

Contents - TacOps Gazette 94.12 Through 04.04

TacOps Gazette 94.12.....	2	TacOps Gazette 96.14.....	193
TacOps Gazette 95.01.....	4	TacOps Gazette 96.15.....	197
TacOps Gazette 95.02.....	7	TacOps Gazette 96.16.....	203
TacOps Gazette 95.03.....	12	TacOps Gazette 97.01.....	207
TacOps Gazette 95.04.....	16	TacOps Gazette 97.02.....	211
TacOps Gazette 95.05.....	20	TacOps Gazette 97.03.....	217
TacOps Gazette 95.06.....	24	TacOps Gazette 97.04.....	221
TacOps Gazette 95.07.....	28	TacOps Gazette 97.05.....	225
TacOps Gazette 95.08.....	33	TacOps Gazette 97.06.....	229
TacOps Gazette 95.09.....	36	TacOps Gazette 97.07.....	232
TacOps Gazette 95.10.....	40	TacOps Gazette 98.01.....	234
TacOps Gazette 95.11.....	45	TacOps Gazette 98.02.....	238
TacOps Gazette 95.12.....	51	TacOps Gazette 98.03.....	242
TacOps Gazette 95.13.....	56	TacOps Gazette 98.04.....	244
TacOps Gazette 95.14.....	60	TacOps Gazette 98.05.....	248
TacOps Gazette 95.15.....	65	TacOps Gazette 98.06.....	252
TacOps Gazette 95.16.....	71	TacOps Gazette 98.07.....	256
TacOps Gazette 95.17.....	81	TacOps Gazette 98.08.....	260
TacOps Gazette 95.18.....	87	TacOps Gazette 98.09.....	264
TacOps Gazette 95.19.....	91	TacOps Gazette 98.10.....	267
TacOps Gazette 95.20.....	97	TacOps Gazette 98.11.....	271
TacOps Gazette 95.21.....	100	TacOps Gazette 98.12.....	275
TacOps Gazette 95.22.....	106	TacOps Gazette 99.01.....	277
TacOps Gazette 95.23.....	113	TacOps Gazette 00.01.....	280
TacOps Gazette 95.24.....	119	TacOps Gazette 00.02.....	283
TacOps Gazette 96.01.....	127	TacOps Gazette 00.03.....	287
TacOps Gazette 96.02.....	134	TacOps Gazette 00.04.....	290
TacOps Gazette 96.03.....	138	TacOps Gazette 00.05.....	295
TacOps Gazette 96.04.....	144	TacOps Gazette 00.06.....	300
TacOps Gazette 96.05.....	149	TacOps Gazette 00.07.....	303
TacOps Gazette 96.06.....	153	TacOps Gazette 02.01.....	306
TacOps Gazette 96.07.....	157	TacOps Gazette 02.02.....	311
TacOps Gazette 96.08.....	161	TacOps Gazette 02.03.....	316
TacOps Gazette 96.09.....	167	TacOps Gazette 02.04.....	323
TacOps Gazette 96.10.....	172	TacOps Gazette 04.01.....	330
TacOps Gazette 96.11.....	178	TacOps Gazette 04.02.....	335
TacOps Gazette 96.12.....	184	TacOps Gazette 04.03.....	340
TacOps Gazette 96.13.....	189	TacOps Gazette 04.04.....	349

TacOps Gazette 94.12

<<...today's New York Times...photo of a Russian tracked vehicle ...The turret has what appears to be ... Do you know what it is? Is it in TacOps?>>

Sounds like a 2S6 Anti Aircraft System. Would be a curved rectangular radar on the back of a boxy turret. Mounted on each side of the turret would be two 30mm automatic cannons - from a distance each pair look like just one tube. The four tubes directly underneath the 30mm cannons on each side contain SA-19 Surface to Air Missiles - one in each tube. I have a note that indicates that the 2S6 is replacing the ZSU-24-4 in Motorized Rifle and Tank Regiments.

The 2S6 is not currently used in any TacOps scenarios but there is a photo of it in the TacOps Photo File <g>. Double click on the photo file and it will run as a stand alone application and you can scroll down to the photo of the 2S6.

<<Is the strength of a minefield attenuated by repeated exposure to artillery fire? I was wondering if you can blast a lane through a minefield with some PD 155mm artillery.>>

Not in TacOps. I have a note to think about this though. Seems like if this were a useful tactic in the real world, I would have read or heard about it - which I have not.

<<Do entrenchments have a general orientation (east/west) or are they omnidirectional?>>

In TacOps they are omnidirectional as terrain features. During combat though the facing of a unit that is in an entrenchment is still consulted so side and rear attacks are better than frontal assaults against entrenchments.

<<Will there be any scenarios where the OPFOR attacks from the west instead of the east? I know the unit symbols would be backwards>>

Not for at least a year. At one time the AI was not supposed to care about direction and much of the code is still that way. However over time as I have tweaked on the AI some few routines have come to expect OPFOR to be generally traveling in a Westerly (NW and SW are also ok) direction. I don't trust my AI notes so it would be a big deal to go in and fix this. Also, as you pointed out the icons would more often than not be "facing backwards". Eventually, we will move to dual facing vehicle silhouettes.

<<...Team O'Hara. ...The problem is that I won with the message that OPFOR had not enough units to fulfill his victory conditions.... I had only killed 30%, though I did get 83% of the T80s. He did have a lot of stranded men on foot who could not get off the West edge in time allotted. Any ideas?>>

I have not had any reported problems with Team O'Hara. Sounds like the program checked the distance to the map edge for all units and just deduced that the game winning percentage could not make it there in time given the current situation.

<<I've been looking for a book of charts that represent the organization of US forces, like the ones in the TacOps docs.>>

I don't know where such charts might be easily found. I am constantly on the outlook for them myself. I don't know why some company does not periodically publish them. Perhaps it is a combination of the fact that current organizations are constantly changing at the lower levels and there is probably a limited market for the info. I keep thinking about compiling the info and publishing it myself.

<<In that particular scenario, DeGoey, or any situation with helos you can obliterate the enemy when they are entering from off board. You almost always know about what time he's coming on so you fire some art'y smoke a couple thousand meters from the edge and fly a helo into it. Even if OpFor has thermal sights, it's only the tanks and ATGM's, and they probably won't get close enough to shoot their MG's at you. Just sit in the smoke and blast away.>>

Rushing the map edge, are we? Naughty ... naughty <g>. Doing that in two player human games can cause a fair amount of ill will. One of the oldest problems in wargaming is that there has to be a map edge somewhere and that artificial edge keeps the entering player from shooting the way he would in real life from "farther back". I have thought about putting a mystery super weapon in the game engine that would automatically fire from "off map" at any unit that got too close to the opposing map edge in "entry" type scenarios <g>.

<<I want to be sure that it [TacOps] will run at least reasonably well on a PowerMac 7100.>>

Yes - as far as I know, it runs as well on a 7100 as on any other Mac. TacOps development was finished on a PowerMac 6100/60 and that is the model that I primarily now use. The only folks who have reported program problems are those with Mac "AV" models and they have some support screens that do not erase properly all the time.

<<Obviously it would be best if it runs native...>>

TacOps does not yet run native. I do not yet have a native code development system and I can not afford to take the time right now to learn a new development system or to go through the lengthy test and verification cycle that prudence would call for if I made a native code version of TacOps.

There is no real justification for immediately doing a native version of TacOps because by its nature TacOps does not need the speed advantages provided by the native PowerMac environment. TacOps is not an arcade shoot-em-up so the kind of ultra fast screen drawing provided by PowerMac native code is not needed. Were I to go native, I suspect I would have to insert timing loops throughout the program to slow it down <g>.

TacOps Gazette 95.01

<<I have'nt figured out how to move my units forward without becoming ambush meat. Further, it seems that even in a full frontal assault, my units don't seem to fire often or soon after the enemy has begun firing. Any suggestions about offensive strategy would be welcome.>>

You might want to pick up the next issue of Strategy Plus magazine. The current issue (January) has an article on TacOps defensive strategy and the next issue (February) will have an article on offensive strategy.

In a nutshell ... in the offense you want to cross elevation changes and blocking terrain in mass so that you don't get in a situation where your guys in the rear can't support the guys in front. When you hit an ambush you want everyone up front to return fire. Walk artillery missions ahead of your advance - target likely ambush sites before you start getting fire. Artillery even when it does not kill, reduces the accuracy and rate of fire of enemy units in its impact zone.

If at all possible don't do frontal assaults. Back out of the kill zone and try flanking the enemy. You get big advantages from firing at the sides and rear of defending units, even those in entrenchments.

Bottom line though is when you are in the offense you are gonna take some lumps. That is why you usually have a 2 or 3 to 1 advantage in force in the offensive scenarios.

<<...why is it that units who are given orders who then take fire seem to "forget" those orders..this is really only a problem with infantry units simply because they are so slow but it become a problem with other units when thier are a lot of them.>>

Only infantry units "forget" their orders and then only if they have been newly suppressed during the combat phase. This is an intentional penalty and is needed to simulate the halting, irregular pace of the sudden rushes that take place in infantry foot assaults in the face of enemy fire. In general in such situations nobody moves far who is receiving effective fire.

<<...I hope that this could be made easier...>>

I can't eliminate all "work" for the player without removing valuable ways to distinguish between the skill and span of control abilities of opposing human players.

<< I've been thinking about how to do an airdrop of paratroops in a TacOps game..>>

So have I. Para assaults are a lot like amphibious landings against a defended beach - it is hard to think up a scenario where the tactic would actually be used in real life. Either the situation appears suicidal or else there is some other form of attack (usually helo assault) which seems to make more tactical sense.

At any rate, actual para drops from aircraft are on the list for a future scenario pack. I have been corresponding with an ex paratrooper and have some good ideas on how to do it code wise. But the problem still remains on figuring out a mission valuable enough to risk a drop.

<<I would like to know how Helo altitude is treated with respect to terrain elevation.>>

The short answer...

A helo flying at NOE (nap of the earth) altitude has the same line of sight as a unit on the ground at the same elevation. A helo flying at medium altitude over any ground elevation can spot (and be spotted by) just about everything within 4000 meters.

A helo over woods or town terrain counts as being one level higher than whatever the trees or town are at. Consider them to be flying "over" such terrain.

The long answer...

"Elevation 0" just means low terrain. The "0" does not mean zero feet of real altitude. Both ground units and helos can be at elevation 0. If a helo is "landed" on terrain that is at elevation 0 then that helo is at elevation 0. If a helo is flying at NOE altitude over terrain that is at elevation 0 then that helo is still at elevation 0. If a helo is flying at NOE altitude over terrain that is at elevation 0 and the helo flies directly over a town or woods, while over the town or woods the helo will be at elevation 1.

"Elevation 1" mean high ground. Both ground units and helos can be at elevation 1. If a helo is "landed" on terrain that is at elevation 1 then that helo is at elevation 1. If a helo is flying at NOE altitude over terrain that is at elevation 1 then that helo is still at elevation 1. If a helo is flying at NOE altitude over terrain that is at elevation 1 and the helo flies directly over a town or woods, while over the town or woods the helo will be at elevation 2 (will actually be treated as being at medium altitude for targeting purposes).

"Elevation 3" means medium altitude. Only helos can be at elevation 3. Elevation 3 is some undefined altitude at which a helo has a clear line of sight to every ground unit within 4000 to 8000 meters and every ground unit has a clear line of sight to the helo. A helo that is flying at medium altitude is always at elevation 3 regardless of what the elevation is of the terrain that it is flying over. Woods and towns are irrelevant at elevation 3.

<<Have to ask [about new scenario disk]: is there any scenario list, the kind of which that came with the original game, designer's notes, readmes, whatever?>>

Of course not, that is not the TacOps way <g>. Documentation? Real TacOps heroes don't need no stinkin documentation <g>.

Besides, which scenario set or map would you have me delete to make room for documentation?

<<I'm continually having a crash when I run the Degoe scenario. In the set up phase, I split the first company of AV-7...(? forgot what they are called) and then split the SMAW unit (bazooka looking figure). I then try to load the Smaw unit into the first APC and it crashes.(Type 1)>>

I just got a first report from another user that sounds a lot like yours. The other user can always cause a crash on his system by doing the following. Run a scenario that starts with units in a setup window. Select an APC in the setup window and unload its cargo. Place the APC on the battle map. Then select both the APC on the battle map and an infantry unit still in the setup window. Select the menu item "Load". The program will then crash on his system. The program does not crash when I do this on any of my computers. Regardless, I will be working on a solution but I will be held back by not being able to replicate the problem on my machines.

The temporary solution is to not load APCs on the battle map with infantry units that are still in the setup window.

TacOps Gazette 95.02

<< On team Davis, I had been experiencing some instances where OpFor ATGMs fired but did not impact.>>

Not a bug - tis but another unpublicised realism detail <g>. TacOps considers the air speed of ATGMs. If they take longer than 15 seconds to reach their target their impact will be "held back" until the next pulse of the combat phase. If they are "held back" in the last 15 second pulse then they won't impact until the first combat pulse after an intervening orders phase. In general this is only noticeable for OPFOR ATGMs firing at ranges of 3000 or more meters. If the target disappears before impact then the inflight ATGM cancels out.

<<How is it that I can carry 1 Infantry Team and 1 Javelin Team in 1 M2 Bradley, but can't carry 2 Infantry Teams and 2 Javelin Teams in 2 M2 Bradleys?>>

Easy - rounding error in the program <g>. I just fixed it based on your note and you will see it in the 0.1.0 update.

<<Is it possible to have a unit back up (i.e. reverse) so that it doesn't expose it's rear to the enemy?>>

Yes. When giving movement orders to a unit - if you hold down the option key as you click on the map, the unit will later move to that point "in reverse".

<<If a Stinger or Javelin team takes a hit and one member is killed (so that only one person is left) can that person still operate the Stinger/Javelin?>>

Yes.

<<Are you also increasing the chance for Fratricide?>>

Not yet.

<<In the 'exit' scenarios, what exactly is a unit? Is it a squad or a team, for infantry? I have been wondering what the tradeoffs are, for example between exiting a tank and exiting a infantry team. >>

In general, in TacOps, when I mention a "unit" I mean a "marker". A marker can represent one infantry squad/team up to a company. A marker can represent one vehicle up to a company. A marker can also include all the infantry embarked on the vehicles in the marker.

However, when a unit/marker is exited, the program counts its strength pts and multiplies that count by the Unit Lethality Value shown for that unit on pages 110 to 112 of the manual. A strength point is the smallest possible unit that a given marker type can be broken down into. For infantry units one strength point is one squad or one team. For vehicle units one strength

point is one vehicle. For example. One M1 tank has a value of 100 points. If you exit a marker that represents 10 M1 tanks then the exit score for that unit/marker would be 10 times 100. Its exit score would be 1000. If you exist an APC marker then the exit score would include the computed values for all the APCs in the marker plus the computed values for all the infantry units being carried inside the APCs.

<<...great game ... which my wife hates ...>>

I hear that a lot <g>.

<<I was wondering if your improvements for entrenched units have gone too far?>>

Could have. I have not gotten much feedback yet though on the subject. I got very strong input <g> that they were too weak before.

<<I mean artillery strikes with ICM is doing nothing more than supressing infantry units as do airstrikes. (Okay, an occassional kill). >>

HE might prove more effective against entrenched infantry targets. ICM remains useful against armored entrenched units. By the way "E" results require that the personnel strength of a marker reach zero. The more frequently seen "Skull" result indicates that one to many individual troops have been deducted from the marker strength.

Entrenched infantry will probably require a dismounted assault by your infantry with your armor just behind the infantry to provide fire support. Don't put the armor in front as they attract RPGs. Note the facing of the entrenched enemy unit and try to come at it from the side or even better rear. You get big benefits from attacking them from the side and rear.

<<Does the effectiveness of infantry units which have sustained losses decrease in any way. (ie. loss of weapon capability, decreased number of firing phases, etc? ... When a Stinger team member is hit are you decreasing the teams rate of fire? >>

When any infantry unit takes a personnel casualty, the entire unit is suppressed for a couple of minutes. During that time, the unit moves slower, shoots less, spots less, and shoots less accurately. Once personnel casualties reach a certain point then the infantry marker will drop an organizational level and it will then fire fewer weapons - i.e. platoon goes to two squads, then two squads go to one, and finally a one squad market is completely eliminated.

<<I wondered why OPFOR Recon teams use 5.56 sniper rifles. >>

I added the US sniper and US recon teams as an experiment in "special case" units - I wanted their OPFOR cousins to be more or less equal so I simply gave them similar weapons. In this case the OPFOR teams are more game constructs than anything else. The standard 7.62 SVD may not be capable of achieving the accuracy that it is given in TacOps - Isby's numbers for the SVD are some lower than the ones I had for the US Remington. Still ... sniping depends more on human talent than equipment so they may be ok.

I would be surprised if Motor Troops Recon carried scoped 5.45 weapons in real life. I imagine they carry ordinary service rifles. Spetsnaz might have more variety in their weapons, but I am no expert on small arms (or anything else for that matter <g>). I did see a photo somewhere recently of what looked to be an AK74 with a small telescopic sight on it - can't find it now. The scope was too small to be an image intensifier. I am pretty sure I also saw one on some recent TV news footage.

<<could you change 5.56 to 5.45?>>

The true caliber of the AK74 is 5.45 but for economy I am using the same data base item for both the US and OPFOR small bore sniper weapon. I am stuck with the 5.56 name for a while.

<< Just finished Task Force Fenwick...>>

How is the play in the new scenarios? We tested TacOps for almost a year - we only had a couple of weeks to test the scenarios. I relaxed a bit on trying to provide a well balanced game in all cases. Some of the scenarios are a bit one sided - usually more in the US's favor than OPFOR's especially against the AI. I have also started thinking about providing some scenarios that lean more toward being tactical exercises than "balanced" games - i.e. the US or OPFOR is always going to win, the question is at what cost. The problem came up with trying to develop scenarios for air assaults. It is hard to picture airborne troops being used in the first place if their chance of success were only 50/50.

<<Tactical question: if you find your on-board SP arty using direct fire against most OPFOR vehicles, have you made a grave tactical error somewhere?>>

If you are US probably so. If you are OPFOR then you might be within doctrine. They used to expect the 122mm SPs to frequently engage defending infantry with direct fire and I would think they would expect there to be usually some armor around enemy infantry. 122mm SPs carry a few rounds of HEAT for such ad hoc anti armor work.

<<Against BTRs, maybe; they can't effectively return fire. Against anything with a >90mm gun tube or a ATGM, isn't the arty toast?>>

Heavy machine guns can get through the armor on the M109 155mm SP - its aluminum like the M113 APC <g>.

<<...when I try shifting back to a previously set TRP, I do not return to the level 5 accuracy I formerly had.>>

An arty TRP stores the accuracy level that you had achieved at the instant when you first created that TRP. The maximum level is five. When you later shift back to that TRP, your first volley will get the stored accuracy level minus one. For example If you had achieved a level five accuracy when you created the TRP then your first volley after shifting back to it will have an accuracy level of four.

<<I fire at a give TRP, in adjust mode, until the accuracy is up to five, than shift to a new TRP. Is this the right process?>>

You don't create the TRP and then shoot at it. You fire first for a while and then you register the arty mission target point as a TRP. You should fire arty at a point on the map until you achieve a level five mission accuracy, then you should create a TRP for that mission. If you create the TRP first, it will be created at level one and will always come back as a level one.

By the way, real arty does not work this way - it does not wander around when unobserved. Modern arty will continue to hit pretty much the same spot, volley after volley until the gunners change the lay of the tubes. TacOps assumes that if a mission is unobserved then the firing batteries are walking the rounds around the target area to make up for not really knowing where the rounds are landing. I don't really like this but I feel I need to do it this way to prevent potential abusive use of unobserved arty - i.e. gaming tricks.

<<Under TacOps 0.0.2 entrenchemnts offer much more protection than under 0.0.1. Does this extra protection outweigh the advantage of backing away?>>

Backing out of sight will always be better since there is no chance of hitting a target that can not be seen. However, sometimes the tactical situation requires one to stand and fight no matter what. In that circumstance, entrenchments come in very handy.

<<I assume this will still be true when I upgrade to 0.0.3, and later to 0.1.0.>>

Don't bother downloading or installing 0.0.3, you can and should skip right to 0.1.0 (unless you have email games in progress). The TacOps 0.1.0 update installer updates all past versions. However, it is always safest to apply the current update to a fresh 0.0.0 version from your factory disks.

<<Also with the recent Russian loss in Cheyen will you change their level of skill for the OPPFOR?>>

No. In the conflict between between providing a simulation or a game, TacOps must put it first priority on providing an entertaining "game". However, I will continue to try to do this as realistically as possible. If the AI performed as badly as the Russians have recently, people would return the game and I would soon be out of a job.

<<Will you be putting the new Apache Bow or the new Commanche in future versions of TacOps?>>

Yes, but it will not be soon. All my effort must now be focused on Panzers East for some months.

<<What about a scenario where the U.S. gets invaded?>>

Just assume the current scenarios are occurring in Florida, South Texas, or in Southern California <g>. I suppose I could do a scenario where the US Army is called upon to subdue some sort of local redneck or survivalist militia <g>. However, I need to try to move TacOps away from being "national or political" - I may have some Russian customers soon <g>.

<<Does TacOps have a Mailing list? If so what is the name? If not how do I find out the latest about Tacops?>>

AOL is the primary player and player support forum for TacOps. The best place to get TacOps info is in the TacOps folder in the AOL Mac Games forum. Type GO MGM to get to the forum, click on the icon named "messages", open the folder named "Strategy & Tactics", and then open the folder named "TacOps". Only drawback is that very time the folder reaches 450 messages, AOL archives our folder <g> into the public library and we have to start over.

<<Thanks again for the scenario updates (though I confess I hadn't noticed anything wrong yet).>>

I recently wrote a utility to scan scenarios for AI typos, gross stupidity, logic traps and for data consistency. With 100 plus scenarios, I needed some automated screening help <g>. I passed all the old and new scenarios thru the screening utility. Only a couple of them had actual bugs. I did a bit of minor tweaking to the AI in a few. Most of them just had some differing or exceptional case data that I wanted to make consistent with similar data in all other scenarios as a precaution against future bugs. If in doubt I changed it.

<<Just one minor problem. When I try to select large icons, the icons turn to "static". Basically they're scrambled. It's not a major problem, as I can just select small icons again. I'm using a Powerbook 100, with 6MB of RAM.>>

I now have three reports of this - all from PowerBook 100 owners. I can not replicate the problem on a PowerMac, a Quadra, or an old MacPlus. I don't have access to a Powerbook 100 so I can not predict when I will be able to correct this.

TacOps Gazette 95.03

<<Maybe you should send the Russian War College a free copy of TacOps.>>

Nyet ... they gotta pay for it like everybody else <g>. So far (as far as I know) we have had no orders from anywhere within the former Soviet Union and only a couple of notes from former members of the Soviet army who are now living in the West.

<<I would either dig in and hold my ground until I ran out of troops & tanks, or try to storm the OPFOR convoys, etc. Needless to say, neither of those worked too well. ;)>>

Learning those lessons advances you to the 1st Lt level <g> ... congratulations. Work on using arty more and I'll see about captain's bars <g>.

<<The M1's in real life, especially the latest version of it, the M1A2, are extremely hard to destroy. Read Tom Clancy's book Armored Cav and you'll read some interesting happenings in the Gulf War, where T-72's pounded one M1 but never penetrated. I think the M1 should be more like this in the game. >>

A valid historical point, however Desert Storm was four years ago. At that time the Iraqis were firing steel and tungsten penetrators, they had no thermal sights to work through darkness and the oilfield smoke, and their tank fire control systems were substandard - in effect they were not only blind but were outranged by close to two thousand meters. Any industrialized country that wants to and can afford to spend the money can field tanks today, including T72s and T80s, with staballoy/depleted uranium penetrators, thermal sights, and advanced fire control systems. Still, if you want the M1s to be invincible just substitute the T72 IQ91 for the T80s or T72s in the scenarios, don't give thermals to OPFOR, and don't give OPFOR advanced ATGM warheads.

<<Also, the MRLS can fire within a minute of receiving orders even when on the move.>>

Maybe on an exceptional basis, but there is still time of flight to be considered. On a routine basis it would probably take at least a minute just to get them to answer and authenticate the radio call <g>. Very few things in real life happen in just 60 seconds.

<<I have generally found my air support to be fairly ineffective at killing armored units.>>

The air combat tables are virtually the same - US tables are slightly better. Could be because the AI often tries to disperse its units upon contact so that fewer clusters of vehicles exist within the effect radius of an air strike. Also lots of ground to air fire reduces the accuracy of an incoming air strike even if it does not down or abort the strike.

<<However, the other day I played a scenario and an OPFOR air strike hit a column of my mostly armored units. It destroyed 8-9 vehicles, almost all of them M1s. - Is this realistic?>>

It is reasonably realistic with cluster bomb munitions and when you stack a lot of units in a very small area.

<<Does OPFOR air support have better anti-armor bombs than I do?>>

No. Their air to ground tables are actually a bit weaker than the US tables.

<<I was depressed, because it turned a winning situation into a losing one. Maybe I was just unlucky... But it seemed pretty unrealistic.>>

If you stack markers, if you congregate lots of people and vehicles within a few hundred meters, if you bunch up your units - you will be punished severely <g>. Happens that way in real life, so it happens that way in TacOps.

<<An interesting observation was that about 70% of my kills came from the machine gun on the UH-60s. I was curious what they would do against infantry and BTRs. Turns out they were the most useful piece of equipment on the field. Major, I wonder if the kill rates for the 7.66 mm gun are too high. It outperformed the Apaches easily>>

The penetration of the 7.62 machine guns is something that continues to bother me but I have not yet resolved to change it. The 7.62 machine gun is quite effective against BTRs when using special armor piercing ammo but the universal availability of such ammo is debatable. Frankly, I am surprised that your Blackhawks could survive after getting close enough to use their machine guns. Everyone else complains that getting them anywhere near an OPFOR unit is virtual suicide.

<<One very minor thing I'd like to see changed, however, is in the organization of the scenarios. It would be cool if they were separated into defensive and offensive categories. Also, I'd like to see separate general categories for Army and Marine scenarios.>>

"What's where" has been a bit of a problem from the beginning. I wanted to leave myself plenty of room to change things in the future and to make new scenarios so I separated scenario data out of the game engine. The game engine doesn't know anything about any scenario until you tell it to read that scenario's data file. This pretty well keeps me from using the game engine to display organized or orderly lists of scenarios or their attributes.

You might check the forum library for some TacOps text files that summarize the scenarios. Go to the library and search on the keyword "TacOps" to find them easily. I think one of these files lists all the original scenarios, whether each is USA or USMC, and gives a summary of the US and OPFOR missions.

<<When ever I try this in the way you describe I end up with a bunch of dead Bradlys and no(or very low) infantry because they couldn't get out in time. How close to approach before dismounting and how far back should the Tanks sit? Should I be using smoke as well if I have thermal sites?>>

If attacking with Bradleys, you should dismount beyond or at the extreme end of OPFOR RPG range. Smoke is almost always helpful for infantry assaults as it blinds the RPG gunners and other non ATGM equipped infantry.

<<Question about AI for ya, Major H... at the start of a game, does the AI have a list of different tactics to use? Or does it just 'go with the flow', so to speak, and just react to the US' actions?>>

It does both. Before contact with US forces, the AI chooses a target list, a battle plan and routes that will accomplish its mission (if there is no US interference) from a roster of multiple different target lists, plans, and routes. As the OPFOR units make contact with US units, the AI task organizes its battalions and or companies and switches to reacting tactically to those contacts. As it successfully deals with contacts, it switches back to the primary battle plan or it may jump to a different battle plan.

<If OPFOR is supposed to be attacking and exit a percentage, will it go into the defensive if it is attacked first?>>

It happens but it is rare. Usually the AI will try to aggressively clear obstacles to its battle plan.

<<What do other OPFOR units usually do if they are on the other side of the map?>>

Sometimes they come back to help out. Sometimes they go ahead and exit.

<<With a chopper I had given myself, I could see the OPFOR sitting in the back of the map. They seemed to be hiding when if they had attacked in force, they would bust right through my defences and through the town. Can OPFOR see the same stats as we can in the game status which shows the battle force size?>>

The AI currently does not really consider the overall remaining strength of the US player when planning its move. In my opinion doing so would cause the AI to periodically to do unrealistic things just to win the game - things like noting that most of the US units were "gone" and then switching to just driving off the map edge - I would consider that to be a game trick. I did not design the AI specifically to beat up on you or to care particularly if it wins or loses. My goal for the AI is for it to move its forces and to respond to contact in a tactically realistic way so that the game looks and feels right militarily. A fortunate side effect is that using real world tactics and principles often seems to also be a good approach for the AI to take from a game play standpoint <g>. Other than some overaggressive selfpropelled howitzers that sometimes insist on leading charges instead of providing supporting fire like they are supposed to do, I think it does ok.

As for "busting through the town", the AI is a lot more afraid of your arty than it is of your ground units. One US unit with a good field of view can wreak havoc just by adjusting arty ICM missions. The AI may have just been being careful to get its attack formation organized before venturing out into the open.

<<we play almost every day several hours over a modem>>

I worked for a while on coding a "real" modem link for TacOps but gave up when the code just for that purpose began to rival the size of the rest of the program. The problem was not the routines that handled the transfer of data. The problem was the zillions of lines of code needed to check for and correct data errors and to check and maintain the data link properly.

If you do a lot of game play by modem, you might consider getting Apple Remote Access (ARA). It is expensive, but one package would take care of both yourself and your friend as the license is for two sites. When using ARA, just about any game that can be played over a network can also be played across a phone modem connection. For example, if you were using ARA, you would be able to select and use the "Appletalk network" game mode in the TacOps startup menu. With ARA running in the background, TacOps would think it was being played over a network instead of through modems and you would get the benefit of the quicker and more efficient network orders exchange process.

<<I have not heard of Panzer's East. Is it going to be run on the same systems as TacOps?>>

No. Current plans call for Panzers East (TacOps WWII) to require a minimum of 256 colors/shades of gray and System 7. That will eliminate all two color black and white machines. The hard disk storage space required to support 256 color maps will probably knock out all Macs with small hard drives. Current plans also call for more elevations and more accurate elevation line of sight handling. That will probably make the game too slow to be playable on any Mac with less capability than say an LCIII.

If at all possible and affordable to do, I will try towards the end of development to come up with a 16 color option, perhaps available as a separate package.

<<Where are the recon sniper teams everyone talks about?>>

If you have the public 0.1.0 update or later, you will find US and OPFOR sniper and recon units in the optional unit lists in the Custom Army 0.0.2 and Custom USMC scenario 0.0.2 templates. If you have the new scenario disk, you will find them in the scenarios named Task Force Fenwick and Task Force Marks.

TacOps Gazette 95.04

<<I've experienced the same problem alluded to by an earlier post with mortar windows being "Hollowed Out". It happened with TF Mizokami, so I suspect its a low memory problem.>>

That particular window not drawing would in fact be an indication of low memory or more accurately heap fragmentation. I am sure it happens to you, but I have never been able to replicate it and I habitually play with only 1700 allocated to TacOps - on a PowerMac 6100, on a Quadra 605, and on an LC I. However, I suspect my Macs are a lot cleaner (i.e. more software tolerant) than most people's systems because I always hide/disable non Apple supplied INITs and extensions unless I am performing some task or using a program that specifically requires them. In particular, I avoid using any public domain or shareware INIT or extension on my Macs. Many folks think nothing of having dozens of system modifying INITs and extensions floating idly around in their Macs memory - many of which may be of dubious origin. I prefer to aggressively use Apple's "Extensions Manager" utility to keep life as simple as possible for the operating system.

<< with the 840AV I continue to experience problems with screen redraw. Have you seen this?>>

No but I certainly believe it exists. Apparently it only occurs on AVs, with the problem being most pronounced on 660AVs. Several AV owners have reported that the redraw problem does not occur if they use the Mac control panel to set their AV system to 16 colors before running TacOps. Please let me know if that fixes the problem on your system. I suspect doing this would also tend to prevent the hollow orders window.

<<Is there anyway to paste to a lot of units at once, like when you have multiple units at the same place, entering the board?>>

Yes. Say you have already given orders to a leading unit and you have its orders window open. Do Copy and then close that unit's orders window. Drag a selection rectangle around (lasso) the units that you want to paste to - they will be highlighted. Do Paste. The orders in memory will be pasted into every "selected" unit. You can also select multiple units for pasting by holding down the shift key and clicking on the units you want to select.

Copy, paste, and group selection now work in TacOps pretty much the same way as they do in most "paint" programs and on the Mac destop.

<<What is direct area fire? Like Kill Zones or something?>>

Direct area fire is a concept that is not in currently in TacOps.

Currently in TacOps most units can not just shoot at an area of ground (arty and mortars can). Currently most units have to see a target unit and have a reasonable chance of hitting and hurting it or else they won't fire at all.

A number of users would like to be able to order every type of unit to fire at points or small areas of ground even if no enemy unit is visible there yet - suppressive fires, recon by fire, that sort of thing. If implemented, this kind of fire would be no where near as effective as shooting at a visible unit but it might be useful once in a while and it would be (or at least would seem to be) somewhat more realistic in some situations.

<<Are landed helicopters susceptible to OPFOR air-to-air attacks?>>

Yes. Upon arrival on the map, if fixed wing aircraft find a helicopter (landed or in the air) within 1000 meters of their assigned ground target they will switch to the helo and they will execute a gun attack.

<<can OPFOR ATGMs fire at NOE helicopters>>

No. In TacOps, ATGMs can only fire at landed helos. Note that BMPs can fire their 30mm auto cannon at helos landed or in the air.

<<Which type of arty is more effective against infantry, ICM or HE?>>

In the real world there are a few situations in which HE is better, however in TacOps, ICM is always more effective against infantry than HE. If target infantry are in the open then ICM is very likely to do a lot more damage than HE. If target infantry are in woods then ICM is moderately likely to do more damage than HE. If target infantry are in a town then ICM is slightly likely to do more damage than HE.

<< And, more importantly, why?>>

Anti personnel ICM ammo does a better job than HE at dispersing more chunks of shrapnel evenly over a larger area at a height and angle more conducive to hitting people. Overhead cover reduces its effect however if overhead cover is a consideration then the firing battery can mix in some anti armor ICM and or dual purpose ICM ammo.

<<I'd like to offer a suggestion to remedy the "rushing the map edge" problem where one player can "stake out" the map edge so that arriving enemy units are pretty much decimated. Why not designate a safe buffer zone ... *only* on turns where new units are due to enter the map. Opposing units would not be able to fire into this buffer zone during the arrival turn (and perhaps the next) so that the other player would be inclined (unless he wasn't thinking) to back off his units to locations where they could engage properly. Is this a realistic kind of idea, or is it impossible?>>

It could be done that way. However, the simplest way to handle it is for people to be sporting and just not do it <g>. I hate to write "policeman" code.

<<That [CPX TacOps] sounds like an excellent training aid. Have you considered marketing this type of system to the military?>>

I don't intend to specifically knock on their door, but they are as welcome as anyone else to buy the boxed product and submit user suggestions <g>.

I don't expect any military interest until the PC version comes out - there are relatively few Macs in the military. Government computer procurement is supposed to be a free and open competition based on quality and price but the reality is that in most offices the "system" makes it almost impossible to buy anything but PCs, especially in the military services.

<<Then again... trying to get the government to buy anything takes so long and requires so much effort I am not sure that it would be worth your time.>>

I worked R&D and procurement for three years in D.C. Based on that horrible experience, there is almost no way that I would allow myself to get involved in a paid, custom programming effort for DoD. I would be a lot more inclined to just do something for free for a motivated NCO or officer in a line Battalion somewhere <g> - assuming he had a Mac.

<<Can we have weapon-specific fire control?>>

It is on the update wish list as an option. However, I don't expect to put out any more TacOps updates until Panzers East is finished.

<<A related problem that would be solved by the previous wish, but which would be useful if you can't implement that, relates to the Stinger teams. If we can't set the weapons ranges, can we get a "Target Type" of "Aircraft" so we can give them a hard target type order to only down aircraft and not fire at anything else?>>

Good idea. I'll add it to the wish list.

<<As an aside, did I see my Stinger team down a fixed wing aircraft?>>

Yes.

<<What is used as success criteria in "exit XX%" type scenarios? Is it a strict number of units removed?>>

No, it is the computed lethality value of the exited units.

In general, in TacOps, when I mention a "unit" I mean a "marker". A marker can represent one infantry squad/team up to a company. A marker can represent one vehicle up to a company. A marker can also include all the infantry embarked on the vehicles in the marker.

However, when a unit/marker is exited, the program counts its strength pts and multiplies that count by the Unit Lethality Value shown for that unit on pages 110 to 112 of the manual. A strength point is the smallest possible unit that a given marker type can be broken down into. For infantry units one strength point is one squad or one team. For vehicle units one strength point is one vehicle. For example. One M1 tank has a value of 100 points. If you exit a marker

that represents 10 M1 tanks then the exit score for that unit/marker would be 10 times 100. Its exit score would be 1000. If you exist an APC marker then the exit score would include the computed values for all the APCs in the marker plus the computed values for all the infantry units being carried inside the APCs.

<<Finally, you mentioned that sniper/recon teams were "invisible" in most circumstances unless they fired for more than one minute from the same location (within 100m). If I fire for a minute, then hold fire for a minute, then fire again, am I still "50% probable" to be spotted? What if I hold fire for two minutes between firings? ... In TF Fenwick I had some folks in a pretty good location and didn't want to move them>>

Regardless of the time between firings, you have to move the sniper at least 100 meters in order to get future awards of max "invisibility". I have to be very restrictive with snipers in TacOps to prevent game tricks and abuse. Otherwise, they could very easily turn into super unrealistic Rambo units. In modern sniperdom, there is no such thing as a good position once one round has been fired. If snipers shoot, they move. Sniper teams are small and alone, they can not cover enough ground with troops to have meaningful flank security, they do not really know what is going on around them. To survive, they have to always assume that an enemy unit/patrol has just wandered into a nearby position.

TacOps Gazette 95.05

Admin Notes: Have you updated your TacOps game engine to 0.1.1? You should as soon as possible. It fixes an obscure game crash bug involving optional unmanned aerial vehicles (UAVs). It also fixes a problem with copying and pasting orders to move in reverse - i.e. the previous version would not paste them properly.

Advice from a TacOps user: If you have trouble with entrenchments containing infantry, put artillery smoke over them and drive up with an M-1. Set the tank's SOP for "Pop smoke and stop after firing" and "Pop smoke and stop after being fired at". This lets you drive the M-1 through the smoke which blinds the RPGs. The M-1 will probably see the entrenchment before the defenders see the M-1, so after it fires, it will stop where it is, and should be out of range of the RPGs. The pop smoke effect is just a precaution in case the artillery smoke screen dissipates before you anticipated. The tank will eliminate the defenders in one or two minutes.

<<Can the OPFOR see adjusting rounds?>>

I assume you mean the computer opponent. If so, it depends on what I have put into the extra AI that is imbedded in each scenario. Typically when the OPFOR AI is in the attack, it may react to incoming arty, even adjusting fire, by dispersing its march and or attack formation. When in the defense the AI typically just "hunkers down" under arty fire.

<<In TF Fenwick, does landing adj rounds inside the perimeter alert the troops to an impending assault?>>

I don't think the AI reacts to arty inside the perimeter in Fenwick. The mission of the troops in the compound is to sit and defend.

<<does the OPFOR notify the reinforcements "at the start of the scenario" or only after they start taking fire?>>

At the start. I figure the incoming helos would be picked up on radar or visually well before reaching the compound.

<<What kind of targeting bonuses does the OPFOR get for their artillery, if any?>>

The computer opponent's arty often starts at accuracy level 1 (still not very accurate) for its first volley. After that it works the same as for the human player - i.e. if observed it gets better, if not then it gets worse.

<< I was playing TF Peterjohn the other night and OPFOR seemed to be dropping HE all over the map at potential ambush locations with high accuracy (i.e. right on the edge of the southern ridge, on the edge of the town, etc.), with no "mis-fires" I see when I've got accuracy 0.>>

Just coincidence. You probably don't notice all the times it misses horribly with its "searching fire" or the times it engages with HE when ICM would have been better.

A big reason why the AI often gets very good use out of its air and arty assets is that it maintains a running target list just as a good human player would. The target list contains recent US unit positions that were legally acquired by spotting and it contains points on the map that would be good places for the US player to use in a given scenario. If the AI is in the attack, the target list also includes terrain points that would make good US defensive positions. At the end of each combat phase, the AI plans its orders for the next turn just as the human player does. The AI looks at its target list and it usually selects arty and air targets based on the most recent spottings of valuable US units. If it doesn't have any solid unit spottings to work with, then it will randomly target nearby terrain that would make good US attack or defensive positions. The AI also notices when it gets secondary explosions and may decide to "stick" to an area for several turns.

<<But also keep in mind that you don't have to leave them there as sitting ducks. You can (and should) plan some escape route for them when their main usefulness is served. You could extract them using some mobile element. But you can also just move them back into deep cover.>>

This is an excellent example of one of the many ways to improve the realism of wargame play by the setting of personal goals - i.e. adding handicaps and conditions that are not enforced by the game engine. Playing a wargame while giving realistic consideration to preserving the lives of your troops adds another whole level of challenge.

<<But if you want tactical control of units from squads to as big as your memory will let you build it (Division?)>>

I appreciate the sentiment and although it may be technically possible to play TacOps at Division level, doing so may be hazardous to your mental health and may be injurious to your personal relationships with significant others <g>.

<<I'm hopeless in managing airborne assault on offense. Do you have any suggestions? I'm sure it's something simple having to do with artillery assets but I'm just not getting it.>>

Helo assaults are not simple in real life. I would be very disappointed if they failed to be troublesome to you in the game <g>. Rules of thumb for helo assaults ...

Helos can move a lot of people great distances at high speed, but in the end the troops have to get out and walk the last kilometer or two.

Troop helos are not armored personnel carriers.

When troop helos get shot down, everybody dies.

Don't land helos in hot landing zones.

Helo landing zones must not be under enemy observation.

Use landing zone deception. Air approach lanes to landing zones should also not be under enemy observation. However, this is often not possible. If this not possible then let the enemy see you approach and appear to land your helos in many different landing zones, with perhaps only one or two of them being actual troop drop off spots. This assumes that although the enemy may see you approach a landing zone, he can not actually see what is going on once your helos land in the landing zone.

<<When artillery falls on my own pieces I see every explosion, S, D, E, and "skull" ... I think I just see a subset of that information for enemy units. ... Are there some rules for when I see those glyphs for enemy units?>>

If arty falls on an enemy infantry unit that is not in line of sight of and or visible to any of your units on the ground then you won't be shown the arty's effect. If arty falls on enemy vehicles and a vehicle is destroyed then you will be shown a secondary explosion but again if none of your units can legally see the vehicle then you won't see the actual vehicle or the nearby suppression results that undoubtedly accompanied the arty impact.

By the way, if arty falls on infantry or lightly armored vehicles, all such units roughly within the explosion animation (unless you are firing very small mortars in which case the effect radius is not as big as the animation) will almost always be suppressed even if you do not see an "S" for every one of the markers. When arty falls on armored vehicles they may or may not be suppressed.

<<I have two questions (being ignorant of desert landforms): What is a wadi? What is a sand berm (and why would one build one)?>>

Technically a wadi is a gully, valley, or riverbed in northern Africa and southwestern Asia that remains dry except during the rainy season - often the feature will be dry unless rain is actually falling in the feature or within some miles of it. Given rain, the feature typically fills briefly with rushing water that erodes it deeper and wider - i.e. just like the flash flood of the US western desert. Wadi has been used to describe features varying from only a few dozen meters wide up to large geographic regions. In US usage the term has degenerated to apply to just about any gully or ditch like feature that is large enough to drive a tank through. Such features are often very militarily significant in desert areas of Africa and southwestern Asia because (1) they provide terrain landmarks for navigation in an otherwise often featureless area, (2) they are usually deep enough to provide cover from distant observation across an otherwise flat and featureless desert, (3) they often extend in the direction you want to travel, (4) their firmer bottoms (except when closely strewn with boulders) sometimes provide better trafficability than the loose sand of higher terrain. In the assault, items (2) and (3) would make traveling in a wadi very useful to armor for limiting exposure to long range ATGMs while approaching an enemy defensive position. An obliging wadi would also prove useful to an assaulting infantry force as it would allow some movement out of sight of the enemy, thus reducing their vulnerability to accurately adjusted arty fire.

The Iraqis used sand berms and sand piles in an attempt to provide ground level line of sight blocks and concealment in areas of flat desert during their war with Iran and later in the Gulf War against the coalition. A sand berm is simply sand, earth, and or rocks that have been bulldozed into a pile or long wall that is typically taller than a tank. In flat, featureless desert anything that obstructs long range ground level visibility is of military value - you can't shoot accurately at what you can not see. Properly constructed sand berms may also provide brief obstacles to movement. Were you defending in flat featureless terrain, a sand berm a few hundred to a thousand meters in front of your position could allow you to engage an enemy force piece meal (a stupid enemy that is) - as leading enemy units crossed the berm you would be able to engage them with your whole force without being exposed to return fire from the whole enemy force.

TacOps Gazette 95.06

<<Can you set the DFTRP at a point that the unit isn't even in, or does the unit have to be within the circle? I.e. if you have an M1 unit on elevated terrain overlooking low terrain, can you set the DFTRP to a point 1,500 meters away with a DFTRP radius of , say, 1,000 meters?>>

DFTRPs can be placed anywhere. The setting unit does not have to be within the circle. The answer to the M1 example is yes.

DF TRP means direct fire target reference point. It describes a circle around a point on the battle map. You specify the size of that circle when you set the DF TRP. When you set a DF TRP for a unit, you are ordering that unit to place its first priority on shooting at targets that are within that circle. The unit will look in that circle for targets before looking anywhere else. If you hold down the option key while setting a DF TRP then that unit will only shoot at units that are in that circle. Using DF TRPs is a TacOps implementation of a real world method of distributing weapons onto multiple likely target areas so that all the weapons in a defensive position don't by chance end up shooting at the same one or two targets at the same time.

<<I've gotten peeved more than once by the seemingly psychic awareness the enemy air support demonstrates in going after choppers. Now, I won't argue that loaded Hawks and Chinooks are dead meat if jumped by MiGs, but it seems the enemy air power is a bit too powerful going after Apaches and Cobras.>>

Could be. I have no studies or citations for fixed wing versus attack helos. I would welcome more info. In the meantime, keep your helos moving. The AI air support only prospects for helos in locations where they were previously spotted (give or take a kilometer).

<<In the interest of playability, it seems the air assault scenarios have been turned into nearer run things than would normally be the case. Would we actually plan large scale helo movements in an area where we didn't have air supremacy, or at least near total superiority? The idea of a couple of battalions or so of helos plunging into the great unknown in the face of unfettered enemy air power seems a bit too much of a stretch, even for the U.S Army.>>

A legitimate point. This is a problem with designing any game scenario. In order to provide a "game" both sides must have some plausible chance of winning. This often means that a TacOps scenario presents a tactical situation that no reasonable commander would enter with the forces given unless the operational situation were desperate. As you mentioned, if the user prefers a different or more realistic military situation, the solution is to use the scenario modification options that are available during the setup turn. For example, in the air assault scenarios you mentioned (Mizokami, Nankervis, De Goey) he could use the "Change Air Support" menu item to delete all OPFOR air support.

<<...it seems arty is useless against choppers. I've had choppers fly through MLRS barrages and emerge unscathed ... I've had landed choppers in the impact zone of 152mm ICM, and nary a scratch on the choppers. I've also had landed choppers attacked by air, and instead of plopping

CBUs on 'em, they strafe 'em! ...wonder if there might be some magical immunity going on in TacOps.>>

In TacOps, arty will never kill helos that are in the air. Landed helos are susceptible to arty effects about the same as light vehicles - i.e. trucks and HMMWVs. The fixed wing air to helo gun table gives a higher probability of kill than the CBU vs light vehicles table so CBU's are never selected against helos.

<<I am unable to deal effectively with the Team Krempp scenario, against OPFOR entrenched infantry. My most recent attempts successfully eliminated enemy BTR80 APC's with Javelin ATGM units in short order. However, clearing OPFOR infantry squads escapes me.>>

When Team Krempp was designed, entrenchments were a lot weaker. The scenario may now be unbalanced. You have my encouragement to add some more units or arty to the US side during the setup turn - guilt free <g>.

<<About the only thing that you cannot [do] in TacOps that the real guys were able to do is recon by fire. It is apparent that both sides used this tactic, but the Major thought that it would just complicate things by its inclusion in the program.>>

It is still on the wish list though, under the concept name of "Direct Area Fire".

<<No doubt that TacOps is by far the best squad level wargame on the market to day, at least for the Mac, but one can never be satisfied can one?>>

Thanks much, but I am very careful to not suggest that TacOps is a "squad level" game. It intentionally lacks the level of detail needed for realistic squad leader play in order to remain playable for battalion and larger engagements.

I expect that Avalon Hill/Atomic's "Beyond Squad Leader" will take care of the squad level fans in a most excellent way, when it is released.

<<It appears that engagement range for units goes to max automatically when a unit is fired upon? If so, does that imply that any unit fired upon will return fire?>>

Generally, yes - assuming the unit survives the volley and the usual spotting and readiness conditions are met.

<<...vehicle mounted mortars and the like have an engagement range. Can I set this to zero (so they won't fire rifles and the like at nearby enemy) and still expect the indirect fire to be unaffected..>>

Yes.

<< ...or will the mortar launch cause the automatic resetting of the engagement range to maximum (with subsequent small arms defensive fire)?>>

No.

<<I would like to suggest another addition for your pile of additions: A playback mode. ... would enhance my enjoyment ...>>

This is high on the wish list. I spent a couple of weeks playing around with this some months ago and could not get anywhere at that time without a major rewrite. I got a viewer going that could read the sequential saved game files produced by PBEM games but the approach was too unwieldy and swallowed up too much disk space to actually use.

<<different sounds for different weapons would be a valuable addition, that would convey some info about what's going on.>>

On the wish list. The Current problem with adding more sounds is that their resources are so big. I could compress them, but the older Macs either can't decompress sounds at all or else do it relatively slowly. Perhaps two sets of sounds could be provided (the current set and a huge set) and the user could choose which set to install. We are also considering adding volley sounds. Say a tank unit of 10 tanks is firing at one target. Instead of doing the tank gun sound 10 times and drawing the fire line ten times, the program might draw only one fire line, do one tank gun volley sound, and then show all the kills.

<<Also, a way to show when a unit is damaged would also convey information. Some times, I see one of my tanks sitting there, and can't figure out why it won't shoot; only to discover when I checked, that its gun is disabled.>>

On the wish list along with annotating the silhouette markers with some sort of border or corner mark to indicate true facing. Current problem is that the older Macs can't draw fast enough to cope well with the extra drawing steps.

<<Not having access to any field manuals above the platoon level, I went for what was in the University library and on bookshelves.>>

I have suggested to a certain wargame publishing company <g> that selling reasonably priced, reprinted military manuals might be a profitable sideline. It is true that they are often available from the government but in my experience it takes months to get them. Seems to me that if a person could order them from a reputable source that would provide them within a week or so that they might be a popular item.

<<I'd like to see a small log for the game that a player can use to type notes into and save over the course of a game.>>

Added to wish list.

<<Spot reports, logistic reports, etc. from units. ... Low-end counter mobility devices: abatis, road obstacles, etc. ... The ability to use a artist's palette to scribble little notes on the map, ones

that could be erased at any time ... printable After Action Report, if anything nothing more sophisticated than the ability to print out Game Status Reports ... I am really leaning against players being able to notice things such as secondary explosions in artillery strikes or vehicles popping smoke if there is no one to observe such actions ... >>>

All on or added to wish list.

<< ... one thing that would be nice would be the opportunity to get printed color maps. ... I know adding these maps would add cost.>>

I agree that printed maps are important. Originally, there was going to be a nice, printed, color paper copy of each map in the box. In the months before we went to print, the street price of wargames dropped from around \$65 to \$49 (and then went even lower). We then could not afford to provide the printed maps.

I hope in future games to at least provide printable color maps in disk form in the factory box.

TacOps Gazette 95.07

<<Just out of curiosity, why did you take click and drag, copy orders and weapons on and off options out of the game in later versions. ... Now, in v.0.1.1, it appears as if the only method you have at setting large ambush is to select every single unit and turn their weapons off.>>

What you want to do is still there, it just works differently now. You now select the area "before" you select the menu item if you want to change multiple units.

Say you want to turn weapons on/off for multiple units at one time - first select a group of units by (1) dragging a selection rectangle (lasso) around all the units or by (2) holding down the shift key and clicking on several units in sequence. Either method will result in the selected units turning blue. Select the menu item "Weapons On/Off" and the engagement range will be instantly set for all the selected units.

Note that if all you want to do is change one unit then you do it the old way and you select the "Weapons On/Off" menu item first.

Same group or individual selection approach also works for paste orders and paste SOP. You can copy orders either by using the "Copy Orders" menu item or by opening a Unit Orders Window and then doing Cmd C or hitting the "Copy Orders" button.

I changed it because of a large number of notes from users pointing out to me that the old way was not consistent with the usual Mac interface. The users were absolutely right and I have not a clue why I did it the other way in the first place <g>.

Please don't take this as a poke at you <g> but you should look for and print two text files on your update disk named "Read Me - TacOps Update" and "TacOps Errata.txt". Many folks have overlooked these files. There are a number of significant changes and new shortcuts explained in those files that could have serious effect on your game play if you are not aware of them.

<<I love the new TacOps but have come across a bug. When using the units command window, the copy button does nothing now. This is since I got the latest revision, version .1.1>>

Not a bug - it does something.

The Copy button copies the orders of the unit with the open command window into memory. Say you open up the orders window of a unit that is leading a bunch of other units in a road march. You give that unit its route orders and then click on the "Copy" button. That unit's orders are now in memory - ready to immediately and conveniently "group" paste into the trailing units when that orders window is closed.

Check the update "Read Me" file that came with the update for details on this and other important changes to the user interface.

<<Too much detail in the air stuff could be a problem for new players. ... Perhaps an "add-on" module of "advanced" features, including air, engineering, etc. would be a better approach than too much expansion (read, detailing, of the game).>>

My thinking exactly. Some day I do want to increase the fidelity of air to ground, ground to air, and artillery procedures. Doing so does have a very real risk of alienating (i.e. boring and or overwhelming <g>) many perhaps most gamers. When I do it, I will either try to make the various additions optional or else create a "computer run FSO/FAC shop" to optionally take care of the details for the human player.

<<I noticed that when a group of Opfor vehicles are sighted/hit by artillery that they disperse in all directions...is that current Soviet policy? I'd have thought that they would continue to advance.>>

I would think that dispersing under effective arty fire is both doctrine and the prudent tactic. In TacOps, once the OPFOR companies disperse into platoons, they generally resume their on-line advance as soon as they can get reorganized. As an experiment you might turn off the fog of war and watch them maneuver.

<<What is happening when my M1s are shooting up OPFOR infantry concealed in smoke? I can perhaps understand the coax gun engaging infantry in smoke, but the other .50 cal and 7.62mm need some explaining. Men using such machine guns would have to be using goggles-types thermal sights to spot the OPFOR grunts, no?>>

It is a speed and coding compromise. The game engine does not currently link a unit's thermal sights to the exact weapon subsystems in that unit. To do so, I would need to flag a thermal bit for every weapon in a unit and I don't have any spare bits left in the unit record structure. To do this perfectly realistically I would also need to add some code to arbitrate using the thermal sight of one weapon to adjust fire of another weapon on target by using impact observation, teamwork, and "Kentucky windage". At present, I don't think the problem is game significant but it is on the list of things to be someday polished out.

<<I was rolling over a OPFOR infantry platoon in a forest ... the tank commander is firing his .50 cal MG at the enemy during a firefight that was "point blank" ...I suspect that in such close terrain tank commanders who did so would take very heavy losses and would rather just keep spraying bullets with the coax gun. What are your thoughts on this?>>

If the tank becomes suppressed, any external weapons will stop firing. You are right though that doing so in the first place is debatable. Good example of why I periodically remind folks that TacOps is not suitable for gaming "squad leader" type actions or for looking for "squad leader" type detail.

<< Game proposal. Radio jamming.>>

Interesting idea, but I fear way too complex for incremental updates.

I would like to hear more such ideas for "super detail".

<<I was going to ask that you add a statistic showing actually casualty amounts, but now I'm not so sure.>>

Personnel casualty numbers and reports were in the game during development. They were removed not for political correctness, but rather because they gave too much unwarranted information to the opposing player.

<<It would also be nice to see a small number (if you can fit it in) indicating what accuracy a TRP is.>>

Excellent suggestion (i.e. easily doable for once <g>) ... added to the list.

<<I think the supply rules definitely need to be worked.>>

What would you like to see? Personally I never use resupply when playing vs a human opponent and seldom when playing against the AI.

<<I got to kill seven of his choppers with SAM16s mostly fired through smoke..>>

Sounds like your opponent did not read the "Read Me" file that came with the latest update that added this capability for SAMs and ZSUs. Suitable punishment in my opinion <g>.

<<Can Stingers and SAM16 really shoot through smoke?>>

I added the capability to engage through smoke primarily due to convincing testimony from an active duty US Army STINGER section leader. Another reason it was added was to eliminate a game trick - laying smoke and then parking Apaches in the middle of it for long periods of time.

<<...should be some chance for fratricide ... A ROE option>>

On the wish list for when air to air and ground to air fidelity is increased.

<<I don't know if we can fix the need for AA fire to visually confirm the target before engaging; perhaps this is something for the Major to consider?>>

The following is based on recent discussions with an Army STINGER section leader. Unless the tactical AAA ROE is unusually restrictive, visual confirmation is usually only relevant to AAA vs helos. If a SAM gunner waits for a positive visual id on a fixed wing target then he will be unable to prevent the aircraft from releasing its load - the SAM would degrade to a punishment weapon fired at the departing aircraft. Absent momentary lock down orders a SAM gunner will probably engage any fixed wing target that enters his field of vision - that is why SAM gunners have their own radios and control net. Interesting sidebar - I was just told that in the real world if a friendly aircraft has attacked friendly positions by mistake and lines up for another pass, STINGER gunners are generally free to shoot it down.

<<Do you have any plans for a game design incorporating some notion of chain-of-command? My biggest design gripe about TacOps is that I, as the battalion commander, have fairly precise control over the individual movements of units. It seems that in reality, I would only be able to give fairly coarse-grained orders (go take hill 635, defend your current position, etc.).>>

Not any time soon. What you describe would definitely be needed for a Division/Corps level game but it will be some years before I leave the tactical/grand tactical path. Adding this to TacOps would probably just bog me down in a constant barrage of complaints from the users that "the game units did not do what I wanted in such and so case" <g>.

<<one thing I'd like to see represented (which isn't in the demo) is special operations. Not only SF but basically anything falling under the 1st SOCOM. For example, use of PSYOPS to implement battlefield deception would be really great, and of course SOA and Rangers would make for a fun stand-up fight in the game>>

We got into this a little bit with the new "add on" scenario disk. There are two scenarios in it that involve a helo borne raid on a terrorist training camp. The US helo raiders (light infantry) depend a great deal on successful early game activity by several sniper/recon teams that may be setup anywhere in "Indian Country" on turn one.

<<I finally started using the PBM feature in a game with JBSScott, and I have to tell you it's opened a whole new realm of TacOps to me. I'm also thinking of getting my brother to bring his computer over and try the network version against he and my wife (who is getting much better in her employment of assets, and who's becoming quite a stiff fight). >>

Super! You are now playing TacOps the way I really designed it to be played - vs another human. If PBM got your adrenaline flowing again, just wait till you do network.

<< Any potential pitfalls I should know about?>>

Yes. Play over a network will likely make you ever afterward very unsatisfied with playing computer games in solitaire mode <g>.

Seriously. When you go to network mode, you should discuss with your opponent and agree on a reasonable time limit goal for doing the orders phase and then force yourselves to stick to it. There is something intense and personal about playing a human on a network that causes many people to want to micro manage their units - i.e. fiddle endlessly with giving extremely detailed orders to their units every single turn. If you don't watch it, you will soon look up at the clock and notice that twenty or thirty real time minutes have passed since the last combat turn <g>. Doing this can easily cause a 60 scale minute game to last several eight hour days.

<<I looked at this game in a computer store and the box just couldn't sell me. However I read a review in a computer gaming magazine and went back and bought it much to my pleasure...>>

Does not surprise me. Serious wargamers have been misled and disappointed so many times in the past by computer game box art claims that frankly I would be surprised if most still buy from stores/on impulse at all.

<<why can't anti-tank guided missiles (ATGM's) be fired at helicopters? It seems to me that anything that will "home" on a tank should very happily "home" on a helicopter, especially one that is hovering in plain view 1 or 2 km away.>>

I consider this to be a waste of very expensive and scarce ammo. If I added it to the game, I would then need to add some sort of automatic dodge response for a helo subjected to incoming ATGM fire. Most likely I would give the helo a very great likelihood of successfully dodging the relatively slow moving ATGM. The most likely result would then be the sudden appearance of a "game trick" - i.e. preceding assaults with hovering helos to soak off/waste enemy ATGMs.

TacOps Gazette 95.08

<<I think you have followed the right course in TacOps - give us realistic men and tanks and terrain and then turn us loose. It sounds like there are some who want a different setup, maybe more modifiers or conditions or minutia...>>

Thank you. My original intent was for TacOps to accurately demonstrate the basic concepts rather than the gritty details of modern combat. In response to customer requests, I have added more detail where I felt it would not unduly slow the game down but I don't want to ruin the game for the majority of gamers.

<<I hope you are expanding your system to other wars...>>

I am working on a TacOps WWII version now that will be called Panzers East.

<<In tight quarters, the stacks can get hard to figure out...>>

I will eventually add an optional way of "opening" stacks that will spread all the units out in a little, moveable window - and will also show the infantry that are in each APC. You will then be able to easily see what is where and probably will even be able to load and unload units by just dragging (drag and drop) the infantry from one APC to another or from an APC onto the map.

<<Please excuse me if this has been answered before, but I am not about to wade through the hundreds of messages you have posted to find the answer.>>

No one should feel that it is necessary to go through the old messages before asking a TacOps question. I don't mind repeating things at all. I don't think the older hands mind either as it gives them (1) a chance to show off their TacOps battle scars <g> and (2) it gives them a chance to possibly get to know a new PBEM opponent.

<<I know this thought is VERY far down the road, but do you ever want to produce a infantry/tank platoon level game that has more of a small unit feel to it? ... a platoon-level tactics game.>>

Not really. I don't have a great interest in platoon level engagements because I believe that in the real world the outcome of such engagements is pretty well preordained by who has the best starting situation and the most ammo. I am fundamentally a gamer rather than a simulator - in games I prefer the tension of a relatively even fight but I do want things to work reasonably realistically.

I plan to pretty much stick to the grand tactical level although I want to eventually do an operational level game - Division and Corps sized engagements with the smallest unit being a company or a battalion.

<<I can set maximum firing range for a unit just fine. However, once it fires, this range is always increased to the maximum limit ...Why was it changed from the 0.0 version, which left the setting fixed unless the unit was fired on?>>

Is not a bug ... is intentional. I am pretty sure that it has always been this way.

My reasoning on this item was that when a unit fires it is generally then usually spotted by all enemy units within 4000 meters that have good line of sight. Accordingly it is generally in the unit's best interest to go to its full range capability. To do otherwise would most often result in the unit getting return fire and not responding. I think the latter approach would cause much greater complaints <g>.

<<I'm running on a Mac 660av...>>

Do you ever have problems while playing TacOps with hollow windows/dialogs or with windows/dialogs that close but do not erase properly? Some 660av owners have had this problem. They also reported that a solution was to use the Mac control panel to set their AV system to 16 colors before running TacOps.

<<I strongly endorse the change in automatic backup distance. Rather than make it user adjustable (for which no single number would for all units, given the varieties of terrain and situations of specific units) I would just reduce it.>>

I also have mail supporting keeping it at the longer distance <g>. I expect that I will go with allowing the user to optionally manually set the distance but the setting box will be already filled in with either 200 or 300 meters so that those who don't want to have to fiddle with it won't be bothered.

<<...the "copy orders" function ... Before the update, it was possible to give an order to a unit and copy it to another unit without erasing existing orders for that second unit.>>

Is still possible <g>. If you hold down the option key as you do the paste, a unit's existing orders will be preserved - the new orders will be pasted in after any existing orders.

<<I don't know what kinds of input you received to make the change other than the certainly valid wish to make it fit with the Macintosh "way.">>

I got royally raked over the coals by dozens of users for doing it the original way.

<<Do units that are going to occupy entrenchments "entrench" themselves if you in advance order them go into defilade?>>

No. At one time units in defilade were supposed to be able to spot better than entrenched units so I thought I would need the distinction but I never got around to deciding to put it in.

<<I wish there was some way to order a unit to do so without waiting until they are over the entrenchment>>

I may put it back the way it used to be. I don't like it either.

<<I don't know if this is a update thing or a TacOps II thing, but I'd like to be able to choose OPFOR and play against the computer.>>

Most likely a TacOps II thing - would require a major code rewrite and extensive play testing.

<<What about an amphibious scenario?>>

Tarawa 1995? I have wanted to do one. Unfortunately, if the scenario was developed realistically according to modern USMC tactics, the ship to shore movement would be boring to gamers. It is unlikely that we will ever again see landing craft or amphibious vehicles attacking a beach that is defended by direct fire weapons. The preferred modern approach is to locate where the enemy is, then find the nearest beach or helo landing zone where he is not and land there - could be dozens of miles away. Once ashore/on the ground the Marines would move inland and then turn left or right and envelop the enemy's defenses from the rear or a flank. This is basically what is happening in Task Force DeGoey and that is why I did not bother to actually draw the beach/water on the west end of the map for that scenario. I have done a number of ship to shore movements in training and based on that experience, I will be eternally grateful to have missed doing it for real against a defended beach <g>.

TacOps Gazette 95.09

<<I know you're used to receiving nit-picks on TacOps...>>

I prefer to think of them as "user suggestions" <g>.

<<While playing TacOps I have, on a number of occasions, successfully placed artillery rounds on top of vehicles moving across a battlefield at 50 to 100 clicks/hour. Can that be done in the real world, with a mortar or a field piece?>>

Currently the max possible speed permitted to vehicles in TacOps is 40 kilometers per hour.

What you are seeing in TacOps is the impact of a volley (i.e. more than one round) of arty or mortar rounds. In the real world a direct hit on a vehicle by one arty or mortar HE round fired as indirect fire would be more of a happy accident than anything else however super near misses from HE rounds can damage or destroy even tanks. HE fire in TacOps seldom kills heavily armored vehicles. ICM anti armor ammo is a different story. Each round of ICM anti armor ammo breaks into many bomblets that spread out over the target area. These bomblets are small shaped charges and they are quite capable of penetrating the top armor of tanks. ICM ammo in TacOps frequently destroys vehicles.

<<...question about the OPFOR AI and minefields... although the main body of the OPFOR remained in defensive positions, the additional units decided that the best defense was a good offense. The charge might have been very effective had they not driven through their own minefield ... does the OPFOR AI know where the minefields are, and does it try to find a path around minefields or push through the middle?>>

The OPFOR AI knows where its minefields are. In the case you observed its units just decided to bull their way through. Sometimes OPFOR units go around minefields, sometimes they go through them.

<<TF Peterjohn ... It seems to me that OPFOR is at a hopeless disadvantage with its lack of thermals and decent penetrators... >>

Now you see why I was not initially motivated to do Desert Storm scenarios <g>.

The customer is always right - even when the customer is wrong <big grin>.

<<TF Peterjohn as OPFOR ...Any suggestions on successful tactics ?>>

TF Peterjohn is a Desert Storm "what if" scenario in which OPFOR has an older model of T72 with only a steel or tungsten penetrator. Thus, the US M1 tanks are invulnerable to fire against their frontal armor and even flanking fire must be at close range in order to penetrate. OPFOR must disperse into a wide line and close rapidly with the US defenders. The wide line will

increase the chance that some OPFOR tanks will get oblique or flanking shots at the M1s. It will still be a blood bath for OPFOR, but OPFOR has sufficient numbers to prevail (sometimes).

<<I'm disappointed that I haven't been able to produce results of attack helicopter engagements which reflect realism equivalent to the rest of the game system.>>

Attack helos were put in the game late in the development as an afterthought and in response to threats of bodily harm from certain highly motivated "rotor head" playtesters <g>. My initial thinking was that it was not useful to include attack helos at all as their presence in a tactical engagement in significant numbers just meant an automatic victory for the side having them - there is no "game" in that. Extremely detailed and accurate rendering of attack helos is very hard to do without getting into the flight sim business. The current simplified approach to elevation and altitude in TacOps keeps helos from getting their proper advantage from popup and terrain masking. However, improving the fidelity of the air to ground and ground to air routines is high on the wish list.

<<Do pop-up orders actually have to be given, or is the maneuver automatic?>>

They have to be given. Try giving helo orders that cause the helo to do the following: using a path that is entirely out of sight of any enemy unit, move at NOE altitude to a firing position that has a line of sight block between the helo and the suspected target area, order the helo to go to medium altitude (helo up orders button), stay there for 15 seconds (delay orders button), go back to NOE altitude (helo down orders button), and move away immediately to another pop up firing position, the farther the better. If you do this you should usually be able to get a "free" 15 second pulse for spotting and firing. By the way, if you try to do two popups in a row from the same general vicinity you will probably lose the helo.

<<...the HIND is too heavy to employ this tactic [popup] in most density altitude conditions, and uses a standard running dive attack similar to Vietnam era US tactics...>>

I have seen that analysis, I have also seen air show video of modern HINDs doing fast vertical popups.

<<When US helicopters fire, they are nearly always engaged by systems--such as the SA16--which should have trouble acquiring and engaging due to time constraints, ground clutter, and aircraft survivability equipment.>>

I have to do a certain amount of "averaging" in the game engine, especially with units like helos that operate in such radically different speed and attitude dimensions. Although TacOps shows 15 second combat pulses and 60 second combat turns I can't really model things exactly to the second. The best I can do and still keep the game playable is to expect that the combat outcomes of actions spread over several turns feels realistic.

<<I haven't found any method of simulating remote designation for Hellfire's.>>

TacOps does not currently support laser target designators. In real life the Hellfire ATGM can travel 8000 meters but the Apache driver can't personally see and control the missile at anything much beyond 4000 meters. In order to get more than 4000 meters out of the weapon in the game, I need to add ground or air spotters equipped with laser designators. The way it would/should work is that an air or ground unit located closer to an armored target would light the target up with a laser beam. The lasing unit would then tell a distant Apache to lock and launch. The Apache might sense the laser spot and lock the Hellfire before launch or the pilot might just launch the missile in the right direction expecting it to find, lock, and home in on the laser spot on its own during flight. This is on the update wish list.

<<Game mechanics are astonishingly realistic. One rare exception is the two player, face-to-face game in which spotted units are displayed when neither player is giving orders. In my experience, players who see that they have been spotted are given an unrealistic cue about the presence of enemy forces. Obviously spotted units must be displayed during combat, but leaving them up between moves invites players to deduce enemy positions unrealistically.>>

I agree but I can think of no other way to handle two players on one computer. The main problem is that if units were only displayed when they were still spotted during the orders phase, then players would often miss the short sightings of units moving for a few seconds between cover. By the way, you don't see this effect (i.e. knowing when you have been spotted by hidden enemy units) in any other mode of TacOps play - it is only present in the two on one computer mode. In my opinion play in this mode is highly inferior to any other way of playing TacOps. The optimum game is two players on two networked computers.

<<it seems that helos at Medium can shoot (and see) through very long stretches of woods. I've had helos at Medium take out targets that are more than a kilometer within the woods (that is, the target is within a stand of trees, which is contiguous between the target and the helo.)>>

Currently correct. I can't polish this out until I add more elevations and altitudes and a different LOS routine.

<<Also, it seems that SA-16's can't hit a barn at more than 3km--is that correct?>>

Yes and no <g> ... I get just as much mail saying that they never seem to miss at any range.

<<I realize you can't answer all your mail personally.>>

Sure I can - besides there isn't anyone else to do it <g>.

<<have you read this book and, if so, what did you think of it? "The Complete Wargames Handbook" by James Dunnigan...>>

Yes I have and I recommend it. The only thing in the book that I would criticize is Mr Dunnigan's rather dismissive attitude about the difficulty of coding AI. In the book he suggests that AI is simple to do. I have no idea what he might base that belief on. All computer war games to date and my personal experience in coding TacOps would seem to indicate that coding

good AI is extremely difficult. In fact, I consider the AI to be the biggest consumer of development time.

<<I just wonder how you have time to do any new development when you make so many improvements to the old product.>>

I don't consider TacOps to be an "old product" <g>. I don't subscribe to the practice of dumping a game on the market, selling it for six months, and then forgetting about it. I think games in the wargaming market have the potential for selling for a very long time if they are maintained. The real problem with keeping game titles available may be the current chain store practice of refusing to stock games the instant that they stop flying off the shelf. Perhaps game companies just need to adjust their distribution scheme so that an affordable way can be established to keep the games available longer for those with the interest to look for them - like with direct mail <g>.

TacOps Gazette 95.10

<<One of the things that eludes me tactically in this game is how to flank another force with my own forces especially in Task Force Gallagher.>>

Flanking is hard to do in a tactical level game unless one side has only a very small force or a player gets careless.

Tactics need to be enemy oriented. What you want your troops to do and your timetable for them to do it is just a plan - what will actually happen is decided by what your enemy does or what he fails to do while you are executing your plan. Part of your problem with flanking may be that your opponent is careful - i.e. he puts out recon and flank security so that he knows what is happening on his flanks.

In TF Gallagher, OPFOR has to cross the map from East to West. OPFOR must come to the US - OPFOR must go through the US defense. There is no need for the US player to move any unit except recon Eastward. I think most of your casualties have been the result of your maneuvering units toward OPFOR rather than laterally or rearward. The US player should not charge Eastward to duke it out with OPFOR. Rather the US player should establish observation posts to identify and track OPFOR's eastward progress. Once OPFOR's routes have been discerned then the US player should maneuver forces (out of sight of OPFOR) laterally and Westward to good ambush positions.

<<I am working with TF Henson, ferrying all of the infantry around with Blackhawks, and I have a question about the unloading command on the delayed orders menu. It looks like it spills everyone out and take 30 seconds. Is there a way to have it just have the 'last' unit loaded get unloaded (just like your basic stack) or just have only one unit unload?>>

No.

<<... could you add this to the wish list?>>

I can't initially see how I could implement this without getting very complex. Besides, there needs to be some sort of delay for loading and unloading helos or else their usage will be totally unrealistic. Remember a turn is only 60 seconds long - can't have too much going on <g>.

<<In the re-supply dialog box, put a button that re-supplies a unit at 100%. It's a pain to keep having to click on the (+) button to get to 100%.>>

Will do in next update.

<< A Real Casualty Percentage - if a Inf Team has only 1 man, there is a 75% casualty percentage. Similarly, one can have a "0" casualty percentage and still have damaged vehicles, and Inf Squads with 2 men.>>

I don't understand the suggestion. TacOps currently applies casualties to infantry units as a percentage. For example, if an infantry marker containing 10 men receives machine gun fire and the program assesses say a 20% casualty effect then the marker will be reduced to 8 men. When an infantry marker is reduced to zero personnel then it is removed from play.

<<For Lethality Points, could you give entrenchments a value? How about the total amount of Air strikes, or total amount of Arty rounds? The reason I ask is these seem to be important factors, but the are not accounted for in the usual play.>>

On the wish list but so far I have struggled unsuccessfully with coming up with good values for other than ground units.

<<Instead of using the symbol of D for damaged and Immobilized, could you put an I in the box when a unit is immobilized and D for weapons Damage?>>

Added to the wish list.

<<Many units (Tracks w/ Mk 19) are used to lie back on a hill and fire their weapons without actually seeing their enemy. (Indirect Fire) When there are more elevations added, could you make this possible?>>

I don't know about this, will have to think about it. Although possible in real life and quite heavily used up through the Korean war, indirect fire by weapons other than mortars and arty has fallen into general disuse by modern armies.

<<could you give a small list of each weapon? For instance, "LAV 25: A light armored recon vehicle, used to outflank the enemy on the sides....." >>

Will be in the TacOps Battle Book when it is published this summer. Production costs and falling street price for wargames kept us from including detailed material like this in the printed user guide that comes with the game. Lots of people ask for such detailed info but most are unwilling to pay for it <g>.

<<You should let people know when the Javelin will be used by the Corps, and when the Dragon will be phased out. (I mention this because my instructor hasn't heard of a Javelin.>>

Your instructor should read the Marine Corps Gazette <g>. The Javelin (used to be called AAWSM) has been a "next year" system for about five years now <g>. The problem with portraying weapons under development is that they never come out on time and many never come out at all. The main reason for putting Javelin into the game was that Marine rifle units could not stop OPFOR attacks with the Dragon <g> - try substituting the Dragon for the Javelin and you will be appalled at the difference.

<<Sometimes, in 0.1.1, the version freezes right after the initial setup phase, and also sometimes after I choose to start a new game.>>

First time that I have heard that about 0.1.1. Please let me know if you are able to develop a sequence of startup actions that can cause it to happen consistently. Most likely it is a conflict with some non Apple Inc INIT or extension that you are running. What kind of a Mac are you using? How much memory allocated to TacOps (I use 1700 and never have any problems). Are you using 16 colors (best) or greater (takes at least another meg of memory).

<<Just how defensively powerful are entrenchments. Seems like a unit dug in ends up pretty much invincible to DF attacks from all sides.>>

In TacOps - very. All entrenched units are significantly harder to spot. All entrenched units are significantly harder to hit with direct fire. Entrenched infantry units suffer less personnel casualties when they are hit by direct or indirect fire. Entrenchments can hold an infinite number of units. [There is no need to have the game enforce stacking limits. Your opponent's artillery will generally drive the lesson home about not bunching up.] In TacOps entrenchments are omnidirectional as terrain features. However, during combat the facing of a unit that is in an entrenchment is still consulted so side and rear attacks are better than frontal assaults against entrenchments. Entrenched infantry will probably require a dismounted assault by your infantry with your armor just behind the infantry to provide fire support. Don't put the armor in front as they attract RPGs. Note the facing of the entrenched enemy unit and try to come at it from the side or even better rear. You get big benefits from attacking them from the side and rear.

<<Don't entrenched units have severe limitations on movement and firing directions when dug in, esp. on hills?>>

Good units prepare alternate positions and move between them as the situation requires - TacOps assumes this. For playability reasons, I often have TacOps assume things like this rather than make the user do a lot of extra work with the mouse.

<<How can a helicopter at medium altitude see a unit over several reverse hillsides and behind more than 1K of trees, yet not be a target of a SAM attack, provided it is within maximum range of the missile?>>

It can't unless it is doing a "15 second popup". In TacOps, helos at medium altitude can usually be seen by every unit within 4000 meters. However, target acquisition and firing is intentionally not guaranteed in TacOps. Units don't always shoot at targets even if they seem to be in plain sight. Also, the fidelity of air to ground and ground to air line of sight and combat is currently somewhat limited in TacOps due to the simplified nature of elevation and altitude in the game engine. When TacOps was under development a more realistic elevation/altitude model would not run on the older Macs at a satisfying speed - that will change.

<<Can you use DF TRP against a non-firing entrenched unit?>>

Currently only visible/spotted units can be engaged with direct fire. I am planning on adding something to allow all units to fire on hidden/unspotted targets. Will be called "direct area fire" or something similar - will be controlled by a button in the unit orders window similar in operation to the "Set DFTRP" button. The fire will be unlikely to kill hard targets but it will be

reasonably likely to suppress and occasionally kill soft targets. This will be a big change with a lot of code ripples and thus it is quite risky for inducing bugs. It will be a while before it is released.

<<Is there going to be a way to replay (or set a speed option) for the combat phase.>>

You can slow down the combat phase by using the File/Options/Change Combat Speed menu item. You can pause the combat phase at any time by touching the space bar. I continue to periodically work on a turn and or game replay option, but I have not yet been able to come up with a solution that does not create prohibitively huge "record" files for large scenarios.

<< I cut my game designing teeth studying RED STAR/WHITE STAR...>>

Check the instructions for RED STAR/WHITE STAR - you will find a Lt Holdridge listed as a play tester <g> - my only game credit <g>.

<<What other games were you involved with?>>

None in the civilian world either as a designer or as a tester. As a junior officer in the Marine Corps, I modified several US Army wargames to support Marine Corps command post exercises in a combat simulation center that I ran - Dunn Kempf, Steel Thrust (?), First Battle, Pegasus.

<<Just a quick note wondering if there will be additional map's etc. available soon?>>

The first add on set of scenarios went on sale in late December - it was artfully named "Scenario Disk One". Enquire privately if you want ordering information. There will be more disks but when I can not say - probably not until after Panzers East is released.

<<the ability to play both sides in a single player game>>

Is on the wish list, but I don't know when I will get to it - may be a TacOps II thing. I could do it fairly quickly if it was acceptable to just use the same AI as is used by the OPFOR but coding tactics more appropriate to US forces would be a big coding deal. I don't have a feel for how people would react to my doing it the easy, fast way.

<<after all, I was taught to fight **RED**, hmmm Soviet tanks and would like to fight with them for once.>>

Pack up your Mac and go over to a friend's house and play a network game <g>. That is the best way to play anyway.

<<... question about the AI ... playing Team Savage ... for the last 30 turns or so, there was a stack of 6 BTRs, just sitting on the road (grid square 7x 3x) and not advancing ... about 3km from the airfield. Did the BTRs just say "6 ain't enough ... or is there a particular reason the advance mostly stopped?>>

I can't say exactly what that unit might have been doing but I suspect the AI put them in either "watch" or "reserve" mode. With soft BTRS it is also remotely possible that all of them could have been immobilized by battle damage.

<<when multiple units are 'joined' and then one is completely killed off, how is the 'post-mortum' ammunition distributed? If two Javelin teams with two missiles each 'join', then one team is completely eliminated, does the surviving team have two or four missiles?>>

The surviving team would have two missiles.

At the instant that one strength point of a given type of unit is completely eliminated (i.e. one squad, one team, or one vehicle) then all the ammo for that one strength point disappears. Example, say you have a marker representing three Javelin ATGM teams and that the three teams total 6men and 12 missiles. The team gets hits by arty and 2 men are killed - in this case since two men equal one Javelin team so a strength point is lost - in this case one strength point comprises one third of the unit marker. Therefore one third of the marker's ammo would be eliminated also. The marker would then show 2 teams with a total of 4 men and 8 missiles.

<<one thing I would love to see is how effective my units were in the scenario. How many troops did my arty kill? How many BTRs did my first M-60 team waste.>>

I'll think about it but I am afraid tracking that sort of thing would generate huge memory usage and huge disk files.

TacOps Gazette 95.11

<<when I give a unit orders that involve movement that changes facing followed by defilade followed by facing change via the facing buttons AND open the unit orders window before movement is complete, the facing can get screwed up.>>

I tried a number of hasty experiments and could not replicate this, however I don't doubt you. I checked the code and found that the routines that do the real combat phase movement are slightly different from the orders phase routines that do the demo move and that calculate the predicted times and future facings that you see in the unit orders window. They are different enough to suggest that the unit orders window prediction may not always be exactly right - it could be off by one to a few pixels and could be off by a facing once in a while especially if the unit experiences suppression or does some firing during its later movement. I don't feel that I can polish this out as the fix would slow the demo move and prediction process way down - sorry.

<<is there any penalty to changing facing while under fire? ... I notice that the AI often doesn't do this, especially with units in emplacements>>

There is no penalty to changing facing while under fire.

<<Does the AI know something I don't know?>>

No.

<<Or does the AI just leave its units that way to keep me from fooling it into turning its back on my main force? >>

I found during development that I had to be careful with having the AI react in certain ways to certain events in order to reduce the chances that the human player would find "game tricks" that could consistently be used to manipulate the AI into doing predictable things. My experience so far has been that the AI does best when it sticks as much as possible to its primary battle plan. Also having the AI sometimes behave a bit sluggishly is probably more realistic than the "change everything every 60 seconds" capability that the human player has <g>.

<<I was just wondering if I were getting ready to play a game against a human as OPFOR but wanted to practice against the computer, could I? I didn't think so.

You could play in "two player on one computer" mode and just give orders for both sides. With a large scenario you would tend to forget exactly where you had put all the US forces and what their exact orders were. This is the way most board wargamers have done the majority of their play for years <g>.

<<Is that on the wish list?>>

Yes for PZE and TacOps II.

<<I've recently been playing TF Mizokami, and each game, the same extraordinary occurs. OPFOR guards manage to decimate my UH-60's, and Hummers at tremendous ranges with small arms. Just now I lost an entire assault company at a range of 1141 meters ... I think that I may have the deck thoroughly stacked against me, and if so, could you please let me know about it>>

The AI OPFOR gets no special benefits for its direct fire. The combat tables may be a bit unrealistic for ground small arms fire vs troop helos - I'll take a look at it. Sometimes though I have to give up realism in one area in order to preserve realism in a more important area. The larger lesson to be learned here is that one does not fly troop carrying helos in sight of enemy ground units - one does not take troop carrying helos into hot LZs. Were I to reduce the effectiveness of ground small arms against unarmored helos, I am afraid the game result would be that players would start landing troop carrying helos right on top of enemy units. That does not happen in real life even by accident - i.e. if the helos take fire from the LZ they abort the landing.

<<It is interesting to note that overwatch assumes that a unit that is sitting still can see more and shoot straighter than a unit moving. TacOps seems to teach the opposite. M1s seem as likely to die when moving as when not moving and shoot almost as well. Interesting quandary.>>

Staying stationary is not as critical in tank gunnery accuracy now as it once was. The equation now is closer to "if you can see it you can hit it". Penetration capability tends to dominate gunnery now.

<<Peterjohn is another good example though I have some doubts about its balance.>>

No reason to be in doubt. TF Peterjohn is absolutely unbalanced. Hard for a Desert Storm scenario to be otherwise with thermal equipped US units vs smoke blind Iraqi units. The main reason I finally did TF Peterjohn was to show a number of critics why I was not initially overly interested in doing Desert Storm scenarios <g>.

<<I have a suggestion for those playing PBM games of TacOps, post a summary/story of your game for us to read about.>>

I also enjoy reading "replays". A suggestion on replay etiquette. I have found that it is usually better for the loser of a game to post the initial replay note. That way it does not look like the winner is crowing <g>. The winner can then add his modest comments.

Time for a friendly rant <grin>.

I thought I should mention that I don't consider the scenarios in TacOps to be puzzles that must be solved by slavishly sticking to just the units and weapons provided in each scenario's basic setup.

Optional units, optional reinforcements, the various editing menu options, and the weapon swaps were provided to provide a "handicap" mechanism for two player human games, and to increase the variety and replayability of the TacOps scenarios, and to enhance your ability to play the scenarios "your way". You absolutely should not feel guilty about using these features.

You paid good money to acquire TacOps - play it the way you want <grin>. If you are not in the mood on a given night for a hard fight, then give yourself more arty and more ground units. Experiment with adding optional units to both sides. Experiment with having to cope with OPFOR minefields. Give yourself extra units and see how that enables you to change your tactics in a given scenario. Exchange the Javelin ATGM for the Dragon ATGM and learn why we should have gotten rid of the Dragon yesterday <g>.

Has anyone noticed that the "Change Weapons" menu item has BMP3s and ATGM firing T80 tanks? No one has commented on the significant challenges these new OPFOR systems offer to the US. Give these weapons to OPFOR and then try to figure out how the US can win any scenario.

There is no school solution - the play is the thing.

<<I found an interesting oddity playing TF Craig1. On Map 1, if I do a LOS check, starting at 095027 and then run the cross hairs up the 10 Easting line the following happens ... [LOS is mysteriously blocked].>>

Good catch.

I just checked Map 01 with one of my development tools and there is a ten pixel by ten pixel patch of woods at 096027 that is not properly shown on the map. That patch of woods is blocking the LOS out of UTM 095027. I looked over the whole map and did not see any other things like this.

There is an area of woods shown on the map centered at about 094026 that is about half an inch across.

The area looks like this on the map:

```
OOOOO
OOOOO
OOOOO
```

It should look like this:

```
OOOOOOO
OOOOO
OOOOO
```

I'll look into changing the map graphic to draw in the missing piece of woods in a future update. What I would really like to do is delete it, but with a zillion maps on the street that would cause all kinds of problems in email play.

<<Is there an easy way to determine if a weapon can penetrate the armor of a particular enemy unit? I want to avoid putting certain units in the way of enemy units if they can't even be effective.>>

Use the Unit and Weapon Data Base reports in the Report Menu to study the armor thickness of various units and the penetration capability of various weapons.

<<I had two Abrams with vastly different amounts of ammo left. By simply joining them on one turn and unjoining them on the next, the ammo was equally distributed. ... I don't know how realistic this is. ...Is there any way to keep track of individual units after they have become joined so that this sort of redistribution doesn't take place?>>

It is completely unrealistic - unfortunately there is no reasonable coding solution. Since the game is on a computer, obviously a way could be coded to keep track of individual units once they joined but the resultant cost in memory usage would in my opinion be prohibitive. The solution would be worse than the problem.

<<One other thought, would it be possible to add command that copied orders as relative points on the map rather than absolute locations so that platoon movement or other coordinated movement could be rapidly simulated?>>

Is on the wish list.

<< can't wait for Panzers East. BTW, how will you handle turret and hull facing in this game? Will we have the ability to alter turret facing without altering hull facing?>>

Current plans are for turret and hull facing in PZE to be handled the same way as in contemporary TacOps - i.e. turret facing is ignored or rather the game engine assumes that the turret is always facing in the best possible direction. The primary goal of TacOps is to allow the gaming of engagements larger than company - implementing details like turret facing would in my opinion kill the playability of TacOps. However, if an elegant way ever occurred to me to handle this I would not rule it out <g>.

<<You often mention that a TacOps map is a collection of pixels, opposed to a hex-based one. What is so wrong about hexes? And after all isn't a pixel a very small hex?>>

By hex I mean a traditional six sided wargaming hex. There is not necessarily anything wrong with hexes. Six sided hexes remain a useful tool for simplifying terrain in most games. They worked well for that purpose in board games and they continue to be useful in computer games as a way to conserve memory while portraying very large maps. A pixel is not just a very small hex in that a pixel is conceptually square - there is a significant difference in the difficulty of coding a regular matrix built on consistent squares and in coding for a matrix based on six sided

hexes in an alternating pattern. However, the primary reason why I do not wish to use six sided hexes in TacOps is that I have a long range goal of linking the TacOps engine to a real world, global digital mapping data base on CD ROM.

<<I find a bit disturbing to see units considerably larger on the map than the one pixel that serves a reference for visibility, protection, etc. This becomes even more surprising when a unit can hold a single Bradley or 15 M1A1.>>

An unfortunate compromise that is required to keep the game playable.

<<Is a large unit more visible that a small one, all things being equal?>>

It should be but I can't implement this without creating a pressure on the player to break his units down to individual squads/vehicles. In order to maintain playability I have to try to keep the game engine from providing significant incentives to a player to break units down below platoon.

<<In the ideal tactical game I dream about, a unit would be either one vehicle or a squad; each would solely occupy a hex (or large pixel? anyway the elementary map element). This would make easier troop control, formation movement and all. You could actually see thing happening as they do in reality, with a better relation between the size of units and the space they occupy on the ground.>>

But - how many hours are you willing to devote to inspecting and giving detailed orders to all those units? You can't have both micro management and playability.

<<Don't you think that there is a market for the kind of game I described?>>

No I don't - at least not a sufficient market to keep the programmer in business at a \$40 price tag.

<<I keep wondering about the very quick response-time of on-map artillery and mortar units. ... I would not have imagined that a unit would be ready to start fire within seconds of being requested. Is really so?>>

Yes for the most part. Fire support is not "always" as responsive as portrayed in TacOps but the game engine assumes that everyone is achieving the optimum through good comms and prior planning. Also, some of the fast response in TacOps is just a mechanism for achieving playability in the obtaining and placement of the fire support. I am more interested in adequately portraying the realism of the effect of the fire support once it impacts rather than portraying the procedures involved in getting it. In real life you can not magically alter the path of an incoming arty salvo 15 seconds before impact <g>. You apparently can do this in TacOps because I am portraying the results of fire support rather than the procedure and not because I fail to realize that it does not really work that way.

<<Have I missed something? Is the A-10 represented in the arsenal available in TACOPS? I don't recall seeing it... why not?>>

A10s are on the wish list but will have to wait until I revamp/increase the fidelity of all the air support routines. The A10 ground attack profile with stand off munitions does not fit either the existing "generic" fixed wing code or the attack helo code. Requires a new targeting approach and huge blocks of new code. Don't know when I'll be able to get to it.

My thinking so far is for the A10 to be off map until it makes an attack run. To make an A10 attack, a player would designate a map edge entry point, a map edge exit point, and click a path on the map that reflected reasonable turn radius limits. The A10 would then either engage random units all along its path or such specific priority targets as specified by the user with the normal "Priority Target", "Target Type", and or "Target Reference Point" buttons in the Unit Orders Window. The A10 would likely be subject to anti air fire as it advanced along its flight path. If the A10 entered or exited the map across an "enemy" map edge, the mission would be subjected to a stiff off map anti air die roll before entry or after exit as appropriate.

There is also a gaming or play balance consideration to the A10. A couple of A10s firing Mavericks at an 8km standoff would tend to yield a turkey shoot in a tactical level game, as would strafing runs in a permissive environment. Unless one is playing a flight sim or an operational level game, where is the challenge in that?

Course, you realize that if I add A10s to the game, I will be duty bound to then give OPFOR the Frogfoot <g> - when the wheel turns, it tends to go all the way around.

<<Also, what's this I hear about a TACOPS II coming out? What's the run down - new maps? new scenarios? new units? A commercial announcement (or hint) is welcomed.>>

I assume that I'll start serious work on TacOps II after Panzers East is finished. In principle TacOps II would be a major revamp of the existing game engine and would wipe out the wish lists. I imagine that I would include all the existing scenarios and maps plus provide an equal or greater number of new ones. I have no idea when it might be released.

TacOps Gazette 95.12

Bug alert for version 0.1.1: I just found a rarely occurring bug that I have been chasing off and on for a couple of months. I had reports of the game not properly accessing victory in exit scenarios but I could never replicate the condition. A user just sent me a sequence of three saved games that enabled me to rapidly find the variable that was being incorrectly used. It only took minutes then to fix the bug but It took several more hours to figure out what the sequence of user actions was that triggered the bug. Turned out that it was restarting a game from the startup turn AutoSave file <g>. This was the only way I could get the bug to appear.

The entry from my update/change log is shown below.

24 Mar - Fixed bug as result of saved game files provided by benson@slip.net (Benson Toy). The program told him that he had lost the game even though it seemed that he had exited an adequate number of units. I discovered the following. If a user restarted a game by loading the xAutoSave file for the setup turn, the force lethality values would be doubled for both the US and the OPFOR. Thus if the game victory conditions involved the exiting or survival of a certain percentage of a side's starting force, that force would have greatly increased difficulty winning because its surviving/exiting units would be calculated against a starting force value that was twice what it should be. Note that this condition could only be caused by loading the AutoSave file for the very first turn. Loading a normal saved game for any turn or loading any AutoSave file for turns after the first turn did not cause a problem.

The bug has been found and fixed, however I do not yet have a feel for when I will release the next official update. Should be less than a month. In the meantime, don't restart a game using the setup turn AutoSave file.

=====

<<When you have an arty unit register an impact point as a TRP at, say, accuracy level 1, and you get the accuracy up to a higher level (say, 4), and then cease or shift fire, does the TRP stay at the last saved accuracy level, or does it automatically remember the highest level?>>

A TRP stays at the accuracy at which it was saved. Think of it as a bit of data that is saved one time and later reread whenever you shift to it. If you later get a fire mission going in that same place that has a higher accuracy level, you should delete the old TRP and save a new one at the higher level.

<<am now the proud owner of a PowerMac ... the first thing I called up on it when my office crew left for the day was TacOps, BUT the darn thing wouldn't run!! ... When I start a scenario, the game shuts down with an error message "not enough memory." ... has 28K Ram ... Is 7.5 my problem and can you offer any suggestions on trouble shooting this problem?>>

I assume when you said 28K RAM that you meant 28 meg of RAM so memory should not be a problem.

I suspect there is an INIT conflict with something in your installation of 7.5 - which really tightens my jaws because there is no reason why TacOps should conflict with any Apple Inc. product if Apple would follow its own coding guidelines. I am running TacOps OK on my PowerMac using System 7.5 but I keep things like Quickdraw GX, PowerTalk, and the like disabled. I'll go back and reinstall all the useless, memory scrambling, goodies and see if I can get the problem to happen on my end.

Anytime you have problems with a game program, try holding down the shift key when you turn on or restart your Mac for a gaming session - this will prevent the loading of most INITs and EXTENSIONS.

<<I have attached 3 saved game files. The LAV units at 030015 refuse to fire on the T80U at 024007.>>

The LAVs in questions are LAV25s. Their strongest weapon is a 25mm chain gun. The chain gun is a kinetic energy weapon and has a maximum armor penetration capability of 70mm. The T80U tank has the following armor protection against kinetic energy weapons: front 500mm, side 185mm, rear 100mm. The chain gun can not penetrate/hurt the T80U so the LAVs do not fire.

<< ... ideas I had about improving it. The first is a simple addition, a force lethality value now.>>

I thought I had already put that in, but on checking found I had not. The numbers are already in the game status report, I just failed to put the calculation in. I'll get to it.

<< Is there any numerical value given to the strength of a minefield? If there is, could it be shown to the player so that he could see how many more units may be damaged by that mine. For example, each arty mine has 5 damage points, and each hand placed has 7 points. When a T80 goes over a mine, the value drops, say 3 points, and when a Inf Team goes over it, it drops 1 point. This may be impossible to do, but it may make the minefields a bit easier to understand.>>

Minefields are not based on point values in TacOps - they are pixel based. A pixel equals 10 meters in TacOps. Each time there is a mine detonation in a minefield the pixel in the minefield at the center of the effected unit is zeroed i.e. becomes cleared. Units that enter that pixel in the future will not be attacked by mines. A similar effect happens for each pixel (and a couple more on each side) as a unit crosses a pixel without triggering an attack - in this case a lane is cleared. Whether a lane is created by explosion or safe passage, the safe lane can be viewed using the "Plot Minefield Lanes" menu item.

<<Lastly, even when a shoulder-fired [SAM] hits, it is often not catastrophic. I've now heard rumors of more than one aircraft landing during the Gulf War having been hit and not even realized it. Don't get me wrong however, anytime there's smoke in the air it gets your attention...make that your FULL attention, which is just how the Major has gamed it...>>

Good point. It reminds me that TacOps was held up several weeks just before release because I was struggling with the ground to air and air to ground routines. Throughout most of the testing there were only two results - fixed wing destroyed or mission aborted - most of the time the result was aircraft destroyed. I don't remember this bothering the play testers but it bothered me greatly because there just was no historical justification for the high aircraft mortality that was in the game at that time.

I revisited all the technical references that I could find and even broke a personal rule and went out and bought every game I could find that had air rules. The games proved to be a washout because for the most part they had the same flaws that I felt the prerelease TacOps had, i.e. fixed wing aircraft were dropping like flies.

What I finally theorized was that modern aircraft in even high threat areas seldom get shot down - in relation to the total number of sorties flown - but they frequently get discouraged and or handicapped. By discouraged I mean they miss the target. By handicapped, I mean that they are directed by higher authority or good pilot judgment to attack at altitudes/attitudes different from what would provide the best accuracy.

I decided to implement the following for fixed wing attacks. If a fixed wing sortie attacks a ground target and if there is ground to air defensive fire then the most likely thing to happen will be that the aircraft will unload and probably miss the target, the next most likely thing to happen is that the aircraft will abort the bomb run, actually hitting and or destroying the aircraft is the least likely thing to happen. To this I added a predictive quantification (a weight) of all the weapons that will be fired at the attacking aircraft. The more weapons that are fired and the more lethal the weapons, the more likely the various results will occur, but still in the relative order given. This is what I finally implemented in TacOps. I am not totally satisfied with it.

<<THEN MAY I HAVE A SUGGESTION: IF I COULD GET UNIT ID BY MUCH EASIER FASHION OTHER THAN BY OPENING UNIT INFORMATION WINDOW. ... IF UNIT ID WERE SHOWN IN STATUS LINE AND UNIT ORDERS WINDOW, IT WOULD BE VERY CONVENIENT.>>

If possible, I will put the unit id number in the status line in the next update.

<<IT WOULD BE COOL, IF I COULD HAVE ALIAS FOR EACH ID>>

I have something like this in the command post exercise version of TacOps (a private hobby and research activity). In that version a player can optionally assign a text name of up to 15 characters to each unit marker - for example "1st Plt B Co". This may eventually get into the public game engine but I can not say for sure at present because it makes the unit records so much larger and thus greatly increases the amount of memory needed to play the larger scenarios.

<<What are the chances of more than one man in an infantry unit being killed by arty? It seems that either they are just suppressed or only one man dies.>>

How many men are killed depends on how many men were in the unit at the instant of impact and how effective the arty mission was. Arty attacks against infantry targets are calculated based on percentages rounded up to the nearest whole man. If a certain arty attack against a marker got a random combat effectiveness result of say 20 percent casualties then 20 percent of the target unit would be eliminated. If the unit had 100 men in it then 20 would be eliminated - if the unit had 50 men in it then 10 would be eliminated - if the unit only had two men in it then only one man would be eliminated due to rounding.

<<In missions where US conducts mobile or stationary defense, I notice that even though I am entrenched or in defilade, presumably in overwatch, the OPFOR's tanks can zap me more often and with greater accuracy than I can zap them. Is this a bug or a simulation of a real life thing I don't know about?>>

Neither <g>. Almost all of the US equipment is more accurate than equivalent OPFOR systems. It may appear that OPFOR is doing better in such firefights because (1) he is shelling the heck out of you with arty which degrades the performance of your units and (2) OPFOR often has so many more weapons firing than you do. You can not just stand and slug it out when you are outnumbered three or four to one. The solution is to have your units take only a few shots and then immediately backup to a new hidden ambush position. Another tactic is to position your defending units so that they only have to engage a few of the enemy at a time - thus they can wipe everybody in sight out in one or two volleys without being exposed to overwhelming return fire from all the following OPFOR units.

<<Also, there are times when my units will just sit there and get ruined without firing back...Any special reasons...>>

Maybe a unit has no weapons capable of killing the targets it can see at the instant. Maybe the targets are out of range. Maybe a unit is suppressed. Spotting and firing are not guaranteed to always happen even when units seem to be in plain sight of one another. Maybe those of your guys with a technical line of sight to targets momentarily stopped looking for some reason - like being hosed by enemy weapons or from the effects of a recent arty impact. Conceptually, the targets may have momentarily rolled through some irregularity in the terrain that caused them to disappear. Real terrain is not as regular as what a computer game map must be limited to - TacOps simulates the transient effects of minor, localized, irregular terrain by introducing random "holes" into the spotting probabilities. In TacOps there is always some chance that units will fail to spot or will fail to be spotted. It is entirely possible that a unit that was spotted and even fired on fifteen seconds ago, might not be spotted for firing purposes in the very next fifteen seconds, and even if it were respotting for firing purposes it is possible that no one would choose to shoot at it. Spotting that leads to a direct fire resolution by your units is not guaranteed in TacOps, regardless of what you as the player can see on the screen. What you see on the screen at any given instant is generally the sum of all the views of all your units - a kind of slow frame rate movie. It does not indicate that all your units can see what you see. As a general rule, the more of your units that are present in a given isolated area, the less likely you are to see units blinking in and out of what seems to be plain sight. If you only have one or two squads in an area, you are likely to see a lot of enemy unit markers winking in and out of sight.

<<I have yet to play every last scenario, but I have noticed a significant lack of OPFOR attack or troop helicopters. Any reason for that?>>

I have not gotten around to coding the AI to be able to handle troop carrying helicopters - maybe in a future new scenario disk. However, OPFOR attack helicopters are often available as optional units - check the options menu items for each scenario. I am not really big on having a lot of attack helos in the scenarios because having more than a handful of them present on the battlefield usually means the automatic defeat of the side that does not have them.

TacOps Gazette 95.13

<<I will sometimes have some on-map arty that is many clicks from the action, and it's a pain to scroll to the unit, select it, scroll to the impact area, set it, and repeat as necessary for each unit.
>>

If you hold down the option key as you click on an on map arty target marker (all are visible when any on map arty unit has its orders window open) the program will automatically open the unit orders window for the owning unit. I use the following approach in my game play. I open whatever arty unit marker is convenient and then I option click around on the various target markers to change the missions that I am really interested in.

<<I was playing a game of TF Davis the other night, I trigger my initial salvo of Bradleys versus the incoming OPFOR. Blam-Blam each Bradley only fires its ATGMs twice, at 15 and 30 seconds, then they switch to their cannons! I suspect this might be by design, but don't know what the reason for it is?>>

Is intentional. The Bradley TOW ATGM launcher is mounted on the outside of the vehicle and only contains two missiles. Once both have been fired they must be manually reloaded through a hatch in the roof of the Bradley's hull. It takes a couple of minutes to do the reload so if your Bradley's in TacOps fire both ATGMs in rapid succession then it will be a minute or two before they will be able to fire missiles again. LAVATs and BMPs have similar reload constraints.

<<Do infantry still go into defilade mode even if they're on top of an entrenchment or go into entrenched mode, which would seem to offer more protection for the grunts and thus would be a more logical reaction to taking hits.>>

I think so ... I have a note in the wishlist to change this to what you suggested.

<< I broke up my three 60mm mortar teams up into individual units. I'm wondering how important is keeping the unit together in terms of firepower and smoke. For firepower, if a group of 3 mortars hit a spot, how does that compare to 3 groups of 1 mortars each hitting the same spot.>>

When you split on board arty or mortar units you reduce their killing and suppression effectiveness greatly - perhaps more than the percentage of split would seem to indicate. I would suggest that it is OK to split such units for smoke missions, but you are not going to kill much if you split them out for HE/ ICM missions. You should conduct some experiments using a custom scenario template and the "two players on one computer" mode. Set up such a game with a lot of enemy infantry in a stack and with only on board mortars and howitzers on the other side. Turn off the fog of war for both sides so that you can see the combat results and experiment with shelling the infantry stack with split units and with joined units.

<<I think I am getting better in TacOps. One thing I noticed is very useful, especially if you are playing one of those "attrition" or "defend point A" scenarios. The key to victory is to know

from where Russkies will attack. Scouts is one good way to give you PRECISE location of OPFOR troops.>>

Good. Consider yourself promoted to Captain <g>.

<<Actually, that raises a question. If I can predict where OPFOR will strike by noticing its firing patterns, can AI: a) purposely mislead human by artying one place and coming from another? b) observe MY firing patterns to know where MY troops are expected to pass?>>

The AI does not work very hard to do item "a" although it can seem to happen if an independent OPFOR recon unit is prowling around some distance from the location of the main body. Usually such recon units do not survive long enough to be very effective at instigating this kind of deception.

The AI observes your firing patterns to the extent that it may choose to deploy some of its units near legally observed arty impacts into a more dispersed attack formation but it does not try to use the information to predict US attack routes. I generally avoid doing such AI code because it would most likely just create a way for the human to consistently trick the AI.

<<When the user guide refers to a "two player" game for purposes of constructing a custom scenario, it seems to matter under which type of game (face-to-face, network, PBM) the scenario is created. However, if I want to create a single scenario file for PBM use how would I do that?>>

It would probably be best if you created and initially saved your master copy of a custom scenario while in the "two players on one computer" mode. There are some routines in the game that are meant to discourage cheating during play by mail sessions. It is possible that those routines would wrongly give you a hard time if you created the custom scenario while in other modes. When it comes time to actually play your creation by PBEM then use a copy of your master and then just start your gaming session as normal for PBEM.

<<It would be useful to be able to draw the mission objectives and startup zones on the map for setup as well as the ability to modify the text in the About the Scenario dialog box (instead of modifying resource MSNT). Will you include these in future updates?>>

Probably not until/unless I do a true scenario editor.

<<Also, is there a way to indicate a group of units as reinforcements instead of always entering the map on setup?>>

No.

<<It would also be useful to be able to annotate the map with simple drawing tools (like boxes with comments, like in Sim City 2000). Will you include this capability as well?>>

Is on the wish list.

<<Somebody had a good idea to be able to use PBM and save game files to record a battle. Any chance this will become a reality?>>

Is on the wish list and is a long-standing want-to-do on my part. I worked for a couple of weeks on adding a replay/movie feature that would simply automatically reload saved games and or orders files, but I had to temporarily abandon it due to the huge code ripples and bugs it was producing - it just turned into too big a rewrite. Also, that "simple" approach became a moot exercise when I noticed that 60 saved turns from a big scenario would make a multi megabyte "newsreel" file. Few people are going to want to keep even their most illustrious victories on their disk at that size <g>. I need to go to an approach that generates some sort of extremely compact disk data file that can be used for replaying previous turns. I'll figure something out eventually...

<<I was wondering how much the AI in TacOps is fooled by misdirection such as using artillery smoke rounds to make it appear as if a thrust is being made where there really isn't one.>>

The TacOps AI intentionally does not consider enemy smoke in developing its tactical reaction orders. I assumed folks would try to use smoke in the fashion you suggested in order to trick the AI <g>. The AI does react to legal sightings of enemy units however.

<<I'm playing Capture the Flag (Army) and I was wondering how I find out where the enemy flag is. I remember reading something about being able to find it after the initial turns, (in the manual), but I cannot find it now.>>

The enemy objective can not be seen until after the end of the first combat phase. After the end of the first combat phase, select the "Plot Mission Objectives" menu item from the "Map" menu. A marker sized black frame will be drawn around the enemy "flag".

<<I just read in the March 20th "Federal Computer Week", that the Marine Corp. has been evaluating TacOps, along with other simms, as a low cost training adjunct. Major, what kind of feedback did you get?>>

Zip <g>. No one contacted me. First I knew about it was when I heard about the Computer Week article.

I suspect that the fact that TacOps is presently only available for the Mac would be an automatic disqualifier for whatever it was that they were looking for. The standard computer in the Corps is the PC. Too bad <g>.

When I investigated the USMC evaluation that was mentioned in the newspaper I discovered that the Marine Corps did not in fact evaluate TacOps. They had it on the list to look at but eliminated it without evaluation because it was not available in PC/IBM compatible format. The USMC office that conducted the evaluation has an Internet web page that discusses the details of their recent evaluation effort. The address is <http://AIS-TRS.MQG.USMC.MIL>

<<LOS/elevation - right now the way TacOps handles elevation makes it pretty useless for taking advantage of high ground, etc.>>

Not entirely - the basic tactical concepts are supported. The current TacOps approach demonstrates the primary concepts of high ground - i.e. if you are on the edge or forward slope of high ground then you can see and shoot at targets that are on both low ground and high ground. If you back up too far "upslope" then you can't see the low ground anymore. Etc.

<<A general problem seen is that there is no reason to have units in reserve, at a tactical level. For instance, one person may want to deploy his tanks in a V formation. He wants four tanks to the left, four to the right and the last four in the middle but back about 200 meters. In the game all this means is the front tanks will be defeated/eliminated and then the back tanks will come up and be eliminated. We game players know that you put all tanks up so that the survivors can fire back at the bad guys and survive the second combat pulse.>>

I almost always see a need for a reserve except usually not at platoon level and sometimes not at company level. Depends on the terrain and the situation. The same thing would happen in real life if the leading tanks could be seen and shot at and if the following tanks could not yet see who was shooting at (i.e. killing) the leading tanks. In rough terrain, a loose V formation can be the same thing as committing your tanks piecemeal. You are just parading into the kill zone.

TacOps Gazette 95.14

<<...trying to figure out the DF TRPs...>>

The three priority targeting buttons in the Unit Orders Window are considered by the program according to the following rules:

- (1) The three priority targeting buttons are evaluated by the program in the same order as their left to right order in the Unit Orders Window: Target Unit, then DF TRP, then Target Type.
- (2) However, hard orders will be considered before soft orders.
- (3) If a soft order can not be fulfilled then the program looks at the next priority button.
- (4) If a hard order can not be fulfilled then the program stops looking.

<<Who gets shot at for each of these three situations?>>

<<1. No unit priority, soft DF TRP, soft type priority (T80 for the example): Only a BTR in the TRP, and a T80 outside the TRP. I'm guessing the BTR, but the example in the users guide didn't say what happens if there was something in the TRP.>>

The BTR will most likely be shot at because the soft order DF TRP is checked before the soft order target type. If the T80 had been in the TRP, the T80 would have been shot at since it would have met both priorities while the BTR only met one priority.

<<2. No unit priority, hard TRP, hard type priority (again a T80): Only a BTR in the TRP, and a T80 outside the TRP.>>

Neither unit will be shot at (probably). By setting a hard TRP and a hard target type you in effect said "Shoot only at T80s that are in the DF TRP".

<<3. No unit priority, hard TRP, hard type priority (surprise! a T80): Nothing in the TRP, and a T80 outside the TRP.>>

The T80 will not be shot at (probably). By setting a hard TRP and a hard target type you in effect said "Shoot only at T80s that are in the DF TRP".

<<More than a few times I've wanted to set a target unit type at a point when no unit of that type was visible. (In particular, I often seem to have units catch sight of a SAM unit sometime during a move only to have it be invisible at the end of the move when I can change orders.) Does anybody know a way to set a unit type when there isn't a unit of that type visible at that moment?>>

Can do easy. Click on the button in the Unit Orders Window named "Target Type". Then click on an empty place on the map. The program will notice that you did not click on a unit and it will automatically put up a window that lists every unit type currently in the game. Just select a type from the list. Bingo - you will have set a priority target type even though none are visible on the map.

<<...map13 is missing.>>

There is no Map13 in TacOps just as many buildings do not have a 13th floor <g>.

<<I've been playing TacOps for awhile now and I've never seen a minefield. Or had a scenario to put mines down. Which scenario's are minefields present ?>>

I don't think any of the scenarios have minefields in the normal startup situation - i.e. they are optional. You have to add them as optional units during the setup turn. Use the Optional Units menu items during the startup turn.

<<To bad there is no PBV 302 APC in the sim.>>

Swedish/NATO units and equipment would be easy enough to add, but I don't have the time to do the research to insure that the characteristics would be right. I want to make TacOps more global in its appeal and I want to include units and weapons for countries other than the US, but I can't realistically do much until Panzers East is released and I am free to work on TacOps II.

I recently received a package of information on the Canadian military and its units/equipment on a tactical level from a Canadian major (with the approval of his seniors) for inclusion in TacOps as soon as I can get around to it. Although I have had offers of such info from several other countries, only Canadian gamers have so far provided anything useful. Their information was even phrased/organized in the same terms as displayed in the various TacOps info windows so as to simplify my task. A couple of months ago, I thought I was going to get a similar package from Australia, but at the last minute the Australian army decided that spies were using the Internet to subvert Australia and everyone involved in that TacOps modification effort withdrew <grin>.

<<Mostly, a wish for counterbattery.>>

Unlikely to happen - beyond the intended scale of TacOps.

<<If I call down an MLRS strike, I've found that I can abuse artillery TRPs.>>

Was not intended, but I have not yet decided if I want to polish it out.

<<why don't SMAW teams ever fire their SMAWs at entrenched infantry? From what I have read, the primary use of the SMAW is supposed to be bunker busting. ... Is there some way to tell a unit to _not_ use certain weapons? I had the M-1 tanks helping to clear the little town in

TF DeGoey, and they pretty much burned up their 120mm ammo on the dug-in infantry, when 7.62mm would have done just fine.>>

This is in the "think about" it pile. Initially I thought that better handling of multi capability weapons (i.e. useful against both hard and soft targets) would require a pot full of complicated code to assess "economy of material" issues which would in turn open up a can of worms with great potential for making wrong decisions that would inflame the users. Subsequently I have been leaning toward adding some sort of button to the unit orders window that would allow a user to optionally choose to fire a given weapon at targets other than the normal defaults - example, firing an expensive ATGM at a particularly annoying machine gun position, etc. Or to override the normal defaults to prevent a weapon from firing - example, tank fires only its machine guns at infantry instead of its main gun.

<<Geez, looking over my previous letter, I sure am thankful that you didn't take what I wrote as a flame. I hope the tone in this missive is a bit kinder.>>

Not a problem. I have learned to discipline myself to not take offense at written communications <g>. I think way too many people perceive totally unintended slights in written communications. I think such misinterpretation (plus poor language skills <g>) is at the heart of most of the flaming that is so prevalent on Internet.

<< In the optional weapons/units category, I'd like to see inclusion of the new Comanche scout/attack helo as an AH64/AH1 replacement.>>

I don't know that adding the Comanche would currently amount to much more than a cosmetic name change in TacOps terms. In game terms it just seems to be a newer Apache . What kinds of things would you like to see the Comanche prototype do that the Apache does not or can not do?

<<Inclusion of the A-10 Thunderbolt II with some sort of "extra " treatment of its anti armor role, meaning a bit more detail than your current treatment of CAS>>

Will do, but I don't know if it will happen before TacOps II. Adding the A-10 and improving the fidelity of the air to ground (and then the ground to air) routines requires a big rewrite.

<<Inclusion of the Copperhead artillery round.>>

Pretty much the same answer as for the A-10 except I would be overhauling the arty routines.

<<How about airborne drops of troops and equipment? >>

On the wish list.

<<The ability of OH58D's to use their mast-mounted sights to designate targets for AH-fired Hellfires at something approaching max range.>>

On the wish list.

<<The first is the almost eerie accuracy of shoulder-fired SAMs vs helos, whether Stinger or SA16.>>

A very tough situation. I get an equal amount of mail complaining that they are not accurate enough and do not fire enough <g>. The ground to air resolution (like the air to ground resolution) is intentionally simplified and conceptual - I am presently just trying to replicate satisfying target effects in these areas rather than realistic second by second procedures. I can't really make one more realistic without doing so for the other. Also the question still remains open if increasing the fidelity of the routines will make any difference in game play. It may well turn out that doing the procedures more realistically just produces more work for the user and the battle results stay pretty much the same.

<<The second is really much the same as the first. I'm often struck by the extraordinary abilities that tanks and IFVs, both US and OPFOR, seem to have when it comes to observing and engaging multiple targets in a single minute/turn, regardless of the targets' bearing. It seems to be limited only by the unit's rate-of-fire, and the changes in direction, ranges and target attitudes involved are often hard to believe. In multi-vehicle units such as tank platoons, it's easier to imagine because, I assume, different vehicles may be covering different arcs of fire. But with single vehicle units, well, it's a little like the thing with shoulder-fired SAMs, and when it occurs in combat situations where you know the vehicle is or should be buttoned up, it's even more of a stretch.>>

Modern weapons, in the hands of well trained crews, have a very great ability to rapidly and accurately engage targets. I see this as one of the biggest changes from the WWII/Korea era. Also, currently TacOps uses the same routines for multi unit markers as for single unit markers. This is why I periodically emphasize to folks that routinely breaking units down into individual squads/vehicles will introduce realism quirks. This may change in the future.

<<I want to add that neither of these gripes have prevented my enormous and continuing enjoyment of TacOps.>>

Glad to hear it. Game coding is a constant battle of tradeoffs and compromises between realism and playability. I think the mix in TacOps is pretty good, but it could be better in a number of areas. I do need to get in some more chrome as user selectable options.

<<AH-64 helicopters seem to be less aggressive than cobras...i.e. a cobra will get into a firefight, take some hits but keep firing...an AH-64 in the same situation seems to be able to maneuver but its weaponry (undamaged) stays silent. I am certainly no expert on helicopter combat, but isn't this slightly reversed behavior considering the advanced capabilities of the Apache over the Cobra?>>

I don't know about this one. I have not observed such behavior. My TacOps gaming experience is just the opposite. The Cobras get into a fire fight and with their poor armor seem to immediately get shot down while the Apaches are able to hang in there (as long as they are not

facing a big SAM threat). You may need to use the unit info window to see what kind of ordinance the helos are carrying in a given scenario. If Cobras are being used, it is probably a USMC scenario and so the Cobras are probably carrying rocket pods in addition to ATGMs - thus they will fire a lot more at distant infantry ground targets. In the Army scenarios the Apaches are often only carrying ATGMs and thus they don't engage infantry targets except at relatively close (and unsafe for the Apache <g>) ranges.

TacOps Gazette 95.15

<<I've encountered a minefield in smoky forest. On my color monitor it displays with the black "M" with the orange circle. But on the B&L monitor they are not obvious. What should I look for?>>

Explosions <g>. Seriously, on the B&W monitor you might try periodically selecting the "View Terrain" menu item from the Map menu two time in a row. This will erase and then redraw all smoke and minefields from/on the screen. During the process of redrawing the extra art, you might get a brief clearer glimpse of the minefield marker.

<<I'm playing a little skirmish right now (Team Hill against Chris Scott) and my ATGM team went after some Bradleys when I chose them to go after the M1's.>>

Sounds like you gave them a "soft priority" order (yellow light). Hold down the option key as you give a priority order to give a "hard priority" order (red light).

<<Even if I didn't choose to prioritize the Abrams, shouldn't they be a bigger priority than the M3's?>>

In TacOps, a unit will generally choose to shoot at the target that presents the biggest threat to it at the instant. Natural self defense/survival priorities do not always agree with what the player (who is out of harm's way <g>) would prefer. In order to override this, you must give "hard priority orders".

<<Also, the Abrams were in plain crossfire of my only two T80's but the T80's didn't even fire on them in 30 seconds; the Americans then went on and dusted them and my ATGM crew in a total of maybe 9 bursts of MG and HE. ... What gives?>>

Fortunes of war - the order of unit fires, unit firing, and target acquisition are not guaranteed in TacOps.

<<After seeing all the messages about TacOps on Usenet, I'd like to purchase it, but I'd like to know what the machine requirements are for it. Specifically, will it run on my (don't laugh now) Mac IIsi? Thanks.>>

I am not laughing. I put a lot of extra work into TacOps so that it would run acceptably as far back as a MacPlus. My reward for doing this was criticism in several magazine reviews for not taking advantage of the latest Mac "gee whiz" features <g>. But to answer your question, TacOps will work very nicely on your Mac IIsi - assuming you have at least 4 megs of memory.

<<I was recently playing a game of Task Force Kincaid. I lost the most helicopters to some unknown missile from an APC, I think it was the BTR-80. But when I looked in the unit data base, none of the OPFOR APC's have SAMs. Is the BTR dismounting infantry that fire at my helicopters or what?>>

The SAM being fired from the OPFOR APCs is the SA16 - a man portable, shoulder fired SAM. OPFOR fields enough of them to put a launcher in almost every rifle platoon. The SA16 gunner is conceptually firing from an open hatch or the roof of the APC.

<<After playing TF Gebhard several times I have noticed that the OPFOR does not respond in computer control to my use of the northern roadway to cross the board. After exiting 65-75% of my forces, all that were left, I have turned off the fog-of-war and found numerous OPFOR units on the southern road in ambush positions. Is this normal or is something wrong?>>

That is the way that scenario was coded. In TF Gebhard, OPFOR has only four companies to defend a frontage of almost seven kilometers. Accordingly, most of the AI battle plans in this scenario are static defenses backed up with one or two counterattack forces. Usually (especially in the original scenarios), the AI is coded to act in a realistic manner rather than to focus on winning each scenario. In the real world, a disciplined OPFOR would not generally abandon a defensive line that was mostly in good shape just because a couple of attrited US companies managed to develop and then penetrate a one or two kilometer gap.

<<One thing that I find somewhat odd, though, is that the computer doesn't seem to react too well to huge losses... The result is that it is possible to set up "meat grinder" defenses and the AI will just keep feeding units in (maybe bringing in some artillery in an attempt to knock out some of my units--but usually too late by then). Perhaps this type of result has been true historically, but I would like to think that modern warfare would be a bit more flexible.>>

Tis a "gaming" compromise. If the AI threw up its hands in despair every time the going got tough, TacOps would be boring. Beyond that, the TacOps AI somewhat reflects the same approaches that I find usually have the best results in my personal play against human opponents - (1) simple plan, stubbornly implemented and supported, (2) tight focus on the mission and (3) don't chase rabbits <g>.

<<Smoke and MRLB dust is supposed to obscure vision both for ZSU-23-4's and SA-16 attacks against helos.>>

As of version 0.1.1, ZSUs and SA16s can acquire aerial targets through dust and smoke. Check the ReadMe and Errata text files that are on your update disk for this and other important changes from what is in the user's guide.

<< Should an airstrike that does not drop munitions but instead sustains an attack (not necessarily a hit) from a helo come back as a normally aborted mission or is it eliminated from the queue of remaining air missions?>>

Most likely, the airstrike will return to your Air Support Window, however there is a low chance that it will not. The following rules usually apply to air strikes. Airstrikes that drop bombs are always removed from play. Airstrikes that attack helos are usually, but not always returned to play. Airstrikes that abort due to effective fire are usually, but not always returned to play.

<<I was just wondering if there is a way to change the capture the flag scenarios so that the flag doesn't show up until an enemy spots it.>>

Not currently. The flag worked that way before play testing. It was changed because it was found that having to search for the flag made the game almost impossible for either side to win.

Someone recently asked me for a PBEM critique of a TF Savage game. The message that follows is that info restated without the personal notes <g>.

Critical Item One: In the defense, you must maintain contact if you are to be able to track the enemy. You want to track the enemy so that you can predict his attack routes and then react to them by repositioning your defense. Contact does not necessarily mean shooting - you can maintain contact just through observation. You must have an adequate security and observation screen. When on the defense you need to put out as many observation posts (OPs) as you can spare. You also need to overlap the OP's coverage so that when one gets eliminated or smoked there is another nearby which can still see what is going on. You should strive to always know within a kilometer where the major enemy elements are. When you know where the enemy is and or his route of advance then you can move units to intercept him. Just as important is knowing where the enemy is not. If through good battlefield observation, you know that the enemy is not in a given area in force, then you can pull friendlies out of that area to reinforce the developing point or points of decision.

Critical Item Two: Maintain worthwhile mobile reserves. Often you need two different kinds of mobile reserves. You should have one at least one reserve force consisting of medium and long range anti armor weapons for distant ambush/armor plinking. The other reserve force should consist of infantry with light anti armor weapons to be used to physically block a critical avenue of approach or to backstop a unit that is about to be overrun. As soon as you commit a reserve force try to build another to take its place - look for folks in non threatened areas to move to some central location to become the new reserve.

Miscellaneous Items:

If you lose a platoon of armor to concentrated enemy fire at less than a thousand meters, don't send another platoon into the very same position five minutes later <g>. When you are on the defense, you should generally try to avoid advancing toward the enemy as much as possible - move laterally and to the rear, but avoid poking directly toward the enemy. You know where the enemy must go to accomplish the mission - position yourself to cover the ground that he must cross and wait for them to come to you.

Avoid massing Javelin ATGM teams in one marker and don't position them in exposed areas and away from transport. If an ATGM has a large field of view then so does the enemy. In such situations the ATGMs may toast a couple of vehicles but they will then be inundated with return fire and enemy arty. With no transport and with no covered avenue of escape nearby they can not fire a quick volley and then scoot to another position.

Machine guns are anti armor weapons if you are fighting BTRs and if you can get flanking and rear shots. Spread them out and position them with your SMAW teams. Let the enemy BTRs get within 500 meters and you can burn up a lot of them.

Don't automatically position troops right on the edge of your mission objective at game startup - especially not ATGM teams - it is often a waste of weapons. You want to heavily attrit the enemy as far away from the objective as possible. By the time OPFOR gets in sight of the objective it is often too late if he has a good number of wheels and tracks left. Static objective defense forces are often better used with trucks and APCs as a mobile reserve. If towards the end of the game it becomes obvious that OPFOR is going to be able to roll within sight of the objective then at the last possible moment you break contact wherever you can and you retreat some units into final defensive positions on the perimeter of the objective.

Spread out your infantry more if they are meant to physically block an avenue of approach to the objective or to be used in a point blank range anti armor ambush. In defensive situations, split the rifle platoons into squads and spread them out shoulder to shoulder. If possible put a second much weaker and thinner line just behind the first. If you do this you won't find whole platoons being taken out of the fight at a critical moment by enemy smoke.

<<How can I get my helicopters to load all troops automatically? I don't want to land next to my troops and wait for the next turn to click the load button on 'orders' window. I'm afraid I'll get my copters all blown to h..l by artillery while they are on the ground.>>

You can use the delayed order button labeled "L" but you can't have instantaneous loading during a combat turn - that would be too unrealistic.

<<I know there is an L button by the U button, but I can never get my copters to load or unload without going into the button menu in the extended orders portion of the orders window.>>

Probably because there is at least a 30 second delay for loading troops during the combat turn.

<< BTW has there been posted a minimum machine requirement for the PC version of TacOps? I have a 486DX2 66Mrzh with 8 meg. Will this be enough?>>

Yes, any 486 will be enough. In fact, any 386 should be fine. My PC is a 386SX and if it doesn't run well on a 386, I will be upset <g>. The only thing I can think of that might mess up play on a 386 would be if Microsoft did something to Windows that bothered the 386. We are only doing a Window port - there will be no DOS port.

<<Oh and can we preorder TacOps for the PC?>>

I hope not. Accepting preorders is a good way for a software company to either (1) find itself pressured to release buggy products or (2) annoy a lot of customers or (3) both.

<<It seems to me that ever since I got the most recent version of TacOps, OPFOR artillery got much more powerful while mine became less so. I must say I really like the changes made to on screen artillery, but I think I've noticed a reduction in its chances to kill, particularly infantry.>>

I just checked all my "change logs" and the combat results tables for artillery have not been changed since TacOps was released in August. The only change to the AI's arty routines was on 26 Dec 94, when I fixed a bug that wrongly allowed the AI to know that it had killed unobserved infantry with a speculative artillery salvo - thus the AI would continue shelling unobserved infantry when it should have moved on to another speculative target point. The US arty combat results tables are in all cases more effective (at least a bit) than equivalent caliber OPFOR arty weapons. Entrenched infantry have over time become more resistant to all types of fire, direct as well as indirect, but the effect applies equally to both US and OPFOR entrenched infantry.

<<... killed vehicles with speculative arty fire>>

The effect on target of speculative arty fire is just as strong as the same fire mission would be if it were observed. If a speculative fire mission is fortunate enough to land on a unit then it gets the full effect of whatever the appropriate arty combat results table dictates. I should point out though that the arty combat results tables do not provide the same exact results every time against equivalent targets even with good target coverage. Even when an arty fire mission is perfectly on target, you will get a random spread of damage varying from none to a lot. The more powerful the arty weapon, the more likely you are to get more damage on target.

<<Does this [infantry SAMs firing from APCs] imply that all troop carrying vehicles, which have hatches or openings of some sort, will allow the troops inside to fire at appropriate targets.>>

No. Currently only portable SAMs can fire from hatches. All other portable infantry weapons have to dismount from APCs in order to fire. I made the special exception for SAMs because firing SA16s from an open hatch is OPFOR doctrine and because US Stinger gunners are also able, trained, and expected to do so.

<<If a HMMMV was carrying a Javelin team, would the Javelin fire at vehicle targets?>>

No.

<<How does one find out for sure if a vehicle can allow this or not?>>

SA16s and Stingers are the only man portable weapons that can be fired from a vehicle without being first unloaded.

<<The arty accuracy number can change from 0 - 5 but to me it feels like the higher numbers doesn't make much difference. ... I would much appreciate if you could please explain how the arty accuracy is meant to work?>>

Its a bit more complicated than what follows and the accuracy number is also used for some things other than accuracy but in general the impact center of an incoming arty or mortar salvo may be off some random distance in meters from the intended target point according to the following table.

Level	With Observer	With No Observer
0	0..500m	0..500m
1	0..50m	0..250m
2	0..50m	0..250m
3	0..20m	0..50m
4	0..20m	0..50m
5	0..20m	0..50m

<<TF Peterjohn intrigues me. Could this game ever be won by OPFOR?>>

[Note: TF Peterjohn is a quasi historical Desert Storm scenario in which OPFOR has no thermal sights and only steel/tungsten penetrators so the US M1 tanks are pretty much invulnerable to frontal hits. It is not uncommon for skilled US players to eliminate three or four Iraqi battalions with the loss of only a few Bradleys.]

Probably not by the AI. There might be a chance if a human OPFOR player were to rush the town along the southern edge of the map in three or four close waves. Each wave should be about a battalion and should be about 1000 meters wide and one marker in depth. The second and following waves should trail just far enough behind the wave in front of them so as to prevent an ICM salvo from straddling two waves. Tanks and APCs in the second and subsequent waves should pick up orphan infantry from vehicles lost in earlier waves as they advance through the wreckage. The more infantry that you can get into the town the better. The waves should not stop or maneuver to do the pickups however - just pick up what you are about to drive through anyway.

The US player's advantage in thermal sights and frontal armor would largely disappear in the point blank ranges of a city fight.

Have you tried play by email yet? Playing a human opponent is a good way to restore the shine that TacOps had when you first opened the box <g>. I have found that having three or four email games going at once, will produce an enjoyable hour of gaming each night.

TacOps Gazette 95.16

<<After creating an impenetrable network of entrenchments in a game the other day, I was shocked when my opponent simply marched up, entered the entrenchments my troops were supposed to be holding, and dug in (eliminating my defensive advantage). Allowing enemy troops to enter an occupied entrenchment seems like a bit of a bug to me.>>

Is not a bug, because that is the way I coded it to work :). If you don't have enough troops armed with the right kind of weapons defending an entrenchment then the enemy will march up to it, enter it, and then clean it out. In TacOps an "entrenchment" is considered to be an area of relatively hasty positions consisting of foxholes, some shallow trenches, and perhaps a few reinforced firing positions. TacOps entrenchments do not represent WWII style concrete/log bunkers.

<<Is there a real-world situation in which this might occur, or have I misunderstood what an entrenchment is? (I thought it was like a bunker)>>

In the real world, entrenchments don't stop attackers - it is the men and weapons in the entrenchment that must stop attackers. An entrenchment only gives protection to the occupants while they engage an approaching enemy. Once an enemy actually enters an entrenched position, then the entrenchment effectively becomes neutral - i.e. it gives the same advantages to both sides.

<<What effect does deploying smoke have in a game where both sides have thermal sights? Other than preventing air strikes, smoke in thermal-equipped games seems pretty useless. Does it prevent infantry from seeing, or does it slightly degrade spotting opportunities?>>

Not every unit in TacOps is equipped with thermal sights. Most infantry units do not have thermal sights (generally only the portable infantry ATGMs have thermals) so smoke can reduce the number of infantry RPGs/LAAWs that are firing at your tanks and APCs. Also, there is a slight reduction in accuracy for even thermal equipped units when they are firing from or into smoke. Smoke will also slow down the movement of any unit inside it - sometimes it can be very useful to make an enemy unit take several extra minutes to get where it wants to go.

<<...does the amount of smoke make a difference? If I put down three smoke missions on the same spot, does it have any more of an effect on the enemy than a single smoke mission would?>>

No - the game effects would be exactly the same.

<<I was wondering about putting in casualties due to friendly fire...>>

Currently in TacOps you can take friendly casualties from friendly artillery fire and airstrikes but not from direct fire. At some point in the future we are going to add more elevations to the game - this will make the line of sight determination less generalized. When we do that we will

probably also put in a chance of hitting your own people with direct fire that goes through a friendly position.

<< ... information pertaining to TacOps for the IBM>>

We hope to release the PC version some time this summer. However, it will not be released until it has been thoroughly tested and testing has not yet begun.

<<...are airstrikes carried out using generic airplanes>>

Currently yes. The focus of TacOps is ground ops. The scenarios do not generally contain aircraft in great quantities because in a tactical game if only one side has significant air power the other side is guaranteed to lose and if both sides have significant air power then the game deteriorates into just hiding from aircraft. Such a game would be boring. Since aircraft do not usually play a critical role in TacOps scenarios, the air support routines are very generalized. Aircraft are assumed to have executed an approach to target that gave them a reasonable chance both of hitting the target and of escaping effective ground observation and fire prior to the target. I do have an item on the wish list to add the clicking of a map entry point and an attack path for aircraft to and from a ground target, but I don't know when I will get to it. The motivation for that change is not so much to increase the fidelity of the air play but rather to increase the fidelity of the ground SAM anti air play. Increasing the fidelity of the air play gets real complex real quick and would add greatly to the users workload when you consider all the variables involved in having the user specify the attack profile, bomb load, speed, height and angle of release, etc. and then all the game engine ripple effects of the variables of the different attack profiles on the response from ground to air weapons. The most likely result of having a skilled user do all that work would be that he would end up with the same result over the target that the game now provides <g>.

<<I have a question about vulnerability tables for a couple of OPFOR systems: the 2S21 120mm SP mortar and the 2S1 122mm SP howitzer. Both seem incredibly difficult to kill...>>

It probably seems that way just because you really want or need them to go away at certain points in a game <g>. I just checked the game code and the 2S1 122mm SP is a tad more vulnerable than a BMP to both arty and direct fire. If by "2S21" you mean the 120mm mortar rumored to be mounted on a BMP chassis, then it has the same vulnerabilities as the BMP.

<<I had a Bradley engage a 2S21 at less than 500m with the 25mm and got no kill. I would contend that the Bradley can't miss at that range and that the 25mm (HE or APDS) would chew up such a vehicle.>>

Was a fluke, but it is within the parameters of the game. Bradley vs the "BMP mortar" is an easy kill at 500m, if there is a hit. However, the highest possible chance of hit and kill allowed in TacOps is 95%. I have seen plenty of people miss targets that were close enough to be hit with a pitched baseball while firing pistols, rifles, machine guns, and even incredibly with a 106mm recoilless rifle <g>.

<<My problem lies herein. OPFOR T 80s have a definite edge on my M1A1s.>>

There is no edge in favor of the T80s . I double checked the code - the accuracy of the T80 is not greater than that of the M1 and is less around the 1500 range point - still it amounts to the T80 in TacOps being about the same as the M1 in most situations. In looking at the accuracy info in the data base on the T80 and T72 I noticed that both weapons are given the same advanced fire controls. If you want a less capable OPFOR tank you can use the "Change Menu" to switch to the 1991 Iraqi T72. Reminder ... the TacOps accuracy tables reflect overall reductions in accuracy from what is possible on a training range.

<<Is the T80 supposed to have a superior fire control system to the M1?>>

Similar, but not superior.

<<In my play of TacOps I have found that when M1s and T 80s meet in a neutral manner the T 80 hits and kills with a much higher efficiency than the M1. >>

I checked the code again and did not find anything that would cause this effect. My perception is that in neutral situations the exchange seems to be equal.

<<In order for my M1A1s to effect a defeat on a squad of T 80s I need to be in a prepared, i.e.: carefully deployed position ...>>

That is the intended effect. Surprise fire is rewarded. Firing first is rewarded. Firing from cover is rewarded. Gentlemanly, nose to nose exchanges are not rewarded <g>.

<< When I give opfor improved ATGMs am I also giving opfor improved penetrators and fire control?>>

After checking the code, I found that for the T80 and T72 tanks, the improved penetrator (DU) and improved fire control is built into the basic tank unit. If you want less accuracy you need to change to the 1991 Iraqi T72. If you want less penetration from the Russian 125mm tank gun you need to change to a steel or tungsten penetrator.

<<How does an OPFOR force approach and get through a US armor unit?>>

By sheer force of numbers at the point and instant of decision. You use whatever benefit you can get from observation, deception (i.e. supporting attacks), and terrain masking to get as close as possible to the defender before exposing yourself. When you reach that point, you just charge. Try to attrit the defenders as much as possible with available supporting arms during the approach and then maintain the shelling where ever possible through the assault to reduce the accuracy of the fire coming from the defenders.

<<The best strategy I found was setting up all 18 of my Apaches exactly 4000 meters (limit of visibility) from a spot I expected opfor to march through. This let my helicopters concentrate their fire on one unit at a time -- at least while the bad guys stayed in road march columns --

which resulted in whole units of 14 BMPs being obliterated in much less than a turn. The only problem is that it felt a lot like one of those dreaded game tricks to me.>>

Ganging up Apaches at extreme range on isolated enemy units is not a game trick - it is good tactics.

<<I was told after the fact by my opponent that a "trick" exists for [doing]15 second [helo] popups:>>

- >Position helo in NOE Altitude, E0
- >Remove all orders
- >Set altitude to Medium
- >click on the delayed orders 15 sec button
- >click on down 1 level button
- >scoot away at NOE and reposition

Again, that is not a "game trick". I specifically coded TacOps so that it would recognize that procedure so that game helos could replicate a standard real world attack tactic.

<<...it would be really nice if the game would let the player know when the other player finishes their orders when TacOps is in the background. All it needs to do is make the clicking sound.>>

Added to the wish list.

<<I was wondering whether you meant for the Cobra's 20mm cannon to be more effective than the Apache's 30mm. From the hit charts, the 20mm cannon is more likely to hit and seems to be consistently much more effective.>>

Yes, no, and maybe <g>. It depends on what is being shot at. TacOps rates the Cobra's 20mm to be more effective vs infantry targets while the Apache's 30mm is rated to be more effective against armored targets. The 20mm gets a higher accuracy table and kills slightly more infantry per volley because it puts more lead in the air per volley/burst of fire. However the 20mm has much less penetrating power than the 30mm against armored targets.

<<...I have version 0.0.0 ... What's the main difference between the versions? Is it instantly noticeable or is it just free of certain bugs? Just curious.>>

Geez ... I wouldn't know where to begin <g>. A quick scan of my change log showed 170 (plus or minus 10) changes since version 0.0.0. The majority of the changes were user requested enhancements and cosmetic improvements but there were also some bugs fixes. Run (don't walk) to the software library and get the latest update. Ignore any updates you may see earlier than 0.1.1. With TacOps, every upgrade always includes all previous changes so you don't have to apply patches to patches.

<<This brings me to another question about Stingers, this time on the ground. If an air strike hits right where the stingers are, then they have no effect. But if you put them 1-2 clicks from the

troops you want to protect, then you usually get at least an "H" result if not an abort. Why is that?>>

Depends on what game version you have. In an earlier version, Stingers could not engage airstrikes at point blank range. I considered this a bug given the generalized nature of ground to air fire in TacOps and I later changed it so that Stingers have no minimum range. If you don't have version 0.1.1, you should get the update.

<<The OPFOR spent itself running back and forth, when a concerted attack against Co. A in the north would have resulted in at least a battalion making it through to the west map edge. Is it normal for the AI to respond in such a disjointed fashion, especially against a position so far off the axis of the original attack? >>

Sometimes yes, sometimes no. Your example does prove conclusively that the TacOps AI does not cheat :).

<<I have encountered problems running TacOps over an AppleTalk network between machines on System 7.5 and System 7.1. In all of the cases, the programs are able to find each other across the network but the game freezes (and locks the machines) when both players have begun the combat phase.>>

Just this week (while working on Panzers East) I found and fixed a bug in my generic AppleTalk code that has apparently has been in TacOps since the game's release but was apparently harmless unless the program was run on a fast Mac using System 7.5. The fix will be in the next free update.

Initial evidence suggests that the following will serve as a temporary work around for those few people who are experiencing system hangs or crashes while doing AppleTalk network play. (1) Have the US player use whichever Mac is the slower machine and (2) always have the US player select "Begin Combat" first and (3) always play with the Auto Save menu item checked. There is no reason for people who are not experiencing hangups to use this workaround.

<<I just started a PBM game with another new player. After a lot of finagling (including my upgrading to the newer 0.1.1 version) we finally got the game going, but when I tried to send my Move 2 file, it wasn't there! So I re-issued orders, created another move 2 file, and again -- it didn't exist. My Move 1 file is still intact in the scenarios folder, but not 2! We're both stuck on this one, so any help is desperately appreciated!>>

I am sure the file is on your disk somewhere. Maybe it was saved at the same folder level as the TacOps application or maybe it is in with the map. If you are using System 7.5 you need to be aware that it can be configured to save files in different default folders from the way that most of us are used to - open the System 7.5 control panel named "General Controls" and you will see what I mean.

To avoid this sort of problem when I am playing PBEM, I create a special folder for each game in which I put a copy of the scenario and a copy of the map used in that scenario. This and

careful watching of what is in the save file window helps keep me from losing things since the System 7.5 change.

<<I'm in a PBEM game of TF DeGoey and playing the OPFOR. My opponent and I are at about 9:10 and most of our forces are on the board. For the life of me, I can't come up with a successful strategy to advance from East to West.>>

First a question. Did you use the first hour of the game and the truck company in the big city in the northeast corner of the map to place a line of OPFOR observation posts and SA16s as far west as possible? If you did not - then forget planning and just charge <grin>.

My suggestions for the OPFOR in TF DeGoey are:

(1) Split the truck company in the city into individual truck markers, load them with infantry teams and SA16 teams (you can fit two inf squads and a SA16 in each truck), and then fan the trucks out and drive them west until each either reaches a good observation position (OP) or it gets destroyed by a Cobra (usually some of the cargo will survive and that spot may well be as good as any for an OP). If any trucks make safe deliveries, then send them back to the city to pick up and deploy another load. The primary purpose of these guys is to observe and hinder the development of the US defense against the OPFOR reinforcements. The infantry teams can spot the US units as they debark from their helos. The SA16 teams can harass and attrit the US transport helos. If the US player is the least bit careless, a SA16 hit on a CH54 helo can leave a big hole in the US defense. The forward deployed SA16s will discourage the US player from using his Cobras to gather intelligence to the east.

(2) OPFOR can not really plan his offensive strategy until just before the leading elements of his reinforcements enter the map. At that time effective planning depends on OPs having spotted the trace and makeup of the US forward defense. OPFOR then plans: (a) if there is a weak flank - to maneuver around a flank so as to attack the US defense from the side/ rear, or (b) if there is no weak flank but there is a weak area in the line - to use terrain masking to approach as close as possible to the weak spot and then to charge in close waves toward and through the weak spot, or (c) if there is no weak flank and no weak spot in the line or if OPFOR does not know where the heck the US defense line is - to move as close as possible to the nuclear facility while using terrain masking and then charge in close waves.

<<Why no command and control?>>

The short answer is that I don't like command and control (C2) and morale rules in tactical level games <g>. However, I am leaning toward adding some C2 and morale factors as user selectable options. These items have to be optional though, I'm not open to forcing it on everyone. I expect Panzers East will have optional "soft factors". Ed Rains is doing the historical research and detail and he has included the text for a number of such items on interface screens that I am coding right now. I don't know yet exactly what he has in mind for their functionality.

<<In the scenarios with companies and battalions, the loss of the company or battalion commander and HQ staff should adversely affect the formation.>>

I don't think the effect would be significant for a well trained and equipped force in a modern tactical level scenario of say only a couple of hours duration. Longer scenario than a couple of hours, yes. If there were limited radios present in a force, yes. Definitely more likely to be significant in a WWII situation.

<<The game would be more interesting if you could play either side.>>

Agreed and it is on the wish list for contemporary TacOps, but I don't think it will get in until TacOps II. The computer opponent in Panzers East will be able to play either side.

<<I have a question about suppressed APCs. Are they buttoned up?>>

Conceptually yes, but I do not aggressively address every detail that would result from being button up - starts getting into squad leader stuff that the engine can not support without seriously effecting playability in battalion and higher sized engagements.

<<If so, does the current TacOps coding allow mounted Inf. and SAMs to fire?>>

Yes, but their spotting and accuracy and effectiveness is greatly degraded.

<<Finally what about different speeds for different vehicles? The M-1 is reputed to be the world's fastest tank, certainly faster than the M-60's and M113. Can you code different speeds for different vehicles? ... It would sure be nice to pour on the gas when moving sometimes!>>

Agreed . It is a TacOps II item - too big a code change for an incremental update. I am working on this in the Panzers East code and I expect it will migrate to TacOps II.

<<I was looking forward to buying TacOps and found out from the store clerk that it's a turned based wargame.>>

Technically TacOps is not a turn based game as it does not follow the sequence of "I go - you go". The TacOps approach is better described as "we go". Green force and red force orders are given simultaneously - Green force and red force orders execution and combat take place simultaneously. It even works this way in PBEM. However if you are looking for a real time, multi player arcade shoot em up, they should not buy TacOps.

<<I don't have a concept of 'Battalion' or 'company'. How many companies make up a battalion etc..>>

The following is a rough approximation that is useful for most modern armies, but it is not absolute.

Team. As a crew served weapon team, can be 2 to 5 men working together to employ a crew served weapon. As part of a squad, can be 3 to 5 men armed with rifles and machine guns and light anti tank weapons.

Squad. Two or three teams make a squad. 9 to 15 men armed with rifles, machine guns, and light anti tank weapons. Commanded by a corporal or a sergeant.

Platoon. 3 or 4 infantry squads make a platoon. 3 to 5 vehicles make a platoon. Commanded by a sergeant or a lieutenant.

Company. 3 or 4 platoons make a company. 10 to 15 vehicles make a company. Companies often have additional heavy weapons like mortars, machine guns, and larger anti tank weapons. Commanded by a lieutenant, captain, or major.

Battalion. 3 to 5 companies make a battalion. Some companies may be infantry, some may be tanks. Battalions often have additional vehicles, more heavy weapons, headquarters troops, more communications, artillery maybe, etc. Commanded by a major or a lieutenant colonel. Can function for days or weeks as a largely independent unit.

Regiment (often called a Brigade). 2 to 5 battalions make a regiment. Some battalions may be infantry, some may be tanks, some may be artillery. Can function for weeks or months as a largely independent unit.

Division (sometimes small divisions are also called Brigades). 2 or more Regiments/Brigades make a division. Usually includes some of everything available to a given nationality. Can function indefinitely as a largely independent unit.

Corps. Several divisions. Only the largest of modern countries have more than a couple of Corps.

Army. Several Corps.

<<Does TacOps support 832x624?>>

Yes - TacOps adjusts its map window to the size of whatever monitor is in use and there is a resize feature.

<<Also, does TacOps come with 2 serial numbers per box to play over a network like Marathon or do you have to purchase 2 copies?>>

TacOps has no copy protection and no network serial numbers. I feel that if you want to play network TacOps in the privacy of your own home, then you should not have to buy two copies to do so. However, when your gaming friends leave your house, I would appreciate it if they did not take with them a copy of the game that only you paid for <grin>.

<<I've noticed that ever since upgrading to version 0.1.1 last Fall, when playing Team O'Hara OPFOR always enters the map from the southern road (about 30 games with no exceptions). Under the original version of TacOps there was much more variety, with OPFOR often entering the southeastern or eastern road.>>

I just did three consecutive startups of Team O'Hara in solitaire mode. OPFOR entered from a different point in each startup. If none of the thoughts below apply to you, try installing a fresh copy of just the Team O'Hara scenario file from your backup copy of the most recent update package - look for a Team O'Hara file with a Get Info version number of 0.1.1.

Are you perhaps restarting your games from a saved game file? Doing so would cause OPFOR to always enter at the same place. Some users have a favorite US setup and they try to short cut the setup process by saving the game once they have finished their first turn setup. This is OK for every type of game except solitaire play. If this is done for a solitaire game, OPFOR will always use the same battle plan/opening move in every game that is later started by using that same saved game file.

Check the version number of your Team O'Hara scenario (the scenario, not the game engine) - it should be 0.0.1.

Have you ever prowled around in that scenario file with ResEdit :)? A very bad thing to do with TacOps files.

<<Speaking of acceptable losses, that is the one thing about TacOps that doesn't seem very credible. Would any commander, US or any other, actually consider exiting a battlefield with only 20% of their original force a victory? Wouldn't most commanders simply abort any mission that is obviously leading to such a great toll? ... these scenarios all seem like suicide missions for both sides.>>

Depends on the situation. There are plenty of examples in WWII in the Pacific amphibious landings in which some US company sized units were down to 20% within 24 to 48 hours of getting off the boat. Japanese units in the Pacific often fought to a 100% casualty level without surrendering or backing off. The former Soviet Union did not sustain 25 million casualties in WWII by quitting every time they were attrited by 20 or 30 %.

As a game, TacOps needs to offer a "gaming experience" in order to be commercially successful. In order for a scenario to be a "game" both sides need to have a reasonable chance of winning. Still, in a situation (game wise or in the real world) in which either force can win, and the mission is paramount for both sides then casualties are likely to be heavy.

<<Wouldn't most commanders simply abort any mission that is obviously leading to such a great toll?>>

In the real world, quitting an assigned combat mission is not generally a "simple" decision. Lets say you are the Bravo Company commander and your company is in the center of a battalion advance. Would you appreciate the Alpha or Charley Company commanders "simply" deciding

to pull out of a fight due to heavy casualties thus leaving your flanks open and inviting the annihilation of your company? The same concept applies to battalion, brigades, divisions, etc.

TacOps Gazette 95.17

Personal note number one:

Lots of folks think that it would be neat to be a game beta tester. If you feel that way, you might ponder the following :).

<<When you say "directory" annihilation, do you mean wipe out the hard drive? I can lose any directory, but I cannot afford to lose the hard drive.>>

It could happen. I manage to totally scramble the hard disk that I code on about twice a year. Such a thing has never happened to anyone testing anything that I have done in the past but the chance of something like that occurring always exists in software testing. Lets say the coder makes a usually minor error and a program disposes of a pointer or handle to memory prematurely. A few seconds or minutes later the program, thinking that the pointer is still valid, writes some information to where the pointer is pointing. Now lets say that the bad pointer is now pointing to a piece of memory being temporarily used by the operating system for something having to do with disk operations. Along comes a disk write operation and one in a million times instead of crashing out, the write operation goes ahead and succeeds in putting something bizarre and harmful into the disk directory or other critical disk area. Boom - much disk data gone. Lets say you kind of doze off a bit while watching the red light on your hard disk blink oddly for 90 seconds - boom boom - all disk data gone.

Since I was opening this test cycle up to folks that may had never tested before, I used the worst example I could think of in the invitation to impress on them that there are hazards involved. A beta tester always has the potential of being the first person with a given system, memory, and or software setup to run a beta version of a program :).

=====

Personal note number two:

I just noticed a program conflict combination involving TacOps, Microsoft Word, and System 7.5.1.

Since I upgraded to System 7.5.1 I have found that if I have Microsoft Word version 5.1 running in the background while I am playing TacOps, I get a lot of occurrences of the battle map not redrawing properly after I release a TacOps menu list - the screen stays white where the menu list was. It seems almost as if Word (while it is in the background) is absorbing or stealing System events and or TacOps foreground update events - strange to say the least. I have checked my code and it doesn't look like I can do anything about it - the operating system is supposed to update the screen when one releases a menu list - it is outside my control.

I have often run TacOps with Word in the background before so that I could take notes while messing with the program, but I never had this problem until I updated my Mac system to 7.5.1.

=====

<<My current gripe with TacOps is that mortars and SP Arty can move, stop and then start indirect fire missions in the next 15 second impulse.>>

An arty unit moves then stops. That arty unit then marks a target - gonna be one to two minutes before the first round lands. After the first round lands it will be two to four more minutes before the salvos are dead on. Seems like a few minutes have transpired to me. If you want longer setup times use a gentleman's agreement.

<<Actually, you can fire indirect on the move also--clearly an impossibility for the Hummer and leg mortar units.>>

I agree. Technically they are firing direct fire against targets in full view when this is done and the game engine has the unit stop when it fires. The TacOps implementaion of the leg mortar units is a bit unrealistic in policing this but 60mm and 81mm mortars can in fact be fired in real life "on the bounce" without going thru the process of preparing the firing point, putting out aiming stakes, etc. The technique is not practiced, to my knowledge, in peacetime because (a) it is dangerous and (b) most peacetime mortar gunners have not fired enough rounds in training to be any good at it.

<< ... as bad as having the current pancake elevation model for terrain. Major H, PLEASE fix this.>>

And the arrows just keep falling The pancake terrain with a 100 meter dual visibility zone at the contour was a gaming generalization that was critically required in order for TacOps to work at a reasonable speed on older Macs. With the demise of the MacPlus and the Mac Classic, I can now move to a more sophisticated terrain model for Panzers East and TacOps II. However and harumph, I will not be "fixing" it, because I don't consider the pancake terrain representation to be broken :). It was an elegant solution to a problem that fortunately does not exist anymore and it works the way I intended it to work.

<<TacOps NEEDS a targeting priority of Vehicles, Dismounted troops, Aircraft, Helos.>>

And priorities of ZSUs, and SAMs, and ATGM teams, and machine gun teams but only if BTRs are in the lead, and soft vehicles, and medium vehicles, and hard vehicles, and oh yeah, really important vehicles at a given instant except and unless the wind direction changes or the moon is in its second quarter, and lions, and tigers, and bears ... the issue is playability. You can't have control over every imaginable tactical detail, every 60 seconds, and still be able to play battalion and regimental sized engagements.

<<I have also just recently heard about TacOps and from the posts I have seen I take it this will also be released in a PC/DOS version. Am I correct and if so can you give me an idea when that might be? Also, what is/will be "Panzers East"?>>>

If the testing goes well, the PC Windows version of TacOps will be released late this summer - for sure by the year 2010 at the latest :) - there will be no PC DOS version.

Panzers East will be TacOps WWII - German Eastern front ops from 1940 thru 1945. The TacOps game engine is being completely revised and enhanced for Panzers East. After Panzers East is released, its code will then be the starting point for TacOps II.

<<The manual says that you should give Opfor some additional units to compensate for the AI. I was wondering just how many units is "some"? I know each scenario is different, but is it all, some, or none?>>

Could be any of the above :). I think the key is how well are you doing against the AI and what kind of gaming experience do you want on a given night. If you have reached the point where you are consistently pummeling OPFOR or you feel like a tough game then add as many optional units as you dare. You should have a pretty good feel by now on what the significance will be of adding a tank platoon here, a mech company there. Add whatever you think will be fun - as you define fun.

Something that you can do to make most scenarios instantly harder is to not use instant resupply.

<<Can you set the default button for the game speed change to be "OK" rather than "cancel"?>>

Sure - you will see it in the 0.1.2 update.

<<Could it also be saved in the prefs file..>>

Sorry, no - tweaking the prefs file is a problem right now.

<<...so that I don't have to hurry to change it prior to receiving orders when playing PBM>>

I can still solve your problem :). Try changing the game speed before you read in your opponents orders. The "Change Combat Speed" menu item is only disabled after reading new orders.

<<When starting from a saved game from network game, the first orders phase after combat does not show the enemy spotting results to either player until after the combat phase. Would it be too hard to include a check spotting option...>>

Yes it would be too hard. Also, this effect on reloading a saved game is an unfortunate by product of some things done in the program to discourage cheating in PBEM games.

<<Terrain and Weather -> Darkness? Twilight? Snow? Mud? Rain? Fog? ... Anti-Tank ditches and streams that require tactical bridges or amphibious vehicles to cross ... Additional Woods types - how 'bout those mesquite thickets and Virginia woods you mentioned in your FAQ? Maybe a swamp or two? ... be able to play either side against the computer opponent>>

Panzers East and TacOps II .

<<Additional elevations>>

Already in Panzers East. Won't get into TacOps until TacOps II.

<<...play on maps of the MCAGCC at 29 Palms or the NTC at Ft. Irwin as well as the Joint Readiness Training Center on the East Coast and the facility at Grafenwhor (sp?) in Germany>>

TacOps II .

<< Unit SOP - I've lost several units (usually helo's) that 'backed up' into visible enemy units (due to facing at the time they rec'd fire) ->might want to look into a routine that runs away from the largest concentrations of known enemy units if 'clear' areas aren't nearby.>>

On the wish list, but I doubt I will be able to solve this. One problem is the frequent occasions when a unit gets fire from several directions at once. Another is that I think that overuse and over reliance on the SOP options probably ought to be punished :). They are meant to be used on an exceptional basis.

<<How do you order vehicles to backup without changing facing?>>

Hold down the option key as you click the "go to" order on the map. When that order is reached during the combat turn the vehicle will move toward that point "in reverse".

<<Look forward to seeing Canadian TOE's. Any references?>>

Will be in the 0.1.2 update. I was recently given a set of basic/generic TO&Es for Canadian ground forces by a Canadian Major (with the permission of his seniors). I think they reflect a notional structure for staff planning whereas Canadian units probably actually differ quite a bit from major unit to major unit.

<<Any info yet on the XM8?>>

Yes, several subject matter experts have provided me with enough info to make a workable implementation of the XM8 Armored Gun System - I think it is going to get into the 0.1.2 update. The only really fuzzy area is its various levels of armor protection. I may put in several variants so that people can select the one that best suits their view of reality/inside knowledge.

<<New User: Units were 'loaded' into entrenchments during SETUP (three different infantry units). Then play was started. The units could not be found in any of the entrenchments though they still registered as alive on the game status screen. I was also unable to 'load' a vehicle into an entrenchment during SETUP ...>>

It took me a while to figure out what was going on here. The program should not have allowed you to "load" a unit into an entrenchment in the first place :). That it did so was a bug that I have

now fixed and added to the pending 0.1.2 update. The "Load" menu item is only for loading infantry into or onto vehicles. You don't "load" entrenchments you "enter" them by placing a unit on top of an entrenchment and using a button in the unit orders window to order the unit to entrench. The program behaved correctly when it would not let you "load" a vehicle into the entrenchment.

<<I was also given a series of TRP's in a scenario (during SETUP). I placed them and then once play started I could no longer find the TRP's.>>

Arty Target Reference Points are only displayed (1) when you open an off map air or arty support window, (2) when you open the orders window of an on map arty unit, or (3) when you select the "Plot Target Ref Points" menu item in the Map menu. This is done to reduce clutter on the battle map.

<< I have experienced several hangs. My system is a Powerbook 165c with system 7.5.1.>>

I have another user who just this week switched to System 7.5.1 on his Powerbook 165 and he too has reported occasional hangs. Please let me know if you are ever able to consistently to cause the problem to occur with a repeatable sequence of actions. My initial suspicions are low memory brought on by the increased memory size of system 7.5.1, or too much memory allocated to TacOps, or an INIT/Extension conflict. Less charitable folks are telling me that Apple's System 7.5.1 created more bugs than it fixed. If you are using only 16 colors, you should stay with the factory suggested memory allocation for TacOps of 1700 K - you might even try reducing it 100 or 200 K.

Things to try if the hang problem continues ... Do not over allocate memory to TacOps. Giving too much memory to a program can cause the Mac operating system to be unable to get enough memory for itself from time to time - hangs result. Don't run anything in the background at the same time that you are playing TacOps unless you have never had a hang problem. If all else fails ... when you want to play TacOps, restart your computer by holding down the shift key. This will prevent most INITs and extensions from loading and depending on your system configuration may often greatly increase the amount of memory available for both TacOps and the operating system.

<< New User: I submit the following suggestions... In two player mode (in particular) there is no 'memory' of where artillery attacks took place (other than successful smoke). A method of displaying an overlay of artillery/air strikes (both ranging and FFE) would be most helpful.>>

I'll add this to my list of things to think about, but my initial reaction is that this is something that you won't pay any attention to after you have played TacOps a bit more and become comfortable with the maps and the game system. You can see where your arty is targeted at any time by selecting the "Plot Fire Support" menu item in the Map menu. Your arty did or will impact reasonably close to where the target markers are. If you have troops observing the impacts then the salvos will automatically get closer to the target symbol with each impact.

<<It would be simpler to have load be 'smarter' (such as only pick M infantry from the stack of N units to load into M vehicles).>>

That would be simpler only for the unusual case where there was only one type of unit in a stack to be loaded. When you are playing a USMC scenario, it is not uncommon for to find markers for a rifle unit, a machine gun unit, a mortar unit, a SMAW unit, and a JAVELIN unit all in one stack :). The current approach is less work in the long run than having to constantly correct errors in judgment that would occur in complex situations if the computer was trying to help out with the loading and unloading.

Be sure to look through your 0.1.1 update disk for the Read Me and Errata text files that should be in the various folders. There have been a lot of significant changes and improvements to the program since the Users Manual was printed. There are a lot on neat new things that are only explained in the disk text files.

<<From a real world fidelity point of view- Is it legit to set a TRP prior to a round being fired at that location (e.g., as a delta from an existing TRP); or is this a gaming artifact like being able target MLRs using TRPs?>>

The ability to expand one TRP into a chain of TRPs in one orders phase by shifting from an existing TRP to a new spot and saving that spot as a new TRP is a bit illusionary. The TRP you store loses one level of accuracy each time you go thru the shift and set TRP cycle.

TacOps Gazette 95.18

<<In one of your posts of the TacOps gazette you mentioned that you were planning to mail a set of printed maps with the game, until the inevitable pricing problems hit-home. Do you have plans to sell them separately? In any case, is there an easy way to print the maps out? I would not mind a b&w map.>>

I have a personal folder of black and white versions of maps 01 through 09 that print very nicely. They are full size, they have the 1000 meter grid pattern on them, and they have the grid coordinate numbers along the map margins. I will send the maps free of charge, by email, to any registered TacOps user who asks for them. Just send "I want the maps" to 'majorh1@aol.com'. What the heck - if you did not bother to send in your registration card, include your full name and mailing address in the request and I'll send it to you also <grin>.

<<When I look at the photos for the units, I always get the b&w photos, is there something I did wrong while installing? Or should I trash the b&w photos to get the color ones?>>

You are seeing color photos but they are "color" in the context of "shades of gray". Technically in the Macintosh coding kingdom, B&W means just two colors - white and black. I did not mean to mislead, I just neglected to recognize that the layman's definition of color suggests reds and blues and the like. In retrospect, it would have been better if I had named the file "Photo File Gray". This is probably the most frequent question that I get. I am going to have to change that file name <grin>.

<< It would be neat if I could have a separate Map window, where I could plot the sighted enemy units' positions.>>

Something like this in on the wish list for the future. Maintaining a separate map window would take a lot of memory and will probably not be the way I'll do it. I have been considering adding a few simple "paint" tools and perhaps "sticky notes" that could be used to annotate the battle map during a game. The user could choose to display or hide them with a menu item.

<< Are the stats provided in the game status window realistic? For instance, should I be knowing and using the knowledge that the enemy has just two tanks left? It seems that I should know how many of my units are left, and how many were destroyed. However, I should only know how many enemy units were destroyed, or damaged, but not how many still are at large.>>

Most folks view the OOB (Order of Battle) report as a work saver for something that they would do manually if the game did not do it for them. Others have asked for the option of not being able to see the enemy order of battle - I'll probably add this option eventually. I put the OOB reports into the game because I observed that the better players in network games were keeping the same sort of info on paper as they played. As for the real world, modern military forces usually have a fairly accurate idea of how many troops and vehicles are on the other side of the hill before a battle starts. Reports of damage inflicted on the enemy are a priority item for

everyone to send during a battle and the Battalion and Brigade S2s labor mightily to use them to keep as accurate a picture as possible of changes in enemy OOB.

<< When is your new game, Panzer East due to be out?>>

Late this summer if all goes well.

<< Will it be similar in its level of abstraction to TacOps?>>

Yes. PZE will have much more sophisticated graphics but it will have the same feel and scope as the current game. Gonna have to have 256 colors/grays, System 7, and 6 or 8 megs of memory to run it though.

<<I want to be able to tell units not to fire at classes of other units. It is maddening when your tanks open up at infantry and then get decimated by concealed BMPs or when they fire at aircraft and reveal themselves to Javelins. It would be useful to have about 5 classes of units: infantry, APC, Armor, Helo, and Air and be able to tell units that they should not fire some or most of these.>>

The suggestion has come up often. Unfortunately so far every experiment that I have tried to do to increase the targeting options has produced an unreasonably complex solution both code wise and with respect to enormously increased work having to be done by the player.

<<...be able to tell units that they should not fire some or most of these>>

It is extremely challenging to code a computer to implement the human judgment concept of "some or most" in a satisfying manner <grin>.

You might find that you could accomplish a lot of your specific targeting desires if study the subtleties of the hard and soft targeting priorities already allowed in the game. Setting a hard order, direct fire target reference point with a very tight radius is often extremely useful. See the User's Guide, pages 37 to 41.

<<TF Nankervis, from the extra scenarios disk. I wasn't very careful with the troop helos, and managed to get a fully loaded one shot down. (Not a way to win friends.) After the helo crashed, it left a little "E" on the map. Normally the little elimination Es disappear, but this one seemed to be etched into the map itself. ... next day. I started another game (new game, same scenario). While setting up my units, I noticed that the E is still there... permanently etched into the map file. Argh! >>

I suspect that the 'E' that you are seeing is supposed to be there. It sounds like your helo coincidentally crashed at or near a place on the map that is supposed to be labeled with an 'E'. TF Nankervis has five map mission objectives - A, B, C, D, and E. During the setup turn or anytime you have selected the 'Plot Mission Objectives' item in the Map menu, the letters 'A', 'B', 'C', 'D', and 'E' will be drawn on the map to show the location of the centers of objectives.

If your mystery 'E' is located at grid coordinates 104024 then your map is OK - the E is marking the location of a victory objective <grin>.

<<Is there anyway we can export your maps to a printer so as to help us set up scenarios?>>

Do screen captures as you scroll the map around. Use a paint program to put the pieces back together and then you can print the map using the paint program. Best results are usually gotten if you put TacOps in black and white mode so that you are capturing the simplified black and white version of a map. The black and white versions print a lot faster and they are usually clearer when printed.

<<I usually use ResEdit to open the PICT file of a B&W map, take a screen-shot, open up the screen-shot in Photoshop, add COORDs and save as a gray-scale PICT.>>

Ahah! I will now annotate your customer support dossier with the note, "known ResEdit user" <grin>.

I discourage people from opening up any TacOps file with ResEdit. There are some resources in TacOps that are expected to be at certain places, in a certain order. All of the resources in TacOps are expected by the program to contain specific and consistent bits of info in them. Many PICT resource in particular are assumed by the program to have a box frame with an exact size.

It is very easy with ResEdit to inadvertently change a resource with an accidental mouse click or keystroke and to not realize it has happened. To make matters worse, the ResEdit "Undo" menu item is almost always available and it always blinks when used just like it had done something - leading to the belief that one has fixed a slip of the wrist. In fact, ResEdit "Undo" does not "Undo" anything most of the time.

<< While playing this morning, one of my units was spotted and attacked by an OPFOR 2S22 self propelled mortar battery. Instead of the usual "whump whump whump" sound followed by area of effect fire, the unit made a single "artillery" sound as it attacked each of my units individually, like a tank.>>

On map howitzers (but not mortars) with a clear LOS to an enemy vehicle type unit will fire one round direct fire just like a tank. On map howitzers with a clear LOS to an enemy dismounted infantry unit will fire multi round indirect fire salvos.

On map mortars always fire multi round indirect fire salvos.

<<My question is, does anyone have any idea if ATGMs are really as effective in real life as TacOps makes them seem?>>

OPFOR ATGMs are probably not yet as effective as the TacOps "i" models. The TacOps ATGM "i" model is what you get when you choose to set the preference "Improved OPFOR ATGM warheads".

<<Does anyone out there have any other stories about ATGMs they could pass along to us tyros?>>

My reading of Desert Storm materials indicates that whatever a US TOW ATGM hit, it killed. The Iraqis were apparently using old SAGGER ATGMs, and the few that managed to hit US M1 tanks only burned the paint.

<<As a follow up to my last letter, I am also concerned about the seeming lack of accuracy from howitzer units acquiring targets through direct LOS.>>

A quick question. Are you splitting up your on map howitzer and mortar batteries into single tube units - because it "looks" like you get more fire missions that way?

If so, you should be aware that single mortar and howitzer tubes firing indirect fire or direct lay fire will have far less effectiveness than they have when firing as a battery. The game engine heavily penalizes the splitting of howitzers and mortar units. The impact has to be dead on the center of the target unit or it probably won't have any effect. I never split my mortar and howitzer units except to occasionally lay an irregular shaped smoke cloud.

<<Has anyone encountered a bug in T Minamora and T Cahoon? It seems impossible to meet the objective. ... The scenario summary tells me that OPFOR automatically loses if at any time there is no OPFOR unit on the target spot (shown on the map during set-up). The spot (with an A) appears in the woods located to immediate the east of the town. Even though several of my vehicles ran over what I thought was the spot, and discovered no "hidden" OPFOR unit, I had still not met my objective according to the game status window.>>

No bug. The mission objective area is a lot bigger than the "spot" under the "A". The letter A just marks the center of the objective area. The full mission objective is about 1200 meters wide and 2000 meters tall.

Select the "Plot Mission Objectives" menu item in the Map menu. This will draw a dark line around the objective area. You will then be able to see exactly what it looks like, where it is, and how big it is. Scoping the size and shape of the objective is a critical first step for playing all scenarios having terrain objectives.

In Team Minamora, the objective area can be a bit difficult to distinguish from the OPFOR, black setup frame during the startup turn. The objective area has a somewhat irregular border while the OPFOR setup frame is a sharp rectangle. Once the setup turn is over and only the objective area is plotted on the map, it is easy to see what is where.

TacOps Gazette 95.19

<<Just got ARA in yesterday...>>

For those who may not know, ARA is Apple Remote Access. It is a standalone software package sold (not cheap) by Apple that allows one to establish an AppleTalk link across a modem/telephone connection. In theory, if you and a friend both had ARA, you could play network TacOps over the phone. I say "in theory" because I have not carefully tested TacOps with ARA and I can not guarantee that there might not be problems. On the other hand I can't think of any reason why there should be any problems - AppleTalk is AppleTalk.

<< Im using a Q605 and my friend is using my old LCII. The first thing I noticed was I would finish my combat phase loooong before he did...no matter how hard I tried, I couldn't break myself of hitting the Do Combat menu as soon as I was ready. Well, after a few turns of my jack rabbit play and repeated hold on a minute dialogs, the two computers somehow got out of sync ... Was what happened inevitable? Is it something thats just gonna happen now and then? Is it maybe a bug that needs to be fixed? Or do I just need to exercise more self control?<g>>>

Yes it is inevitable if you keep telling the program to do what it has cautioned you not to do <g> - after a while TacOps gives up cautioning and just says "OK, the customer is always right".

<<[During a game using Apple Remote Access] after the setup round, the program quit back to the finder, type 1 error I believe. I think I had the memory allocation set too high. I reset it back to the factory setting...>>

Going back to the TacOps factory setting for memory allocation was the right thing to do. ARA takes a fair amount of memory to do its thing. AppleTalk needs a fair amount of memory, intermittently, to do its thing. All three programs periodically compete for the same free memory. However, there was a Type 1 error bug in TacOps 0.1.1 that did cause infrequent crashes during network play on some systems - most people apparently never experienced it. It is possible that play via ARA would have triggered it more often. It was fixed in the 0.1.2 update.

<<My Centris 610 (but not my 6100/60) has lost all combat sound effects. It substitutes the clicks normally heard with dialog boxes. >>

Sounds like you opted for the click sound in a previous game and it is now carried as your game preference. To turn the click sound off ... Run TacOps. Open the File Menu and select the "Set Volume..." menu item. Uncheck the box labeled "Click" in the upper right corner of the volume dialog. Open the File Menu and select "Preferences". As soon as the Preferences window appears just close it. This should get rid of the clicksound.

If this does not work. Open the Preferences folder inside your System folder and trash any file that starts with the word "TacOps".

Volume level and clicksound setting are also saved into saved games. So if you restart a saved game that was saved with clicksound set then it will reset your sound to clicksound.

<<'wish list' ... [1] a more involved "automatic unload" -> now it's 'all or nothing' ... [2] The ability to split off a loaded vehicle from a loaded platoon without having all the troopies automatically unload would also be nice ...>>

On the wish list, but it is going to take some near magical inspiration before number [2] ever happens. I won't bore you with all the problems involved with automatic splitting, but I'll give you one example.

Say you have an AAV marker that represents 11 vehicles. Embarked in the AAV marker are 9 rifle squads, 6 machine gun teams, 8 Javelin teams, 4 60mm mortars, and 2 stingers. You split off one unit. How can the computer automatically figure out what part of the total load you want to be in the split off AAV? Now before you answer that with a suggestion about having another window pop up with various info in it, consider all the user motions and mouse clicks that are involved with whatever your suggested approach is. Then consider the mouse clicks involved in the current approach. I think that the solution that requires the least number of user actions is the correct one <g>. "Neater" is not always "better" <g>.

<<...one of the real "hindrances" to the game is trying to site units so they are both in the "forest" but can see out where you want them to. It takes a lot of time and trouble (and distracts from the game) to check carefully for that...>>

The special spotting buffer zones at the edge of woods, towns, and high ground are 100 meters or ten pixels wide (give or take a couple of pixels from what the map shows). That is a little more than an eighth of an inch on most monitors. Visualize the center point of a unit marker and as long as that center point is anywhere in that buffer zone then you are OK. It becomes very intuitive after a couple of games. Unit position, line of sight, and spotting are all calculated from the center point of the unit markers.

<<Many times I want my unit to concentrate on the closest unit, not battle it out with units all over the map. I suppose I can probably do this with some sort of constraint - but to be honest, I haven't completely figured this out yet. Still, I don't want my units wasting shots on low probability kills when there are closer units.>>

Units will generally default to engaging the closest, most threatening enemy unit, offering the best chance of a kill. Most of the time they will not pass up a good odds attack for a bad one. If you absolutely want a unit to only fire upon targets within a certain area or at a certain range, hold down the option key when you use the "Set DF TRP" button in the unit orders window to give a "hard priority targeting order". See the User's Guide pp 37 - 41. For example - hold down the option key, click on the Set DF TRP unit, click on the center of your own unit, and then set the TRP radius to 500 meters - you just gave a hard order to that unit to never engage an enemy target that is greater than 500 meters away ... no matter what.

<<By the way, the "training" game was OK. It would be nice if you could expand it though. Take a map and scatter units all over the board. In each area, have a particular situation set up so you can see and really understand the effect of some of the rules and the interactions with the rules.>>

Unfortunately there is an economic limit to the amount of printed material that can be included in a \$45 game. For each additional page of tutorial, I would have to delete a page somewhere else from the Users Guide.

<<Is it really as difficult to disengage as it appears in the game? I have tried to get units to shoot a bit and then back out and they usually end up getting hammered (especially since they have turned around and get shot at from the rear). Can we have a "back up" option? >>

Use the "Reverse after firing" and or "Reverse if fired on" settings in the unit SOP orders window. See the Users Guide pp 29-30 and the Read Me/Errata text files. The unit will automatically back up so as to keep its frontal armor toward the enemy.

For direct movement orders, hold down the option key as you give a movement order and the unit will move in reverse so as to keep its frontal armor toward the enemy. See the Read Me/Errata text files.

<<By the way (and don't answer if you feel I am being nosy) but do you have a regular job too or can you make a go of it from TacOps?>>

TacOps is my full time job (plus future games in development).

<<Not being in retail outlets and being the kind of game it is it seems it would be difficult to get a large volume of sale, no matter how good the game is.>>

Wargaming is a niche market, but the volume is sufficient for a small development team that is prudent with its expenses.

<< ... from your presence on the net you spend a lot of time supporting the game ...>>

This is done partly because I enjoy it and I think it is the right thing to do to support existing customers, partly to sell a few more copies of TacOps to the holdouts :), and partly to maintain a good company reputation so that the "next" game to be released will be bought with less hesitation.

<<How does one determine the ammo supply/remaining ammo for a mobile (on-board) mortar or howitzer?>>

Open the unit orders window for an on-board arty or mortar unit. Expand the window to its widest format. Click on the small black button labeled "Unit Info". The numbers of rounds available for each weapon in the unit are listed. For simplicity, mortar and arty ammo listed for on-board units can be used as smoke, HE, or ICM (if the weapon can fire ICM).

<< Four times I got a dialog saying AppleTalk had trouble communicating with the remote computer to try sending my orders again.>>

This same alert will appear if the communication was received but was not acknowledged by the other computer within four or five seconds. There are some activities that the other player can be doing during the orders phase (certain windows or a dialogs being looked at) that fully occupy his computer and will result in incoming AppleTalk messages being ignored. There are many things that can happen during a combat phase that will cause bounced messages. For example, if an MRL or MLRS strike comes in on a large grouping of units, no AppleTalk messages will get through until all the winking and blinking and damage results have been concluded. Since this can take a while on some systems, a chat message sent at this time would likely bounce.

My best advice would be to (1) not send chat messages if either player is in a combat phase and (2) avoid sending chat messages anytime :).

<<Major, you know this game cries out for modem to modem play as will, I'm sure, the rest of the games you've got in the works. That's always been one of the shortcomings of the Mac world, games that communicate, especially with the DOS world. Am I asking too much?>>

Yes you are asking too much <grin>. Adding a "real time" modem to modem link would require the equivalent of writing a whole comm program and doing testing on multiple dozen different modems. It is too expensive to develop for a \$45 game in a niche market. Whatever we came up with would likely be far less reliable than ARA or some other program that has been specifically engineered and is supported for modeming.

A better solution (in my opinion) would be for Apple to reduce the price of ARA or better yet, include it for free with their system software. That would really help Mac games blossom.

<<... if you've got to hire someone to write the routines, we'll pay for it.>>

The game market indicates otherwise. Two years ago, war games were selling for \$60 plus. Now most are down in the \$30s and \$40s. That change was not due to the benevolence of game companies :). It was driven by the distributors and retailers refusing to handle games at the higher price in reaction to what the consumers were showing that they were willing to pay.

<<One other little question, is there any reason why the orders info can't be exchanged in the background? That way, game play could proceed at almost the same pace as 2 on 1 computer.>>

I suppose by this you mean having the orders be transmitted as they are entered or perhaps each time an orders window is closed. This would end up requiring much more transmission time. Would you want to wait four or five seconds each time you closed an orders window? Remember, I have to be concerned with the worst possible case at all times. I have to code the program so that it will work through the presence of several hundreds of markers, plus mine fields, plus smoke fields, plus error conditions, etc. There is a lot of detail involved in maintaining identical unit lists and terrain data on two computers - one lost or incorrectly set bit

on either computer and the game would be ruined. I prefer to go for what provides the best stability. Sending the orders all at one time with constant checking for transmission errors does that.

<< Could you shed a little light for me on the tables values [the unit lethality values that are used by some scenarios for scoring victory]?>>

I started out with a nice, long, scientific looking set of criteria. Each criteria that was met by a unit or vehicle was worth x points. Then I applied judicious Kentucky windage :) During six months of playtesting, I adjusted the values here and there based on what I was seeing in the game play of myself and others. Once I found a set of values that seemed to do a halfway reasonable job of producing a force lethality ratio that seemed (more often than not) to hold up during game play - both as a predictor of play balance and as a yardstick for victory conditions - I moved on to something else. I don't take the lethality values too seriously. From the start I did not believe that perfect numbers could be found to reflect all the variables involved in trying to quantify lethality because the usefulness of any weapon is as much a function of the terrain and situation at the instant as it is a function of the technical characteristics of the weapon. Example - in an open area against armored targets, the M1 tank might be a 100 point system. Put it in a jungle or down in a soggy gully, mired to its fenders in mud, and it would be worth about 10 :).

I figured folks would chime in with complaints or suggestions about the values listed in the Users Guide and I would then adjust them after a while, but I have only gotten a couple of notes about them in the nine months that the game has been out.

<<I placed a ZSU-23 on a terrain object {building} and I later fired at it from a NOE position behind a group of trees. The LOS checker found it to be out of LOS as did the Thermal LOS check. >>

Not a bug. The helo that was doing the shooting was positioned over a cell of town terrain with the town terrain being at elevation 0. The helo was at NOE but NOE when over woods and town is one elevation level higher than that terrain. For LOS purposes the helo was actually at elevation 1. When you use the LOS tool in the normal fashion it doesn't know that you are clicking on a helo. It assumes that you are checking ground level to ground level. Therefore you got a result of blocked line of sight. Try selecting the helo unit before triggering the LOS check. This will pin the LOS check to the helo and you will get a true reading.

<<I would really like to know when you plan on finishing the PC version of TacOps.>>

So would I <grin>. It will be done when its done. I don't pay much attention to the calendar - I just plug away at it all day, every day. One of these mornings I'll sit down at the keyboard and there won't be anything on the TacOps Windows list and there won't be any mail from the publisher, the port guy, or the testers. The game will be released a couple of weeks later.

<<Could the delay have anything to do with Windows 95, since the PC version is supposed to run under windows?>>

No. The delay is due to my spending six weeks on the TacOps 0.1.2 update instead of the two that I planned. The gent doing the conversion can't get much done if I am making big changes in the code of the Mac version. Once I switched over to doing the update, I decided to try adding some of the bigger improvements on the "wish list". One thing led to another and the Windows port got delayed - as did the Mac version of Panzers East. On the plus side, everything that went into the Mac update will also go into the Windows version.

<<I gotta believe there is a much bigger base of PC wargamers than Mac wargamers.>>

You are probably right, but it remains to be proven that the return for me will be worth my time and stress after all the middlemen involved with doing and marketing the Windows version take their cuts <grin>. I hope I will be pleasantly surprised.

<<In the scenario review, the OOB incorrectly states that OPFOR has a MR Regiment, as opposed to the MR Battalion actually fielded.>>

Fixed with fan update to Team Savage to version 0.0.2.

<<The game got confused about who won: OPFOR successfully penetrated w/ a T80 platoon and entered the objective. At the end of that round, the game status report came up, showing US: Mission Failure, etc... However, I continued to play. On the next round, my Javelins in the town NW of the airfield WOKE UP AND STARTED DOING THEIR JOB... <g> and destroyed the T80 platoon. As you can see from the attached saved game, the Game Status Report now shows the US to be the winner (even though there are 23 minutes left! (Not to mention that it should continue to say "Mission Failure"))>>

Some would say that it should say mission failure since that was the result of the "official" game. Others would say that since the user had chosen extended play then the victory conditions should reset and the report shouldn't say anything until the 23 minutes had expired. Once a user chooses to continue a game that has been "officially ended" the victory conditions may or may not be tracked the same way they were during original play. It depends on your point of view. At the instant that you described, the US player was accomplishing his mission since there were no OPFOR units in the town. With all the different kinds of victory conditions that are possible it is hard enough for the program to figure out winner and loser in normal game play. Adding a bunch of routines to figure out how the user wants to "view" victory during extended game play is too much effort. Most games would deal with the problem by just not letting you continue the game. I decided to be a little more flexible than that :).

TacOps Gazette 95.20

<<Please take out the Marine's Hymn from the opening screen.>>

Not bloody likely <grin>. By the way, if you click the mouse as each splash screen appears then that screen's sounds will instantly stop and the screen will instantly disappear. Also, if you start the game with the Caps Lock down, you will bypass all startup sights and sounds - just be sure to later release the Caps Lock key as it will interfere with the program sensing some keystrokes.

<<I had trouble with the Canadian Javelin SAM--it was shooting through smoke. Game specs say it has no thermals.>>

I'll double check this but part of the 0.1.2 SAM changes was that smoke far away from SAMs and other anti air weapons does not block their fire against fixed wing air anymore even if they have no thermals. Prior to the 0.1.2 update smoke clouds had a very unrealistically high top height. After 0.1.2 the top of the cloud is conceptually much closer to the ground. Therefore, unless the cloud is very close to the observing unit, it will not block line of sight to a fixed wing aircraft.

Rule: A clear LOS from any anti air weapon is assumed to exist to a fixed wing airstrike or to a helicopter at medium altitude unless there is woods or town terrain or a smoke cloud within 125 meters of the SAM and that terrain or smoke cloud is directly between the SAM and the fixed wing or helo target.

<<If my understanding is correct that the OPFOR for a particular scenario is chosen when the scenario begins between a number of predefined ones, it would be nice to know which one it was at the end, or even select between them at the beginning. For example, in one Task Force Davis game, the OPFOR waited until about 2 minutes into the game, then scattered apart; in another, it bunched up a lot and made ICM quite effective. It made me want to know just who I was dealing with, and even just a simple scale of dumb-average-smart would be nice.>>

Your understanding is correct. I can't really add the selection feature you mentioned without a major change to the way the computer opponent works. The problem is that in addition to the random selection of which basic battle plan is to be used, many of the battle plans contain additional random factors. Trying to predict what a given selected battle plan is going to do and then laying out a text explanation to the user would be very complex.

<<I am confused by what the difference in the "variations" in the scenarios is. My understanding is the if I play, for example, Task Force Craig 1 twice, the AI will not do the same thing twice. Or will it and that is the difference between the variations?>>

Your understanding is correct. The AI is likely to play differently each time you repeat a given scenario or each time you play a given scenario variant. Each scenario and each scenario variant has anywhere from a dozen to multiple dozen different opening moves/strategies for the AI. In

general, scenarios that have the AI attacking will have more different opening moves than will scenarios that have the AI defending.

Scenario variants maintain the theme of a scenario but each variant provides a slightly different order of battle for one side or the other, and or different map entry schedules. To tell what is different between say Task Force Craig 1 and Task Force Craig 8, you need to compare the scenario description that you can read by using the "About Scenario" menu item. Using TF Craig 1 and TF Craig 8 as examples. Both scenario variants have identical victory conditions and the US force is the same in each. What is different is that in TF Craig 1 the OPFOR Motorized Rifle Battalions are mounted in weak skinned BTR armored personnel carriers and in TF Craig 8 the OPFOR battalions are mounted in the much more capable BMP infantry fighting vehicle. Another difference is that the OPFOR regiment arrives on map in a very extended column of battalions in TF Craig 1 (it takes many turns for the whole force to get on the map) while in TF Craig 8 the regiment enters the map with its battalions more or less on line (it takes many less turns for the whole force to get on the map). The result of the slight differences is that TF Craig 8 is a much different and much harder game to play.

<< I was using a SAM team as observers. I set their range to 0. An enemy tank drove by and they opened up! (suicide impulse I guess). Anyway, shouldn't they have just sat there?>>

My first reaction is that you did not in fact set their range to 0 <g>. However it is possible that the OPFOR tank spotted and fired on your SAM gunners first. Regardless of what orders you have given to a unit to limit its engagement range, if that unit is spotted and fired on by an enemy unit, it will automatically reset its engagement range to maximum in self defense.

<< I would like the "line of site" menu to stay on when selected. In fact, the best way for it to work would be if when it was selected I could click on a unit and all areas hidden from view would turn gray.>>

The number crunching required to turn all hidden areas gray would be so slow that you probably would seldom use the feature if it was provided <g>. This has been tried.

<<Also, as the Opfor really gets rolling in a successful attack, they tend to get reinforced with various units-helicopter support, more arty etc. I like playing Opfor so how can I game that?>>

Use the new "Add Unit" menu item during the setup turn to give more helos to OPFOR. Park them somewhere out of sight on the edge of the map and just observe a gentleman's agreement that you can't use them until certain conditions occur later in the game. Do the same with the "Change Arty Support" Options menu item.

<<I was thinking about artillery the other night, after seeing 14 BMPs in the same pixel, and being out of ICM. :-(It seems to me that if a pixel is 10m to a side, then you can fit a BMP about 4 across and 2 deep, for 8 physically present in a pixel. While I understand your reluctance to introduce the concept of stacking (and enjoy not having to worry about it), it seems that the impact of artillery of any kind (except smoke) and of air strikes would be much improved if hitting a unit this bunched up. In other words, in such a situation, the chances of

taking out a BMP with HE would be about as good as the chances of taking out a BMP as part of a dispersed group when firing at that BMP with ICM.>>

Although the center pixel is used as a compromise for line of sight and spotting purposes, those 14 BMPs are not conceptually treated as being in just one pixel for combat resolution purposes. They are treated as being dispersed more or less in the area of map that is covered by the small sized unit marker.

<<By the way, have you noticed the sheer percentage of your customers who seem to be grognards?>>

Yes, as far as the folks who are still playing and posting are concerned. I think the demographics for the total buyers to date are a little heavier toward "casual gamers". But they have moved on by now to other titles <grin>.

<<... [my friend] is now saving up money to get a used Mac *just* to run TacOps on!>>

Super! Make sure he gets a "good" used Mac though. Panzers East is going to require System 7 and 256 colors/shades of gray <grin>.

<<I have used empty transport helos to "clean up" infantry that my ATGMs have shot out from under them, and now wonder how unrealistic a practice this is. I'd appreciate your comment on this.>>

Very unrealistic in my opinion. Transport helicopters and especially their pilots are extremely valuable and hard to replace assets. Any transport pilot that loitered in the forward battle area after unloading his cargo and then further hazarded his aircraft by going out of his way to plink at enemy infantry would likely be immediately grounded if not court martialed - desperate situations excepted of course.

<<what is a 'Chimera'?>>

Apparently it is a bad dream of some Canadian defense planners that won't go away <grin>. It does not exist except "on the drawing boards" and my guess from trying to use it in TacOps is that it never will. Apparently it often turns up in staff exercises at Canadian military schools.

<< More photos would have been appreciated in the last update. >>

Public domain photos are very scarce and I could not afford the time necessary to get permission from more manufacturers to use their public relations photos.

TacOps Gazette 95.21

<<Is it possible to do a turn over in a PBEM game? For instance, in the initial attempt, I'd use helos to spot enemy positions by having them hover at medium altitude. Then I'd quit the game and open the previous saved game file and reissue orders using the extra bit of intel.>>

Yes <sigh>, that ploy can be used - unless a middleman is involved in the orders exchange process. There is no reasonable way to prevent the "replay/extra intel" form of cheating in most computer games. It can be prevented in TacOps, due to the way the game works, by using a middleman for turn exchanges. By that I mean that each player sends his orders file for a given turn to a middleman. When the middleman receives both the US orders file and the OPFOR orders file for a given turn he then sends the US file to the OPFOR player and he sends the OPFOR file to the US player. This slows PBEM games somewhat but it does prevent the kind of cheating that you described. Personally, I can't fathom why anyone would cheat while playing a game against a human opponent. I usually don't even bother to use passwords in the PBEM games that I play <grin>.

<<Will there be an anti-cheating feature in the next update?>>

The program is full of them already. I have no more solutions to offer.

<<Anti cheating suggestion. US: saves game as US Game T01 and sends US Orders T01
OPFOR: saves game as OPFOR Game T01, sends OPFOR Orders T01, receives US Orders T01, and resolves combat (password protection then kicks in for OPFOR Game T01). However, if OPFOR quits after combat for T01, he would be "locked out" of the game!>>

This won't defeat the problem that you are concerned with. The player could have several copies of the game program on his disk. The player could make several copies of the US Orders T01 file. Wouldn't matter that he was locked out of the game in TacOps copy 1 since he could use TacOps copy 2 to do the turn over.

<<Also, how does the password feature already present in the game work?>>

As of version 0.1.3, the password is encrypted.

<<When I got into my first PBEM game about a couple of weeks ago, I told my opponent that there were no do-overs since I believed that would get the game out of sync. I e-mailed him that the major had already anticipated that particular ploy. I had no idea I was wrong. :-)>>

It should not be necessary to tell an opponent that he can't do-over. There should be no do-overs because that is the wrong way to play the game against a human. The fact that cheating is technically possible does not make doing so right. Cheating in a recreational game against another human is stupid, unethical, immoral, disgusting, sick. If you think that someone would cheat you in a game of TacOps then why play them in the first place? Cheaters should be

shunned for the low life, weak charactered, mentally deficient scum that they are. What more can I say?

<<The problem is, is that the update you sent out, the OLD map (as well as scenarios) had the _SAME_ version number. When I look at both of them side by side, there is NO DIFFERENCE. I can not distinguish which is the update, and which is not. This is not good. So I ask again [sarcastically :-)], why would I or anyone else want to replace the SAME version? I have no way to distinguish between the two.>>

Although one can easily distinguish between old and new TacOps support files by comparing the version number in their Get Info Windows, why go to the trouble? Comparing them file by file is a waste of one's time. Just copy everything that is in the update package into your TacOps folders. Every file that is in the latest update package is guaranteed to either be just exactly what you already have or else it is a file that is updated/newer. There is no need for you to bother trying to figure out which files were actually updated for your individual situation. So some things get replaced that technically did not need to be. So what <grin>?

My update packages are intended to be universal updates so that any TacOps user can get his TacOps system up to date with one download regardless of which engine version he is starting with. I think this is more convenient for the user than to require him to download every earlier update package and apply them incrementally until reaching the current level.

Consider the update and file numbering scheme from the perspective of what is needed to support thousands of TacOps users - each of whom is not necessarily at the same point in the update process as you are. I presume that you recently applied the 0.1.2 update package. In your case your Map07 already had a version number (as viewed from the Get Info window) of 0.0.1. Map07 in the 0.1.3 update package also has a version number of 0.0.1. That is because they are the same map - no change - no update was made to Map07 between the 0.1.2 update package and the 0.1.3 package. Actually Map07 hasn't been changed since around the 0.1.1 update. In your case, copying Map07 into your TacOps folder was a waste of a fraction of a second. However, if you were a TacOps user who was still puttering about with a game engine earlier than 0.1.1 and you happened across the 0.1.3 update package then Map07 0.0.1 would have been new (i.e. an update) for you. On the other hand, Map01 with version number 0.0.3 is in fact an updated file for you as well as everyone else since that version had not appeared in any previous update package.

The TacOps update package in its current form takes care of every user with a few mouseclicks plus some group drags and drops - and it does it for free. The current update format also allows me to keep some level of sanity while trying to maintain and keep straight on my end the current status of the hundred plus files that make up the complete TacOps system

<<I little while ago I read a discussion (on this board) about Stinger Teams "riding on top" of APCs in TacOps. How is this done? Are any Stinger (or OPFOR SAM) teams loaded on an APC said to be riding on top?>>

In TacOps, a SAM gunner embarked in an APC can still fire his weapon at fixed wing aircraft and helos - you don't have to do anything to make this happen - even if the APC is moving. The game engine assumes that the SAM gunner is riding on top, standing in a hatch, or dismounting and firing from the short halt - whatever is appropriate.

<<If so, what does this do to their effectiveness vs. standing on the ground?>>

In TacOps, a dismounted, stationary SAM gunner is significantly more likely to acquire a target, fire on a target, and or hit a target. Dismounting SAMs is particularly important in towns.

<<Or are you talking about a stationary APC with the Stinger team unloaded? (So they can fire and bug out.)>>

That would be the best employment.

<<If a Stinger team is moving in foot, does this reduce their acquisition and hit probability?>>

Yes, but not as much as would be the case if they were traveling in an APC.

<<During Team Sposito, an Mi24 fired 57mm rkts through an antithermal artillery smoke screen at a Dragon2 unit.>>

Not a bug. If the helo was at medium altitude then it may have been firing "over" the smoke. Smoke doesn't go as high now as it did before.

<<If one had an AOL account, where would one find the TacOps support folder?>>

Log onto AOL. Type GO MGM, open the folder named "Strategy & Tactics", then open the folder named "TacOps". There you will find 300 or so recent messages about TacOps. Several thousand older TacOps messages can also be downloaded from the TacOps archives in the MGM software library - plus TacOps updates and misc freebie support files like printable maps, archives of play hints, strategy articles, etc.

<<Now that we have M557's, Leopard I's, dismounted Milans and we can rename the green team, a few Aussie scenarios seem on the cards. ;-)>>

There would have been an Australian module in the update but several months ago the Australian government apparently decided that national security was being subverted via the Internet <grin> and my few Australian military contacts stopped talking to me. The Canadians were a bit more cooperative.

<<LAV25s and M2/3s can't elevate their guns sufficiently to fire at aircraft>>

They can often fire at helos but I think it unlikely that they could track a fixed wing aircraft.

<<UAVs don't give off enough heat to make targets for Stingers/SA16s>>

I have differing notes on this, but the majority say a small recon UAV would be a tough target for a STINGER or SA16.

<<Jets seem to ignore UAVs>>

In my opinion, jets move too fast to be able to consistently spot let alone down a small recon UAV. Picture an F16 chasing a model airplane <grin>.

<<I have observed that the computer AI uses UAVs very poorly ..>>

I agree.

<< I was unable to get the "Set Target" button to work on the Sniper orders window. I read the manual and followed the instructions. I opened the Sniper Orders window, I clicked on the "Set target" button, I then clicked on the specific unit I wanted the Sniper to target and I got a yellow movement dot on the target unit as if I was giving an order for the Sniper to move to the location occupied by the target unit. The button did not change color. Am I doing something wrong?>>

I just tried to do the same thing several times and I had no problem. There is no "Set Target" button, so I assume you mean "Target Unit", "Set DF TRP", or "Target Type". Is it possible that you are clicking on the indicator light (green, yellow, or red) inside the button instead of the brown active part of the real button? The indicator light is only active as a button if a target priority has already been assigned and then it provides info - it does not set target priorities. When you click on the brown part of the button, do you immediately get a cross hair cursor? If the normal arrow cursor does not change into a cross hair cursor then you are doing something wrong. Try clicking somewhere else inside the brown part of the button named "Target Unit" besides on top of the indicator light. You should get a cross hair cursor.

<<...very curious about whether it is the Leopard 2 or the Leopard 2i that is modeled ...>>

You will have to draw your own conclusions. Based on info provided by a Canadian officer I gave the TacOps Leopard 2 the same armor protection as the best depleted uranium package on the US M1A2 tank and I gave it the same gun accuracy and penetration as the US M1A2 tank.

<<.. the army [not the US army] bought some 700 MT-LB and 300 BMP1 for almost "nothing". Well, this means we would like to have those units on the "green" side of the game. Is it possible to put red units on the green side?>>

It isn't currently possible to do that in the game, but it would be possible if I added such units to the green force data base and some more code. Unfortunately, I have to stop fiddling with the Mac version so that the Windows coder can finish his work <grin> and I have now stretched the original TacOps game engine about as far as I dare. I doubt that I will add any more units or weapons until TacOps II comes out in late 96.

<<Any news on Panzer East and TacOps for Windows.>>

Panzers East Mac version is still some months away. The windows version of TacOps should be out within a couple of months.

<<[a friend] made a comment that TACOPS artillery smoke degrades the ability of thermals and reduces the Ph of weapons so equipped. Is this so?>>

Yes, this penalty is assessed as a minor, general inconvenience factor and is not related to the presence or absence of thermals. If the target unit or the firing unit is inside smoke then firing weapons get not more than a 10% decrease in accuracy. Firing through smoke is not tested - only smoke at the target point or at the firing point is tested.

<<How does one transport a ZU23 AA gun aside from a HALO helicopter?>>

One doesn't. I put the ZU23s in just for special static position situations. When they were added I did not have the time to add and test a huge block of code to take care of limbering and unlimbering towed weapons.

<<Are AT/AA guns going to be ground transportable in the Panzers East game?>>

Yes.

<< In the terrorist training camp scenario I have not been able to place the sniper/recon units anywhere on the map except in the set-up zone. In several places it states that these units may be placed anywhere on the map. How?>>

The 0.1.2 update introduced a bug that wrongly disabled the natural "put em anywhere" status of sniper/recon units. This was fixed in the 0.1.3 update.

<< I haven't seen a summary document for the new scenarios and was wondering if I just missed something or if it just isn't there!>>

Should be on your factory disk. Look for a text file named "Scenario Disk 1 Guide". If you can't find it let me know and I'll email it to you.

<<A platoon of T-80's overran a Stinger team, and the team took out two T-80's with their SAMS. Is this realistic?>>

Driving directly over infantry units in TacOps can be hazardous to tankers <grin> however I am confident that the T80s were not killed by Stinger missiles. Check the unit info for Stinger teams and you will find that they usually also have a couple of AT4 disposable anti armor weapons (most US units do, same as most OPFOR units have some sort of disposable RPG launcher). I am sure that is what killed the T80s.

<<Could a stinger be used as a short-range, ballistic weapon?>>

Maybe against a soft skinned vehicle in real life but not at all in TacOps.

<<Could it "acquire" a tank?>>

Probably in real life but not in TacOps

<<Most importantly, could a Stinger warhead penetrate T-80 armor? Perhaps from the rear?>>

No way - not in real life and not in TacOps.

<<So now I have map 1-9 and 16...>>

The "real" TacOps Map16 is from the new add on scenario disk and it was not included in the 0.1.2 update package. So I assume what you have is the "bogus" Map16 that was hacked and uploaded by a user some months ago. The bogus Map16 is unauthorized and is unverified for consistency with the TacOps game engine. The bogus map is very small and appears to be a small island surrounded by water.

<<I tested a theory I had today concerning the IGNORE SETUP LIMITS option. An unscrupulous player can cheat on the very first turn of a PBEM game by choosing this option. ... I've not had the time to check and see if the opponent in a PBEM game was notified if the opposing player chose to IGNORE the limits. >>

This feature can not be used to cheat. In PBEM and network games a player is notified if his opponent has used the "Ignore Setup Limits" option. If your opponent uses this feature you will get a large and very noticeable dialog window when you read his startup orders.

<<I thought I read somewhere that I could re assign unit designations in the unit info window. I've gone back through the manual, and back through all the documentation I could find, but haven't been able to find the procedure.>>

I think the scoop is in the "Game Changes" text file that came with the update.

During the orders phase click on a friendly unit to open its Unit Orders Window. Zoom the orders window to it wide form. In the lower right corner you will see a wide, white rectangle. Click in that rectangle and a "naming window" will appear. Type in "Alpha Co" or whatever and hit return.

TacOps Gazette 95.22

<<Well, I've been playing TacOps for some time now. Let me preface by saying that it is the single best "war-fighting" game I have ever played...>>

I always shudder whenever a message starts that way. It usually means that long pages of criticism follow <grin>.

<<It seems to me that with the update smoke is essentially useless. Not only can vehicles and personel see in it and through it but I get the impression it doesn't even effect hit probabilities.>>

The update didn't change the smoke routines. It is true that smoke doesn't do much in scenarios where most vehicles and ATGMs are equipped with thermal sights - same in real life. In TacOps, smoke will blind most infantry units though and will cut down on losses to their RPGs except at point blank ranges. Unless units are at point blank range (less than about 100 meters) smoke will prevent spotting and firing by all units that are not equipped with thermal sights. Also, even thermal equipped units that are firing out of smoke or that are firing into smoke have about a 10% reduction in accuracy as a general nuisance factor.

<<If a plane is shot down does that decrease the chances of receiving further air support. I assumed that would be the case but sometimes it doesn't seem so.>>

Your air support is defined by the "slots" that contain aircraft names in the Air Support dialog. If an airstrike is "shot down" or if it drops bombs then that airstrike is removed from further use. If an airstrike can not find a target to drop its bombs on, or if an airstrike attacks a helo rather than dropping bombs, or if an airstrike is aborted (but not destroyed) due to effective ground fire then that airstrike will generally (but not always) be available for further use.

<< I was hoping I could get some suggestions on linking scenarios. What I mean by that is this; playing a final scenario (for the 'win' or 'loss') in which the starting material, reinforcements and timing were determined by the outcomes of previous scenario games. For example, playing TF Harper in which the reinforcements are taken from the surviving units of a game of Team Hill. I was thinking of trying to get the tournament players interested in something like this.>>

It is not possible with the current game engine to do this with a "normal" scenario. The only way to approximate it would be for you to build and play a custom scenario. At the end of the custom scenario you could then build a new custom scenario manually based on the results of the first game.

<< I'm presently stuck at Team Cahoon. I am always defeated by running out of time trying to dislodge the three Infantry squads. How do I dislodge them? Arty doesn't help much, doesn't attrit them, simply suppress them.>>

First get rid of all enemy armor. Then attack the enemy infantry with a combined arms assault in the following manner. Get good observation of the enemy position then shell the enemy infantry

with HE or ICM until you have good accuracy and are able to suppress the infantry. Switch your arty to smoke for one mission to blind the infantry. Move toward the smoked position with tanks and APCs - APCs leading. About 200 meters from the enemy position stop your vehicles and dismount your infantry. Have your infantry assault on foot. When the arty smoke clears, the enemy infantry will begin to fire at your infantry. This will reveal their position to your tanks and APCs and your vehicles should begin to fire into the enemy infantry with good effect. Keep your infantry moving toward the enemy infantry until the enemy is eliminated. A few turns of this should do the trick for each enemy infantry position.

<<In Team Kelley I destroyed enough of the OPFOR to prevent its exit goal. The 'result screen' popped up and said that BOTH sides had a achieved mission FAILURE. Any comments?>>

The report was technically accurate in that at the instant that the report was made the US had not yet accomplished its entire mission. In your game the program recognized that OPFOR could not possibly win. However the program should not have ended the game since it was not yet certain if the US side could win or not since the US side not only had to prevent the exit of OPFOR units but also needed to exit a number of its own units. As a result of your note, I fixed this in the 0.1.3 update.

<<I insist you add 'Weapons of Mass Destruction' as an option.>>

I doubt that I will ever add 'Weapons of Mass Destruction' as I still see no gaming point in them being present in a tactical game of engagements lasting only a few hours.

<<I've been playing on a local AppleTalk connection. We seem to always run into a strange discontinuity with our games, though. ... [example] my opponent calls in an air strike and when it arrives, his computer tells him that some SAMs shot at the fighter but the mission went through, destroying one of my T-80s. On my screen, however, the fighter comes in, and is destroyed by one of the SAM launches.>>

Something is causing the random number generator in your Macs to behave differently. The most likely cause would be something (a screen saver or a novelty INIT?) going on in the background of one or both Macs that is also pulling numbers from the Mac random number generator. The random number generator is "seeded" with the same starting value on both Mac at the beginning of each combat phase. If something besides TacOps also pulls a number from the random number generator during a combat phase then the number sequences will be go out of sync and you will get different battle results on the two computers.

<<When there are six planes in the menu does the game engine stop determining if you receive additional air support until you use some of them?>>

Yes - it stops checking for new air support - six missions is the most you can have "on hold" - once you use one up, the game will start checking again.

<<In TF Taylor, the "about this scenario" file says that the "off-board" support consists of 2x155mm howitzers and 4xF16/F18. The actual support at the start of the game is 1x155mm howitzer, 1x227mm MLRS and 2xF16/F18.>>

Is a typo in the about scenario text. The correct starting support is what you described - i.e. 1x155mm howitzer, 1x227mm MLRS and 2xF16/F18.

<<... noticed that the US always receives at least two more planes by the tenth turn. Are these two extra planes part of the 4 that are listed in the "about this scenario" file or is this another coincidence and the actual number is supposed to be two?>>

The actual starting number is two. It is not exactly a coincidence since the US player has a 5% chance each turn of getting an additional air mission.

<<How would I go about submitting a DYO scenario for publication/playtesting/AI writing?>>

Send me a word description of what you would like to see in a scenario with victory conditions, friendly and enemy order of battle, and support desired. Use a format and provide information similar to what you see when you use the "About Scenario" menu item. If you want a new map (a good idea since most folks are tired of the current maps) to go with your scenario idea then a map sketch in PICT format would be useful. The map sketch does not need to be fancy, for example most of the maps started out as black and white drawings with only simple lines for roads and blobs here and there to show where the high ground, woods, towns etc were desired to be. The most important thing to show on a map sketch is a line somewhere that indicates 1000 meters - so that I can determine the scale of your drawing. I don't know when I will be working on another scenario disk though. Right now the Windows port and Panzers East are taking up all my time. By the way - all such submissions become my sole property and I assure you that I will selfishly try to make a buck from any that are useful <grin>.

<<I am playing my first offensive game, [Stubblefied] or something like that, and was trying to figure out how fast each unit moves... >>

My quoting to you the basic and terrain modified movement rates used in the code for the various types of units would probably not be very helpful. A better approach would be for you to setup a test game and to experiment with giving orders to the three basic classes of ground units (tracked, wheeled, foot) to move along roads, go cross country, thru woods, etc. Observe how much ground a given class of unit can cover on your screen in one or two minutes. Use an index card for each class and mark the distance along one side that that type of unit can travel in woods terrain. Mark another side for clear terrain, roads, etc. The markings that you develop will be good guides for planning but remember that things like firing and being suppressed will usually cause units to cover less ground per minute. You can also see approximately how long it will take for a unit to get to a given waypoint in its future movement path by clicking on the little black button in the box labeled "Orders" in the orders window. Doing so will display a time next to each waypoint on the map - see Users Guide page 26.

<<Also, the Stubblefield scenario has a redraw bug. I didn't see a new map scenario for it in the updater. One has to move to the other side of the map and come back for it to correctly draw an area that had a dialogue box over it.>>

If you see some sort of screen oddity, use the "Redraw Map" menu item. Is a lot easier than scrolling the map around. The Stubblefield scenario has not been previously reported as having a redraw bug in it. Are you using an AV Mac? Some AV models of Macs have bugs in their operating system ["bugs" in my opinion - there I have finally publicly said it - grin] that cause drawing problems. There are also some sharware /public domain novelty INITs around that can interfere with screen updating. If you continue to see this problem, send me private email on it and I'll try to make it go away on your system.

<<One more thing, could it be patched so that you don't have to hold down a modifier key? Like instead of pushing command i you just push i? >>

Self appointed "guardians of the Mac user interface" get very annoyed with coders doing common sense things like that in game interfaces and they post long public flames about it <grin>. Experiment with the TacOps interface and I think you will find that a lot of times the command modifier key is in fact not used by the program. It is almost always required for menu items but usually is not elsewhere - i.e either way will work, command "something" or just "something".

<<The M1s seem to fragile! If one believes reports from desert storm, they are pretty hard to kill.>>

Desert Storm was four years ago. M1s were hard (actually almost impossible) for Iraqis to kill because the Iraqi army was poorly trained, poorly motivated, had inferior fire control that allowed their tanks to be hit by M1s before the M1s were even in range of their weapons, and most importantly because their tank ammunition could not penetrate the M1s armor when they did manage a hit. Replicating this would make TacOps a pretty boring game - however If you prefer invulnerable M1s (1) use the preferences window to deny thermals and improved penetrators to OPFOR and (2) change all OPFOR tanks to the Iraqi T72 with steel or tungsten penetrator.

<<Where do all of those damn 120mm mortars that the OPFOR has come from...>>

Every OPFOR battalion has a battery of them.

<<They [120mm mortars] probably result in more dead javelin crews than all other stuff together! Does anyone have tips on how to avoid this ?>>

Fire a volley or two and then immediately move your Javelin teams several hundred meters to a new firing position.

<<Have you ever considered consolidating questions by topic (e.g., it seems like there's a "when is PZE/WinDoze/etc. due out?" questions in each issue.)>>

Too much work. I just barely get the Gazette out once in a while with the current shotgun approach <grin>. Think of as more of a weekly digest of my better email than as a magazine/newsletter.

<<I was just wondering about the hit probabilities table for the BMP-3's Stabber ATGM. The hit percentages don't seem right (at least, they aren't as good as advertised in real performance!). Could you please just check the table in the game and let me know? Thank you,>>

The percentages in TacOps don't reflect the perfect weather, calm gunner, training range percentages quoted in manufacturer's handouts <grin>. My notes and the game indicate the following probabilities vs a stationary target. 100m 60%, 375m 75%, 625 to 875m 90%, and 1250 to max range 85%. The 100m to 375 m probabilities are low because the missile moves along pretty fast and thus its flight is difficult to adjust onto targets in the first few hundred meters. The mid range is good at 90% - a pretty standard value for all third generation ATGMs. The long range probability drops off a bit because (1) there is more chance that the target will see the missile coming and be able to dodge it and (2) the need for course corrections are more difficult for the gunner to sense through his sights at longer ranges.

<<...so if I understand you, in real life, M1s are much tougher [than] in TacOps ?>>

It depends on who, where, and when M1s are fighting. If we are talking about fighting today against anyone other than a NATO ally, then M1s are tougher than they are portrayed in TacOps - at the default preference settings which are OPFOR thermals and advanced penetrators. If we are talking about fighting in the near future and if the enemy can afford to switch to staballoy/depleted uranium penetrators and advanced fire controls then the M1 might well be as vulnerable as portrayed in TacOps.

<< Or would real T80s, with Real russians, and real tungsten penetrators make swiss cheese out of our beloved Abrams as well ?>>

In my opinion a well trained and motivated enemy with a numerical advantage could get side and rear kills against the M1 at close range using tungsten pentrators.

<<Maybe I just can't execute this move very well, but once they come in contact, sending APCs in to get them results in a high (unacceptably high) level of APC casualties. >>

There is rarely time to "send APCs in" to get ATGM teams. The APCs have to be colocates with the Javelin gunners at the firing position so that they can load up right after the volley and scoot to a new firing position by a concealed route (i.e. a route that is out of observation of the enemy).

<<I down loaded the 0.1.2 update 2 weeks ago and in it were the scenario updates, including those from the "Scenario Disk #1". I just received the Scenario disk. I was careful not to overwrite any scenarios already in my TacOps folder, so that should have resulted in the AOL sourced upgrades being in place. It is hard to tell because it does not appear the version number in the files info windows were changed. Did I do the right thing? >>

I think not. The update installer program only updates the code inside the TacOps game engine. It does not copy or move the updated scenario files. To "install" the updated scenarios you need to drag them from the update folder to your game folder.

<< I now have two folder for some scenario collections. Nankervis, Hurly, Hoeft all have two folders. One plain, the other labeled 0.0.1. I assume one of these is the upgrade. Which one do I keep?>>

In each case keep the scenario with the highest version number - as viewed from the Mac desktop Get Info window - and trash the older version. Most of the time updated scenarios have version numbers of 0.0.1 but a couple are 0.0.2 and maybe even 0.0.3.

<<I don't see a Map#13. Don't tell me you skipped the number?!>>

I skipped Map13. Just call me superstitious <grin>.

<<I recall there was a way to sequentially select units in TacOps (by pushing a key). Do I remember right and if I do, which one is it?>>

There is no such feature in TacOps.

<<Got a question about this increased OpFor Enhancements. Should I play with them on, or off? And, why was it required? If one is concerned with "realism," wouldn't the scenarios victory conditions to be adjusted to reflect the lesser ability of OpFor units/equipment?>>

Use the setting that suits your wargaming interest. Both ways of playing were provided in an attempt to provide both a game and a reasonable simulation in one game engine. Simulation is important to me personally but it is the "gamers" that pay the bills <grin>.

<<Have you ever won as OPFOR in DeGoey>>

Yes. Use the truck company in the large city in the northwest corner of the map to move a line of infantry and SAMs forward to gather intelligence, to observe for arty, to shoot down troop helos, and to generally harass the US player while he is seizing the facility and is setting up his defense.

<<So my question is, are the scenarios included in the game created for the bogus OPFOR forces with unrealisic tech/training, or are the scenario victory conditions based on realisic goals with realisic forces?>>

From a perspective of a close match or a "fair fight" the scenarios need for OPFOR to be given thermals and advanced penetrators. I don't see how OPFOR (AI or human) can win without them. I consider "bogus" and "unrealistic tech/training" to be debatable. All the real world OPFOR has to do to gets its military up to Western standards is to make some organizational changes and spend a lot of money.

<<And if this is such a big deal, why are players so into making OPFOR unrealistic? So what if 75 T80s get brewed up in a scenario? What does that say? It says you need to give the U.S. player 2 M1s instead of 4 then.>>

Most people feel that playing the game at what you consider to be realistic settings results in a kind of Space Invaders game where the US player just camps in a tree line, lays smoke, and shoots through the smoke to kill enormous numbers of OPFOR vehicles while taking no losses. Most gamers find that approach boring.

<<I'd rather play OPFOR with real units/weapons vs. the U.S., and still get my butt kicked, but win based on VC (which would have been a Soviet 80's strategy anyway).>>

And the game as it is currently written allows you to do that. Just give more optional units to OPFOR and use the delete units feature to reduce the size of your force. You can have it your way and so can the gamers <grin>.

<<we had better confirm the version used with our opponent.>>

TacOps now automatically checks at the first orders exchange to make sure that both players are using the same version of game engine, scenario, and map.

TacOps Gazette 95.23

<<When should the enthusiastic, but understandably cynical, TacOps fan expect this kind of support (i.e. updates, TacOps Gazettes, scenario disks) to stop?>>

When would you expect it to stop or when would you not care that it stopped? By that I mean, at what point would you consider that you had received adequate/fair product value and support in return for your initial expenditure? Remembering that we are talking about a \$39 to \$49 product here <grin>.

In my opinion, user support and program maintenance should not stop as long as there are continued title purchases by late comers and continued online comment and questions from old and new buyers. It is my intention to keep modern TacOps on the market indefinitely. The updates so far have been free but at some point (probably late next year) I will do a total rewrite that will justify selling a whole new box - TacOps II.

In my opinion - free updates for a year or so keep a game title interesting to and in play by the original "first calendar quarter" buyers. Their online chatter and good word of mouth recommendations cause late comers to continue to buy the title well past the six month "dump it" point that most designers and publishers seem to observe. Every couple of years (1) the user requests for more features will grow sufficiently and (2) the "average" computer will advance significantly enough to require and allow more sophisticated things to be done by the game and a major rewrite will be justified. As long as a major rewrite justifies the purchase of a whole new box, I think this cycle can be repeated indefinitely.

<<What is the best way to win team Cahoon against the computer AI? I'm still not too good at being on the offensive.>>

Patience and combined arms. First check the east end of the town for OPFOR stragglers and clear it if necessary. Then move most of your force eastward using terrain cover along the top or bottom of the map. Send small scouting groups into the open east of the town with good covering fire available from the majority of your force which is kept back in the edge of town or in nearby woods. As you draw fire, patiently mass your direct fire and arty support to eliminate the forward enemy positions with minimum casualties. Towards the end of the game move all your units to the top or bottom of the objective area and then turn them north or south as the case may be, put them on line, and then just sweep the length of the objective area. Helps to lead the sweep by a couple of hundred meters with a moving barrage of arty fire - keeps some of the ATGM and RPG gunners in their holes <grin>.

<<I just started my first TacOps PBEM game, and I'm having a hard time getting the turns to my opponent. I'm on TacOps 0.1.5, and I am binhexing the turns (Binhex 5.0) and attaching them to an e-mail message (I use pine on a unix host). I receive his turns, no problem, but I don't know why he's not getting mine.>>

If your opponent does not seem to be getting the attachment at all then perhaps (1) his email reader can not deal with attachments or (2) perhaps he has set his email reader to ignore attachments or (3) perhaps his email reader is parking the downloaded attachments somewhere on his hard disk that is unknown to him. I suggest you ask him to check the various preference setting that his email reader uses and to do a careful search of his hard disk.

If your opponent is getting the attachments but TacOps can't see them or load then perhaps his or your email reader, or his or your encoding program is failing to include the Macintosh file "creator" and "type" info with the attachment. If this is the case then I suggest you both check the preference settings of your email and or encoding programs. For example, Eudora has a preference setting titled "Always include Macintosh Information" - unless this is set, an attachment may lose its Macintosh file "creator" and "type" info.

<<I work weird hours and when I get home after midnight, I would like to unwind by destroying OPFOR. However, every time I run TACOPS, it starts out VERY LOUD. How can I fix it so that the sound remains low or soft?>>

Put the "Caps Lock" key down before running the game. This will skip the startup sounds and the splash screen and allow you to get to the volume control undetected <grin>. Once TacOps is running, use the TacOps volume control slider to set the volume level. When you use the TacOps control to set system volume the program stores the setting in its preferences file and that is the volume that will be used the next time the game is run.

<<How are the scenarios balanced. In particular Gallagher? Are they balanced so the AI can win pretty 50% of the time, or are they balanced so a human OPFOR player could win 50% of the time?>>

I think someone recently asked a similar question and I think I answered it wrong the first time <grin>. My original intention was that scenarios would be primarily balanced for play between two humans having about the same skill levels. I just remembered that I suggested in the original manual or maybe it was in the FAQ file that an experienced player should add optional units to OPFOR when playing against the AI. Having said that, I am not willing to state that every scenario is in fact perfectly balanced for human vs human play. It seems reasonable that I would have been less than perfect in at least some of the 100+ scenarios that now exist <grin> - also some of the enhancements that have been made to the game since its release have altered balance for some scenarios. The Team Kelley variants come to mind as being hopelessly unbalanced for human vs human play.

<<Highlight all places on the map that are visible from that unit.>>

The last time I tried to code this, the number crunching involved slowed the function so much on most Macs that I didn't feel anyone would use the feature more than once <grin>.

<< Further, is there anyway that you can keep the units from resetting their ranges? It seems that once I set the Abrams units to 2-2.5K initial ranges, the units reset it once the battle gets rolling, i.e. return to the unit and the range is reset to max.>>

You can use the option key and the "Set DF TRP" button to set a hard priority target reference point that is centered on a unit. Hold down the option key as you click on the "Set DF TRP" button, when you get the crosshair cursor click on the center of a unit, then when the range limit window comes up enter 2500. Obviously this tends to work only for stationary units as a moving unit will rapidly move away from the DF TRP.

<<Is it possible that the next release would actually have pictures of the maps used together with the scenarios?>>

Good idea. The only drawback is that the size of the PICTs would make the update so much larger. The size of the universal update at 1.4 meg is already a problem. Definitely time to put out a whole new game <grin>. "Printable" versions of the TacOps maps are available from the Mac games libraries of the major info services and from various Internet ftp sites. These files have full sized PICTs of every map complete with the map coordinate grid, including those in the add on scenario disk. They can be used with any paint program to make situation maps, note maps, etc.

<<Maybe a tank (or any vehicle) should always be treated as attacked from the rear when closing in to some specified distance from infantry and staying there for more than x seconds/minutes.>>

This is already in the game code. Any armored unit that closes to "point blank" range with infantry will be attacked by the infantry as if they had access to the rear of that armored unit.

<<Vulcan armed M113 unit ... does TacOps model this M113 variant, or are man-launched Stingers and SAs the only AA units? >>

The Vulcan gatling gun weapon system is not modeled in TacOps - I keep forgetting to put it in <grin>. Portable and vehicle mounted Stingers are present.

<<It's too bad we can't have "Green" vs "Green".>>

I tried to implement this in the development phase of one of the last updates. It proved too hard to stretch the current game engine that far. No promises, but I'll try to get it into TacOps II in late 96.

<<I'd like the capability to set up a command center-type game. The ability to combine several TacOps users in either real-time or PBEM into an interface that allows several players to play with and against each other, with each player controlling a company (or battalion) of units...>>

This is high on my personal wish list also. I work on the conceptual/design issues from time to time as a hobby but I don't know when I'll be able to do it "for real".

<<Off-board artillery is straight forward but on-board is confusing. In the various articles on the subject it seems that smaller bore artillery needs to be grouped for good effect, but what of on-board main artillery like a 155mm?>>

The game allows on-board artillery and mortar units to be split down to individual vehicles, tubes, and or teams but this is not generally a good thing to do as the effective beaten zone of the weapon is greatly reduced in the process. By this I mean that a salvo from an onboard arty or mortar marker representing six tubes will attack a much larger area of ground than will a salvo for an arty or mortar marker representing only one or two tubes. The more tubes in the marker, the more ground will be effectively covered by a given salvo. The only time that breaking down an onboard arty or mortar units might be beneficial would be the case where you want to lay a long and irregularly shaped smoke cloud.

<<Is the off-board designation of ONE unit equivalent to one on-board?>>

No. Off-board arty is not meant to necessarily reflect the fire of one discrete arty unit or even a certain size of arty unit. The slots in the off-board artillery support window provide greater levels of potential destruction per salvo than similarly named on-board units/markers. Each off-board arty slot typically represents a level of fire somewhere between one very hardworking battery and a lazy battalion.

<<In three separate cases, two AGS-17 teams allowed M1A2's to pass by (side and possibly rear shots) without even attempting to engage with their RPG-22's despite that fact that the range was never more than 175m and in one case was less than 100m. In NO case were the OPFOR guys under fire at the time (although the guys at less than 100m were subsequently taken under fire and destroyed). Is there something in the program that prevents the RPG's from being used unless the firing unit is actually being overrun?>>

Not unless the AGS-17 teams were suppressed from recent incoming arty or direct fire. Being suppressed reduces significantly (but does not eliminate) the chance that an infantry unit will fire. Perhaps they were out of ammo? Such units would only have one or two RPG-22s per team at game startup. Otherwise it was just a fortunes of war thing.

<<I'm sure you've considered NBC exchanges, but the use of even low yield tactical weapons in small engagement scenarios like those in TacOps would be "too easy.">>

Correct. NBC would tend to be too overwhelming in a tactical game of scenarios that last only a couple of hours. Need a different scale game to use NBC.

<<Is there a difference between F-18/F-16 and Harrier strikes?>>

Not in the current version of TacOps. Currently all airstrikes have the same destructive potential.

<<Just about EVERY SCENARIO uses map 1 or 14. How come you did not use the other maps?>>

Same reason I did not include a lunar combat option - at some point one has to stop coding and sell something to put food on the table <grin>. Up until near the end of development there was only going to be one map - Map01. Then I made some last minute changes that made the game engine more flexible. The ability to use a custom scenario template resulted and I wanted to include some more maps for folks to use with the custom templates. Since more maps were being added, I went ahead and did at least one scenario for each additional map. I then reached a date after which there was not time to do more scenarios.

<<I thought (as per the rulebook) that the "Team" scenarios were all Army and that the "Task Force" scenarios were USMC.>>

Team and Task Force refer to the size of the US force in the scenario, not whether it is USMC or Army. "Team" scenarios are those in which the US force is less than battalion in size. "Task Force" scenarios have a US force equal to or larger than a battalion.

<<You will see this in the saved game file that I sent you - at UTM 0605 a Bradley fired at OPFOR. Even though I had the unit's SOP set to retreat after firing, the Bradley MOVED FORWARD toward OPFOR!!!!!!>>

Not a bug. It was user error <grin>. First thing ... "Retreat" implies that a unit will move away from the enemy. There is no "retreat" setting in the TacOps unit SOP - the setting is labeled "reverse" and it is labeled that way for a reason <grin>. The Bradley's SOP was in fact set to "Reverse after firing". Before anything else happened, the Bradley fired a TOW at a BMP. This was what triggered the Bradley's movement. The problem was that you had the Bradley facing west when it fired - it had its rear toward OPFOR when it fired. Therefore when it dutifully executed the order to move in reverse, it moved toward OPFOR.

<<Could the Bradley have been triggered to move into the open by the arty fire?>>

Indirect arty fire will not trigger unit SOP settings. Only direct fire or direct arty fire will trigger SOP settings.

<<Over the weekend, I figured out how to use ResEdit to alter certain aspects of TacOps. For example, I ended up with a UAV with rocket pods, an XM8L1 with Hellfire missiles, and an Inf Team (4) with a 25mm Gatling gun.>>

I hope you used a spare copy of the game engine <grin> because you just blew that one for network and PBEM games.

<<do you know what happens when two computers with different TacOps try to play a net game?>>

(1) If AWP, UNIT, or WPN resources are altered, the random number generators will go out of sync. It may not always be real obvious, but each computer will get different battle results from the other in each turn in which there is combat - spotting and firing will also often be different.

Also, when the next orders exchange occurs - the US computer will be updated with the OPFOR order of battle as held by the OPFOR computer - the OPFOR computer will be updated with the US order of battle as held by the US computer. Some of the enemy units that each of you saw killed on your screens will magically reappear. For example ... say the computers get different battle results as a result of some resource being slightly different in one computer and that you as the US player see an OPFOR tank get killed on your screen but on the OPFOR computer that tank did not get killed ... when orders are next exchanged, that OPFOR tank will be alive again on the US computer.

- (2) Occasional mysterious system crashes (probably lockups) may occur when the program hits a patched/updated area of code where the game is hardwired for a certain unit to possess certain weapons and it does not because the UNIT and or WPN resources have been altered - i.e. the runtime unit and weapon data bases will not agree with stuff that is hardwired into the program.
- (3) If OPFOR UNIT or WPN resources are altered, the AI may perform erratically - the AI may enter a logic loop that hangs the computer.

TacOps Gazette 95.24

<<Is it true that TacOps 2 is coming out soon? If yes, then will we have to buy the new version or will an update be provided to current TacOps owners?(I probably know the answer for that one already!)>>

TacOps II is not coming out "soon" and you will have to buy it. TacOps II is unlikely to be released before very late 1996 or early 1997. TacOps II will be a complete rewrite of the TacOps program and it will be a much larger and more sophisticated game. TacOps 0.0.0 was released in August 1994. Since then I have issued nine free updates containing several hundred changes. Some of these changes were bug fixes but most of them were enhancements and new features. Many if not most of the enhancements were user requests. I did the TacOps enhancements in my spare time. I expect to have to work full time for six months to a year to produce TacOps II. I just can't afford to give it away <grin>. By the way, there will probably be some more free updates to the original TacOps. I still have a couple of minor cosmetic bugs on the TacOps list.

<<Does answering questions take up much of your time? I have this horrible feeling that these conversations might distract you from your real work. I wouldn't mind if you said so then.>>

Conversing with you and other TacOps players is (a) an important part of why I like what I am doing and (b) is needed if I am to improve TacOps and its future descendants. Answering your note took me about twenty minutes given that you managed to ask a lot of questions that no one has ever hit me with before <grin>. As for distracting me ... Panzers East will be released when there is nothing left to do on the "to do" list. Each minute that I spend answering mail pushes the release date of Panzers East back by one minute. This is neither good nor bad, that is just the way it is <grin>.

<<Attached are some saved game files. I have a feeling that my opponent is cheating me. One of my airstrikes did not appear in his turn even though it was due. Also notice how his units stay just out of range of mine and how lousy my guys shot. And he took longer than usual sending his turns (extra day).>>

I found no bugs and no signs of cheating. Your opponent seems to me to merely be using good tactical judgment. Here is the reason why your airstrike that was supposed to arrive in 2 seconds, did not appear. You had the airstrike targeted to hit a place very near where one of your infantry units was located. When I looked at the SOP setting for that infantry unit, I noticed that you had not checked the box labeled "Allow fire support on own position". Unless you check that box, your airstrikes and your arty will not fire at a target that is very close to that unit. The airstrike started its run, but when it noticed the friendly unit in the target zone it automatically aborted its run and reset its timer for another pass in four minutes.

<<Why is the penetration for the BMP3's 100mm kinetic energy round only 50mm? That's lousy! Is it supposed to be 500mm?>>

50mm is the correct number. The round currently fired by the 100mm gun on the BMP3 is actually a low velocity, high explosive, fragmentation round. I know of no high velocity armor piercing round or HEAT round for it. The 100mm gun on the BMP3 and the BMP3's turret mounting (and probably its chassis) are probably not strong enough to allow the firing of a high velocity, 100mm solid shot or penetrator rod. The 100mm gun is intended for use on soft, area targets. If the BMP has an armored target it fires its ATGM (for very hard and or distant targets) or its autocannon (for APCs at close range).

<<What's the best scenario (balanced and fun) for two players?>>

I think most people would say "Task Force DeGoey" and I would not argue that call. However, a scenario that is often overlooked is "Team Savage" - the airfield defense by USMC stragglers vs an OPFOR battalion mounted in BTRs. Most players seem to think that it is a walk over for OPFOR but I think it is a very balanced scenario when played by experienced players. When played by experienced players, a US victory requires more adroit use of infantry tactics and short ranged weapons than any other scenario (i.e. in particular the US player must realize and exploit the fact that machine guns can kill BTRs from the sides and rear <g>) while an OPFOR victory requires more finesse (sneakiness ?) in the attack than most other scenarios.

<<Does a M60 MG have to be exactly 375m or less to penetrate 15mm of armor?>>

No. The six range and penetration numbers shown in the weapon info window are just range reference points. The penetration numbers that are actually used in the game increment smoothly between the range reference points. There is an area of slop just before and just after the 375m point at which the M60 can still defeat 15mm of armor.

<<In Team Savage, I have only one guy manning the 60 (other 3 are dead from a hail of lead), and he has a SP 122mm Hwtz Battery in sight, 380m away. I'm thinking of taking one howitzer out with a burst and then popping smoke. Just want to know if the machine gunner will take the shot.>

<<I just set up an experiment, by starting Basic Training in two player mode and using the "Add one Unit" to place a M60 team and an OPFOR 122 Howitzer near one another. I gave the 122 orders to drive past the M60 team at various ranges. During one run, the M60 took a side shot at 395 meters and killed the 122.>>

<<There should be some limitation as to how close to a map edge where the enemy will enter that a TRP can be placed. It's quite easy to figure out what time your opponent will enter, and with a few "strategically" placed TRPs, you can bring down ON THE SPOT arty that will wipe him clean.>>

Added to the wish list, but I really hate to write "policeman" code like this for things that ought to not be done out of simple good sportsmanship.

<<What's the difference between checking and not checking the box "Firing units always spotted"?>>

If the box is checked then any time a unit fires, it will be automatically spotted by the enemy force (thus it can usually be immediately shot back at) and its marker will be drawn on the enemy commander's screen. This is often unrealistic. If the box is not checked, then a unit may or may not be spotted when it fires. If it is not spotted then there is no chance that it will be shot back at - assuming that it was hidden/unspotted when it fired. Its chances of being spotted increase according to the number of times that it fires per minute and according to how many times it has previously fired from the same location. Once a firing unit is spotted, it will usually remain spotted as long as it stays in the same place and as long as any enemy unit has a line of sight to its position.

<<I believe I've read several messages from you saying that all things considered, when a moving vehicle meets a stationary vehicle that is hidden, the stationary vehicle will more often get the first shots in, and maybe even a 'surprise' pulse of shots. I've found this to be very untrue. In city or forest fighting, I've often had my units, armor and infantry, set to 500 meters/ 200 meters, and the OPFOR units that move into them almost always, I would say at least 80% of the time, get first shots. I almost never get surprise.>>

It should work as I described for hidden, unspotted units. I just did several experiments with hidden M1 tanks in the edge of a wood (visible at 400m prior to firing) set to fire at 500 meters vs approaching T80s and I got first shots and "pulse of fire" surprise awards every time. I got a second pulse of surprise fire a couple of times. I think the problem is that you are setting your engagement limit too low. You especially might try not setting your vehicle engagement ranges so low. Vehicles are going to usually be spotted at 400 meters no matter what. An unsuppressed enemy vehicle can cover about 127 meters in 15 seconds (one movement pulse) in clear terrain and about 165 meters if on a road. If unsuppressed enemy vehicles are approaching your position in clear or road terrain, it is very possible that they might cover your 100 meter buffer between 500 and 400 meters in less than one 15 second pulse. In other words they might pass completely through such a small buffer and be close enough to where they can spot you before some or all of your guys get a chance to fire. Once one of your units is spotted, it is a toss up who gets to fire first and a unit that is spotted before it fires will seldom be awarded surprise fire.

<<When designing custom scenarios, can the mission objectives be set to either defend or take a specific area or can it only be exit goals?>>

The program will report percentages for exited units in a user designed scenario but it can not determine any sort of victory condition in a user designed scenario. Determination/declaration of victory in a user designed scenario is left to the player.

<<Why don't less capable weapons open up on what's normally too tough a target?>>

Because when I coded TacOps, I felt that doing so would produce a bad simulation and a bad game full of opportunities for players to use unrealistic tricks. I did not feel at the time that I could come up with automatic target selection routines that would generally make the best decision about what targets a unit should choose to engage. Consider the programming

challenges involved in arbitrating what is the best target for a unit at any given moment. If units just fired at whatever was in front of them, regardless of their ability to hurt the target then you would see problems and tricks like the ones that follow. All one would have to do to protect a valuable unit would be to always put a less valuable unit in front of it. In a similar fashion one could protect a weakly armored unit by always putting a super heavy unit in front of it.

<<I guess Elite Panzers would be less likely to open up at the wrong moment than a VG-unit.>>

If you want to get a better idea of how hard something like that is to code try the following <grin>. Take a pen and a big pad of paper and try writing down all the logic rules and all the tactical and unit/weapon characteristics information needed to enable the computer to make a good decision for doing something like that. Remember, you have to advance to the decision one step at a time following the format "if a then b else if c then d else etc.". Also remember that the game player wants _the game to move along quickly. People get impatient real quick when the computer frequently pauses to "think".

<<Will an HMG ever shred the tread of a T-80 or M1?>>

Not in TacOps.

<<Will a T-34 ever score a lucky hit on a King Tiger front?>>

Probably in PzE.

<<I think you wrote once that units won't open fire on targets they can't penetrate (correct?).>>

Correct, however just because a TacOps weapon fires doesn't mean that it will get an automatic kill. Many firings are misses/hits that don't kill.

<<My dad once talked to the Israeli Chief Army psychologist (that's head-shrink) of the -70s who said that a lost tank had on average seven hits to it. That would mean that a lot of the firing will reveal the firing unit but not accomplish a kill.>>

Same thing happens in TacOps when firing units miss/hit and don't kill.

<<Now, with PZE coming up (one day :-)) I have this mental picture of units firing on each other even though they can't expect to kill. For example a T-34 firing at the front of a King Tiger just because it's frightened, don't know better, has nothing better to do or just simply hopes for a lucky shot. The point being that it would still reveal itself and therefor affect the outcome of the battle.>>

Most likely PzE will work much as you described above. Many units in PzE will in fact fire at units that they have little or no hope of killing. I don't know yet how I am going to keep this from being a bad thing (see comment that follows), but I am working on it .

<<I noticed what I thought was a peculiarity in a very small customized scenario I was playing last night. I had three weakly armed OPFOR squads defending the western approach to a town. Opposing them were 4 HMMVs (3 had HMG, and 1 had an LMG) and 4 inf scout teams. Well, I moved the scout teams in close to force the OPFOR to reveal his position by firing and I kept all HMMVs out of the range (>500m) of the AK74-equipped OPFOR squads. When the OPFOR squads opened up on the approaching inf scout teams, the HMG-equipped HMMVs opened up (at approx. 630m), but the LMG-equipped HMMV remained silent despite the fact that the OPFOR squads were visible to it, and well within the max. range (630m) of the 7.62mm LMG. The Info for the LMG states that there is a >50% chance of hitting and penetrating a soft (infantry) target at a range around the 630m mark (approximation). Why wouldn't the LMG open up?>>>

If you saw this for just one or two fire pulses (15 seconds per fire pulse) it could be explained by the uncertainty factors built into TacOps. There is no guarantee that a unit will engage a target even if all game conditions are proper, even perfect, for an engagement. However the likelihood of this happening is small, so it should not normally be seen to happen for more than one or two fire pulses in a row.

If you saw this for more than a couple of fire pulses in a row then it is possible that all of the OPFOR squads had been hit or suppressed so many times by the fire of previous US units that by the time the game cycled to the LMGs' fire opportunity, the game could have judged that they had been engaged sufficiently for that fire pulse. In such a case the game would have then skipped the LMGs as unnecessary to the current situation. This attempt by the game code to make an "economy of force" decision for the player is not always totally realistic but it is preferable to the situation that would constantly appear without it - i.e. every one of your units might concentrate on the one closest, most threatening unit, grinding it into a pulp while not firing at all at other adjacent units. The game code tries to spread your fires from multiple units more realistically than that.

<<I just got the 0.1.5 TacOps update from a magazine CD. I made the changes on my game system and gave the CD to my gaming buddy so he could update. Since both of us upgrading we have not been able to play by mail. After making initial set ups the game will not let us load the other players turn. The game says there is a different version number between, sometimes the scenario, sometimes the map.>>>

The 0.1.5 update has been out for a month now and I have no unexplained reports similar to this so my initial suspicion is (1) that the update failed to properly install on one of your machines or (2) human error <grin> - i.e. there are in fact old game or game support files still lurking around on someone's hard disk.

Some thoughts ...

I recently helped a person whose had a similar problem because his Mac was set to default to a certain folder when TacOps was run. He thought that he was using the newest scenario and he believed that he had confirmed it with a Get Info visit. However, when he later ran TacOps and closely looked at the top of the scenario file selection dialog he found that a different folder was

being checked by the Mac's System Finder. In that folder was an older version of the scenario in question. Check your default settings in your Mac's General Controls Control Panel. You will see file opening and saving default options named "Folder which contains the application", "Last folder used in the application", and "Documents folder". You can see from the choices, that you can be sent off into some pretty remote places depending on how this system setting is configured and how you have your TacOps folders organized.

Some things that has been missed by a few people ... The game engine update installer only updates the game engine. It does not install updated maps and scenarios. You have to manually copy updated maps and scenarios into your game folders in order to replace the old versions. You can not rename a TacOps scenario file unless both partners in a play by email game have made the same file name change. Also you can not rename a TacOps scenario file once a play by email game gets underway. Doing so will not always cause problems, but it can over time.

I suggest ...

- (a) That both of you reapply the game engine update installer to a clean 0.0.0 version of the game engine.
- (b) That you each search through your hard disk for old duplicate copies of the game engine, maps, and or scenarios. Reduce your hard disk holdings to just one copy of everything and put all the maps and scenarios in one folder. This is just to insure an error free install of the updated maps and scenarios - you can split them up again later if you like.

Delete all older game engines - if you have a PBEM game in progress with an older game engine version then you might temporarily move the game engine and files for that game to a floppy disk.

Place the update folder from the CD near the one folder that you just created containing all of your current maps and scenarios. Drag all the maps and scenario files out of the update folder and into your folder of old maps and scenarios. When you see the dialog warning about replacing files with same names, just click OK. If you have not renamed any of your old map and scenario files, this will take care of replacing everything that has been updated. Be careful to make sure that scenario collections like Task Force Craig and Task Force Gallagher also get taken care of - it is common for folks to add leading spaces to the folder name of such collections to move them up to the top in file selection dialogs - in that case you would have still have the older folder present after doing the "copy/drag" update step .

If, due to your past renaming of TacOps scenarios or scenario folders, you find that you now have two of something then do a "Get Info" on the duplicates and trash the one with the oldest version number.

<< ... found something which I suspect is a bug even though it's not exactly a critical one. I had 6 BMP2 (single units) and 2 BRDM2s open fire (max range on 4 M1s) in the very last phase of the minute. The result, as you know, is that the missiles launch but won't reach their targets until the beginning of the next combat turn ... none of the units had given themselves any retreating

order but the SOP was still checked for all of them...[also did not give themselves reverse order after the missiles finally impacted] ...>>

Great bug report. This was a valid bug. Based on your report I found and fixed it.

Here is my change log entry: 13 Nov - Fixed following game play bug. If an OPFOR unit fired an ATGM and if the range was so great that the ATGM did not have time to get to the target during that same combat fire pulse and if the OPFOR unit had a SOP setting directing it to reverse after firing or to pop smoke, the OPFOR unit would ignore those SOP instructions - i.e. it would not give itself a reverse movement order and or it would not give itself a smoke order. This bug fix has been added to the 0.1.6 update - currently under development. I do not know when the v0.1.6 update will be released, but it will be a month or more. Current plans are to hold this update until the Windows version of TacOps is released or just after.

<<I had a weird thing happen when playing TF Davis against the AI. (v. 0.1.5, factory defaults except Firing Units Always spotted was turned off.) I won the scenario, killing all enemy in sight but the OOB said OP took only 77% casualties. When I turned on the "see OPFOR at all times" option I was surprised to see the 23% left all stacked together in the rear. The AI stuck them there and forgot them. (Or maybe they were simply cowering in fear.) Has anyone else seen this happen?>>

They were probably being used by the AI as a reserve and the right conditions never developed to employ them. Due to your report I tweaked the AI routines that handle this so that such units are much less likely now to sit out an entire scenario. The change will be included in the 0.1.6 update.

<<If I play the scenario again with the same saved game file (Turn 00), is it likely to happen again?>>

Starting scenarios from a Turn 00 saved game file will cause the AI's strategy for the initial/opening move and the opening battle plan to be repeated. However it won't necessarily cause this particular situation to occur again - unless the order to sit/defend immobile was given by the AI in the very first turn.

<<I'm playing a custom scenario as the OPFOR with one battery of on map 152mm howitzers. I can not get ICM shells selected. Off map 152mm batteries have ICM rounds. Is this a bug? >>

It is not a bug but it may or may not be wrong <grin>. I have a note from last year which suggests that ICM type ammo was not given to OPFOR units when they were in forward/direct fire support (i.e. TacOps on map) so that is what I coded. However, as a result of your note I just decided to go ahead and give ICM to on map OPFOR 152s. The completed change has been added to the 0.1.6 update .

<<I think that I might have found a bug in TacOps 0.1.5. I have attached a scenario file, which illustrates what I'm referring to. Basically, when OPFOR infantry units (squads, MGs, etc.) closed in to point blank range on an M1A1 ABRAMS, the M1 would fire as per normal at the

infantry inflicting the losses that one would expect. Here's the bug (maybe), the infantry would not return fire at the ABRAMS at all.>>

You did cause me to find a bug, but I don't think it is the one you suspected <grin>. The infantry units are not shooting at the M1 because they have no weapon that can defeat the M1 tank's armor with a frontal or side shot. The anti armor weapon for these infantry units is the RPG16 - it can only penetrate 375mm of armor. The M1's armor vs a weapon like the RPG16 is: front 1300mm, side 890mm, and rear 115mm. Note that the infantry units could defeat the M1 with an RPG16 if they could get a rear shot. The bug here is that when an infantry unit is firing at an armored vehicle at point blank range, the program is supposed to award "rear fire" to the infantry unit. I found that the program is actually only awarding "side fire". I will fix this in a future update.

TacOps Gazette 96.01

The TacOps Gazette is an informal (very informal) compilation of TacOps user email and forum postings and my responses to them. I save everything about TacOps that is sent to me privately or that is posted on a public forum. Every couple of weeks I go through the pile and I summarize the more interesting material into an "issue" of the Gazette. I then post this as one long note (usually 9 to 18K) on a couple of Internet game newsgroups and on games forums on a couple of national info services.

This issue is a slightly edited digest of a recent public thread from an Internet newsgroup. The original posters provided excellent game play tips.

=====

Topic: TacOps: reconnaissance in the offensive

=====

John M.

What's the right way of carrying out recon. on the attack ? Do you just send scouts forward and watch them get blown up (and where from) ? Do you sneak them to a place under cover from where you can register artillery on potential sites of resistance ? (the second seems to take a lot of time)

Sub-question 1: is using air strikes as speculative recon. a good idea, or is it a waste ?

Sub-question 2: is "reconnaissance in force" a viable concept at the TacOps level (or is it rather a strategic concept) ?

I read somewhere about the WWII commander Jochen Peiper's recon technique: sending half-tracks down the road and pushing until they got blown up. The Soviets seem to have done the same with penal battalions. But what about modern tactical doctrine in these matters ?

=====

Jim S.

In my experience, the best way to recon in TacOps is to set engagement distance to 0, set SOP to unload when fired on, and push forward as long as you can till you get shot at/blowed up. If you can drop some infantry off along the way for backup recon, that's great. The only problem with the above method is the bad guys 'know' where they blew you up and probably suspect you have an infantry guy there. With that knowledge, they can send a couple of tanks to zap you, or just 'smoke' you so you can't spot.

=====

Eric G.

Reminds me of the old joke about American armored cars in World War II -- the standard crew of an M8 was said to be three: a driver, commander and a priest.

Often times this is how mechanized/armored recon works on the offensive, especially if the offensive is a concerted drive. You spread a screen of scouts out ahead and wait till they bump into something. Now, the scouts don't have to be stupid and drive around in the open with a banner flying saying "Shoot Me!" You can use terrain, maneuver, etc to minimize your vulnerability, but ultimately when advancing into unknown territory, the quickest way to find out where the enemy usually involves getting shot at.

There are other ways of reconning and combining other assets with your scouts to help maximize your resources and minimize your vulnerability.

First, try adding in a UAV or a flight of helicopters, and use them to scout ahead. If you don't want to do that, you can use "recon by fire" -- advancing artillery out ahead of your scouts, hitting likely enemy hiding places and waiting to see what scurries out or blows up. Cover your advancing scouts with smoke (really great if your enemy doesn't have thermals.) Break up your scout units into individual vehicles and spread them out a bit -- don't run them all down the road in a nice neat column. Use "scout and move" -- advance some, put some in overwatch. It takes some doing, but it is a little more effective than just advancing them and seeing what happens. Combining all of these assets or techniques can really help you in scouting -- but it takes time. And you can almost always be assured that you'll miss something, and the only way you'll find it is when your Bradley or LAV goes *BOOM*.

[Using air strikes as speculative recon is] Largely a waste of airpower -- especially in TacOps, which is VERY unfriendly to aircraft. In TacOps airpower is best used hitting formations which are already under attack and have been softened up.

"Reconnaissance in force" is one of those more nebulous military terms which is very much in the eye of the commander. Usually it means simply sending forward a force large enough to handle whatever you expect it to bump into. On the TacOps level this really doesn't come into play, as you could think of entire scenarios as being recons in force -- battalions advancing on an objective, etc.

Modern recon would like to rely on numerous assets and technology to let a commander see the battlefield ahead of him -- drones, sensors, aircraft, helicopters, EW, satellites. Specially trained units of recon troops or special forces infiltrating on foot, or inserted covertly, scouting out enemy positions. However, on a certain level there still is no avoiding "movement to contact" - sticking something out there until it finds, or is found by, the enemy.

=====
Ronald G.

I would add one thing to the thread and that is you may want to set the SOP to smoke and reverse course if fired on. This gives your advance unit more of a chance of surviving. Though it is no guarantee.

Keep in mind that normally both forces would have some scouts out front in a situation where recon is really a major factor. In other words, if both forces are mobil then neither knows where the other is and both are scouting. This gives your scouts some chance of meeting an 'equal' unit (another scouting force).

If OPFOR is in a roughly known position, then I think recon must be in force unless you like the suicide mission approach. It is tedious, but I like to move my mobil scout close, but under cover, where the OPFOR is, then dismount and let some grunts walk up (e.g. to the edge of a woods) and peek out. They are pretty hard to see that way, but can see anything that moves. Then you can advance the mobil stuff and see if that draws fire (assuming the grunts couldn't see anything).

Like I said, some of this is pretty tedious, because TacOps is not really a game built to operate at that detail level. But if I were in charge of a scout unit, I know I would want to operate that way.

=====

Sherwin

My favorite method of scouting is by having infantry teams walk out in the open (after having been dropped off at the edge of the woods by their APCs). This way, tanks will open up on 'em if the opponent hasn't been careful with his targeting priorities. Heh. Or if your opponent is holding back his fire and using his artillery, quickly mount an assault about two and a half clicks from where the artillery rounds land, taking advantage of the fact that it takes time to shift artillery fire.

Or to spice things up, I'd send an ATGM team or two along with the inf teams. It's sort of like chess--save your best pieces for last and use your pawns wisely.

This scheme (I daresay tactics) takes time, of course, but you can save a few vehicles, and frustrate the hell out of your opponent.

=====

John M.

The next question your post brings up is the correct way to deal with enemy recon: let it through and take it out with units (e.g. M1s) deep inside your defense formation ? shoot at it with some of your advanced defenses, as far out as possible ? Send forward dedicated anti-recon units ? The latter sounds the most fun-- what's the ideal mix ? A few Bradleys I suppose... In the light of what you wrote on the essence of offenseve recon (no way around "things that go boom" approach) I don't envy those sent out as forward recon units.

=====

Jim S.

I have found that when setting SOP for recon units, it's best to set SOP for NOT smoke and reverse if fired on. I usually have my guys coming out of forests and if they survive the first attack, by not smoking before reversing, they have a better chance of reversing into the forest, and out of sight. The smoke slows them down. You of course are right about them having a better chance of surviving multi-phase ATGM attacks if you smoke, but I find most attacks on my recon guys are usually not at extreme range.

=====

Sherwin

Usually, whenever my recon units are out in the open and far from cover, I just have 'em stop (no smoke), and let the heavy hitters do their thing from behind. At this time, the recon units should have their ranges set to zero to save 'em for another try (by letting them disappear from the battlefield). If your opponent decides to use artillery on [them], you won't be losing much.

When to eliminate enemy recon varies from situation to situation. I usually use ATGMs from afar, but only when there's no other way of stopping them. Using artillery is okay, but then the opponent is quickly alerted of the fact that he's being watched. Most of the time, though, infantry teams deployed way ahead of my main defense suffice to knock the vehicles out of commission.

When I see enemy recon units inching their way forward, I'd sometimes let my artillery set up TRPs about 1.5 to 2 klicks away from the main thrust of the soon-to-be offensive and have everyone hold his fire to give my opponent a false sense of security. Then when he's close enough, I'd unleash everything I've got and scoot to the secondary firing positions.

=====

Ronald G.

I am definitely selective about how I take out enemy recon. One of the things I definitely avoid is having one of my own forward units attack their recon. Once that happens, your forward recon is likely to be attacked. Which is not at all what you want. I usually attack the recon unit with something mobil, and something that is in a misleading or unimportant position. And after attacking the recon I have the unit move. You want to keep OPFOR guessing, or better yet fool him or her into going into a killing zone.

=====

Jeff M.

Here is my method for scouting on the offensive (assuming I do not start in contact):

I like to concentrate the full force of my attack at one point. Feints are useful, but only in moderation (they make more sense at the operational level). Helicopters and LAVs are ideal scouts, but assuming their lack, I tend to push a mixed armor/armored infantry force in moderate

strength about 2 klicks ahead of my main body. These can both locate the enemy's forward forces and usually deal with them unassisted. Once I have spotted the enemy's forward force, I'll leave a large portion (20%) of my force to deal with them, while the rest of my units push through. At the second enemy line, I have good strength to push through and hook either left or right with a further 20% of my force. By this time, the 20% I had dealing with the forward scouts have moved forward, and are able to exploit the gap, while the main body of my force deploys in a line to protect the route of advance of the exploitation force. I can then pull in units at the back end of the corridor as the exploitation force passes them, and have the exploitation force guarding the corridor ahead for these units to pass. Essentially, I am using groups leapfrogging forward under cover of the majority of my units.

In this method of attack, the only role of recon is to find the enemy's eyes and blind him...not to the point of my attack but to keep him from directly targetting my units. This method does not work if you don't have a good numerical or quality superiority.

I like to use this [air strikes as speculative recon] under a few conditions: 1) any enemy unit in the target area poses a threat to my advance 2) the lead elements of my ground forces are already approaching the target area 3) I don't have a need for the air power in a later planned situation

In fact, offensive recon without force is usually a waste of time and units. A good defensive player will let them pass, and get them in a fire pocket behind the front line.

=====

Craig V.

My own preference is to use any available attack helos as a scouting force using terrain shielding and appropriate use of "pop-ups" to scout along and adjacent to the main axis of my offensive. By careful use of timing and altitude control you can often identify defensive concentrations.

Of course, even better is to have and use a UAV in this role as it has a better survivability factor in most situations and isn't subject to SAM attacks which the helos are. The downside of the UAV is that it doesn't have a thermal imaging system and thus is blinded by smoke. On the upside, because it can linger more safely at medium altitude it is very useful in registering TRPs and otherwise directing arty.

In general it [air strikes as speculative recon] isn't that effective and I hate to waste the "shot" that a planned air strike can deliver.

It [reconnaissance in force] is indeed viable (certainly in any of the "task force" level scenarios and is what I tend to use in situations where no air power is available to me and I'm on the offensive. Given the nature of most of victory conditions it is foolish (IMHO) to not concentrate your forces to a greater or lesser degree (keeping in mind always the possibility of MRS and air attacks). When you're trying to break through on OpFor you want to be able to concentrate more force at the point of the attack to sustain the momentum of the attack and break through and then curl up the defense before they can mass to repulse the attack. Part of doing this is using a bit of intelligent pre-scouting of the terrain map to ascertain likely chokepoints that OpFor will use as

well as determine routes that are terrain masked from potential defenders. Ideally the final routes should share an initial path and then branch into two or more "end paths" somewhere short of where you anticipate contact with the enemy. This way you can start out by massing your forces loosely together and be able to swing onto the best path your scouting reveals.

After establishing at least two potential avenues of advance send out your helos if you have them, or a small tank force if you don't have any helos, to scout along the paths and start marshalling your forces to follow up towards the branching point. If your scouts run into "significant" forces they should, if ground based, pop smoke and withdraw to a defensible firing position and dig in at least temporarily to see if OpFor is going to come after them in force. If OpFor doesn't (ha!) lay some smoke and head back to main force asap to avoid taking a beating from arty. If OpFor seems to be coming after you, start directing your own arty onto OpFor's line of advance (keeping in mind that it takes a few minutes to get any reasonable accuracy so lead OpFor's advance appropriately).

About this point you have to decide which of the possible routes to commit your forces to. If OpFor is going for a particular scout group on the ground consider the possibilities for flanking their attack or if the odds are too grim, simply dodging left while they go right (or vice versa). Also keep in mind what the mission objectives are and what you need to complete them successfully. This sometimes means that discretion is the better part of valor and using a scouting group to engage the enemy while the main part of the force slips by quietly and exits safely.

=====

Mike N.

Dealing with a human opponent can be a lot of fun as well as a big challenge. Humans tend to react too quickly or too slowly to different stimuli. Knowing this, one can poke an opponent into doing what you want, even if on the passive defensive. Assuming that both sides are using recon elements properly (I usually do, but my opponents mostly don't) my favorite tactics follow along these lines:

Situation 1) Opponent uses few, if any, forward recon elements. I will usually take out the recon elements with direct fire or suppress them with artillery. When enemy infantry recon units are spotted, I generally concentrate on eliminating them or smoking them. After taking out the enemy recon, I pull my own recon elements back to a different position.

Situation 2) Opponent uses large numbers of recon units, but not a recon in force. Many players send out hordes of vehicles (usually M3s or BTR/BRDMs) at me on line. Their expectation is to react to my fire directed at them and then proceed to either fall back and go around, or push into and past my firing units. My tactic is to hold my fire and let them come. I'll generally smoke a few of them in order to slow them down and break up the recon line. When the line becomes uneven and gaps appear, I take out specific units by direct fire. This tends to widen the gaps in the recon line.

Situation 3) Opponent uses the "recon in force" tactic. This tactic involves a large number of "throwaway" elements. Their typical mission is to find the enemy recon units and wipe them out. My tactic in dealing with this threat depends on my resources. If I have a MRL battalion off map, I use it on this recon group. I will also target my artillery on clumps of vehicles or infantry. If I have mortars, I'll set up a smoke screen using individual tubes (single SP mortar vehicles) and then I'll just create a mess of smoke in the area after that. What this tends to do is break up the recon group into manageable chunks and I'll take them out one at a time.

Other defensive tactics: I prefer to use large numbers of infantry for static OPs. I'll place my units in good locations (but not *too* good so as to avoid the eventual smoke or HE rounds) and crank their range down to 200 meters. I then back up my infantry with a few vehicles so I'll have some thermal coverage. I'll then target my artillery on clumps of vehicles or infantry. Since most recon units aren't tanks, the infantry can generally deal with them when they get too close. Even if the infantry units are wiped out soon after, they would have accomplished their assigned mission (to spot the enemy) and quite possibly have also taken out an enemy recon unit.

TacOps Gazette 96.02

<<I was hoping for some advice and suggestions about the use of helos in TacOps. I've tried a couple of different techniques and I'm not quite sure if I'm missing something. ... I've landed away from the target, only to find that due to the slow speed of unmounted infantry it takes forever to actually get where I want to go. ... I've laid heavy smoke and ... basically send the fully loaded choppers crashing into their target area, unloading under heavy fire and taking heavy casualties to both choppers and infantry. Am I missing something? Is there some happy medium I haven't found yet? >>

No happy medium. Transport helicopters are very fragile beasts. The only reasonable tactic is to bring them in at nap-of-the-earth altitude and land them as close as possible but still out of the line of sight/fire of the enemy. The grunts then have to walk on in.

In the real world, helo pilots (not to mention their combat cargo) take a very dim view of crashing into the objective <g>.

"Forever" is a relative term. Remember - a TacOps turn only represents 60 seconds.

<<One problem (bug perhaps Major?) is that if an OPFOR unit doesn't actually have smoke ON it, it will shoot at helo's even if they don't really have an LOS. For example, I dropped smoke all across the "southern" side of the base and left the northern end open. Although the ZU's and SA-7 units had no LOS to the south, they still managed to take out my entire landing force. Be warned!>>

Not a bug. (a) From point A to point B, LOS between a ground unit and a helicopter can be different from what it would be from a ground unit to a ground unit - depends on the altitude of the helicopter. The LOS tool only shows ground to ground LOS. (b) Some anti air weapons have thermal or radar sights that can see through smoke.

>As an aspiring programmer I'm also interested in what language you used to >code the game?

I originally coded the game in C on an Apple Macintosh using the Symantec C/C++ development system. The Windows conversion coding was done in C on PCs using the Microsoft Visual C/C++ development system. My future games will be done in C++. I don't know if I will continue to use the Microsoft Visual C development system for conversions - I am thinking of switching to the Symantec Windows development system.

<<As a professional soldier serving in the Field Artillery (MLRS) I was wondering what kind of command and control for Artillery was implemented in the game?>>

You may be disappointed - only arty officers like real world arty procedural detail <g>. Artillery command and control and most of the real world procedural details involved in obtaining artillery support are not represented in TacOps. Early play testers found realistic artillery call for fire procedures to be too much work. Real world arty concepts that the game does include are:

benefits of observed fire, use of adjusting fire, fire for effect, target reference points, registered targets, shifting fire vs a moving target, shift from a known point, and use of HE vs ICM vs smoke, benefits of using a FIST vehicle. In TacOps, arty support play is oriented toward effect on target rather than on arty procedures. In TacOps, players are provided a certain level of arty support expressed conceptually as volleys or minutes of fire of a certain caliber (155mm, 152, MLRS, etc). The player designates arty targets on the map during an orders phase and after an appropriate period of time has passed (i.e. x number of one minute combat turns) the arty fire arrives. Initial volleys may or may not be on target. If the arty impacts are observed then the arty support becomes more accurate over time.

<<I saw the article you wrote about setting up a CPX style exercise using TacOps. Did you design the game with this in mind? using it as a possible training aid for the military?>>

Not really but I was careful during development to try to not put things into the game engine that would prevent or make such use totally unrealistic. I expect a CPX mode to be a major consideration in the development of TacOps II due to recent interest shown in the game from offices in HQ Army and HQMC.

<<I have taken part in several Warfighter exercises and have always wondered how the software was developed. How would you rate your game on realism?>>

I think the combat results at company and battalion level are reasonably realistic when averaged out over a period of several turns/several minutes. While in the Marine Corps I participated in a lot of CPXs that were not as realistic as a TacOps administered "recreational" CPX would be <g>.

<<This still bothers me and it has never been reported. When splitting APCs with infantry loaded, all the infantry is off-loaded. I feel this is incorrect. If the intent is to split two or three APCs down to individual vehicles, the result should not be to unload infantry contained within the APCs. Does this happen in the Mac version? If it does, it should be corrected there also.>>

This is correct program behavior. The program does not really know what is loaded in each APC. It only knows the totals of the cargo units being carried by the marker. I won't bore you with all the difficulties involved with doing automatic splitting, but I'll give you a couple of typical examples of major problems.

Say you have an AAV marker that represents 11 vehicles. Embarked in the AAV marker are 9 rifle squads, 6 machine gun teams, 8 Javelin teams, 4 60mm mortars, and 2 stingers. You split off one unit. How can the computer automatically figure out what part of the total load you want to be in the split off AAV?

Now, assume that the computer did do some sort of automatic distribution of troops when you split a marker. In the above situation you would likely be very interested in which of the new markers had the javelins or some other weapon. You would probably feel compelled to open every marker to reassure yourself about what was in what.

Now assume that you don't like the computer's division. Now you are in a situation of having to unload all the markers, do dozens and dozens of splits, joins and reloads to get exactly the mix and loading that you want.

The current approach provides the least number of mouse clicks to get back to where you want to be.

<<I'd love to see coverage extended to UK, France, Germany, and perhaps Israel and China as well as the US, USSR-type and Canada. >>

Will have to wait for TacOps II. The current game engine is "maxed out". I have already extended it way past anything that it was originally designed to be able to handle. It is groaning and creaking.

<<Another ideal situation would be coverage extending back one more generation on some weapon systems (the T-64 tank, the PT-76 light tank (is it still in service?), and the M48 tank mainly) so that I can fiddle around with early 80's situations>>

I can take the TacOps and the future TacOps II engine back to the 60s. Anything earlier than that and I would need to switch to a very different game engine (i.e. the Panzers East engine) if the game is to remain at all realistic.

<<Again I have an ideal situation that I don't expect to ever see. I'd love to separate the AI from the specific scenarios so that a user defined game could consist of picking a map, picking the two opposing formations, and picking which side (if either) would be AI controlled.>>

I can't code an AI opponent that would be good enough to be able to cope well with that much user flexibility. If I could, I wouldn't be coding games <g> - I would be collecting grants from the government for robotic brain development.

<<On a related note, is a second game disk still in the works?>>

It is on the wish list but frankly I don't know when I will be able to get to it. I am knee deep in supporting the Windows version, the first game disk still needs to be converted, Panzers East is needs to be finished, and I ought to have started new research for TacOps II by now <g>. I may catch a breather in a couple of months to code a set of scenario and AI tools that an assistant could use to create scenario disks - if I can do that then the add on disk projects could be resumed.

<<Does the game use different damage tables for different weapons versus infantry or is it assumed that the different hit probabilities cover most/all of this?>>

The "to hit" probabilities are about the same. There isn't much difference between shooting at a squad sized infantry target and shooting at a tank sized target. What happens after a "hit" though goes through completely different tables.

<<Does the chance to hit a target depend on what the target is?>>

Yes.

<<To give a simple example assume a T80 at 3km from two US APCs. One is a Bradley, one is an M113. Everything I've heard says that the M113 should be easier to hit.>>

In my opinion, since they are about the same size, they offer about the same "to hit" probability in most situations. Now if the Bradley were moving in terrain that allowed it to approach its top speed, then yes in that case the Bradley would be harder to hit simply because it can move so much faster than an M113. But that would pretty much require a road or almost perfectly clear terrain.

TacOps Gazette 96.03

<<I was wondering if there are some less difficult scenarios than TF Gallagher? I am not a grognard, but I really love the TacOps game system. I just want to work up to a scenario with so many units to worry about. Can you suggest which scenarios I should tackle first?>>

Any scenario whose name starts with "Team". Team scenarios usually involve engagements where at least the US side is below battalion size. "Task Force" scenarios usually feature a US side of battalion size and above.

The following info might be helpful...

Map001

- Basic Training
- Task Force Craig
- Task Force DeGoey
- Task Force Frolik
- Task Force Gallagher
- Task Force Gebhard
- Task Force Harper
- Task Force Henson
- Task Force Kincaid
- Task Force Low
- Task Force Stubblefield
- Team Savage
- Capture the Flag Army
- Capture the Flag Tanks
- Capture the Flag USMC

Map002

- Team McMains
- Team Meyers

Map003

- Team Slocomb
- Team Sposito

Map004

- Team Hill
- Team Murray

Map005

- Team Hall

Map006

Team Krempp

Map007

Team Cahoon

Team Minamora

Map008

Task Force Pucci

Task Force Waring

Map009

Team Ostle

Team O'Hara

Map 100

Freebie map for use with custom scenario templates. Not currently used by any regular scenario.

The following scenarios allow the user to choose any map.

Custom Scenario Canada

Custom Scenario US Army

Custom Scenario USMC

<<My brother and I are in the middle of a PBEM game of TacOps and after about a half a year of playing numerous games via Email, something has finally gone wrong. I send him a BinHex'ed turn that he says has been corrupted. I re-BinHex'ed the turn that I had saved on my hard drive and resent that copy which he says still exhibits problems (like killing his TacOps program). My question is: How do I recreate that move from the files that I have?>>

(1) Option one - both of you go back to an earlier saved game file in which both of you show the same time in the info line and both of you restart the game and redo your moves from that point. You did hang onto the last couple of earlier saved game files just for such an emergency didn't you <g>.

(2) Option two - Get the password of both players (if used) and one of you open the most recent saved game file that worked ok (either yours or your brother's) in "two players on one computer mode". Reset both passwords to "no password" and save the game. Send the saved game file to your brother and both of you use it to restart your game and then redo your last moves. Each of you will probably need to fiddle a bit with the fog of war setting to get the saved game file back to believing that it is a red file or a green file. Then restore your passwords if used and continue your game as before.

<<On a related note, it would be nice if a single click on a unit concurrent with a depressed "L" key would initiate a LOS check for a particular unit. I have gotten burned by missing a unit's center pixel, and then wrongly believing that that unit could cover a part of my operation. I know

that I should be more careful, but when dealing with so many unit markers over a period of 120 scale minutes such a feature would be neat.>>

Hold down the shift key with your left hand, click on a unit with your right hand - the unit will be selected/highlighted - release the shift key, release the mouse button and do a Command L - you will get a LOS cross hair that is pinned as originating from the exact center point of the selected unit.

<<How much can a helo see at medium altitude?>>

Generally - everything and everywhere within 4000 meters.

<<Is there some feature to check this?>>

Use the LOS method described above to pin the LOS tool as coming from a selected helo unit that is at medium altitude.

<<I'm interested in knowing the duration of SMOKE for the units in the game.>>

Arty and Rocket Launchers (all) - Initially set at impact to last 300 to 420 seconds. When original duration expires, there is a 50% chance each 15 seconds that the smoke will not clear.

Mortars (81mm to 120mm) - Initially set at impact to last 180 to 240 seconds. When original duration expires, there is a 50% chance each 15 seconds that the smoke will not clear.

Mortars (less than 81mm) - Initially set at impact to last 120 to 180 seconds. When original duration expires, there is a 50% chance each 15 seconds that the smoke will not clear.

Smoke grenades - Initially set at pop to last 30 to 70 seconds. When original duration expires, there is a 50% chance each 15 seconds that the smoke will not clear.

<<I assume that there is no difference in the SMOKE from offboard 122mm and that from a 122mm SP Howitzer.>>

Correct.

<<What effect does the number of tubes have on SMOKE duration?>>

None (I think).

<<What number of tubes will give full effect/half effect/etc.>>

Any number of tubes provide the same duration (I think), but the area of smoke effect of one tube is less than that of a battery. If the on map arty/mortar unit has strength points of 1 or 2 you get a small smoke cloud. If strength points of 3 or 4 you get a medium smoke cloud. If strength points greater than 4 you get a large smoke cloud.

<< When you set the TRP somewhere out at a range of 2000 feet with a radius of 500, but set your fire Control to zero, will it fire at the 500 foot radius 2000 feet away.>>

Not unless the unit is fired on first. Whenever a unit is fired on, any existing "fire control box" range limit is reset to maximum range - however even then the DFTRP priority is not changed.

Remember though that the priority target buttons are absolute orders only when you make them "hard" priority orders. If a priority target button is used as a "soft" order then if the unit can not find a suitable target that matches any of the soft priorities it will then search for any target, anywhere.

<<...stormed through the town en masse to the objective. In the first game he had placed several entrenchments in the town (good defence) and I anticipated this and smoked the town for the duration of my assault....Two entrenched infantry units, one rogue Javalin team and one entrenched SMAW team killed ALL of my forces--he was getting close to 100% kills (including a 2 for 2 with his ATGM's at just over 100m) and I tried to keep the engagement ranges over 75m. Neither SMAW's nor the infantry's LAAW's have thermals so how was he able to do this?>>

There are a couple of things at work here. (1) Armored units that try to drive directly over/through unsuppressed infantry will be punished <g> - modern infantry are not just speed bumps. (2) Once TacOps units get within 125 meters of each other, they can often see each other through smoke whether they have thermals or not. 125 meters or less in TacOps is generally considered to be "point blank range".

<<(I assume that the Javelins LAAW's are treated as having thermals even though they really shouldn't)>>

Correct. At present in TacOps, any thermal sight in a marker allows that marker to fire all its weapons into/through smoke, however the weapons will still get a degraded "to hit" chance for the smoke. This was done to satisfy comments from users and testers that "hey, the guy with a thermal sight in that marker could be telling the other guys to fire in a general direction".

<<About LOS, how far can units see out of woods? I've had units that are right on the edge of a wood and yet they could still not see out of it and when I used the LOS tool, it showed a blocked LOS from the unit to the area outside of the woods.>>

The outermost 100 meters of woods and town terrain (ten pixels plus or minus a pixel or two) provide the dual spotting zone - i.e. you can see and shoot out of the woods and town but your visibility to the enemy is greatly reduced (until you fire). For visualizing LOS, you need to key on the center point of the unit marker. If you are "in the zone" and if you are using one of the larger marker sets, a lot of the unit marker will appear to actually be out of the woods.

A similar effect occurs in the outermost 100 meters of high ground terrain. In the first 100 meters above the contour line a unit can see both all otherwise unblocked high ground and all

otherwise unblocked low ground. If the unit backs away from this 100 meter buffer, then it will only be able to see units that are on high ground. If it crosses the contour - headed downhill - then it will only be able to see units that are either on low ground or that are themselves right next to a high ground contour.

Again, it is where the center point of the marker is that is important for LOS.

After a few games you will get used to the dual zones and you will find that you don't need to use the LOS tool so much to confirm things.

<<One question tho, I read in the TacOps Gazettes your comments on the OPFOR AI, I wonder, is their also a random factor in my total formations (not individual units) combat routines when I load the scenario ?.>>

No. There there are no AI support routines for the human player's force nor are there any secret tricks, frictions, or penalties assessed against the human player's force when playing against the AI (some games use such techniques to make the computer opponent seem more capable). I dislike such "AI cheats" in a computer game. I feel very strongly that things like spotting, observation, movement rates, unit capabilities, combat result tables, weapons probabilities and the like should work exactly the same in a solitaire game vs the computer opponent as they do when two humans are playing each other. If the game had different "logic rules" for the solitaire mode then the serious gamer could not confidently use that mode as a means to learn tactical lessons and hone tactical technique for his future games against humans.

<<It seems sometimes I have command of a sharpshooting high kill ratio formation, other times a command that can't hit anything let alone kill it ?>>

Fortunes of war - however some general rules of thumb - units that shoot first from good, covered, unspotted positions will be rewarded - units that get surprised in weak positions will be punished - units that fire too long from the same position will tend to get punished. Also, if some of your units get royally nailed in a fire fight or experience several consecutive minutes of effective arty attack you need to try to pull them out of harms way for a few minutes. A lot of folks don't pay much attention to all those "S" (suppression) results produced by effective arty fire - that is a mistake <g>.

<<When I played the demo(the game is in the mail) and added some units to the green side I added the M113 FIST-V and M113 PP55 Radar units. However they didn't seem to do anything? Could you enlighten me as to what they do and or how to use them effectively.>>

The M113 PPS5 Radar unit has no special game capabilities other than being able to see through smoke. It was added to the data base mainly as a favor to certain users who are employing TacOps in conjunction with unofficial military training. The M113 FIST-V however will give you an accuracy bonus for the initial salvos of arty missions that it has a clear line of sight to.

<<Armored Gun is Latest Victim of Budget Woes ... Termination of the U.S. Army's \$1 billion Armored Gun System only weeks before the scheduled signing of a production contract.>>

Well ... I won't cancel it from the TacOps "budget" <g>. The AGS will stay in TacOps. Maybe I should ask the maker of the AGS for a R&D/advertising stipend <g>.

TacOps Gazette 96.04

<<One problem (bug perhaps Major?) is that if an OPFOR unit doesn't actually have smoke ON it, it will shoot at the helo's even if they don't really have an LOS. For example, I dropped smoke all across the "southern" side of the base and left the northern end open. Although the ZU's and SA-16 units had no LOS to the south, they still managed to take out my entire landing force. Be warned!>>

Not a bug. (1) From point A to point B, LOS between a ground unit and a helicopter can be different from what it would be from a ground unit to a ground unit - depends on the altitude of the helicopter. The LOS tool only shows ground to ground LOS unless you pin it as originating from a helo unit. (2) Some weapons have thermal sights (ie. the SA-16 SAM) which see through smoke.

<<I don't understand how to pin the LOS check to a unit. When you click on a unit to select it, the Unit Orders Window is displayed and the Map Menu containing the LOS check is "grayed out" making it inaccessible. What am I doing wrong?>>

To "pin" the line of sight tool to a specific unit you must select the unit in a way that does not trigger the opening of its unit orders window. You can do this two ways.

Hold down the shift key as you click on a unit marker - this will "highlight" the unit marker without opening its orders window. Now select the LOS tool menu item.

Or ...

Click on empty map some distance away from the marker, hold down the left mouse button, and "drag out" a selection rectangle that includes the unit - this will "highlight" the unit marker rather than open its orders window. Now select the LOS tool menu item.

<<I never saw much of a point to these "exit X% of your forces on the other side of the board" scenarios. You could have all of your armor and all of your mech forces gone, but you've worn the enemy down to the point that he (or she) cannot prevent your ARTILLERY from exiting, thus achieving an exit goal. This is unrealistic because 1) You NEVER send artillery out on its own. 2) You may have advanced 10 kilometers into enemy territory, but you still loose.>>

The point in "exit percentage" scenarios is not whether the type or number of exiting units are likely to be useful in any real world sense. The point is that the exiting units demonstrate that your defense failed to stop or delay the attack adequately, farther away from the map edge. Originally, I felt that the defender should lose if just one unit exited the map <grin>.

<<Can my cobra see over woods when at medium altitude?>>

Yes - from medium altitude it can see over woods but not necessarily into woods.

You can confirm this for yourself by doing the following experiment. Load up the Basic Training scenario in two players on one computer mode. Select Options/Ignore Setup Limits. Use Options/Add One Unit to add a Cobra to the game. Place the Cobra west of some woods. Open the Cobra's Unit Orders Window and set it to be a medium altitude. Close the window.

Now select Orders/Do US Unit Orders and then Orders/Do OPFOR Unit Orders to change to OPFOR orders mode. Use Options/Add One Unit to add a T72 tank to the game. Place the tank well east of some woods but within 4000 meters of the Cobra. Give the T72 some movement orders to make sure that its visibility will be at max.

Now select Orders/Do OPFOR Unit Orders to exit the OPFOR orders phase and select Combat/Begin Combat Phase.

You should see the Cobra engage the tank - over the intervening woods.

By the way, there is often a air to ground shadow area in the first 100 meters before woods terrain starts. If a ground unit is in this area it will sometimes not be visible to an enemy helo at medium altitude that is on the other side of the woods.

<< Can a helo in TacOps conduct a "Pop up" attack? Hide behind a hill or woods pop up to med altitude fire a Hellfire and drop down to nap of the earth.>>

Yes. The technique follows.

A helo flying at NOE (nap of the earth) altitude has the same line of sight as a unit on the ground. A helo flying at medium altitude (the highest altitude in TacOps) can spot (and be spotted by) just about everything within 4000 meters. Try giving "move and pop up" orders that cause the helo to do the following: move at NOE altitude to a firing position that has a line of sight block between the helo and the suspected target area, order the helo to go to medium altitude (use the helo up orders button), stay there for 15 seconds (use the delay orders button), go back to NOE altitude (use the helo down orders button), and move away immediately to another pop up firing position. If you do this you should usually be able to get a "free" 15 second pulse for spotting and firing at the pop up point. If the helo spots a target when it pops up it has a very good chance of nailing it and getting away. If a helo stays visible to OPFOR SAM gunners or a ZSU for more than 15 seconds, it is in trouble - more than 30 seconds and you can kiss it goodbye. You should try to use your helos at the maximum range of their weapons. The closer your helos get to OPFOR the more things he has that can shoot them down, especially if the helos are hovering. For example, the 30mm automatic cannon on a BMP starts to be quite useful against hovering helos at around 2000 meters.

Note that the AI remembers where it recently saw US units. If a helo is observed as it moved to its pop up firing position or if it tries to use the same pop up position twice in a short period then the AI is going to be primed to fire on it - i.e. you may not get the surprise fire award.

<<I believe that I've found a bug in TacOps for Windows. When an on-map artillery unit runs out of normal HE rounds it will no longer be available to fire any of its remaining smoke

rounds. I wasn't sure if this was on purpose or not, but I thought you might like to know about it.>>

Is not a bug. On-map arty units only have one number for rounds on hand. That number can be used for firing HE, smoke, or ICM (if the unit can fire ICM) missions. When the number reaches zero then the unit can't fire anything. When TacOps was originally coded, memory was scarce and expensive and CPUs were slow. I had to worry about every byte required by the program and every little procedure. Since on-map arty units are tracked the same way as all other ground units, tracking three kinds of arty ammo for them would have required three numbers in the data record for every unit marker whether it was an arty unit or not. I could not afford the memory usage. Things are not so tight these days and I will eventually change this.

<<On a separate note I want to make a suggestion about on-map arty units. It would be really nice if there was a pull-down menu for on-map arty units like the one for off-map arty. It would simplify the orders phase quite a bit.>>

I have this on the "wish list" but so far I have not found an efficient way to code it. The problems are (1) that large scenarios have a lot of on-map arty units (at least on the OPFOR side) and (2) the number of on-map arty units is so variable - such units can be lost, exited, split, combined, etc. For example, a user can choose to break an 8 tube battery down into 8 markers. That would create 8 more lines in the arty support menu or list. Someone who was fanatical about this could create so many on-map arty units that the menu or window list would be really long. I have to plan for the worst possible case.

<<I have a question about arty. It seems that you are able to shift arty fire right before it impacts, is this a bug in the game? Especially for MLRS fire, this doesn't seem right.>>

This is correct program behavior for the current version of TacOps. The current version also allows you to change the type ammo for rounds that are "in the air". Both items are intended to work that way. The air and arty implementation in the current version is "effect oriented" rather than "procedure oriented". The game engine and the air/arty combat results tables assume that you made "the best possible" procedural decisions for air and arty use at some earlier point in the game. Early in development the arty had a lot more procedural details that had to be attended to in order to get rounds on target. The procedural approach created a lot more mouse and window work for the user but it did not seem to make the effect of arty on a target any more realistic.

I think we have found a way in Panzers East to provide both more procedural realism and satisfying effects on target - without requiring an excessive amount of work from the player. We had to make this change in Panzers East because arty in WWII was not as flexible as it is today - it didn't feel right to assume as much.

<<I'm interested to know how you went about designing the game. Did you create the game engine first? or did you create a map and scenario editor first then drop in the game engine?>>

Everything was developed in parallel, but only a little piece of each thing at a time.

<<Have you ever thought of adding a tool bar to help access some of the more common functions?>>

Conceptually the Unit Orders Window and the Air and Arty windows are all tool bars that only appear when they are actually needed <g>. As far as putting something permanent on the screen, I prefer to reserve the max possible amount of screen for the battle map.

<<What is the density of the mine fields?>>

In TacOps, one pixel equals ten meters. All pixels within a minefield symbol are initially active vs both sides. As a unit crosses a minefield, one of two things happens each time it advances a distance of one pixel - there is a mine attack result or there is a mine clearing/marketing result. If you see an explosion then there has been a mine attack result - the pixel under the center point of the unit is usually now clear and one pixel "left" and "right" (per the direction of movement) of it are usually also now clear. If there was no explosion then there was a mine clearing/marketing result - the pixel under the center point of the unit is usually now clear and one pixel "left" and "right" (per the direction of movement) of it are usually also now clear. By the way, infantry units are much more likely to get a clearing/marketing result than are vehicles.

<<i.e. as a Brit I would be very keen to see our forces and perhaps Argentinean as opponents. Also a Desert Storm pack would be useful.>>

The present game engine is pretty well maxed out. I can slip in a few more unit types and weapons but I can't fit in a whole country's worth.

<<Let's say a section of M1's is defending just inside a wood line. It has a thermal visibility of 400m and has order to engage at maximum range of 400m. A platoon of T80's is approaching on a direct line across clear terrain. When it is 400m from the M1's, will the M1's have the advantage of surprise? Or is there a 'coin toss' to determine who fires first? I know the answer might be "Set the engagement range greater than 400m", but I'm curious how this is handled.>>

In the exact situation you described, it will most likely will be a coin toss because the spotting resolution will probably occur before the firing resolution. The proper thing to do in the situation that you describe - if you want to get the first shot and a surprise fire bonus - is to set your engagement range greater than 400m. And to be sure you need to set it greater by a distance that is greater than what can be covered by a moving enemy vehicle in 15 seconds - just setting it to 401 meters won't do.

<<I noticed in Team Hall, during the setup phase, the OPFOR has many entrenchment icons. The program won't let me end the setup phase unless I place all the entrenchments. Is there a way for me to place only a portion, and discard the rest? >>

Yes. Select the Options/Delete Units menu item or do Cntrl + X ... you will get a cross hair cursor ... click the cursor over the unit or object to be deleted - poof its goone.

<<I drove a hummer mortar unit over near some dug-in infantry, but wanted to dismount the crew and proceed on foot as an infantry squad, but could not. Why is this?>>

(a) It never occurred to me that anyone would want or need to do this. (b) Tracking the crews in vehicles as separate units would add a heck of a lot of overhead to the game.

<<Wouldn't it be just like tracking units "loaded" onto a vehicle?>>

It could be done that way but the huge memory overhead involved would probably force me to find some other way of tracking crews. The big concern is memory. The unit record info and status info for each unit marker in TacOps costs 500 bytes of memory. Adding a crew marker for every vehicle marker in play would be a big addition.

<< ...allow the user to dismount a tank crew and assault a MG emplacement with their .45s/Berettas! :-) It could work just like an IFV now when it gets hit with the squad on board. What do you think?>>

If I ever do a squad or platoon level game, that would probably be an appropriate detail to add.

<<TacOps _is_ a squad level game, isn't it?>>

Not from my design perspective. In order for me to truthfully claim that the game was a squad level game, the combat results and game flow would need to be accurate down to each firing of one weapon and down to one scale second of time. In order for this to be true I would need to address (i.e. reduce averaging) many more combat and situational variables. For example, the facing and individual situation of every man in an infantry marker would need to be considered, the hull and turret facing of each individual vehicle in a multi vehicle marker would need to be addressed, artillery support in the game would need to be procedure oriented instead of effect oriented. These things would potentially force hundreds more mouse clicks on the user per orders phase. My design goal for TacOps was for the combat and movement results to be reasonably realistic at the Company/Platoon marker level when such results are averaged over a few turns (i.e. several scale minutes).

TacOps Gazette 96.05

<<Thanks for keeping the machine requirements down - I have a cd-rom-less 386-40, and the demo runs very well. I'm hoping that Panzers East and TacOps II won't require a CD drive also (although in six months to a year, I may get a Pentium, at least you don't make me feel as I must spend \$2,500 to play a \$40 game...or simply to play a game!).>>

Unfortunately, I will have to let you down before long. I held the line on adequate game performance on the 386 as long as I could. The cutoff computer for Panzers East will be the 486 and Windows95. Panzers East will be CD only, as will TacOps II and probably every other future game that I do. PzE will make full use of 256 colors and will have realistic maps with unlimited terrain elevation differentiation. The maps will be huge data files. We can't afford to distribute a \$39 to \$45 game on a couple of dozen floppies. Even the serious gamers are now demanding super sounds and hi color visuals. The cost of such chrome is more memory, new CD ROM drives, and putting the faithful 386 on a shelf in the garage.

On the positive side, PzE is unlikely to hit the streets in less than six months and TacOps II is a year or more away. So you should be able to get a lot of hopefully pleasant TacOps play time in before I am forced to disappoint you <g>.

By the way, I put a "under \$200" CD ROM on my old 386SX (used it for compatibility testing) and it works pretty well. Lots cheaper than buying a whole new computer. That does not solve the CPU speed problem though that a 386 will have with any new game that uses high color and digitized sounds.

<<[Concerns a defender rushing the map edge to nail enemy units as they enter the game.] If you do not want air strikes and arty to pound entering units then code it. Restrict air and arty location for x turns or allow more control over entering forces. Seems to be a engine limitation to me when I'm trying to beat the pants off someone and lots of extra agreements are required from the enemy! A "gentleman's agreement" in ANY game is a crutch to an engine flaw.>>

I don't personally care if two players want air strikes and arty to pound entering units or not - as long as I am not involved in the game in question <g>. If ambushing map entry points (which I consider unsporting in most scenarios) bothers the two people who are playing, then they can agree to not do it. If it does not bother them, that is fine with me too. This is a decision that I choose to leave to the players. I prefer to avoid writing "policeman code" when it unnecessarily limits users' flexibility in how they want to play the game or use the program. Different people are entertained by using TacOps in different ways.

<<If it is not feasible now or ever then say so and I will live with it. >>

It is feasible. I choose to not do it.

<<It bothers me that you seem to be defending a flaw. Your game is better than that.>>

It is a question of perception. You perceive this item as a flaw - I don't.

<<Playing the same scenario(Long one) I noticed that my infantry, especially the scouts, didn't have thermal sights? I thought that was standard now. Am I wrong or am I missing something.>>

Passive image intensifiers for night use only and powered by small batteries are pretty standard (i.e. starlight scopes) but thermal sights are not standard at all yet for infantry except as sighting devices for ATGMs. Portable thermal sights are still extremely expensive and not really very portable.

<<One feature that I would like a lot, and while I'll probably buy the game without it, I'd play it a lot more with it, is an option for short sounds.>>

I'll give it some thought. At present, I can't afford to buy any new sounds and shortening the current ones would probably not produce a very satisfying effect. In the meantime you might try the Options/Set Volume menu item. It allows you to substitute quiet, short clicks for all weapons sounds - really speeds up the combat turn for those who don't care for the long sounds.

<Downloaded the demo yesterday and have been playing it at work (shhh!).>>

Take a look at the Options/Set Volume menu item. Although it won't in fact let you change real volume it will let you select no sound or you can substitute a very quiet "click" for all weapons sounds. I call this the "at work stealth mode" <g>. You might want to also use the Preferences menu to turn off the "bugle alert" sound.

By the way there is no music in the demo version - had to leave it out so the demo would fit on one disk. In the retail version if your morale needs a boost you can hear the Marine's Hymn if you select the About TacOps menu item <g>. I would be glad to add an appropriate Army tune, if some Army field band would send me a public domain tape recording of themselves doing their best.

<< Why don't the M3 Bradley/Scouts use the Nato's Armored Cavalry Symbol and the Recon/Sniper Teams use the Nato's Symbol for Special Forces. ?>>

It is a compromise made to keep the database a bit smaller so that the game will run ok on older computers. Many of the symbols in the data base are used by several types of units and not every type would be right for a cavalry or recon symbol. Also some of the "real" NATO symbols do not translate very well to the limitations of a computer screen drawing environment - i.e. they would not be readable on most people's computer screens.

<<Found a bug. In one of my games as the US player. I have 3 Infantry teams as a one unit. When I look at the Info menu, and see how much ammo they have, everything is multiplied by 3 EXCEPT the Smoke grenades. They only have 3, but 3 teams should have 9 Smoke grenades (i.e., 2 teams shows 3, but should have 6).>>

Not a bug. That is how I intended smoke grenades to work.

<<I want to know the detailed computer logic used for the direct fire systems. Could you provide me with some explanation of these in greater detail than is in the manual?>>

I don't really know what to say without generating reams of data. The basic probabilities are shown in the weapon info windows. The probabilities are basically my personal "Intel" analysis based on open documents and personal experience (modified in some places to produce more of a fair fight/a capable enemy). The situational modifiers that reduce the base probabilities are also my analysis but they pretty much match the standard percentage reductions used by the military Sims and most board wargames that I am familiar with. As a general rule of thumb it would probably be safe to say that I tend to slightly understate current US capabilities and to slightly overstate current OPFOR capabilities - that might be a good way to train though <g>.

<<I've downloaded TacOps as suggested, looks as though it is very good, but it is giving my hard drive a real thrashing, every move for each unit seems to result in the hard drive doing some serious accessing, and making the game somewhat unplayable, even on the tutorial game. Dialog boxes take a long time to arrive, and then the map has to be redrawn which again involves a lot of time and disk thrashing. I'm running it on a P50-90 8 meg of RAM with an ATI Mach 64 video card, do you have any thoughts ... if I could get it to run quicker with less stress on my Hard Drive.>>

Try switching to using a permanent Windows swap file cache. I assume from the problem description that you are running Windows 3.1 or Windows for Workgroups 3.1. It sounds like you have Windows set to use a "temporary swap file cache". I used to get the same kind of constant disk accessing (with other games too - not just TacOps) before I switched to a "permanent cache".

Games (and Windows itself) will often run significantly faster if you experiment with the Windows system setting for use of "swap file"/"virtual memory". A swap file is a hidden file on a hard disk that Windows uses for swapping information from memory to the disk - especially when it begins to run out of free memory. There are three basic options for a Windows swap file: none, temporary, and permanent. If you have more than 16 megs of memory and do not run huge graphics processing programs, "none" is likely to be your best choice. If you have 8 to 16 megs you should experiment to discover whether "none" or "permanent" is best for you. I have never seen using a "temporary" swap file to be of any benefit - on my 8 and 16 meg systems using a "temporary" swap file slows Windows and games down significantly. You should check how this is set on your system because you may well find that at some point your Windows system has been inadvertently set to use a "temporary" swap file. If after using Windows for a while you begin to see longer and longer periods of disk activity each time you open a window or dialog, and it seems to take forever to see the first splash screen in a game, then your Windows system may well be set to use a "temporary" swap file. I think that "temporary" may even be what the Windows installer chooses the first time you setup Windows.

To check or set this, do the following. Open the Main program group on the Windows desktop, then open the icon named "Control Panel", then open the icon named "386 Enhanced". On the

right side of the "386 Enhanced" window there is a button titled "Virtual Memory" - click on it. In the "Virtual Memory" window there will be a text box labeled "Current Settings" with a line labeled "Type:". If that line has "Temporary" in it then I recommend that you experiment with seeing how setting it to "Permanent" or "None" effects your system.

To change the setting, click on the Change button. The window will enlarge to show a "New Settings" box.

(a) To change the setting to "None", select a "Type:" of "None" and just start hitting OK buttons.

(b) To change the setting to "Permanent", select the "Drive:" that you want the swap file to be created on and then select a "Type:" of "Permanent". Unless you know better, accept whatever "New Size" has been suggested by Windows and then click every OK button that you see until you return all the way to the Windows desktop - for example on my system with a pretty empty 500 megabyte hard drive, Windows suggested a size of 11718KB (i.e. about 12 meg). Had my hard drive been almost full, Windows would probably have suggested a smaller size for the swap file - however the suggested smaller size might not offer the same speed increase so it would likely be to my benefit to cancel the routine, go clean out some file deadwood, and then return to this procedure in order to be able to have a larger permanent swap file.

To determine whether "None" or "Permanent" is better for you, simply do the kinds of activities and run the kinds of programs that you mainly use Windows for and see if "things" in general seem to work faster or not. Again - my personal opinion is that the setting of "temporary" is never of benefit to game play.

TacOps Gazette 96.06

<<Have you given any thought to a squad level game, with each "piece" representing an individual soldier?>>

No serious thought - primarily because so many other companies have already done or are developing that type of game. Atomic Games should be releasing such a game in the near future (Close Combat) - I expect it to be a great game and I encourage you to take a look at it when it comes out.

<<Anyone have any idea by what is meant by 'Improved ATGM warheads'. Are there plans to improve OPFOR's ATGM warheads?>>

Basically it means warheads that are up to Western standards for their size - exotic charge liners, tandem warheads - in general more expensive and more modern ordnance technology. Improvements that OPFOR could reasonably make if OPFOR were willing and able to spend the time and money. The improved equipment for OPFOR is optional, but not using it makes for rather boring game play if the US player has any M1 tanks and it is hard to find a PBEM opponent willing to take the OPFOR side without the "good stuff" <g>.

<<Recently I've come up with a tactic that you would probably consider a "game trick". Basically what I do is establish a good TRP anywhere within 1 km of the intended target with several turns of spotted, adjusting fire, then shift fire onto the real target, which is usually not in my LOS. If left alone, the arty fires will drop one level in accuracy with each turn. However, if I shift back to the TRP and then shift to the target again on each turn, I can maintain level 4 accuracy on the unobserved target.>>

I do not consider that to be a "game trick" - given the constraints of the current TacOps arty model. Use it with a clear conscience <g>. See what follows for the "why" of it.

<<Is this at all realistic?>>

Yes and no. The TacOps arty routines and arty combat results tables are "effect oriented" rather than "procedure oriented". The arty targeting and call for fire "procedures" in TacOps are not perfectly realistic - they were not meant to be. The TacOps design goal was for the responsiveness of indirect fire support to be realistic and for its effects on target to be realistic - when averaged over the course of several turns.

<<Can an artillery unit consistently hit a registered TRP even if there is no longer a forward observer monitoring the fires?>>

In the real world, yes - in TacOps, no. In the real world, modern arty salvos do not wander around significantly until the gunners change the firing settings on the tubes or on the ammo (assuming that the guns are properly emplaced on dry/firm ground). Unobserved arty salvos wander around in TacOps because the game engine assumes that if you as the TacOps player are

directing your arty to lay on an unobserved target then your "virtual arty gunners" are changing the firing settings with each salvo so as to cover more ground so as to have a better chance of hitting a target that "your virtual troops" can not in fact observe.

<<The US Air Strikes are almost always shot down (75 % +) once the bad guys get their SAM's deployed in the right 1/3 of the map. As an very old USAF guy it seems to me that is unrealistic for hand held AA weapons.>>

I don't think it is unrealistic for today's weapons vs low level attacks. Although the game often shows aircraft as being "shot down" by hand held SAMs it would probably be more realistic to consider them as having been damaged or discouraged to the point where they had to/chose to leave the battle area.

<<As an old Air Force trooper I am disappointed in the air support. I keep losing most of my incoming strikes before they can do any damage. Am I doing anything wrong(probably at this point in my learning curve)? Any help here would be appreciated.>>

You probably are not doing anything wrong. TacOps was designed to be a very hostile air environment. TacOps assumes that both sides have good medium and high altitude SAM coverage so the game currently models only low level air to ground attack. Most TacOps scenarios feature OPFOR formations that have a portable SAM in every platoon. The combination of these factors makes for a very hostile air environment. In most TacOps scenarios it will be difficult to get effective air strikes unless (1) you launch several missions in the same minute so as to provide more targets than the air defense can cope with or (2) you wait to use your air support late in a game after OPFOR (especially the SAMs) has been heavily attrited.

Also, if you are sending air strikes against large concentrations of tanks and APCs and you are not suppressing those formations with arty and you are not smoking units near but not in the target area during the turns leading up to the airstrike then you are also dealing with dozens of turret mounted heavy machine guns (suppression silences them as well as local SAMs). The heavy machine guns have less than a 1% chance of discouraging an airstrike, but if you are facing several dozen, that % starts to add up to a significant number.

Some game design philosophy...

TacOps does not model unconstrained air power because unconstrained air power in a tactical level game would guarantee victory to the side that had it - there would be no "game" to the game play.

Tactical air support is far more effective in real life than what seems to be shown by TacOps. The real world effectiveness of tactical air support is so great that it creates a serious problem in designing a tactical level, ground oriented game. If one side or the other has plenty of tactical air support and if the tactical environment is such that those assets are free to roam the battle area at the altitude of their choice then (1) that side is going to win any tactical ground engagement and (2) there will be no incentive to employ ground assets in any role other than merely locating the enemy. In other words - a dead boring ground ops game <g>.

The focus of TacOps is ground ops. Since aircraft do not usually play a critical role in TacOps scenarios, the air support routines are very generalized. Aircraft are assumed to have executed an approach to target that gave them a reasonable chance both of hitting the target and of escaping effective ground observation and fire prior to the target. The scenarios do not generally contain aircraft in great quantities because in a tactical game if only one side has great air power the other side is guaranteed to lose and if both sides have significant air power then the game deteriorates into just hiding from aircraft. Such a game would be boring. I do have an item on the wish list to add the clicking of a map entry point and an attack path for aircraft to and from a ground target, but I don't know when I will get to it. The motivation for that change is not so much to increase the fidelity of the air play but rather to increase the fidelity of the ground SAM anti air play. Increasing the fidelity of the air play gets real complex real quick and would add greatly to the users workload when you consider all the variables involved in having the user specify the attack profile, bomb load, speed, height and angle of release, etc. and then all the game engine ripple effects of the variables of the different attack profiles on the response from ground to air weapons. The most likely result of having a skilled user do all that would be that he would end up with the same result over the target that the game now provides <g>.

<<I know how insistent you are about this being a *tactical* game. I appreciate this approach but cannot figure out why there are no A10's. Seems of all the available fixed-wing aircraft in the US arsenal, these are the most "tactical" in nature.>>

There are two considerations on my putting A10s into TacOps ...

- a. The main problem is that the A10 is unlike other fixed wing aircraft and it is unlike helos. Neither set of program routines are appropriate to simulating it. Requires a new targeting approach and huge blocks of new code. Don't know when I'll be able to get to it.
- b. There is also a gaming or play balance consideration to the A10. A couple of A10s firing Mavericks at an 8 km standoff would tend to produce a turkey shoot in a tactical level game, as would A10 strafing runs in a permissive environment.

<<It would be nice if a single click on a unit marker only resulted in the display of that unit's information line; a double click would be necessary to give orders.>>

My main goal in interface design is to link the easiest mouse and keyboard commands to the most frequently done user actions. The two most frequent actions required from a user in TacOps are (1) clicking movement points on the map and (2) opening unit orders windows. The number of occurrences per game of a user opening a unit info window is way behind the number of times that he will open a unit orders window. Clicking the mouse one time is less work than clicking it twice - therefore in my opinion a single click should be reserved for opening the unit orders window.

<<The LOS feature is awkward. I read in the Gazette how slow you said it would be for a click on a single point to reveal all visible areas. How about at the end of each turn, all obscured areas be overlayed with gray? If one wanted to see which units were observing a particular point, the

player could then employ the existent LOS feature. Otherwise, the player would still have a general awareness of blind spots, an awareness which seems very realistic. Moreover, the whole calculation would be handled in one go and would not impede the order's phase.>>

An example of what you are asking for. Map15 measures 1556 x 664 pixels - that means there are (worst case) over one million pixels (1,033,184) to be checked for a "total map" line of sight check. Task Force Nankervis has 167 US unit markers in it - if the US player breaks down no units. So we start checking the map to find and highlight in some manner every blind spot (i.e. a place on the map that no US unit has a line of sight to) ... we start with pixel h0 v0 in the upper left corner of the map ... in this case a line of sight check between one US unit and pixel h0 v0 involves checking a one pixel wide line from the center point of the unit to pixel h0 v0 - if the unit happened to be 4000 meters from pixel h0 v0 then there would be about 400 pixels in the line, however it happens that I can check the line of sight by only sampling every 10th pixel in that line so in fact checking the LOS for that unit would involve checking a mere 40 pixels between the unit's center and pixel h0 v0 - so worst case we do a check like this 167 times to pixel h0 v0 - once per each US unit ... if no US unit can see pixel h0 v0 then we color that pixel in some way ... cool, only 1,033,184 pixels times 167 units times 0 to 40 subchecks to go until we get to pixel h1556 v664. Now some of the checks will not have to go the whole route due to things like an infantry unit inside an APC gets skipped completely because it can not see out of the APC, or a unit is totally surrounded by woods or town, or because it is more than 4000 meters from the pixel being checked and therefore can't see it regardless of LOS. Still, the whole process for a large scenario is still going to amount to at least a hundred million checks with each check consisting of dozens to hundreds of CPU steps/code actions.

TacOps Gazette 96.07

<< ... [wants] artillery delivered mines as an option during the game rather than having to be emplaced at the beginning...>>

"On call" usage of arty delivered mines was actually removed from TacOps during the final playtesting of the Mac version because several active duty arty officers said it could not be done in the real world in the limited amount of time represented by a typical TacOps scenario - i.e. one to two hours. The reasons given were (1) it takes a lot of prep time at the firing unit to get mine rounds ready for firing and once prepared they can't just be left laying around for "use when and if needed", (2) their firing generally has to be approved in detail well in advance by some local noble (military or civilian) who usually does not in fact want them used at all, (3) it takes a long period of concentrated firing by a lot of arty units to lay a minefield large enough and thick enough to be tactically significant and (4) arty delivered mines don't arm for a significant period after impact. The rule of thumb that I remember one of these gents giving me was "if you can see them coming [the enemy], it is too late to use arty delivered mines".

No one has since provided me with a convincing counter argument. Therefore the current TacOps approach of requiring you to make a pregame, "best guess" as to where arty delivered mines will be beneficial seems to best replicate the real world situation.

<<...let me suggest some sort of results/promotion history and ladder. >>

I doubt that I will add such a feature to TacOps. I intended to do this at one time but when I sat down to try to figure out the exact rules that would be used to provide an end of game efficiently rating, I was unable to come up with anything that I liked or that I had confidence in or that would consistently produce a proper rating for every possible flavor of scenario/tactical situation. Having the program tell a player that he has done "well" or "poorly" really means that I am telling him that. If I am going to tell someone that they are a poor commander, I better be able to back it up <g> - I did not feel that I could or should do this.

<<Am having problem with the AH-1 and AH-64...cannot get them to engage with the 20mm/30mm guns regardless of the range. They end up getting blown away by the infantry as soon as they run out of rocket pods. Any chance this a bug?>>

It is not a bug. It may be a poor design decision on my part <g>.

Here is the scoop. The game engine heavily penalizes the 20mm guns on the Cobra and the 30mm guns on the Apache vs targets that are in cover or in defilade (especially infantry targets in defilade or cover). The starting accuracy value for helo 20mm and 30mm guns is also currently a bit low in the game engine. The result of these factors is that the game engine will seldom fire these weapons at targets that are not fully exposed.

<< I can't seem to use that Apache effectively. They get shot down before they get a shot. How is the best way to get them to spot targets?>>

Use the "15 second pop up technique". Try giving "move and pop up" orders that cause the helo to do the following: move at NOE altitude to a firing position that has a line of sight block between the helo and the suspected target area, order the helo to go to medium altitude (use the helo up orders button), stay there for 15 seconds (use the delay orders button), go back to NOE altitude (use the helo down orders button), and move away immediately to another pop up firing position. If you do this you should usually be able to get a "free" 15 second pulse for spotting and firing at the pop up point. If the helo spots a target when it pops up it has a very good chance of nailing it and getting away. If a helo stays visible to OPFOR SAM gunners or a ZSU for more than 15 seconds, it is in trouble - more than 30 seconds and you can kiss it goodbye. You should try to use your helos at the maximum range of their weapons. The closer your helos get to OPFOR the more things he has that can shoot them down, especially if the helos are hovering. Note that the AI remembers where it recently saw US units. If a helo is observed as it moved to its pop up firing position or if it tries to use the same pop up position twice in a short period then you may not get the surprise fire award.

<<How do I unload one unit from an APC without unloading all of the units? I want to drop off a mortar crew, but if I unload it drops off everyone.>>

You can not unload just one unit.

<<For that matter, how do I load all but the mortar back into the APC?>>

During an orders phase, use the instant load button (rather than the delayed load button) in the Unit Orders Window.

<<The thing I can't figure out is what are ambulances, Hemmitts, command vehicles and so forth for? I played around with adding to scenarios and couldn't figure out what to do with them or if they made a difference. >>

These units currently have no special abilities. They were originally added to the data base as a favor to certain military and game club users.

<<When playing TacOps, I often do much the same thing with my observation posts. My OPs will stand until overrun, but the information they provide is invaluable when considering it helps to prevent an even greater loss. Yet, I would sure hate to be the poor slobs being overrun.>>

If it is any comfort, you don't have to consider the overrun infantry units in TacOps as always being "dead or captured". It is plausible that they went into hiding or escaped but that the nature of their situation became such that they were not combat effective or able to contact higher headquarters again for the time remaining in the scenario.

Were I too add a campaign mode of play to TacOps, I would likely usually restore a very large percentage of the unit losses (especially foot infantry) in one scenario for the beginning of the next scenario. These would not be new guys or replacements - they would be troops and

equipment that had returned to a state of combat effectiveness or that had regained command and control.

<<Today I was busily running Gebhard when TacOps began to require that I press a key, any key, to cause the next unit to fire. It seems that artillery completes all its missions for the segment, but units act one at a time.>>

You would get that effect if someone or something had changed the game Combat Speed setting to a very high value. The Combat Speed setting places a delay between combat phase activities such as firing so as to slow down the combat phase. The delay can be overuled by key presses or mouse clicks.

Once changed, the Combat Speed setting becomes permanent until (a) it is changed back using the Change Combat Speed menu item or (b) the TacOps preferences file is deleted. The Combat Speed setting for a game is also probabaly saved into any saved game file.

<<would it be possible to allow units to enter from the northern or southern borders of the map?>>

It would be currently possible for me to create such a scenario for two player human modes but not for play vs the computer opponent. I am not confident that the existing AI code could deal with attacking on, or defending against, a generally north/south axis of advance. The code to handle a north/south orientation is in the engine but it has been almost two years since I last messed with it. The north/south code is never visited by the scenarios that presently exist and it was not tested at all during the Windows conversion.

<<A related question: are the new maps for the Windows version which are to appear on the upcoming scenario disk any squarer than the current large map?>>

The maps for the expansion kit are "new" only in the context that they have not yet been converted for use by the Windows game engine. They must be the same as what is in the Mac version of the expansion kit and they can not be any different for the Windows version. Some are "squarer" but none of them are any longer or taller than Map01 by more than one grid square. Originally there was a limit on how long and how tall a TacOps map could be due to a peculiarity of a certain Macintosh code routine - that max dimension is pretty well shown by Map01. That techincal limit was overcome for the Mac as well as for the PC during the Windows conversion but that progress is irrelevant until an entirely new scenario disk is started.

<<That shape would enable a larger field of maneuver or flanking ability for the attacker, and avoid the reason for wanting map entry broadened to the north and south.>>

True, if you assume that the only units in the "war" are those presently on your TacOps battlemat. Such an assumption would tend to ignore the real reason why opportunities for really clever and surprising flanking maneuver are so often absent on the battlefield at the battalion and brigade level. In real life there would usually be major enemy units just past the "TacOps map edges" that would prevent you from doing those flanking maneuvers that you want

to do <g>. The typical TacOps scenario only portrays what is going on in "your" little piece of what is probably a line extending some hundreds of kilometers. Whatever is happening to you at the moment in TacOps, is conceptually also probably happening to your neighbors to the north and south. If you were defending and your attackers moved to the far north or far south of your defensive zone they would just run into the defensive zone of one of your neighbors - and vice versa.

In a real war against a serious, competent enemy, you don't usually have huge gaps and open flanks to exploit at battalion and brigade level until someone first creates them by force or by accident.

TacOps Gazette 96.08

<<I was playing a PBEM game and it finally hit me that each time I start up the game, I have to tell the game where the scenario file is. I keep my PBEM stuff buried in other folders so I can keep it organized--I can't imagine having it all in one place. Maybe you could fix it in a future update such that the game "remembers" where the scenario file is, taking into account the fact that it is not likely for one to move it around every which way during the course of normal TacOp-ing.>>

I tried that once in the Mac version and it should have worked but it never really did - one bug after another.

I can suggest a good workaround. In my PBEM play I also keep each email game in a separate folder. However, I put a duplicate copy of the appropriate scenario and its map in each of the email folders. If you do this, the program as it currently exists will be able to find both the scenario and the map without putting up a "where is it" dialog.

<<Someone I know in ROTC said that HE works better than ICM on entrenched infantry. Is this true?>>

In the real world, it depends on the nature of the entrenchment and of the surrounding terrain. The most critical factor is the amount and strength of overhead cover. Unless the entrenchment has a top on it that can resist the penetration of antitank type ICM or unless the entrenchment is in forested terrain then in my opinion ICM would be better to use than HE.

In TacOps, neither HE nor ICM will have great killing effect vs entrenched infantry when the entrenchment is in wooded or town terrain. Arty vs such targets is most useful for its suppression effect while you are closing to do a direct fire assault of the entrenched position. Since ICM is generally scarce in TacOps, it is thus generally more efficient to use HE vs entrenched infantry when the entrenchment is in wooded or town terrain.

<<The description of preferences settings appears to say that automatic spotting of firing units is the more realistic choice. This is not what I would expect. Typically, more statistical effects mean more realism. Am I reading it wrong?>>

Must be a poor choice of words in that part of the game manual. Automatic spotting of firing units is less realistic than non-automatic spotting. In other words. If you want a more realistic game, do not place a check mark in the box beside the line in the preferences window that is labeled "Firing Units Are Always Spotted".

<<Are there no command and control effects?>>

There are no command and control effects in the game engine that have anything to do with "HQ" unit markers.

<<Is a company HQ really just two more tanks?>>

As far as the game engine is concerned, a company HQ is just two more tanks. The HQ, medical, and logistics units were added to the game data base well after the initial release of the Mac version. They were added at the request of some club gamers and some military gamers who wanted them present in their custom designed, multi player games/exercises. Some wanted them just so their unit array would look and feel more complete. Others wanted them present so that they could more easily implement personal or umpire enforced game constraints related to the presence and positioning of the HQ, medical, and logistics units.

<<Do the spotting algorithms work differently for tanks than for infantry? In other words, does dismounted infantry spot better than tanks?>>

Yes & yes.

<<[Is an] ATGM with a pen of 1305 significantly less effective than one with 1350, against, say an M1's front armor.>>

Strictly from a penetration standpoint - no. However, there may be other factors involved with each ATGM that significantly effect their comparative probabilities of hitting and killing a particular target.

<<What are good, concise (and preferably inexpensive) sources for Soviet and US OOBs?>>

To the best of my knowledge there aren't any - that are current.

<<How do you (roughly) calculate weapon effectiveness against infantry?>>

Each weapon that can be used against infantry has its own "vs infantry" combat results table that expresses casualties per volley as a percentage of personnel in the target infantry unit and or in the area around the target infantry unit. The values in that table are modified before application by a number of situational modifiers - the most important of which is the target unit's tactical disposition.

<<For instance I have noticed that the OPFOR 100mm gun has pathetic range and penetration, which leads me to believe that it is a short barrel gun designed to attack infantry. Is it more effective? How much more?>>

I assume you mean the 100mm gun on the BMP3 - it is actually quite long. There is not much publicly available info on the BMP3. What I have read suggests to me that the main purpose of the 100 mm gun is to serve as a launcher for a 100mm ATGM to be used at long range against armored targets weaker than tanks - i.e. IFVs and APCs. Given the small size of the BMP3 turret and the absence of a significant counterweight on the back of the turret, I don't think the tube on the 100mm gun can be very heavy. A 100mm barrel would have to be very heavy in order to be able to handle the tube pressures of firing any sort of traditional shell. Therefore if

the 100mm gun has an anti-infantry round, it seems to me that it would need to be some sort of RPG [rocket propelled grenade] like round. That is what TacOps assumes.

<<Is it possible to exchange save game files between Mac and PC?>>

Not at present.

<<do you think infantry ATGM teams (e.g. Javelin) would really be able to use their thermal sights to spot while on the move?>>

Not really, but the coding compromise that allows this to appear to happen greatly enhances playability. I think it has little if any effect on the game's combat results. Most units in TacOps move a bit slower than they would in real life - part of this is to build in a time fudge factor to take care of things like an ATGM team pausing briefly to take a look around through the thermal sight. If TacOps was a man or squad level game I would be more concerned with things like this.

<<Is it possible to create user-made scenarios for TACOPS where the computer plays one side?>>

Yes - somewhat - by editing the regular scenarios that have a computer opponent.

<<To create a human versus AI custom scenario, would it be possible and legal to heavily modify an existing scenario, save the game before the first round of play, and then post this "new scenario"?>>

Yes it is possible and it is legal due to a specific license/release that I included in the TacOps User's Guide. See pages 95 & 96 in the TacOps (Win) User's Guide for the rules on sharing scenarios in "saved game" form. In summary, you may post/share an edited scenario when it is in "saved game" format. You may not post/share a scenario (or any other TacOps factory file) in its original factory provided format. In other words you can give someone a saved game file but you can't give them the map and original scenario file that are needed to play that "saved game" file.

<<I'm still trying to figure out how to play a PBM game>>

Don't think so hard about it <g>. Just find an opponent, agree on game preference settings, and then start the game. The "Send Orders" and "Receive Orders" menu items will lead you through the process. Just select whatever menu item is not "dimmed out" and then do what comes naturally.

<<I am curious as to whether or not a direct network connection for TacOps (Windows) can be set up under the Internet. Hey Major, can it be done?>>

I have been told that it can be done, but I don't know how to do it and I did not intentionally code the game engine to be able to do it <g>.

Now I have witnessed TacOps (Windows) being played across the Internet in a sort of real time mode while using its regular PBEM mode. I have recently participated in several IRC question and answer chat sessions with TacOps users where several of the users were at the same time using the IRC chat channel that we were on to exchange PBEM orders files. They were actually playing a game at the same time that we were talking about TacOps. Until I saw it myself, I did not have a clue that such a thing was possible. You might email Scott Blaha for more info on this - he seems to be the ringleader in using IRC to play TacOps and he plays a lot of TacOps PBEM. His address is sblaha@globalvision.net. Tell him "the major" sent you <g>.

<<Can an E-mail game work if one person has v1.02 and the other 1.03?>>

No.

It will work but it may not work right for more than a turn or two. Both players should update as quickly as possible to v1.03. The ability of v1.03 to read saved games and orders files from earlier versions is only there to support an immediate transition to v1.03 by both players.

<<I am not sure M1A2 tanks are useful on the US side, I haven't find a good use for them yet. It seems to me Bradleys are a much better weapon: They can kill T80 with missiles 4000 meters away with a good probability ... Since both type of vehicle die when hit by improved OPFOR warheads what is the advantage of Abrahms vs Brads?>>

The M1 shows its value when you are heavily outnumbered at ranges under 2000 meters <g>.

In a situation where OPFOR has weapons that can penetrate the M1A2 tank, the M1's main advantages over the Bradley are (a) the M1 has a much higher rate of fire than the Bradley and (b) the M1 is more resistant to arty attack.

In TacOps, the M1 can fire four rounds a minute, minute after minute. The Bradley can only fire one or two TOWs per minute (depends on the range to the target) and once two TOWs have been fired in rapid succession the Bradley will not be able to fire again until its external TOW launchers have been reloaded - it takes a minimum of two minutes of inactivity to reload the launchers.

Thus, at optimum range, the M1 has a good chance of killing four enemy tanks per minute or 12 tanks per 3 minutes. The best the Bradley can hope for is two tanks per 3 minutes.

<<I didn't notice there was a penalty to fire missile (delay before hits).>>

There is a delay for time of flight if it takes more than 15 seconds for an ATGM to get to its target. There is also an extra reloading delay for some ATGM systems. For example, if the Bradley fires two ATGMs in a row there will be at least a two minute reloading delay before it can fire ATGMs again.

<<Anyway to get those F16 to use their Mavericks ?>>

The Maverick is not currently in the TacOps database.

<<Combat disruption due to losses doesn't seem to be modeled>>

Other than transient suppression, it isn't modeled in an obvious way but it is modeled some. I think the infantry casualty rate in TacOps is high enough to include people who have chosen to remove themselves for harm's way.

<<Well, maybe if there was a icon-based supply system instead of the kind of "omnipotent" system now in use, you could see just how feasible the battlefield conditions are. Something like supply icons for various weapons systems (like tank main gun- generic for all 105-125mm guns, or Light ATGM- generic for all man-portable ATGM systems like Dragon, Javelin, Eryx, AT-7, etc.) that are loaded onto trucks (or whatever) like infantry is, then dumped or transferred to the needy vehicle like you would transfer an infantry squad from an APC to a tank, except the value of the icon or icons you drop is transferred right into the vehicle's ammo supply. My only gripe with TacOps has been supply.>>

I appreciate and agree with the point.

However, I am not inclined at present to divert my resources to working on a more detailed supply/logistics module for TacOps.

However, if someone or several someones want to do the concept implementation design work for me <g> I am not opposed to adding such a module at a later date. By that, I mean provide as detailed as possible explanation of exactly what is desired in the way of a supply module. The best concept definition would be a list of proposed rules that would govern the conduct of supply/logistics in the game. Vague conceptual explanations make for interesting reading while on their way to what is now a very long TacOps wish list. When suggestions include rules that can be coded in a straight forward manner, the suggestion is placed closer to the top of the wish list <g>.

<<... regarding sniper fire... at times, when the snipers fire, there's no line of fire marked and no associated sound, rather, an OPFOR unit is just hit (as the message bar at the screen bottom reports the fire), whereas at other times there DOES seem to be a standard line of fire marker and sound...>>

Prior to the v1.03 update the sniper firing sound - the sound of a single shot - was missing from the program.

Below is what is supposed to be happening as of the v1.03 update and it was what happened when I checked it this morning on my machine.

The longer that a sniper unit fires from the same spot the more likely it becomes that (a) a fire line will be drawn and (b) that the sniper unit marker will be revealed/the unit will be spotted. To receive the max chance of remaining unspotted a sniper unit needs to fire no more than 2

shots (generally 2 sniper shots equals one combat phase/turn) from the firing position. After firing the 2 shots the sniper must move to a new position that is at least 100 meters from the last position and the move must be completed without the sniper being spotted enroute.

The first time a sniper fires from a previously unspotted position: sound of a single shot, most likely the fire line is not drawn, and most likely the sniper unit marker is not revealed/spotted.

The second time a sniper fires from a previously unspotted position: sound of a single shot, most likely the fire line will not be drawn, and most likely the sniper unit marker will not be not revealed/spotted.

The third time a sniper fires from a previously unspotted position: sound of a single shot, most likely the fire line will be drawn, and most likely the sniper unit marker will not be not revealed/spotted.

The fourth(and any subsequent) time a sniper fires from a previously unspotted position - sound of a single shot, most likely the fire line will be drawn, and most likely the sniper unit marker will be revealed/spotted.

By the way, the US and OPFOR sniper and recon sniper units in TacOps are elite quality units. The game gives them exceptional hiding, spotting, and accuracy capabilities. The use of more than a very few sniper or recon sniper units in a TacOps game would be very unrealistic. In particular, the OPFOR sniper unit or recon sniper unit is far more capable than should normally be expected for the "sniper" that is supposedly in each real world OPFOR rifle platoon. It is more accurate to say that there is supposed to be one scoped rifle in each real world OPFOR rifle platoon. That rifle may or may not be there in every platoon in the real world. If it is there, although its user may be the best shot in that platoon, it is unlikely that he would be trained or experienced to the level represented by a TacOps sniper unit or that his weapon would be sufficiently accurized.

TacOps Gazette 96.09

<<Task Force Hoeft ... why do Canadian/US units exit when they go too close to the map edge?>>

Multiple Choice quiz ... pick the best answer ... I have used them all <g>.

- (a) There is a friendly Corps headquarters unit just off the map edge that has hot chow and a dance troupe.
- (b) There are enemy defensive positions just off that map edge with overwhelming fire power.
- (c) It is mainly just one of those nasty coding compromises. In any TacOps scenario, if a unit strays into the gray border that goes around the map, that unit will exit the game. Having the gray border always be hot for exit, gives more flexibility to folks who like to design their own scenarios and victory conditions for two player games.

<<Now, Major, ... will you please give an honest reply to whether the following statement is true - "The _optimal_ (and I'm not talking about the most enjoyable here) way of organizing your direct-fire forces in TacOps is to split them into single squads/vehicles."?>>

All of my replies are honest. They may be wrong sometimes but they are honest <g>.

When TacOps first came out for the Mac, there were some very significant advantages to splitting a marker into its components and having those components travel around in a single stack. I have been scrubbing those advantages out of the code ever since - whenever one came to my attention. I don't think there is much difference now between moving a single marker and moving a stack of components. If there is an optimum size for a marker, I would say that it would be the platoon marker - the "three dot" marker.

<<This is important, I think. There's absolutely no reason (at least not in general), to start releasing at the first possible moment. Sure, due to one being in covering terrain and being unspotted, one will probably kill more units than one loses - but this advantage won't disappear as a result of waiting. What _is_ important is to see the enemy for as much of the time as possible.>>

It is different now, but for much of my time in the Marine Corps, published doctrine was to employ a defense that engaged the attacker as soon as possible with whatever weapon could reach him at the instant. Most direct fire weapons were located more or less on line. The idea was that this would cause the attacker to travel through an ever increasing volume of fire. First he would be engaged by air attack, then by arty, then by TOWs, then by tank gun, then by mortar, then by heavy machine gun, then by medium machine gun, then by Dragon, and finally by rifle fire and LAAW. Each weapon system would join in the firing as soon as the attacker advanced into that weapon's max effective range. Such a defense might be useful against repelling a WWII banzai attack or a Korean War human wave attack, but I think TacOps

accurately shows such a defense to be terribly flawed in a situation where the attacker has good comms and responsive arty and where the attacker precedes his main force with a thin line of recon/skirmishers. In the latter situation, the piecemeal firing of long range direct fire weapons at their max effective range just gives the attacker an early opportunity to take them out with arty.

In my opinion the optimum defense would be one that engages the attacker only with arty, mortar, and air for as long as possible so as not to reveal the trace of the direct fire defense positions. Direct fire should be withheld until it can be delivered simultaneously by as many weapons as possible in a devastating opening volley. What happens next depends on the terrain and situation but I am convinced that in general - whether a defender wins or loses the direct fire fight that follows this initial concentrated volley - he should move the bulk of his forces to new defensive positions as soon as possible to avoid the arty barrage that is sure to follow.

<< I'm wondering, did you happen to base some of TacOps on the old GDW board game "Assault"?>>

No. Any similarity between TacOps and the board game "Assault" would be due to both product's use of fairly traditional board and miniatures gaming concepts.

<<Although parachutes are not used, I noticed that I may unload helos even at medium altitude.>>

That is a playability compromise. Originally every helo altitude change required a delay before the next action could occur and there was no ability to "instantly" load and unload helos during the orders phase. The playtesters complained that the procedure was too much work for too little play benefit, so I added the "instant" Load and instant "Unload" buttons to the orders window - located on the right side of the orders window.

If you prefer to use a more realistic load and unload approach, you can restrict yourself to using the "delayed orders" load and unload buttons - marked with "L" and "U" and located on the top side of the orders window. These buttons will cause delays to be observed by a helo as it loads and unloads troops.

<<Is it possible in reality to decrease altitude to nap-of-the-earth, unload the troops and return to medium altitude in less than 15 seconds?>>

I doubt such a thing would be safely possible in the real world for most troops and most helos.

<<Can an airplane or helicopter attack and shoot down an UAV?>>

In TacOps - airstrikes will not attack and can not shoot down a UAV - attack helos can attack and can shoot down a UAV if they get close enough.

<<When an artillery unit on the field is performing indirect fire, it cannot perform direct fire simultaneously, right?>>

Correct in TacOps - at least not with its artillery weapons. It is possible that the crews might fire small arms and personal antitank weapons in self defense during indirect fire missions.

<<TF Mizokami ... the Hind and Havoc flights I gave to OPFOR entered much earlier than the times stated in the About Scenario screen (0800 and 0900).>>

That is correct program behavior for solitaire mode. In solitaire mode, OPFOR helos enter the game randomly rather than at the times shown in the mission text.

<<One curiosity... under the 'Reports' menu header, in the 'Photo File', what does the 'Select' button do?>>

It is just another way to open a photo - it was put in to allow keyboard access to the photos. It is an artifact from the days when I used to pay more attention to the Apple and Microsoft user interface guidelines <g>. They suggest that keyboard paths should be provided for users who don't have or don't want to use a mouse. I long ago gave up on the concept of making a game that could be played by keystrokes alone.

<<do you plan to include cross-platform PBEM in future versions?>>

I have not totally given up on the idea. I have been trying to get it going in the current version of TacOps ever since the release of the Windows version but I have not been able to make it work reliably yet. My trying to add cross-platform PBEM has delayed way too long the release of a new update for the Mac version and the Mac version is now quite a bit behind the Windows version in features. I recently decided to temporarily give up on the cross-platform PBEM so that I can concentrate on finishing and testing a new update for the Mac version that will bring it up to what is in the Windows version. I hope to have that update out this summer.

<<what about Panzer's East? Will it include such a feature?>>

I hope so. I am personally doing both the Mac and the Windows versions this time so the chances are better.

<<One final wish. Can smoke be made more fuzzy. The Thermal Imager is such a powerful tool. I cannot conceive that the smoke is so clinical in real life, e.g. no wind in 'tacops'>>

I will probably tweak the smoke routines eventually but I have no inspiration for it at the moment <g>. You are right that smoke in TacOps is more precise and predictable than it is in real life. However, I think the basic concepts of smoke usage are covered adequately from the infantry commander's perspective. Wind conditions are not the infantry commander's problem to solve. If an infantry commander wants smoke to obscure a certain place or a given line of sight, he tells the arty commander what he wants, where he wants it, when he wants it, and how long the obscuration is to last. The arty commander will then respond simply if the task can be done or not. It is entirely the arty commander's problem to make the smoke happen the way requested, given current atmospheric conditions.

<<Does artillery affect helicopters in flight? landed?>>

In TacOps artillery can not effect helicopters in flight. I have no note of a helicopter ever running into an artillery round while in flight in the real world. Landed helos suffer the same as other units on the ground.

<<Does artillery attack units or individual steps?i.e. can you avoid multiple hits on your infantry by amalgamating them into large units?>>

Artillery attacks all unit markers within its salvo radius and the arty combat results tables yield casualties as a percentage of what is in each marker. You can not reduce or increase casualties from arty fire by amalgamating units into large units or by splitting them into a stack of small units. The final casualty percentage within the salvo beaten zone should be the same either way. If you want less casualties from arty, you need to spread out your stacks so that there is not so much in one place - same as in the real world.

<<When giving the 'split' command to IFV's, etc, they always off-load all their troops. Is there any way to prevent this, as it can be 'real-time' consuming to upload them all again!>>

No way to prevent this. It is very intentional that it happens that way and it is the result of an analysis of what produces the least number of keystrokes and mouse actions required to support the usual outcome of splitting during the orders phase. Automatic redistribution of infantry teams when vehicles are split can't work due to the large variety of unit types that can be placed inside APCs. Lets say that you have an AAV marker that represents 11 vehicles. Embarked in the AAV marker are 9 rifle squads, 6 machine gun teams, 8 Javelin teams, 4 60mm mortars, and 2 stingers. You split off one AAV unit. How can the computer automatically figure out what part of the total load you want to be in the split off AAV?

<<In the limited number of scenarios I've played, I've noticed that troops at level one tend to treat ground at level zero as 'out of view'. Is this the sim, or just my inexperience? If not it tends to give the lie to 'Take the High Ground'!>>

The outermost 100 meters of high ground, woods, and town terrain (ten pixels plus or minus a pixel or two) provide a dual spotting zone. In the case of high ground it relates to the ability to see from the high ground down to low ground. In the case of woods and town terrain it relates to seeing out. From the first or outermost 100 meters above the contour line a unit can see both all otherwise unblocked high ground and all otherwise unblocked low ground. If the unit backs away from this 100 meter buffer, then it will only be able to see units that are on high ground. If it crosses the contour - headed downhill - then it will only be able to see units that are either on low ground or that are themselves right next to a high ground contour. In the outermost 100 meters of woods and town terrain you can see and shoot out of the woods and town but your visibility to the enemy is greatly reduced (until you fire). For visualizing LOS, you need to key on the center point of the unit marker. If you are "in the zone" and if you are using one of the larger marker sets, a lot of the unit marker will appear to actually be out of the woods. Again, it is where the center point of the marker is that is important for LOS.

<<The USMC TOEs [i.e. Tables of Organization and Equipment in the User's Guide] show no indigenous air support. Is this correct? The impression I got from watching news reports from the Gulf - particularly the operations around Khafji, was that the USMC units there had gunship and A10 support. Would this have been 'on call' rather than part of the formation?>>

The USMC TO&E charts are for infantry units - up to regiments. Such units will have air assets temporarily assigned to support them (to use in combat, but not to maintain) but they do not have organic air assets. Air support is an 'on call' thing.

<<Is it really difficult to use artillery to interdict moving armor or am I just incompetent?>>

It is really difficult - even more so in real life than in TacOps <g>.

TacOps Gazette 96.10

<<My opponent has selected two FASCAM which gives him 20 mine icons. He's placed them in at least nine locations (that I've stumbled across so far) in 1's and a few 2's with very little clustering. Is this realistic?>>

The following doesn't answer the question. It is provided only to help the discussion. In TacOps, a minefield marker represents a square area of ground measuring about 150 meters by 150 meters that contains a sufficient density of both anti personnel and anti-tank mines to be tactically significant to both infantry on foot and to vehicles of all classes - i.e. a real physical threat to movement across it. A TacOps minefield is more than a nuisance minefield but less than a barrier minefield.

<<Is there a way of winning TF DeGoey?>>

(1) Make the reinforcing OPFOR infantry walk to the objective. Use every unit that carries a machine gun as an armor hunter/killer team and move them as far East of the objective as you dare. In TF DeGoey, the OPFOR APCs are BTRs. BTRs have very weak armor and can be killed easily by machine gun fire into their side or rear.

(2) Use your fixed wing air power aggressively in TF DeGoey. The Marine force in TF DeGoey has a very high (for TacOps) fixed wing sortie rate. If you use your airstrikes, you will find that you will get more of them relatively quickly. In TF DeGoey the US player should always keep at least one empty mission slot in his air support window as this is what lets the game engine know that you can use more air. If you have all six slots filled, you will not get more air support until one of them is used.

<<I have been playing the TacOps demo ... Do units belong to higher level formations and does this have any effect on game play?>>

Not for human players. The AI/Computer opponent often maneuvers its markers in groupings that correspond to higher level formations - usually companies and or battalions.

<<Do units have morale?>>

Units have optimum morale, training, and C3I. I think your real question is do units have bad morale <g>. The answer to that is no.

<<Example: The lead OPFOR bn is moving west along the southern road. I subject it to a withering barrage and kill 80% or more of the units. They do, however, force me to fall back. I set up the next kill zone farther west. Then the remnants of the OPFOR bn come strolling out of the smoking wreck zone. The force consists of about 3 BMP's, 2 mortar carriers, and a ZSU. They promptly get hit by TOW and 120mm fire from three sides, not to mention an 155mm ICM barrage. About half of them get popped. The rest keep coming. And coming. The last mortar

carrier got killed by 25 mm fire from a Bradley at about 400 m. Every unit in the bn was dead, but the last units were like crazed Zulus. Is that how it works in the real version??>>

Yep. In the current version of TacOps, for the most part, you have to physically stop the enemy. You can not just scare him away.

On the other hand, transient suppression is applied pretty liberally in TacOps and some users have suggested that the casualty rates from direct fire and arty are too high. It isn't too much of a stretch to suggest that many of the units "killed" in TacOps have rather chosen to remove themselves from harm's way or have become otherwise not combat effective for a time duration equal to the time span of a scenario. I don't trot that out very often as I have an equally large stack of email from folks who think that the TacOps casualty rates are too low <g>.

The TacOps demo is missing a few features and it has bugs in it that are not in the retail version (and of course it does not provide all the scenarios and maps), but play wise it accurately represents the retail version. If you don't like the way the demo plays, you should not buy the retail version.

<<I don't understand why my infantry aren't firing their LAWs while in close proximity to enemy vehicles.>>

Maybe it is because the infantry are suppressed or the enemy vehicles are in smoke? In town terrain, units must usually be within 100 meters at least (i.e. point blank range) of each other for there to be a clear line of sight.

<<Just a question: is there any urban heavy scenario in the expansion disk?>>

No.

<<Do you plan to have more?>>

No. In my opinion, the map scale of the current version of TacOps is not appropriate for producing an enjoyable and adequately realistic city fight game. If the grid squares were say twice as large then I might be able to do something - but then the rest of the game would suffer due to the long ranges of modern weapons (i.e. constant screen scrolling).

<<I realize that an unsuppressed, unmoving unit in good cover gets the initiative in firing, but how long does it take for the enemy to spot who is firing at him?>>

It varies from 15 to 60 seconds - in TacOps, if automatic spotting is turned off. The chances of being spotted increase with each 15 second pulse that follows the first firing of the hidden/previously unspotted unit.

<<If you kill units in advance of the rest of the group (say, the recon or lead units in a battalion), is the probability of being spotted by the next units to come by increased?>>

Nothing is guaranteed in TacOps but usually no. If you kill everybody that has a line of sight to a unit and if no enemy unit acquires a line of sight to the hidden unit within about 15 to 30 seconds then it will be as if your hidden unit had never fired - most of the time. Except not for helicopters. Helicopters are always special cased so that once they fire from a certain location they can not get the surprise fire award again from that same location.

<<Why haven't the M110 (8") and M107 (175mm) howitzers been included in the US TO&Es?>>

To the best of my knowledge they are no longer in the US inventory.

<<Also, how about adding the M109A6 (Paladin)?>>

I think that the 155mm SP that is currently in the data base is adequate to represent the A6 model since no TacOps map could be large enough to make the increased range of the A6 relevant to game play.

<<I am especially puzzled about scenarios such as Gebhard (I think that's the name). What is the reason why a military force would want to pass through an enemy force and exit "20 percent" off the map? What is the military objective here?>>

The point in "exit percentage" scenarios is not whether the type or number of exiting units are likely to be useful in any real world sense. The point is that the exiting enemy units demonstrate that your defense failed to stop or delay the attack adequately, farther away from the map edge. Originally, I felt in exit scenarios that the defender should lose if just one unit exited the map.

Wining and losing and abstractions like the "exit percentage" victory condition are part of the "game" side of TacOps. In order for an activity to be a game there must be quantifiable victory conditions and both sides should have a reasonable chance of winning - all other influences being equal. Real world victory conditions based on real world missions would tend to produce boring games for users other than wargaming grognards and military professionals. If you don't like the game victory conditions of a scenario then you are free to make up your own. Pick out a victory goal that seems reasonable to you and once it has been achieved or failed, just declare yourself the winner or loser and move on. You are the boss of your own computer <g>.

<<I imagine the explanation of the mission: "Your forces will pass through such-and-such area. You will be under almost constant observation by the enemy.>>

Frequently realistic for the real world.

<<The enemy will attack from the air, but you will have no SAMs to defend yourself.>>

If you don't like the number of SAMs provided in a TacOps scenario, give yourself some more with the Add Unit menu item. You might also write your Congressman and ask him why US troops seem to be provided with so few portable SAM launchers <grin>.

<<You will transport troops in your Bradley vehicles, but they will be unable to play much of a role, except to serve as targets for enemy gunners.>>

Sometimes that is the way it is - especially in a fast moving, large area, mechanized engagement. If you are in the attack and you want to use leg infantry oriented tactics, use the Change Game Length menu item to add two to four more hours to the scenario length.

<<The enemy will fire from fortified positions, thus reducing the effectiveness of your return fire. And we have no idea whatsoever where enemy forces are actually located, but they have a pretty good idea of where you will be traveling.>>

Again, nothing unrealistic there.

<<Your orders are to get through all of this, and hopefully no more than 80 percent of your forces will be slaughtered along the way.>>

Unrealistic for a typical day of warfare for US forces but could be realistic for a desperate situation. Not at all unrealistic for Warsaw Pact tactics of the 80s which assumed that leading regiments and even divisions would continue to advance, no matter what, until completely burned up - once the first echelon was consumed, the second and third echelon forces would simply pass through the debris. WWII Russian troop leaders and troops would do this, but I always wondered if the average, modern Soviet soldier would actually fulfill his role as a "consumable item" and if the modern Soviet troop leader would execute subordinates on the spot who refused.

<<Am I missing something here? I must be, but I'm not sure what. The only way I've ever been able to succeed in these scenarios is to stay pretty close to the map edges. But this seems rather unrealistic to me, the real world not being equipped with "edges.">>

The real world does have "map edges". Units of all sizes have lateral boundaries imposed by higher headquarters that they can not physically cross, or fire across without permission or exceptionally good cause. Another producer of "map edges" in the real world is terrain that can not be crossed in the time available or by the method of transportation possessed by a given unit. A third real world map edge is produced by the presence of an enemy unit whose size or position is such that a given area must be avoided.

<<The OPFOR, although it plays a pretty good game, does not, in my opinion, follow WARSAW pact doctrine. In playing the demo (gallager6), several times, the OPFOR used a two pronged attack one along the road in the north and one along the road in the south. It seems that the Combat Recon Patrol (platoon mix) and the Forward Support Element (Company-Team size) attacked in the north and the rest of the regiment attacked along the southern road.>>

The AI is generally coded to follow conventional wisdom on Warsaw Pact tactics from the 70s and 80s however I also put some alternative tactics in to enhance replayability. That being said, I don't view the particular situation that you described as being outside the parameters of classic Warsaw Pact tactics. The northern and southern roads of Map01 are only three or four

kilometers apart. At the regimental level, a three or four kilometer frontage could be considered to be "one main axis of advance".

<<I've played Gallagher6, not all the way through about 5 times. Each time trying to refine my ability to use the software. The OPFOR does the same pattern for attack each time. I have seen the OPFOR have varying degrees of caution, but utilize the same attack pattern each time.>>

You should not have seen the same exact pattern with each replay. Gallagher6 has a number of different opening moves - i.e. choice of routes initially taken - including all battalions in the North, all in Central area, all in South, or one battalion on each axis, or one battalion on one axis and two on another, etc. Did you perhaps start the subsequent games from a saved game file - i.e. to avoid or shortcut the US setup turn? Doing so will tend to cause the AI to repeatedly pick the same opening move.

<<Is there any consideration to adding the M119 105mm Howitzer to the weapons data base for us Airborne types? It is an essential element of the 82d Airborne's MTOE, and would be great to have in the game!>>

It was added to the data base as an optional unit as of the Windows v1.0.3 update. Use the "Add One Unit" menu item to add it to a scenario. Also added at the same time was the M551 Sheridan tank. Both were added per the request of airborne fans.

<<Also, is there any way to resupply helicopters? The Army does have things Forward Area Refuel and Rearm Points. They are always prime targets for the OPFOR, is it possible to add them to TACOPS?>>

Instant resupply was enabled for helicopters in the Windows v1.0.1 update. Use the "Supply" button in the unit orders window (anytime after turn one).

<<Not having a whole lot of experience with helicopters, (none in fact) I was curious about the way NOE altitude worked. Does this mean the helos fly between the trees, or just above them?>>

In TacOps, if a helo flying at NOE altitude enters woods or town terrain, the helo rises one elevation level while over the woods or town - the helo flies over the woods or town terrain.

<<2. How does that affect LOS?>>

It usually means a clear line of sight to the helo.

<<Are helos at NOE considered to be at the level of the terrain they're in? >>

Yes, unless they are over woods or town terrain.

<<Is there a spotting penalty for units trying to spot helos in NOE in a forest area?>>

No, because the helo is over the forest.

<<Is there a movement penalty for moving in NOE vs Medium?>>

Not at present.

<<Do helos have a spotting penalty for being in NOE in woods?>>

No.

TacOps Gazette 96.11

This issue started out as a simple answer to an email question, but by the time I was done the response turned out to be a summary of just about everything I have ever written about the TacOps AI/computer opponent. It is a bit disjointed but that often happens when I work on a long response during "compiling" breaks <g>.

<<After playing the Degoeey scenario many times, I am convinced that it is stage-managed in favor of the US Forces.>>

It is not. I assume by "stage-managed" that you mean some sort of artificial game management that periodically favors one side or the other. My term for that is "AI cheating" and it does not happen in TacOps. TacOps does not artificially adjust the level of difficulty for one side or the other in any way.

<<At a point in the scenario, I would say about 90 minutes into it, suddenly everything becomes easy for the US player. OPFOR units are curiously eliminated or damaged without great expenditure in ammo by the US forces.>>

There is nothing in the game code that was intentionally designed to produce an effect like that. The combat results tables never change.

<<As the OPFOR reinforcements get near the nuclear facility they become much less aggressive. Strange very strange, because by that time the US forces are decimated, down to a few infantry units, practically no armor or attack helicopters.>>

The AI would not know that the US forces are decimated. I do not allow the AI to track the total force condition of the US player. The AI plans its orders for each turn based on its overall battle plan, on recent legal sightings of enemy units, and on the effects of current and recent direct and indirect fire that it has received. The AI currently does not really consider the overall remaining strength of the US player when planning its move. In my opinion doing so would cause the AI to periodically to do unrealistic things just to win the game - things like noting that most of the US units were "gone" and then switching to just driving off the map edge - I would consider that to be a game trick. I did not design the AI specifically to beat up on you or to care particularly if it wins or loses. My goal for the AI is for it to move its forces and to respond to contact in a tactically realistic way so that the game looks and feels right militarily. A fortunate side effect is that using real world tactics and principles often seems to also be a good approach for the AI to take from a game play standpoint <g>. Other than some overaggressive self propelled howitzers that sometimes insist on leading charges instead of providing supporting fire like they are supposed to do, I think it does ok.

<<For the last 25 minutes or so of the Degoeey Scenario, the armored OPFOR units simply run around in circle instead of attacking the US Forces in the nuclear compound....never engaging the remnant US units that they could destroy without really trying. Instead only a few OPFOR infantry unit carry on the attack, till the end of the game resulting in a US victory. The fact is

that if the OPFOR attack would have been carried out normally the US Forces would have been eliminated or pushed out of the objective 20 minutes earlier.>>

Fortunes of war. In that particular game session you either randomly drew a less capable AI battle plan or else you fought the AI into a state of attrition, suppression, or confusion from which it could not recover - same thing happens in the real world.

<<Why are the OPFOR most powerful units, when victory is practically assured, all of a sudden refusing to assault the nuclear compound to take out the US units that occupy it. I would like to have some explanation.>>

The explanation is simply that the battle evolved in a way that caused the AI forces to behave that way.

<<For the time being I stopped playing TACOPS. I feel I have been conned by someone's legerdemain with the AI.>>

Misc notes on the AI/Computer opponent follow. Some are related to the gent's comments, some are just provided as additional info on how the AI works so that he could make a better decision about whether he had been "conned" or not <g>.

The AI has only two advantages not allowed to a human player and I think both of these are documented in either the manual or in the FAQ file. The AI gets a one level advantage in first salvo accuracy of observed artillery fire (but not air) and its APCs can pick up dismounted troops at a slightly greater distance than the human is allowed to. Both of these items were compromises that eliminated huge blocks of AI code and they do not significantly affect game outcome.

There are no secret tricks, frictions, or penalties assessed against the human player's force when playing against the AI (some games use such techniques to make the computer opponent seem more capable). I dislike such "AI cheats" in a computer game. I feel very strongly that things like spotting, observation, movement rates, unit capabilities, combat result tables, weapons probabilities and the like should work exactly the same in a solitaire game vs the computer opponent as they do when two humans are playing each other. If the game had different "logic rules" for the solitaire mode then the serious gamer could not confidently use that mode as a means to learn tactical lessons and hone tactical technique for his future games against humans.

In scenarios where the AI is mainly in the attack and the US is mainly on the defense. Before contact with US forces, the AI chooses a target list, a battle plan and routes that will accomplish its mission (if there is no US interference) from a roster of multiple different target lists, plans, and routes. As the OPFOR units make contact with US units, the AI task organizes its battalions and or companies and switches to reacting tactically to those contacts. As it successfully deals with contacts, it switches back to the primary battle plan or it may jump to a different battle plan. Usually the AI will try to aggressively clear obstacles to its battle plan with a combination of direct fire, indirect fire, and or direct assault. Sometimes it will move toward a US position and then quickly pull back in what looks like a series of probes or faltering attacks - in this case the

AI is usually trying to draw fire to expose targets for air or arty attack. Sometimes it will assume a temporary defensive posture. Sometimes it will halt or mill around a bit to see what happens if it does little or nothing. Sometimes the AI will put single unit markers or small groups of markers in a "stay behind", "watch", or "reserve" mode - such units may or may not ever move again.

Typically when the AI is in the attack, it may react to incoming arty, even adjusting fire, by dispersing its march and or attack formation. When in the defense the AI typically just "hunkers down" under arty fire.

A big reason why the AI often gets very good use out of its air and arty assets is that it maintains a running target list just as a good human player would. The target list contains recent US unit positions that were legally acquired by spotting and it contains points on the map that would be good places for the US player to use in a given scenario. If the AI is in the attack, the target list also includes terrain points that would make good US defensive positions. At the end of each combat phase, the AI plans its orders for the next turn just as the human player does. The AI looks at its target list and it usually selects arty and air targets based on the most recent spottings of valuable US units. If it doesn't have any solid unit spottings to work with, then it will randomly target nearby terrain that would make good US attack or defensive positions. The AI also notices when it gets secondary explosions and may decide to "stick" to an area for several turns.

Here is how the AI does its thing with calling in air strikes (arty is handled similarly). During each combat phase the AI makes mental notes about points on the map where it legally spotted your units - same as a good human player does. In the case of moving units, it also projects and records where the unit could be in a minute or so based on its speed and its last legally observed direction of movement. I call this maintaining a target list. During the next orders phase the AI plans its orders based on its target list, again based on what it legally saw during previous combat phases - same as the human player does. The first time it spots valuable units it will probably target some or all of them with air and arty up to the limits of its legally available assets. AI OPFOR air gets no time advantage over a human player. During the four to eight combat turns that must pass before the AI's air arrives on the map, the AI continues maintaining and considering its target list of legally spotted units. The AI is allowed to shift ongoing air and arty missions the same distance per turn as the human player is allowed to. Thus as time passes and the AI gains and loses legal unit spottings and as more valuable targets become noticed, it often modifies its air and arty targeting with legal target shifts. Enemy helos are the highest possible priority target for AI air support. Anytime a US or OPFOR airstrike comes on the map it looks for helos within 1000 meters or so of its target point. If it finds a nearby helo, the airstrike will usually switch to a gun attack on that helo. Usually the air unit will prevail over the helo target. Usually an air strike that has diverted to helo attack will also remain available for reuse. By the way, human players also get these very same helo attack benefits with their air.

The AI also has a target list of places on the map that would make good US defense, attack, or hidden observation positions based on the current overall situation. If a terrain feature looks good to you as a fighting or a hide position, it may also look good to the AI. If the AI does not have anything better to shoot at with its air or arty, it will often choose to target these places -

same as a good human player would. So it is possible for a player to do everything right in carefully occupying a position without being spotted and still find his units later under air or arty attack. In such a case the computer is not cheating - it just made a good or lucky guess.

The AI air support only prospects for helos in locations where they were previously spotted (give or take a kilometer).

The AI knows where its minefields are but it does not know where a US minefield is until it encounters it. Sometimes AI units go around US minefields, sometimes they go through them. Sometimes the AI will drive through its own minefields.

I found during development that I had to be careful with having the AI react in certain ways to certain events in order to reduce the chances that the human player would find "game tricks" that could consistently be used to manipulate the AI into doing predictable things. My experience so far has been that the AI does best when it sticks as much as possible to its primary battle plan. Also having the AI sometimes behave a bit sluggishly is probably more realistic than the "change everything every 60 seconds" capability that the human player has.

The AI gets no special benefits for its direct fire.

the AI uses exactly the same combat results tables as would a human playing OPFOR.

The AI intentionally does not consider enemy smoke or arty fire that is not close to any of its units in developing its turn orders. I assumed folks would try to use arty and smoke in a deceptive fashion in order to trick the AI.

In scenarios that feature OPFOR in a generally defensive posture, the AI usually gets a lot of startup TRPs - i.e. already zeroed target points- that it can switch to with good speed and reasonable accuracy.

If the AI threw up its hands in despair every time the going got tough, TacOps would be boring. Beyond that, the TacOps AI somewhat reflects the same approaches that I find usually have the best results in my personal play against human opponents - (1) simple plan, stubbornly implemented and supported, (2) tight focus on the mission and (3) don't chase rabbits.

The AI is likely to play differently each time you repeat a given scenario or each time you play a given scenario variant. Each scenario and each scenario variant has anywhere from a dozen to multiple dozen different opening moves/strategies for the AI. In general, scenarios that have the AI attacking will have more different opening moves than will scenarios that have the AI defending.

The AI remembers where it recently saw US units. If a helo is observed as it moved to its pop up firing position or if it tries to use the same pop up position twice in a short period then the AI is going to be primed to fire on it.

The computer opponent generally follows OPFOR doctrine but it will often add a twist or two once contact is made. Each scenario has multiple possible opening moves and battle plans and multiple levels of competence. Which combination you draw for each game against the computer opponent is a random event. You may get a good OPFOR commander with an excellent plan, or you might get a poor commander with a bad plan, or something in between. In any case you won't know. Some of the larger scenarios have dozens of different opening moves or battle plans/plan variants - some or better than others. You should be able to play a given scenario many, many times before it starts to become a bit predictable.

The AI is both scripted and reactive. Barring interference from its human opponent, it follows a script or a battle plan that will accomplish its scenario mission. If the human interferes with the plan (i.e. gets in the way with units and or fire) the AI usually switches to reacting to legally acquired spottings of the human's units - sometimes it just ignores minor spottings and or treats them just with arty. If enough time passes with no human interference, the AI will usually switch back to its script. A script or battle plan may include a general movement path, precautionary assaults on intermediate terrain objectives (even if there has been no contact), precautionary pauses followed by recon, rolling arty prep fires, etc. Reaction to contact varies depending on if the AI is attacking or defending but can include ignoring minor human resistance, frontal assault from the column, deployment to a frontal online assault, deploy and maneuver to a flank assault, deploy and maneuver to a rear assault, pause in place and shell, split a force to do combinations of the preceding, temporary withdrawal (not seen very often when AI is attacking), counterattack, online sweep, recon by fire, recon in force, fire and move to alternate position, hasty defense, etc.

I designed the AI so that much of its strength would lie in its unpredictability. In a sense my approach to AI programming hinges on exploiting, even amplifying, the human player's tendency to act fearfully and cautiously in the face of many unknown possibilities. With my approach, the more a user plays TacOps the better the AI appears to do. For example, once a human has experienced an OPFOR battalion unexpectedly bearing down on him from his flank or rear instead of politely driving down the obvious path in column, that human will forever thereafter weaken his optimum defense by putting out OPs and scouts, by dividing his main force to cover more avenues of approach, and by maintaining a reserve.

The AI never resupplies its units.

The AI always operates as if fog of war was set to "on" for OPFOR. In other words, the AI only considers legally spotted units regardless of the game's actual fog of war setting.

The AI is more situation based than map based although each scenario has map specific extra AI embedded in the scenario file. Most of the AI is in the game engine, some is embedded in each scenario, there is none embedded in a map. The AI is not really hardwired for exact units. The AI looks more at the class and weapon systems of its units rather than at the fact that this unit is a T80 and that unit is a T72.

The TacOps AI code comprises 12% of the game engine (based on lines of compiled code), plus additional code that is embedded in each scenario. The code percentage doesn't really reflect the

effort that went into the AI. I didn't work on much else for most of a year and I trashed numerous approaches and started over several times. I think it is pretty good compared to the competition, especially since it does not cheat. I don't publicly make a big deal about the AI because I don't think AI can ever be as good as an experienced human - at least not for the price that people are willing to pay for games.

the AI battle plans are not always organized as discrete structures. Many times the final battle plan is created by advancing through a pyramidal chain of route choices, task force organization choices, timing choices, and other tactical concepts with an often random branch taken at each link in the chain. Even I can't always predict what the AI is going to end up with from a given start point <g>. And once contact is made with the US forces, the AI's original plan often goes out the window.

It is true that there are usually only a few "reasonable" strategies for OPFOR in a given scenario, but I don't necessarily limit the battle plans to "reasonable" setups. Sometimes unreasonable AI setups work very nicely against an overconfident US player.

Movement along the top or bottom edge of the map are just two of many possible strategies that the computer opponent may choose to take. Each scenario has multiple possible opening moves and battle plans. Generally out of a dozen or more possible battle plans only 5% maybe 10% will involve movement along a general route that is less than a kilometer from the top or bottom edge - assuming the map is fairly large. The computer opponent may also sometimes gravitate to the map edges in reaction to spottings in an attempt to flank or work around behind the enemy but the effect is being caused by its running into the map edge while trying to do something else. In my opinion, there has to be the occasional chance of OPFOR working the edge of the map or else the human player would not bother to protect his far flanks. Unpredictable routes are a major part of what makes TacOps replayable. If OPFOR always came "up the middle" a user could only play a given scenario a couple of times before becoming bored.

The AI often tries to disperse its units upon contact so that fewer clusters of vehicles exist within the effective radius of air and arty strikes.

The AI does a fair number of interesting and useful things that I don't remember coding <g>.

CAUTION: Some players like to shortcut the game setup turn by reusing old saved game files that contain a "favorite" US setup - this is a bad thing to do. If you restart a game using the saved game file from the first turn of that, you will usually draw the same basic AI battle plan - reusing startup turn saved game files spoils replayability. The AI chooses its basic battle plan from its bank of multiple opening moves right after the OPFOR order of battle is loaded and before you have the chance to do a save game. If you do your first turn setup and save the game, then every time you start from that saved game file you will fight the same basic AI battle plan. Doing this will make the AI more predictable and will soon result in boring game play. I can not change this without a huge and very risky program rewrite.

TacOps Gazette 96.12

<<...I've seen BMPs & M2s firing infantry weapons (5.56 mm) at targets. I assume that this is the on board infantry using the firing ports, but this is happening when there is no infantry on board.>>

Those are the small arms of the vehicle's crew. Usually you won't see crew firing small arms unless the vehicle is fighting at point blank range. If the vehicle was suppressed, the crewmen would not be so brave and efficient <g>. I usually add a rifle or two and a disposable rocket launcher to the data base entry for vehicles just to keep folks honest. Has surprised more than one player who lost an APC or a Tank to an RPG from what he thought was a harmless truck hiding in the woods <g>.

<< Is there a way to get elevation data of different points on the map? It would be helpful to be able to point the mouse and get elevation data.>>

The line of sight tool is multipurpose. Select the Map/Line of Sight Check menu item and then drag the cursor around the map. If you look at the text line at the bottom of the screen you will see displayed the range from the point of origination to the cursor, the elevation of the terrain under the cursor, the type of terrain under the cursor, and the UTM coordinates of the point under the cursor.

<<Wondered if you might allow tanks to re-engage a missed target in 5 seconds, rather than waiting another 15 seconds to fire again. By the same token, a tank would be able to engage a subsequent target which was very close to his last target -- 50 to 100 meters (a different tank that was in the same 'gamepiece' perhaps) within 5 seconds.>>

Not without a lot of convincing, a lot of arm twisting <g>, and a lot of testing. To date I have absorbed considerable flack that too much happens too quickly in TacOps and that tanks are already given too many bennies.

<<Wondered if you might consider a couple of wish list items:>>

<<Tank main gun rounds would not be able to fire accurately through smoke at ranges beyond 1200 meters since the gunner can neither lase nor use his "choke sight" against the target, even though he'd be able to see the target in thermals.>>

First I have heard of this. I had been told that during Desert Storm the M1s were not bothered at all by smoke.

<<Visibility out to 8000+ meters.>>

That is kind of far to rapidly spot and sort out squad and vehicle sized targets in most terrain and tactical situations. Kind of hard to figure out a routine to differentiate between the majority on

the battlefield who generally have poor spotting capability and a calm few who are steadying a pair of binoculars on a tree limb <g>.

<<An After-Action Review feature, that let's you play the whole mission back from beginning to end, so you can watch what you did from an omniscient perspective, or watch the game from the enemies' perspective.>>

On the wish list.

<<I have had bad luck when using the MRL while playing OPFOR while it always seems very effective when used by the computer opponent. I raise this question to understand from others if the rocket barrages' wonderfully devastating effect in games vs the computer is the fluke, or if the fluke was in the human vs human games.>>

Some background info... The combat resolution for MRL, MLRS, in fact all arty attacks is the same

for games against the computer opponent as for human vs human games. The computer opponent does not get extra explosive effect. The only arty related "good deal" for the computer opponent is that it gets a one level accuracy increase for the first arty salvo that falls on a given observed map point - instead of the accuracy of such a mission starting at zero, it starts at one. The effectiveness of any form of arty in TacOps, in general, varies according to the terrain in the beaten zone and according to the tactical disposition of the units in the beaten zone. The clearer the terrain, the more effective will be the arty. Units that are moving/exposed (in any kind of terrain) are more susceptible to damage than are units that are stationary/in TacOps defilade mode or that are in field fortifications. In general, in TacOps, the best deal for arty is a target that is moving/exposed in clear terrain. The worst deal for arty is a target in woods or town that is also in a field fortification. In between these extremes, you get "in between" results <g>.

<<How can I toughen the scenarios?>>

A good way to toughen just about any scenario that features OPFOR entering from the East map edge is to prohibit the defending US force from ever moving a unit East of a given UTM Easting line - so that OPFOR gets a better chance to deploy and so that the OPFOR entry points are not under US observation/fire. The farther East the limit, the harder the scenario will be.

<<Where do you get your armour thickness classifications on your armour?>>

Personal analysis based on experience and public documents. Say I want to simulate the depleted uranium penetrator ammunition - the "Silver Bullet" - of the M1A2 tank. I start with a stack of publicly available reference books and I begin looking for clues to its size, weight, range, muzzle velocity and the like. I then scan magazine articles and books for battle narratives and quotes from soldiers on tank kills - more clues. Someone brags in a popular magazine about one round from an M1 tank passing through two side by side T72 tanks and then I find the same incident mentioned in a public government report to Congress - getting close now. I turn off down a side road of doing the same kind of research for the armor on T72 tanks that were present in Desert Storm - got it - the Silver Bullet is mine and into the code it goes. I used the same sort

of approach for developing the armor protection levels used in the game engine. Technically, TacOps does not express armor in terms of "thickness" but rather in terms of level of protection. For example, the aluminum armor on the M113 APC is actually much thicker than the number shown in TacOps - the number shown for the M113's armor in TacOps is expressed in terms of equivalent millimeters of "a standard" steel armor plate.

<<Someone asked on one of the forums if you are ever going to include the rest of the world's AFV's in your simulations. Would you please include them in TacOps 2.>>

Yes.

<<I am getting pretty much chewed up when attacking infantry positions. I know I would take some losses, but I still should be able to overrun these positions.>>

There are significant benefits to assaulting infantry positions from the side or rear (best).

<< ... how can you tell which way an enemy unit is facing ?>>

Use the Map/Change Unit Symbol Info menu item or its keyboard shortcut. Each time you select that menu item, the face of the markers will change. During the orders phase, the first time it is selected the marker faces will change to show which units have orders and which do not and which units have been opened during this orders phase. The second time it is selected the marker faces will change to show the direction that each unit is facing. The third time it is selected the markers will return to showing the normal unit type icon.

<<Why isn't it possible to ply OPFOR against US-Computer ?>>

When I coded most of the AI, it was important to me for the AI to model conventional wisdom on real world OPFOR tactics (for the most part). I probably spent more hours on the AI than anything else. At that time, I did not want to provide a Blue force AI unless it pretty much modeled Western tactics. I could not afford to spend another four to six months coding it "right" so I just did not do it at all. Were I to do it all over again, I would probably provide dual play by the computer opponent and just have both sides use the same AI.

<<Someone said European data was to be included in TacOps II. Presumably the necessary research time is being allocated for that project?>>

TacOps II is a long way away (seems farther away every day <g>), but yes European data will be included.

<<Can ATGM shoot over rivers>>

Yes.

<<if so is there any penalty for doing so.>>

No.

<<T-72 tanks are listed as non-amphibious. Does that mean that they can only cross rivers at bridges?>>

T-72s (and I think all other tanks in TacOps) can currently only cross rivers at bridges.

<<It's pretty common now for chemical smoke rounds to block IR, since the additives needed to block IR are cheap and common. And WP will block IR anyway.>>

I have no references that support the above assertion in relation to modern thermal sights. My notes indicate that thermal defeating smoke currently only exists at a developmental level, that the materials used to produce it are very expensive, and that the materials used are so highly and lastingly toxic to people and the environment that fielding of the current versions of anti-thermal smoke would be very unlikely. I have email from active duty tankers that conventional WP based (white phosphorous and also red phosphorous) arty smoke and vehicle smoke grenades will/may briefly "bloom" the image on a thermal sight but that the heat of such smoke dissipates instantly/so quickly that the effect is not tactically significant. My info may be outdated or wrong - it has been before <g> - but that is what I have at present.

<<The Army is gearing production for the XM-56 Smoke system that will defeat though the far IR range with a combination of fog oil/graphite dust.>>

I would like to know the effects of the smoke on unprotected humans and its effect on the environment. If the smoke is more like poison gas than smoke, I don't think it is going to get much use <g>.

<<How many individual units are represented in a unit of off-map artillery? I want to move my arty onto the map and I'd like to know how many units to move onto the map. For instance: I have a MRL in OPFOR in off-map and I want to replace it with a mobile on-map unit.>>

The off map OPFOR MRL is exactly an OPFOR MRL battalion. The other off map arty units are not so exact - more than a battery, less than a battalion. You might try adding two on map arty batteries for each off map arty line or you might try adding three on map arty batteries for each two off map arty lines.

<<From info attached to the last update: On startup, the map window now automatically resizes itself to closely fit the map when a map is loaded that is smaller than the user's screen (i.e. no more gray window content showing on right and bottom of map window). Is this statement promising me a full screen map?; of an increased/decreased scale?, but a full-screen map all the same? I have plenty of gray window content showing on right and bottom of map window on various scenarios.>>

No, the statement was not meant to promise a full screen map. The window referred to is the TacOps window - not the Windows desktop. The way the program used to work, the TacOps window was initially sized to fill the whole screen/the whole Windows desktop. If the map was

not as large as the whole screen, the map was drawn beginning in the upper left corner of the TacOps window and the right side and bottom side of the TacOps window were filled in with gray color. I got a lot of criticism for this so I changed it in an update. Now I am catching flack from people who liked it the other way <g>.

There are two basic ways that Window games can choose to use the screen. A game can (1) accept the screen resolution that the user has chosen via the Windows desktop properties control panel or (2) a game can arbitrarily specify a standard resolution (typically 640 x 480) and force all users to live with it regardless of the screen size of their monitor - TacOps uses the first approach. In the first approach, the user is free to choose how big the game art should be drawn based on his personal preferences - in my opinion this is the better approach for a game that has large maps. With the second approach, the user can not choose the size of the game art and a user with a large monitor will usually see game art drawn so large that it is unsightly - not to mention the annoyance associated with spending big bucks for a large monitor and then finding that a game was scaled for users with small monitors. The second approach is mostly an artifact from the limitations of old DOS and from a period when most users had monitors that were so small that they could only reasonably use a screen resolution of 640 x 480. With today's greater variety of monitor sizes, the second approach now offends more people than it satisfies.

Even though TacOps uses approach one, I could have coded it to allow the user to "zoom" a map to a larger size so that even a small map could be enlarged to fill the whole screen. I did not do this because enlarging small maps would have distorted the art and made it more unsightly than it already is and because I felt that keeping the same scale at all times was important for enabling the user to rapidly learn to intuitively estimate ranges and movement distances. I focused on keeping the UTM grid squares consistent across all maps (given the user's screen resolution preference).

TacOps Gazette 96.13

Feedback from users is important to companies and developers that actually try to provide post purchase support. When folks take the time to send me such info, I carefully save it so that I can pass it on to others when questions come in. An especially important area is user reports of solutions that they discovered for system compatibility problems that they encountered while using a software product. Most often such problems appear during installation or in the first few gaming sessions after installation. Less often, problems appear in a given program after the installation of a new and unrelated piece of software or the addition of a new piece of hardware. Similarly, for the common good, folks who ask a developer or support rep for help with a problem should let him know which of his suggestions solved their problem. Most of the time when I answer an email call for help, I get nothing back to let me know if my advice was any good. I assume that silence means that the user's problem went away, but still I would like to know exactly which of probably several suggestions did the trick. I am not looking for a "thank you" - I just want to be able to give better, more focused advice to the next user with a similar system and a similar problem. If everybody did this, I think we would see a lot less of companies sending out page long, multiple choice, "try this then try that" support responses <g>.

<<Just wondering if you found the graphics problem with ... ?>>

No. I spent several days on three different machines trying to replicate the effect. I am sure it is there somewhere, I just have not been able to find the interface path - the series of clicks and menu item calls -that causes the program to lose its focus. Difficulty in finding a bug that is caused by a user following an unintended "interface path" is a common problem for developers. Since we know the "right way" to do certain game functions, we tend to not be able to find program bugs that are the result of a user traveling through a series of keystrokes and menu items that are "the wrong way" to do something. I don't mean to be critical when I use the words right and wrong - intended and unintended would be more accurate descriptions of what I am referring to.

<<What language did you write TacOps in?>>

Mac version was done in C using Symantek Think C development System. Windows version was done for the Windows 3.1x environment in C using Microsoft Visual C/C++ v1.x development system. I am transitioning to Codewarrior C++ for Mac coding and Windows 95 and Microsoft Visual C++ v4.x for my future games.

<<As an example let us suppose one of my tanks is ambushing a first BMP. The first impulse the BMP is killed but my tank is spotted by the BMP surviving infantry, if my tank's SOP include smoke just after firing will the OPFOR infantry lose the spotting of the tank and then makes the tank available for another ambush again another BMP next impulse (i.e. without risking the second BMP to fire at the same time)?>>

Yes.

<<Maybe also it is possible to play on the flight time of the AT missile. I am not sure about it but it seems when my M1 are beyond 1900 m from BMP, even if both units spot together the BMP is dead on the first impulse and the M1 survives since it needs 2 impulse for the missile to reach him. Can anyone confirm?>>

Your analysis is correct.

<<I have read where some players set the range for a unit to zero, as in an OP and such. I do not do this. I set the range of the unit to the range at which the unit can be detected or slightly more (+50 meters). I do not want them overrun and eliminated without firing back in defense. If the unit range is set to zero and the unit receives direct fire, will the unit return fire if the range was set to zero, or am I right in setting a minimum engagement range? Or will they unit with a zero range just sit and die?

Anytime a unit is fired on by direct fire (i.e. not by arty), that unit will automatically reset any engagement range limit to maximum range. This will not happen though until after the unit has been fired on at least once. I also usually set my OP unit's to a range slightly more than the range at which they will automatically be spotted. If they are going to be spotted anyway, I want them to at least get off the first shot.

<<I would like you to consider setting up the game to allow one to add buildings and an airfield runway anywhere on a map, the way additional units can be added now.>>

Sorry but that would require too much new coding. TacOps Expansion Kit #1 has two new large maps with airfields on them. One map is of moderately wooded European style terrain - the other is desert.

<<Can you clarify for me the purpose of the small brown markers that appear occasionally and explain the rules for their appearance? I can't tell if they mark "lost contact" points or represent a fortification.>>

I assume you are referring to minefields and or entrenchments. Minefields have an "M" in the middle of the marker. Entrenchment markers have a broken circle in the center of the marker. If you are starting a scenario where your force gets to use these items, they will appear in the setup window just like units. You position them where you want them to be and at the beginning of the first combat turn they will be converted to permanent terrain features. An enemy minefield or entrenchment marker is revealed/drawn on the map when it is spotted by one of your units. An entrenchment marker is revealed by (a) the firing of an occupant or (b) by an enemy unit moving adjacent to it. An enemy minefield marker is revealed the first time one of your units moves into or almost into it. Once a minefield or entrenchment is revealed it stays revealed for the rest of the game.

<<... I am mortified at the number of casualties. Its not uncommon for all units of a vehicle type to be completely eliminated. We never trained to expect this kind of carnage; I am too old to have seen Desert Storm - maybe it was like this also.>>

It was for the Iraqis.

<<Does anyone know if there is a mission editor, builder for TacOps? I am not talking about altering existing games only on the side played by player. Is there an editor where I can program in orders for the computer side??>>

To the best of my knowledge, there is no editor for TacOps - neither from the factory nor from any private user.

<<Is there some place (e.g.. an IRC channel) where people meet to play TacOps in "near-realtime", or is everybody basically just using PBEM? I'd like to play someone, but I find, to my dismay, that I've gradually become an instant-gratification junkie :-). Actually, PBEM sounds like fun, but I'd like to play the occasional (relatively) quick game, too. Thanks for any info!>>

I don't know of any place that is always active but a number of folks on the TacOps mailing list do sometimes arrange to be on IRC at the same time to play "near-realtime" PBEM games (I think it is Wednesday and Sunday nights) or you could join the mailing list and issue a public challenge. Also there is usually a group TacOps CPX running every other weekend on IRC DALNET under the name #tacops - the CPX is usually publicized on the mailing list.

To join the TacOps mailing list that is administered through the Stanford campus mailing list server send an email to majordomo@lists.stanford.edu with a message body consisting only of "subscribe tacops" . Do not include the quote marks.

>The picture for M113 FIST V is the same as for M901 ITV.

That is because they are virtually identical in appearance <g>. The FIST V has extra/different optical equipment in the "TOW Hammerhead launcher" instead of TOW ATGMs, but otherwise the "Hammerhead" is the same assembly and thus the vehicles have almost the same external appearance.

<<The only thing I was wondering is why you don't have a scenario where you can defend over a river on a wide frontage. Say a map that is six or so km wide and ten or more high.>>

Simple - I never got around to coding the AI/Computer Opponent so that it could deal with properly crossing a river obstacle or to look for a bridge. Rivers and bridges present one of the worst AI coding challenges. You can play such a game against a human opponent however. Map100 is a fairly large map that is cut north to south by a river. There is no scenario to go with it so you would have to make one up using one of the custom scenario templates.

<<Hey, I was fiddling around with a custom scenario, and found this Map100.>>

Map100 was done (gratis) for a military user. It was later publicly posted as a Christmas gift for the Mac users with the proviso that it was a freebie and was in the class of an unsupported item. At the last minute, I added it into the Windows box just to be fair <g>. There is no scenario that

goes with it. It can only be accessed through the use of one of the custom scenario templates - "Custom Scenario USMC", "Custom Scenario US Army", and "Custom Scenario Canada".

Map 100 represents a six by ten kilometer area of pretty rough/irregular ground - could be Korea, could be Bosnia. The key features of the map are (1) most of the map is high, very rough ground almost completely covered by scrub woods and (2) that the high ground is penetrated in critical areas by long, narrow, crooked valleys that are mostly clear of woods but are still almost always rough terrain (i.e. very irregular). Most of the valleys are remarkable for providing the defender with one near perfect ambush site after another.

Low ground is a light, greenish sand color. High ground is supposed to be indicated with a medium green pattern, but there is so much wooded terrain (dark green) that the light green pattern is seldom noticeable. To better distinguish the high ground, the elevation change contour is a thick orange line in this map. All ground within an orange line perimeter is high ground. The first 100 meters uphill from the orange contour provides the usual TacOps two level view. High speed roads are dark gray lines with solid gray interior. Low speed roads are filled with brown dots. These represent poor quality dirt roads, tank trails, fire breaks, paths, etc.

<<I am running Win95 in High color (24 bit) and get this error when using those three scenarios (US Army, Marines, or Canada) and selecting Map100 when asked for a map to use. Then, the program tries to load the map and freezes up. Any Ideas,>>

A few folks have reported the same problem but I have not yet been able to replicate it on any of my machines so I don't yet have a solution for you. Some users who reported this problem were able to make it go away by changing to 256 colors before running TacOps. Since a copy of the entire TacOps map is kept in offscreen memory at all times, it takes a lot more memory to maintain and manipulate a TacOps map in 24 bit color.

TacOps Gazette 96.14

<<I'm running a CPX this Saturday and would like to use Map 14 from the expansion kit. Would it be all right if I sent the players (six) a bitmap [paint program file] of that map?>>

Yes - that would be all right. A person may send a drawing or a paint file version of a TacOps map to anyone. The map images when in "paint file" form are freely distributable and in fact can be freely downloaded in complete sets from a number of public download libraries. It is only when the map files are in the game engine ".map" or ".dll" format that their distribution is restricted - since we kinda want to sell them when they are in that format <grin>.

<<I had a LAV-AT unit with the SOP set to reverse 200 meters if fired upon. It started eating artillery so I decided to move to a different location. I turned it around and set a new course, however right about then a platoon of T-80 tanks fired on the LAV from behind. They immediately stopped going forward and started reversing towards the fire! Needless to say they died. Would it be possible to put some kind of limiter so that units don't do this in the future.>>

Off the top of my head, I can't think of a way to do it that would not produce other, worse oddities. I think I will have to leave it to the user to monitor his unit SOP settings and to change them as tactically necessary.

<<One other thing I noticed, I know that if a unit is fired on, its engagement range is immediately set to maximum, but is this supposed to apply to artillery fire as well? It seems to be working that way in my game and it is a bit of a pain.>>

That is correct program behavior. When a unit is fired on it will revert to a maximum range setting - simple self preservation logic.

<<It's fire [2S22] seems too effective. Example: I have a group of Marine infantry units entrenched in the open. They were getting hit with 122mm off board arty with little effect. A section of 2S22's drove up and proceeded to plaster the infantry in a few short minutes. Each salvo would result in kills on every unit. At the very same time 122mm rounds were impacting that had very little effect. (suppression only, and even then not on every unit). Is the fire of the 120mm mortar really that much more effective? Or is there something else at work here?>>

In TacOps, the 120mm mortar is some better versus personnel targets than 122mm HE arty but not much. In real life, mortar fire is generally considered to be more effective against personnel targets than an arty HE round of the same caliber. You generally get more frag effect out of a mortar round than you get out of an HE arty round of the same caliber and the circle of effect is generally more even in all directions.

<<It's [2S22] fire seems too quick. It is able to fire on targets in the same pulse that they are spotted *and* get the indirect fire graphics. It seems that this type of fire would be direct fire treated in the same manner as tank guns, rather than area fire.>>

Could be. It has an auto loader though.

<< In TacOps preparation to fire arty fire takes zero time--this is not the case in real life>>

One could also assume that the effect on target that is displayed on the game screen is the product of several minutes of staff work done by unseen helpers/fire support coordinators, conceptually begun well prior to the turn of effect.

<<In TacOps batteries and PLTs of Artillery and Mortars can split to individual vehicles or tubes and conduct multiple simultaneous independent fire missions--not in the real world;>>

It can be done in the real world, not doing so is the typical if not universal choice. When this is done in TacOps the game engine heavily penalizes/weakens the split out fires. In TacOps, split battery fire almost never kills anything and often doesn't even suppress. The only time I would suggest using this tactic in TacOps is to lay an irregular or long smoke pattern.

<< In TacOps any units on the map can adjust artillery--in the real world this is limited by the number and type of radios, code books, and training;>>

Is only limited by number of radios. Any US battery that refused a call for fire based simply on the requester's poor technique would be risking the relief of its commander.

<<Would the Arty Battery FDC fire a mission without the proper call signs and authentication?>>

Perhaps yes, perhaps no - requires a judgment call from the FDC. It is a classic "bet your bars"/"what now lieutenant" example.

<<In TacOps Arty and Mortar units can change the type of rounds, switch from adjusting to FFE, and change the impact point while the rounds are in the air>>

That argument is too literal a translation of what is seen in the game to the real world. Being concerned with the timing of "rounds being in the air" would be a procedural approach. TacOps follows an effect on target approach.

<<In TacOps units firing indirect don't have to worry about counterbattery unless they are observed by an enemy ground unit--this is a serious concern which forces arty/mortar units to change location frequently, thereby reducing the effectiveness of the units.>>

I'll give you that one <grin>.

<<In TacOps on map arty and mortar units don't have separate types of ammo for smoke, HE, and ICM. Off map units do. In real life the type of ammo matters a lot.>>

An important gaming compromise to avoid huge support data structures in the in-memory unit data base and to avoid adding much extra work for the player. By assuming that the player did

an exceptionally good job in the setup turn of predicting what his ammo needs would be, I am able to avoid having to deal with huge amounts of code and memory usage.

<<You can say that TacOps is only a game but I believe that effectiveness of Arty/mortars in TacOps is inflated.>>

(1) Ask the Iraqis. (2) Since WWII, conventional wisdom has been that artillery has been responsible for 75 to 80 percent of all ground combat related casualties.

TacOps arty responsiveness does assume a best case situation of comms, staff support, training, morale, etc. The TacOps arty kill numbers may be a bit high, but they could also be said to include the folks that get semi permanently suppressed - i.e. individuals and small units that become combat ineffective or that just decide to remove themselves from harms way for a few hours by way of inaction.

The current TacOps arty concept was never intended to replicate the detailed, real world procedures involved in getting arty rounds on target. The TacOps arty constructs are meant to replicate effect on target - not call for fire procedures that would in effect become a game in themselves and that would bore anyone but an arty officer to tears. I know that arty rounds travel through the air for many dozens of seconds. I know that one can't magically change a round in a tube, let alone one in flight, from HE to ICM in 15 or 60 seconds. I know that arty salvos can not be instantly shifted 1000 meters while in flight. I consider such details to be largely irrelevant to the arty paradigm presently used in TacOps. What I want TacOps to convey is that modern arty is flexible, is timely, and that it kills a lot of things. TacOps arty fire missions are meant to be an easy to use quantifier of the levels of destruction that are reasonably achievable by arty support over several turns. I don't think it is relevant to the current paradigm for technical procedures and physics realities to be calculated every single time the animation seems to indicate that a "salvo" is landing.

<<How can I get units to fire anti tank missiles at non-vehicle targets? >>

You can't at present. I have something like this on the wish list (under the title of "wasteful direct fire" <g>) but I don't know when or if I will get around to it.

<<How can I prevent a unit from shooting a particular type of unit? For example, when faced with oncoming BTR regiments I want my TOW units to fire at everything that can hurt them and other high value units (tanks, BMP's, SP arty, etc.) but not at the weak BTR's.>>

Use the priority targeting buttons as explained on pages 22 to 24 and 34 to 38 of the User's Guide. Be sure to remember to hold down the Control key as you set a priority so that it will be a "hard/high" priority rather than a "soft/low" priority.

<<Infantry in woods is detectable at 100 meters. This seems like a long way off to notice 2 guys who are not moving or shooting. I know that when *I* am in camouflage people have walked within 2 meters without seeing me. In fact, I have had people almost step on me before seeing

me. (Of course, I am not carrying 80 pounds of equipment, but the point remains valid. It is very hard to see someone who does not want to be seen.)>>

In practice, few troops other than snipers or recon units are able to or inclined to practice the level of camouflage that you described. In my experience, the positions of tactically significant groups of regular troops tend to be readily visible at around 100 meters except in unusually close terrain. In TacOps, 100 meters is the shortest possible measurement of spotting distance. I think it is a reasonable compromise for the current game engine which is not intended for the most part to replicate squad level activities or squad level situations in detail.

<<Shouldn't there be a way for an infantry unit to "hide" where their LOS falls to zero, but the range that they are visible at falls to, say, 25 meters? It seems improbable that a SAM unit of two guys, trying like heck to look like a tree, should be spotted from an M-1 traveling past at 30 MPH 100 meters away.>>

I may be able to increase spotting resolution/detail in a future game to cover more unusual situations, but there is not much if anything that I can do about it in the current TacOps engine.

<<[A playtester] is just not the right person to write a review. It would be like asking a doting uncle to write an unbiased review of a child's behavior.>>

Another view would be that a review by a beta-tester is likely to provide the deeper insights of one who has actually played the game to near exhaustion. Reviews and bias mean different things to different people. To some folks "review" and "unbiased" means that every compliment must be balanced by a criticism. If a review contains ten compliments then there should be ten criticisms. Some folks confuse the simple recitation of a game feature by a reviewer to be a compliment. Some folks think that "review" and "unbiased" means criticism only - that there can be no compliments in an "unbiased" review. Some folks would prefer a game review to be largely a factual statement of exactly what features are in the game and what are not so that they can make an informed purchase decision based on their own preferences. Personally, I prefer the latter approach. I don't pay much attention to the part of a review that says "I like this game" or "I don't like this game". When I look to a review to help me make a purchase decision, what I want to see is an accurate recitation with as much detail as possible of what is in a game and what is not and whether it runs without crashing or constant babying.

<<A lot of wargame makers honed their programming skills back in the DOS days... >>

These same folks are probably also resisting the move to PC Windows programming. If so, they will likely get their "come-up-ence" before long as they are replaced by young turks who never gave a thought to coding for DOS and perhaps by a few old salts who chose to step back and learn something new. Personally, I am presently evenly dividing my time between continuing my old coding ways and learning C++, OOPS, developing a simultaneous Mac & Windows cross platform development capability, and learning Windows 95 coding. The new stuff seems harder than the old and it is extremely annoying to be studying and coding again at the introductory level, but I feel that if I don't go through this misery now then I will soon find myself having to look for another line of work.

TacOps Gazette 96.15

<<Are you aware that the Commandant wants to put a version of Doom in all the barracks. I think TacOps would be much more appropriate. Maybe you should drop him a line.>>

I haven't been out of the Corps long enough that it would occur to me to drop the Commandant a personal note <g>.

<<Are there stacking rules in TacOps?>>

No. I rely on enemy artillery to discourage stacking.

<<I have played PBEM and solitaire Simultaneously using multiple copies of TacOps ... I successfully completed a PBEM game on one copy while at the same time I played a PBEM game on another copy. Keeping both games open on my desk top.>>

I am amazed that you experienced no problems. Having multiple copies of the TacOps game engine running at the same time should cause PBEM and network games to go out of sync. In PBEM and network games, it should cause problems loading and saving orders files and saved game files. In PBEM and network games, it should cause problems with preference settings and with game functions that are related to preference settings.

Although you can install and run several copies of TacOps, there is still only one random number generator in the Mac op system. There are situations where the single random number generator could be pulled simultaneously by both running programs - even though one of them is in the background. If this happens, your opponent's Mac will not pull the same sequence of numbers when he runs that same combat turn and the game combat and movement results will go out of sync.

Also there is only one prefs file for TacOps and it is checked often and sometimes modified on the fly during game play. If two copies of TacOps are running at the same time and if they are using different pref settings for things like thermal sights, improved warheads, etc then sighting and combat results can differ.

Also, during play, TacOps frequently rummages through its application resource fork, the resource fork of the map file in use, and the resource fork of the scenario file in use. Some calls that are made to retrieve resource data will take the data from the first open resource with the right name and or number that is found. In other words, if you have different versions of TacOps running at the same time, you will never know which engine's resource data is being read - like perhaps two version resources with the same name and number open and floating about in the system ... hmmm. Some of the resources have different data in them between the old and new version. Some of the resources have a completely different data order between the old and new version. Gack.

There are probably other problems related to running two copies of TacOps at the same time, that I can't think of at the moment.

<<in your view, is there a real future for the Mac version of TacOps/TacOps II and, eventually, Panzers East? Will it always be on an more-or-less equal footing as far as releases and upgrades? Or will emphasis, because of business pragmatism and/or economic necessity, shift strongly toward Windows/Intel?>>

Frankly, I don't know. My gut feeling at present is that I will continue to do Mac versions. Around March, I got so mad at Apple's miserable marketing of the Mac that I came within a hair of chucking the Mac completely in favor of Windows 95. At that time I was prevented from doing so only by pressure from my partners - both of whom have only Macs and neither of whom has ever used Windows 95 for a significant period of time on a fast PC.

The real threat is not one of my having to shift from Mac toward Windows, but rather the that I will have to shift to doing "dumber" games in order to get into the retail chain stores.

<<He and I wish to Play by Mail via our E-mail systems, but we are having trouble exchanging an orders file via Internet that can be read on the receiving end.>>

My number one suggestion would be for you both to get a different Email reader program <g>. Attaching a file to an outgoing message or translating an incoming message should not be as hard as your current comm programs are making it. Better email programs do this stuff automatically so that you don't have to worry about it.

Of the options that you mentioned to me, the correct one to try to use is the one that says "An Attachment - Displays an icon that represents the file. Clicking this option sends the actual file with your message." The other options sound like they are for inserting text into a message or for reading text that has been linked to a message. TacOps orders files are not text files, they are binary files so you would probably would not want to use any kind of attachment option that used the word "text".

<<I received the below E-mail from an email opponent and I cannot make sense of it.>>

The gent sent you a "MIME" encoded combination email and file. He processed the TacOps orders file with a utility that translated or encoded the binary format of the TacOps orders file into a text format that could be placed inside the body of a normal message for Internet transmission. In order to convert the message into a TacOps orders file, you will need to locate a decoding utility that can decode "MIME" files.

<<My TacOps directory is starting to grow. I started with version 1.0.3, downloaded 1.0.4 and recently loaded expansion kit one. I have deleted no files. Are there any files I can delete without hurting program execution.>>

Anything in the TacOps folder that does not end with ".exe", ".dll", ".map", ".sce", or ".mrc" can be removed. However, you might want to preserve files that end in ".hlp", ".tac", ".gms", ".rms", ".gmo", and or ".rmo" - see below.

The help files - anything that ends with ".hlp" - can be deleted without harm to the program.

If you don't want to hang onto old saved game files you can delete anything that ends with ".tac".

If you don't want to hang onto old email saved game file you can delete anything that ends with ".gms" or ".rms".

If you don't want to hang onto old email orders files you can delete anything that ends with ".gmo" or ".rmo".

<<LOS Diagrams. It would be great if you could add a fan option to the point to point.>>

TacOps maps are pixel based rather than hex or tile based. To highlight the portions of the map that were or were not in sight would require a calculation of line of sight from the center of the unit marker to every pixel within range - potentially millions. That would be a lot of computations for long shooters even on a modern Pentium. I tried this last year and the process was so slow to complete and draw that I concluded that it was worse than providing nothing at all <g>. I will revisit this in my future games but at present I believe that it can not be reasonably added to the current version of TacOps.

<<The limitation on 4000m in visible/IR really hurts the use of APACHE and other stand-off systems.>>

It originally was a design decision/compromise that was made primarily so that TacOps would run at a satisfying speed on older 486 computers. Changing this now would require too much new code and new testing for the current version of TacOps but it will be changed in TacOps II.

<<I believe in a note of accuracy that the T72 and T80 have a limited thermal capability -- not as long range as US but significant.>>

If you want OPFOR tanks to have thermals in TacOps you can make it happen simply by marking item #5 in the game preferences window. The most recent info that I have (which may or may not be right) is that only a few T72s and T80s in active service have been equipped with true passive thermal imagers (i.e. something other than infrared searchlights and infrared viewers) due to the expense and maintenance challenge of the devices. The capability is available though as the French will sell such devices for addition to OPFOR equipment to just about anyone who is willing to pay for them.

<<How do you figure what grid square you are in? I imagine that this is also part of the array.>>

The UTM grid squares are irrelevant to the game engine. The UTM grid and the UTM coordinates are provided just as a convenience to the player.

<<From looking at your maps it doesn't look like you used any tiles.>>

Correct. TacOps maps are pixel based. The map art is drawn as one big graphic. There are no tiles and no hexes.

<<I would assume that each pixel is equal to ten meters on the ground>>

Correct - a pixel equals approximately ten meters.

<<How do you define the map data values i.e. terrain type, movement cost and so on?>>

There is a terrain matrix/array underneath the map graphic consisting of square terrain cells. Each terrain cell is ten pixels (i.e. 100 meters) wide and ten pixels high - therefore one of these cells represents 100 square meters of ground. The game holds a number of values for each cell in the matrix - type of terrain, movement cost, etc. Unit move from pixel to pixel but the terrain that they are in at the instant is determined by that 100 meter cell - it represents an average of the local map terrain.

<<Ok so the actual map is overlayed on this matrix? Each square in the matrix holds the map data which is tracked by an array in the program that is the same size as the matrix. The array elements correspond to the matrix.>>

Correct. The center of each unit marker (when divided by 10 on each axis (h/10 and v/10)) is the index to the array that holds the terrain values for each cell. For example if a unit is located at pixel h = 200 and v = 100 then the array index of the terrain cell that it occupies would be terrainArray[20,10].

<<it would be nice to be able to assign different maps to set scenarios>>

No can do. Some of the AI is hardcoded/tailored to fit each unique scenario and map combination. If a different map were used by a given scenario, the AI would do weird things - like hiding in woods that were not there <g>.

<<Will you continue to support lower spec computers by perhaps making a limited version available on floppy disk, like Alliance did with Harpoon Classic, and allowing the use of smaller monitors (i.e.. 12")?>>

I would like to but I can no longer afford to do it. I have to go to 256 colors, snazzier sounds and graphics, and CDROM only distribution. If I don't then I can not attract a major publisher or hope for a decent magazine review and I can not get my products into stores. Increasing the "eye candy" aspects of a game makes the program and its support files too large to be economically distributed on floppy disk. Also most major software chains are now refusing to carry games unless they are on CD - whether a CD is really needed or not.

<<in a PBEM game of Team Meyers, I have witnessed a newly marked on-board OPFOR 120mm SP mortar adjusting round that started immediately with an accuracy of 3 and a time to impact of just 14 seconds.>>

That is correct program behavior for an on-map arty or on-map mortar unit that has a clear line of sight to the target point.

<<I was a little surprised when I dropped into MacsBug after responding to the error message ... My system, a Quadra 950 with System 7.5.3, is not nearly so stable as I'd like.>>

In my opinion, running MacsBug will make your system slower and less stable. MacsBug is for coding/debugging. In my opinion, it should not be loaded at any other time or for any other purpose.

<<During game play the Setup menu items remained selectable on the menu bar. I believe that they should be eliminated after starting a game.>>

Not a bug. The setup menu items are available now throughout the game, per user request. The Setup menu is now poorly named, but I never came up with anything better to call it <g>.

<<In 16 colors, arty and air support markers are displayed in red. At 256 colors, they are displayed in dk. gray or black. Same goes for the hilite color in the arty and air support windows.>>

I assume that you mean that the "selected" markers are displayed in the differing colors. It is probably going to have to stay that way. The Mac and Windows op systems determine what colors are chosen when a simple inversion is done - I have no control over it. At present the only way around it would be for me to create a marker set that contained a duplicate marker for every marker in the game - the duplicate to be used when highlighting was needed. I am afraid that is too much work.

<<which begs the question, why bother supporting 16 colors on the Mac ?>>

16 colors is the "native" mode for the current Mac version of TacOps. That is what all the maps and counters were done in. 16 colors is absorbed/replicated automatically by 256 colors so it is no work to continue basing the current Mac version on 16 colors even if the user is looking at them with a 256 color monitor setting. I can't afford the development time that would be required to redo or spiff up all the Mac graphics to take advantage of 256 colors - at least not for a free update <g>.

<<We know you are aware that the ability to shift to a new target the artillery rounds when they are "on the way" is a little bit unreal. Thanks to this feature I've been able to blast within few seconds an enemy tank platoon which had suddenly wipe out part of my spread head advancing in a wood. This is far from reality, so we strongly exhort you to correct the way in which the artillery is handled. Because of the vital role played by the artillery, an excessive abstractness in treating it impairs the realism of all the simulation.>>

That is the way that the game is meant to work. The artillery combat results tables take into consideration that the artillery placement procedures are unrealistic. If I made the artillery placement procedures more technically realistic then I would also have to change the logic tables that assess casualties so that they would calculate casualty effect based on artillery rounds instead of based simply on a standard, optimum salvo. If done properly the result in the game would be a lot more work and annoyance for the player but the artillery combat results when spread over an entire game session would be almost exactly the same.

<<There should be an "undo shift" button for the artillery fire. When you press the "shift" button, you commit yourself to shift the fire despite you could realize that it isn't the best thing to do.>>

I am doing this in my work on future games but adding it to the current version of TacOps would require too much new coding and new testing.

<<The fire support icons should be transparent to see where the artillery will exactly hit (or better, where we hope it will hit). This feature is really useful when two or more of such icons overlap.>>

Transparency is a very hard thing to get to work right on all PCs but I will add it to the wish list.

<<I was reading your posting to the newsgroup ... Any help on where this game can be downloaded/bought would be greatly appreciated. Also, is the name TacOps, or is that an abbreviation for something else.>>

"TacOps" is the full name of the game - i.e. the name that is on the box.

TacOps Gazette 96.16

<<I haven't gotten the hang of air assaults yet.>>

When doing your assault planning, think of transport helos as if they were bright yellow school buses <g>. If a plan doesn't feel like it would work for school buses then it probably won't work for transport helicopters either.

<<I can't get the hang of TF Fenwick. I tried dozens of times, with all sorts of tactics, (blind rushes, slow sniper attacks, trying to engage the relief column first) and I've never cleared all the objectives nor totally defeated the relief column. Suggestions, please.>>

Snipers, smoke, and air strikes are the keys. Use the snipers during the first three or four turns to clear one flank of the compound of all SAMs and machine guns. Then bring in all your air strikes to kill as many additional crew served weapons as possible. If you use them up rapidly at the beginning of the mission, you will probably get more before the enemy reinforcements arrive. Then lay smoke everywhere and bring most of your helos into the compound across the cleared flank at nap of the earth altitude. While you are mopping up the compound, use some of your helos to lay your ambush positions against the eventual enemy reinforcements.

<<Some of the sounds [in TacOps] do not seem like the sounds that would actually be heard in a real battle.>>

I think I know what you mean but I suspect that what you are really asking for is not more realistic sounds but rather sounds that are more like those heard on TV and in movies. I suspect you would not like the sounds that are heard in a real battle. Weapons and explosions in real life do not sound anything like they sound in movies and on TV. In general, real life weapon sounds are very short "pops", "thumps", and "cracks" and volume wise they are very uninspiring unless you are personally firing a weapon or you are within a few meters of an explosion - in the later two cases you fairly quickly go temporarily deaf and you don't really hear anything again for hours except a high pitched whistle or a sort of a tinny echo of what is going on around you <g>. Early in development, all the sounds in TacOps were perfectly realistic. The first playtesters all reported them to be "extremely boring" so I went in with some sound tools and I jazzed them up a bit - altered, amplified, echoed, etc. - until most of the playtesters were satisfied but not so far that I would be embarrassed with military professionals.

<<I would also love to hear the long report of a sniper's rifle instead of that tiny little "pip" sound.>>

The sniper rifle sound is the most "real world" sound in TacOps <g>. When I first added it, I did not have time to mess around with it.

<<Is there any problems in transferring [Play by email] orders files via Internet to another Internet user? AOL user? Any special software required?>>

No real problems but you will need to become a savvy user of various encoding schemes and you will need to obtain several utilities - you never know which encoding standard will be required by the email program or the service provider of your opponent. If you are a PC user you need to get both a uuencode/uudecode utility and a base64/MIME decode/encode utility. If you are a Mac user you need to get a uuencode/uudecode utility, a base64/MIME decode/encode utility, and a BinHex encode/decode utility. BinHex is an encoding scheme that was developed for Macs and it is largely unknown in the PC world.

<<An important item to note here about SOP's: All of NATO's units were given Reverse after Fire/if Fired upon and pop smoke. It was evident (and someone please correct me if I'm wrong, but I paid strict attention to it later and believe I'm right) that units do not undertake their SOP orders until the end of the turn minute.>>

Units do not wait until the end of the turn/minute to execute SOP orders. Units execute SOP orders during the next 15 second movement pulse that follows the triggering fire pulse.

<<Is there any way to build a custom scenario using the US Army template in which both sides start off the map.....(i.e. a movement to contact with Bluefor off the west edge and OPFOR off the eastern edge.....)?>>

Not at present.

<<although I am sure this has already been addressed I think you can cheat in TacOps by loading and unloading units. I can move large number of troops a considerable distance. Has this been changed.>>

No it has not been changed. I decided some time ago that the fix would be worse than the problem. Personally I don't consider that cheating when only done once - i.e when one APC loads a unit during a combat turn to provide either hasty protection to a unit or when it is done simply to quickly load a unit for withdrawal or tracked transport to another firing position. In that case I am not talking about loading and unloading a unit across a series of parked APCs. I would consider it to be cheating if a player set up a "bridge" of several parked APCs and then proceeded to load/unload an infantry unit from one end to the other as if the APCs were a series of Star Trek transporter rooms <g> .

<<Is it realistic to set up an infantry unit, on top of a hill, put a Bradley on the bottom of the hill, shoot the infantry, load and load it before the enemy has an opportunity to respond.>>

It is realistic for defending infantry to be able to choose to expose themselves for one quick volley and then to immediately drop into cover or to immediately move with relative safety to another firing position. This is one of the few capabilities of infantry that is a real world problem for tankers to deal with <g>. The game method that you are mentioning is the only way to simulate this in TacOps. As long as it is not abused, I have no problem with it. I can see how others might disagree.

<<Even when the T62 has clear LOS to the front of a M1A1 it won't fire (The OPFOR unit was not suppressed at the time and was not moving). I can see from the statistics that the 115mm+ DU gun on the T62M+ cannot penetrate at point blank range with a shot at the front or flank of the M1A1. It only has a chance if the M1A1 exposes its rear. But why won't it even attempt to fire? It seems that it could still knock off a track or damage the sights.>>

In the current TacOps game engine, anti tank weapons do not fire at armored targets unless they have some chance of killing the target's vs it front, side, or rear armor - they do not attempt "track shots". I am dubious that very many tankers would expose themselves to almost certain death just to try to immobilize an enemy tank that is otherwise immune to their weapons.

<<Is there a reason why SAM16's won't engage UAV's with missiles? I fly them right over, and they shoot at them with their machine guns! Does the UAV not emit enough heat to be detected? What is the best way to get rid of the pesky things as the OPFOR player?>>

In TacOps, SAMs will not engage UAVs. That is my current info - source was a reservist Stinger gunner.

<<What is the best way to get rid of the pesky things [UAVs] as the OPFOR player?>>

Helos will go after UAVs (air strikes will not). The ZSU-23-4 AAA and ZU-23 AAA do ok if the UAV comes close enough. Whatever you use, it will usually take a good number of firings to down a UAV.

<<how about something that would draw the shift fire ranging circle for the map in use? What I'm doing now is using the print out maps that Major H. kindly supplied through this group and plotting fires, etc. on them, and then drawing 500m circles around the current point of fire to determine whether shifts are going to work or not.>>

There is already a mechanism in TacOps that allows you to see arty and air shift rings without actually doing a shift. Open the arty or air support window, select an ongoing mission (or option/alt click on a visible air or arty target marker), and click on the shift button. The arty support window will disappear and the legal shift ring for the selected mission will be drawn. If you then hit the backspace/delete key, the shift routine will abort with no shift taking place and with no penalty - the shift ring is erased, the arty window reappears, and you are back where you started - i.e. the fire mission is not shifted.

Some very useful arty shortcuts that folks often miss...

The backspace abort keystroke mentioned above - it also applies to aborting a shift to a TRP and aborting target marking.

While the arty or air support window is open, clicking on an arty or air target marker on the map will automatically select the line in the arty/air support window that applies to that mission. If the arty support window is open, clicking on an air target marker on the map automatically closes the arty support window and opens the air support window. If the air support window is

open, clicking on an arty target marker on the map automatically closes the air support window and opens the arty support window. If either the arty or air support window is open and you click on the target marker for an on-map arty mission, the arty/air support window will automatically close and the unit orders window will be opened for the on-map unit that owns that target.

Select the menu item "Map/Plot Fire Support" so that arty and air mission targets are plotted at all times. You can then open the arty or air support window or an on-map arty unit orders window merely by Control+clicking on any visible arty or air target marker (on the Mac you would use Option+click). When the window opens, the mission line for the marker that you clicked on will be automatically selected.

<<I've been paying close attention to the way arty works, and the best I can figure the randomizer considers the center of the TRP to be the Mean Point of Impact (MPI) of a "large" number of salvos, and each individual salvo describes a point about the Circular Error Probable (CEP) centered on the MPI. If you pay attention, you'll note that salvos "wander" around the center of the MPI (TRP) marker. This is completely realistic, and entirely proper behavior for arty. The perception seems to be that the center of the TRP is the specific point where the salvo will impact. It's not. If you want to have a significant, lasting effect on the target, let the guns work it over for more than one or two minutes. If you give the arty time to do its job you will notice the salvos spiraling into the center of the MPI (TRP) in ever decreasing random circles within the CEP.>>

Your analysis is 100% correct.

TacOps Gazette 97.01

<<Who is the expected users of this software? Civilians or military personnel?>>

Military enthusiasts, experienced wargamers, and military personnel.

<<I need an MTLB unit.>>

I'll put one in the next test version (along with the COLT team). Remind me if I forget.

<<What is the VTT323 IFV?>>

North Korean version of the Chinese YW531 APC. Looks a little like a turretless BMP. 1960's era battle taxi. Most have no weapons turret- thin armor - death trap. Added to data base in April 96 at request of US Army personnel in Korea.

<<Does the ACRV [OPFOR Artillery Command and Reconnaissance Vehicle] have enhanced artillery adjust capability?>>

Yes. If an ACRV is observing for an off map arty unit, the first salvo will usually arrive with greater than usual accuracy and the accuracy of the next salvo on the same target point from that artillery unit will be increased two levels instead of the usual one. Same info applies to US FISTV, US FO Team, and OPFOR FO Team.

<<Could it be that the sound assigned to the short-barreled 73mm gun of the BMP1 IFV could be that of an anti-tank missile (i.e. like an LAAW)? This is the impression I have. If so, is this intentional (should it not rather be a gun sound?) or an error?>>

Yes, it is the LAAW/RPG sound. It is intentional. The round fired by the 73mm on the BMP1 is actually a rocket propelled grenade.

<<Am I correct in assuming that there is no difference in game terms between air support on ground or on air alert and that this is only included for cosmetic purposes?>>

Correct.

<<Is there any limit to the time aircraft can be on hold in the air?>>

At present there is no limit to the time that an aircraft can be kept on hold in the air. I originally intended to introduce a random chance of losing an air asset that was kept "circling" for more than a few minutes but I never got around to it <g>.

<<How do I use them [TRPs] and what good do they bring?>>

In TacOps, TRPs are artillery target reference points. They represent artillery target points that have been registered with supporting artillery units. You can use the Artillery Support Window to start an arty mission with a TRP instead of starting one from scratch. When you start an artillery mission with a TRP you generally get your first salvo sooner and the initial salvos will be more accurate. In some scenarios you get a bunch of TRPs at the beginning of a scenario to set up on the map like unit markers. In all scenarios you can create TRPs by firing an observed artillery mission until its accuracy is high enough to suit you and then saving the mission as a TRP.

<<Does artillery, ICM or HE, have any effect on helicopters at NOE altitude?>>

Not at present. Although I have no citation for an airborne helo ever actually being destroyed by arty fire, I have often thought that I probably should represent the possibility somehow - particularly for helos at NOE altitude.

<<I have tried to at least suppress helicopters with artillery, but it doesn't seem to effect them. Is this realistic?>>

I don't know if applying the current TacOps concept of suppression would be appropriate for helos but I do agree that something probably needs to be done in the game to realistically discourage NOE helos from loitering in an area that is receiving arty fire and to punish those that do.

<<[From a foreign user of the TacOps demo] For me, the order window of TacOps is a little hard to understand or to use since I am a [non US] Army Major and have problems on exactly understanding the US military terms.>>

The demo version of TacOps does not include a paper manual. The full version includes a thick paper manual that explains the terms and game procedures in great detail.

<<Also, is there any function of detection inside the TacOps? I cannot find it in this demo version. In a modern game, without detection measures, you cannot locate the enemy. Like C3I measures.>>

There are no remote passive detection systems in TacOps. The only way to find the enemy in TacOps is by conducting active ground reconnaissance with scouts, or air reconnaissance with helos and Unmanned Aerial Vehicles. I think this is reasonable for the one, two, and three hour long, battalion and regimental level battles that TacOps is designed to represent. There are a few TacOps scenarios where the exact positions of most or all enemy units are displayed during the first turn. In these few scenarios it is assumed that the situation was such that sophisticated intelligence resources were able to pinpoint exact unit positions prior to the beginning of the battle.

<<What is the motives to design TacOps?>>

A strong desire to not have an ordinary job <g>.

<<...even for the 'basic training' scenario, a OPLAN is is needed; otherwise I cannot play a good game.>>

The mission objectives and the victory conditions for a scenario can be examined by first loading the scenario and then using the File/ About the Scenario menu item. This will display a long text file that gives the current friendly and enemy situations and the missions of each side. Once you add your own analysis and mental plan to that information, you will have your OPLAN. I consider the user doing the mental development of an OPLAN to be part of the entertainment value of the game.

<<How about recon by fire? In the offense this would be invaluable in causing the defending units to fire back, based on the proximity of the incoming rounds. It beats moving in the open and waiting to get shot at!>>

That is on the wish list as part of a to be implemented concept titled "area direct fire" (TacOps currently only addresses "point direct fire") but its implementation would require a huge amount of new code and extensive testing. I don't know when or if I will be able to add it to the current TacOps. If it does get added, it probably will not guarantee that defending units will respond in the manner that you expect in your suggestion. To be fair/realistic, if I add a button to the Unit Orders Window that allows a unit to put direct fire on an area of ground rather than on a spotted unit, then I will also need to add an SOP option so that a player can direct a unit to not fire back/reveal its position if it receives only area direct fire.

<<I just completed a PBEM game and got some bizarre figures in the after-battle status report. There were 10 units of infantry teams listed in the NOW column of this OOB, but 15 in the eliminated column -- and -5 in the ELIMINATED column!>>

I think it is clear that your PBEM games got out of synch. Units were killed on one computer that were not killed on the other. Out of synch problems are automatically corrected with each orders exchange but the auto correction does not extend to the order of battle "killed" records. I don't currently allow the program to correct the order of battle report so that I will have some indication when sync problems occur and thus know to look for a bug or a user error explanation.

This is how the auto correction works. If you don't notice a loss of synch in the turn in which it happens, you might never know that there had been one. The program has always been self correcting, to a limited degree, for synch errors. Whenever orders files are exchanged, the actual order of battle for a given side is recreated based on the unit data provided by the owner of that side. Thus your force always stays the way you saw it before - it is only the enemy force that may show a unit back in action that you thought you killed.

Example: When the Red player sends an orders file to the Green player, part of what is in the Red orders file is the entire Red unit data base. During the orders exchange process, Green's Red unit data base on his computer is deleted and Red's Red unit data base is substituted for it. The reverse happens when Green sends Red his orders.

Thus synch loss will never effect your perception of your units. The reappearance of a dead enemy unit is the only thing that you will see. The only other evidence might be that the unit totals in the game status report do not add up right. You might show more enemy units killed than what actually started the game.

TacOps Gazette 97.02

<<Will ATGMs fire against hovering enemy choppers? I can't get my BMPs to fire ATGMs at hovering US choppers.>>

TacOps ATGMs will not fire at a hovering helo. They will fire at a landed helo. This was done as a game play compromise. There were two reasons for it. (1) If I allowed ATGMs to fire on helos I would need to allow helos to take evasive action upon the launch. 99% of the time the helo would escape - any other result would be unrealistic in my opinion. I didn't see any justification for putting in a lot of code to handle something that was not going to end up being game relevant and I also felt that players would be annoyed at the wastage of valuable ATGMs that would occur. (2) More importantly, an unsporting player could display a hovering helo for no other reason than to trigger and exhaust his opponent's ATGMs.

<<Also: will AGS-17 units fire at choppers?>>

They should fire at hovering NOE or landed helos.

<<The Canadian Grizzlies were recently updated in the field with some neat ceramic plates, resulting in a steel/ceramic/kevlar sandwich that the fitters were **quite** proud of (quote: "makes an M2 look like a tin can"). Any chance of seeing this new mix reflected back into the game?>>

Sure, if someone sends me (1) the name/nomenclature for a Grizzly with that modification, and (2) a reasonable SWAG for the front, side, & rear protection level to be assigned for the armor -- i.e. mm of equivalent steel armor vs kinetic energy attack and mm of equivalent steel armor vs chemical energy attack (being ceramic armor, the numbers will be much different).

<<My Stinger units had little success. In contrast, the OPFOR AA units seem to knock my Apaches and Kiowas out very easily. I know that classic OPFOR forces have great AA capability. Is this a reflection of the differences in weapons systems, or just my poor handling (g).>>

I think it is probably that there are so many more SAMs on the OPFOR side. In TacOps, the US STINGER is superior to the OPFOR SAMs but there usually aren't very many STINGER gunners.

<<This last game, I gave orders to a SAM unit to make a long trek through the mountains, along a narrow shoreline along a river (being careful not to order it to touch the river itself) and out into open territory where it would have a better field of fire. I had forgotten all about it but 15 turns later I was expecting to see it in the clearing. Instead it was still by the river with zero orders. It was never seen or attacked at any time. What could have caused it to stop?>>

When non amphibious units move next to water and they find that they have a pending move order that will cause them to enter the water, they stop at the water's edge. They do not attempt to go around. Your situation was probably caused by a disconnect between what the map looks

like and what is actually in the terrain data cell. Terrain is averaged into 100 meter cells (ten pixels) that underlay the map art. For artistic effect, the map drawing does not always show the exact trace of the terrain data cell - otherwise the map would be too blocky looking. Rivers are in fact always 100 meters wide to the game engine even if the map art makes them look narrower than that. So, while you could see ground in the map art along the water, it might be that a sliver of the ground is actually registering in the game as water. This is a limitation of the current game engine but it is not a bug. You can use the line of sight tool to find the exact trace of terrain art. Move the line of sight tool cursor around on the map and you will see text at the bottom of the screen that tells you how the game engine will interpret the terrain underneath the cursor.

<<We have started a PBEM [play by email] game normally and are now at turn 5. Whenever my opponent tries to open the Saved Game file as the US player, the program demands him to enter the OPFOR (!) password.>>

My first thought would be that your opponent was mistakenly trying to open (as the US player) an old OPFOR saved game file from a previous PBEM game that he played as OPFOR. My second thought would be that you as OPFOR, mistakenly sent your OPFOR saved game file instead of your orders file. A player never sends his saved game file to the other player, a player only sends orders files. What you described would be correct program behavior if you as the OPFOR player had mistakenly sent the US player your saved game file instead of your current orders file or if your opponent was mistakenly trying to open (as the US player) an old OPFOR saved game from a previous PBEM game that he was in as OPFOR.

If the Saved Game file that your opponent is trying to open is actually his proper US saved game file and not your OPFOR saved game file then I still don't know from the description if this is a bug or not. The program has a list of "cheating and innocent mistake indicators" that it checks for whenever it loads a PBEM orders file or a saved game file. If it finds something that seems suspicious, it starts asking for passwords and unless the proper passwords are provided it won't load the file. However, if it finds something suspicious and the player who would be compromised failed to use a password then the program will go ahead and load the orders. Moral - use passwords in PBEM games.

<<...if I try to restart my (OPFOR) Saved Game file stating (wrongly) being the US player, the program demands the OPFOR password from me as well and entering it enables me to restart as the US player with the US units in plain view. Although I was still able to divert my views in order not to spoil the game, I am naturally not too keen in trying to replicate this with another ongoing PBEM game.>>

That would be correct program behavior if your opponent was not using a password for the US force. The game works this way so people have greater flexibility in how they can use the program. If a player chooses to not use a password then the game assumes that the players either trust each other implicitly or else that they want each other to be able to turn off fog of war and to do other normally compromising activities.

<<What language do you use to code TacOps?>>

TacOps for Apple Macintosh was programmed in C using the Symantec Think C development system. TacOps for Windows 3.1x was programmed in C using the Microsoft Visual C 1.52 development system. My new games are being programmed in C and C++ using the Metrowerks CodeWarrior development system for both the Apple Macintosh and the Windows95 versions.

<<What is the algorithm you use to calculate the attrition?>>

Each weapon and unit is linked to tables of probabilities for chances of hitting and chances of damaging or killing various types of targets in various types of terrain and at various ranges. The tables are based on conventional military wisdom and on my analysis. At the instant of effect, the computer calculates probabilities appropriate to the situation and figuratively rolls a die to determine the outcome of each combat incident.

<<Can anyone tell me a good technique to position my units such that I can ensure that they can back up immediately after firing and disappear from enemies' view. I know about SOP but my difficulty is with positioning units in woods/town just at the threshold of having a LOS to the outside.>>

Visualize about where you want the unit to be on the edge of the woods. Then use the line of sight tool to find the point near there that is the most inboard from the edge of the wood but that can still see out - does not have to be exact - with vehicles you can usually be off by five or six pixels but the more accurately you place the center the better. Place your unit at that point and set its SOP to backup after firing. The unit will fire, and will immediately begin to back up. Since it only has a few pixels (40 or 50 meters) to move until line of sight will be blocked, the unit will usually get away without suffering return fire - unless it was already spotted before it fired.

The special spotting buffer zones at the edge of woods, towns, and high ground is 100 meters or ten pixels wide (give or take a couple of pixels from what the map shows). Given your monitor settings, visualize how wide ten pixels is. Then visualize the center point of a unit marker - as long as that center point is anywhere in that ten pixel wide buffer zone then you are OK. Unit position, line of sight, and spotting are all calculated from the center point of the unit marker.

Or put another way ...

The outermost 100 meters of high ground, woods, and town terrain (ten pixels plus or minus a pixel or two) provide a dual spotting zone. In the case of high ground it relates to the ability to see from the high ground down to low ground. In the case of woods and town terrain it relates to seeing out. From the first or outermost 100 meters above the contour line a unit can see both all otherwise unblocked high ground and all otherwise unblocked low ground. If the unit backs away from this 100 meter buffer, then it will only be able to see units that are on high ground. If it crosses the contour - headed downhill - then it will only be able to see units that are either on low ground or that are themselves right next to a high ground contour. In the outermost 100 meters of woods and town terrain you can see and shoot out of the woods and town but your

visibility to the enemy is greatly reduced (until you fire). For visualizing LOS, you need to key on the center point of the unit marker. If you are "in the zone" and if you are using one of the larger marker sets, a lot of the unit marker will appear to actually be out of the woods. Again, it is where the center point of the marker is that is important for LOS.

<<Given that OPFOR is not provided thermal sights and improved ATGMs, it seems that with prudent use of smoke, ICM artillery rounds and the ability to conduct limited resupply (especially Javelin/Dragon/TOW and mortar (smoke) rounds) by the US player, the computerized OPFOR AI has just about 0.0% chance of victory.

That is the way it worked out in Desert Storm <g>.

<<Conversely, when the OPFOR is given thermal sights (with or without improved ATGM's) I've found the opposite often to be true. US positions are swamped with direct and indirect fire as soon as they are spotted. TOW launchers are toast after the first shot or two, and Javelin/Dragon units almost never inconvenience the US player by running out of ammunition and needing resupply<g>.>>

Different enemy capabilities require different tactics. When OPFOR is equipped with thermals and improved warheads, a defending US force can not generally survive a static nose to nose slug fest, therefore it should use a mobile defense rather than a static defense. Defenders should generally avoid the use of direct fire for as long as arty can significantly attrit the attacker. Exceptions to withholding direct fire include (1) the elimination of the enemy's advance recon units, (2) enemy units that that can be annihilated with one volley and that are isolated by terrain features so that they are momentarily out of sight of following/supporting units, and (3) long range nuisance sniping by rapidly displacing, heavy ATGMs. Defenders must satisfy themselves with the damage that can be done by direct fire with one or two surprise volleys (preferably one) and then immediately move/fall back, under cover, to a new firing position.

<<I ran into the same problem with my Squadron Commander here; he was interested, but didn't pursue it when I mentioned site licenses and stuff.>>

If a military unit buys a copy of TacOps today they get all the site license they need - the box is the site license! The concept of "needing to program and negotiate site licenses" has popped up consistently as a stumbling block to military purchases. No one seems to be able to communicate to the procurement types that there is no rhyme or reason to going through the hassle and long process of trying to push a site licensing scheme through an Information System Management procurement channel for a \$40 dollar, off the shelf computer game program <g>. Looking at it from another direction, lets say your S3 had a training support project (approved by the CO) that required a few hundred dollars worth of graphic arts supplies or minor construction materials to implement and that those materials were readily available in the civilian world but were not stocked by your base supply center. The local supply officer wouldn't think for one second about asking higher authority to provide the items, he would just send somebody out the main gate to buy the darned stuff in town. I am pretty sure that those model-airplanes-on-a-stick that aviators love to wave at each other in the ready room did not come from the base supply depot <g>.

<<When making a *war* game, please the grognards while maintaining acceptable playability - if it is a good game, our praise will filter out to the "mass consumers" and give better advertisement than any CGR or PC Gamer ad possibly could.>>

None of what follows is meant to indicate that I do not respect or value grognard opinion. I do - partially because I am a grognard myself but mainly because if it weren't for grognard sales I apparently would have no sales at all <g>.

In my opinion... Grognard opinion is, for the most part, irrelevant to the commercial success of a wargame. Commercial success means that a game recovers its development costs and provides some subsidy for the development of a new product. The mass consumers don't give a twit for grognard opinion because (a) they don't see it because they aren't active on Internet for the most part, (b) most grognard comment occurs on title specific mailing lists rather than in the more heavily frequented newsgroups, and (c) a lot of what is important to grognards is either of no interest to the mass consumers or would actually be considered a drawback to them.

The first, primary, and some say only determinant of commercial success is simply getting onto the shelves of the major software retail chains. If a wargame gets on the shelf and if it works at all then it will do ok. I have seen no evidence that grognard opinion has any effect on the stock/no stock decision of the major software retail chains. I have been told by people who should know that the things that are most likely to get a wargame on the shelf are (a) paying the chain up front to carry the product [the best approach and the only one needed for those that can afford it], (b) slick box art, (c) slick graphics and sounds in whatever program areas are seen during the first five to ten minutes that the game is run, and (d) three or four months of large, slick magazine ads prior to release. I have been told that magazine reviews are irrelevant to the chains because they occur too far after game release. I have been told that magazine previews are relevant if they include screenshots that show a slick interface. I have been told that even bugginess is irrelevant to the initial stock/no stock decision because the chains don't test what they sell.

If a wargame gets on a shelf, its long term success will be determined by how much and how quickly it sells. I have been told that for most "run of the mill successful" games this is determined more than anything else simply by the box art and by the game providing just barely enough play value to avoid angering the average buyer. At present the chains are concerned only with short term volume sales and fast return on investment, their marketing goals do not as yet appear to include a service oriented level of providing consumers with variety or with satisfying niche interests.

Grognard opinion is most useful for garnering a reasonable number of mail order sales some weeks or months after initial release. Such sales may help keep the lights on but they do not pay the costs of big time development and marketing.

<<Please don't forget the Windows players as you develop new games for the Mac.>>

Unfortunately, there is more of a danger that the Mac players will be forgotten. Apple seems to be doing its best at the moment to kill the Macintosh as a home/consumer computer. The only remaining question is whether this is intentional or not.

<<Do you develop for the Mac first because the grognards are using it a lot?>>

Actually the civilian grognards seem to mostly be PC users and the Mac has very little representation in active duty military offices. I still use the Mac as my primary development platform (for both Mac and Windows95 code) but I don't develop for the Mac "first" anymore. The code that I create daily on the Mac is written so that it can be compiled to produce either a Mac program or a Windows95 program. My next game should have a simultaneous Mac/Windows95 release on a hybrid CD. If something prevents a simultaneous release then it is most likely that the Windows95 version will be the first and possibly the only release. Although I have an excellent Pentium 133 PC sitting right beside my Mac, I do my daily development and coding work on the Mac because, in my opinion <g>, (1) the Mac user interface is more efficient than the Windows interface for doing serious, creative, or artistic work and (2) the Mac code development systems are faster/better than the Windows code development systems.

TacOps Gazette 97.03

<<Is the most recent Macintosh version of TacOps version 0.1.5?>>

0.1.5 is the latest officially released version for the Macintosh. A free Mac update is in alpha testing that will jump the Mac version to 1.0.5 to bring it more in line with the Windows version and that may allow PBEM games vs the Windows version. I can not tell you at present what the date goal is for its public release.

<<How does one copy and paste SOP orders? If I have a subset of units which I want to copy a given unit's SOP orders to, how do I do it without opening and closing every desired unit's marker?>>

Select the unit whose SOP you want to copy - either by holding down the Shift key and clicking on the unit or by dragging out a selection rectangle that surrounds the unit marker. Then select the Orders/Copy SOP menu item. Then select the unit or units that you want to paste to - either by holding down the Shift key and clicking on one or more units in turn or by dragging out a selection rectangle that surrounds one or more unit markers. Then select the Orders/Paste SOP menu item. A similar method also works for copying and pasting orders.

<<Would it be possible to add a feature where units can upgrade their fighting positions for every minute that passes.>>

On the wish list for TacOps II, but I doubt I can get it into the current version. This is a complicated item to do right.

<<I've been a tanker most of my military career ... and have never had a use for a foxhole. I remember back in my ROTC days, I was told Infantrymen were supposed to be able to dig a foxhole fairly quick and keep upgrading the protection as time permitted. So, maybe they could build a fighting position in 15 minutes.>>

I spent five years in the infantry and I have dug a lot of them <g>. About the best you can do with an Etool in fifteen minutes (in average packed soil) is a slit trench just deep enough to lay down in. A hole deep enough to crouch in and offer a decent firing lip might could be done in an hour with soft, cooperative soil. On the other hand, I have seen a lot of ground that could not be disturbed with anything less than a full sized pick axe and a real shovel - few of which are usually available to an infantry unit in contact.

The biggest problem with adding this feature to the current version of TacOps is that the smallest possible terrain feature that can be tracked by the game engine is 100 meters by 100 meters. For example, if a squad were allowed to "dig in" during a game under the current terrain scheme it would produce a 100x100 meter field fortification.

<<Then, as time permits, they could add overhead shelter and sandbags.>>

Overhead cover and sandbags is an all day thing. Who other than perhaps a CPXer is going to play TacOps for 18 to 24 game hours?

<<One question - do the individual "black dot" type buildings block LOS only if going right through the building, or is there a kind of "LOS buffer" around each dot?>>

There is conceptually a "LOS buffer" around the building but it is much bigger than just "around each dot". 10x10 pixels (100x100 scale meters) is the smallest that any terrain feature can be in TacOps. That is because the game engine divides a TacOps map into an array of 10x10 pixel cells starting in the upper left map corner. These cells are not shown to the user but if you look at a map carefully in things like wood edges, town edges, high ground edges, etc., you can see where their outline would be.

<<... do the dense, grayed urban zones block LOS any more than a group of those black dot buildings?>>

No. They block the same.

<<about another unit addition, is there a possibility of creating a "bunker" type unit? >>

Not possible at present.

<<When units have their ranges set to zero, they still fire at targets that are 0 meters away.>>

That is correct program behavior.

<<When LAV-AT units fire, they seem to fall behind the main column. Do these units (and any other similar units) have to stop while firing?>>

Yes they must stop while firing and for the duration of the time of flight of any ATGM that they launch.

<<Every different unit & variant should have its own marker on the map. I find it difficult to keep track of T55s amidst T62s amidst T72s amidst T80s.>>

Can't do that yet for a couple of reasons. One - a distinctive marker for every possible unit would kick the memory requirements of the game way up. Two - and more importantly - there is only so much one can do with a 15x15 pixel or 19x19 pixel sized marker. Most regular players don't mix four different kinds of OPFOR tanks in one scenario <g>.

<<The fixed wing strikes all deliver identical payloads: cluster bombs. Would it be possible to call for different types of air strikes, much as it is now possible to ask for different types of artillery support missions?>>

On the wish list, however.... Cluster munitions are the best kind of aerial bomb load for the types of targets and combat situations that usually appear in TacOps. If I provided more variety

in bomb loads the result would be that you would get less effect on target if you picked anything other than cluster munitions. Once you learned that, you probably wouldn't use anything except cluster bombs so why should I provide more load variety <g>?

<<It would seem that a A-10 strike with Hellfire missiles against an armored formation would be quite different than a F-16 cluster bomb attack.>>

The A10 is on the wish list. Problem is it is unlike other fixed wing and it is unlike helos. Neither set of program routines are appropriate to simulating it. Requires a new targeting approach and huge blocks of new code. Don't know when I'll be able to get to it. I don't think its not being in the game is a serious loss. The A10 in the typical TacOps scenario would either be useless due to not being able to get through the enemy AAA and SAMs or if there was not much of a AAA/SAM threat in a scenario then the A10 would greatly unbalance game play. Whoever had the A10s would usually win while the OPFOR player would spend most of the game playing 'hide in the bushes'. When I get around to adding the A10 then you know that I am going to also have to give OPFOR the FROGFOOT <g>.

<<Are ground forces [in the real world] able to ask for a particular type of air support?>>

Not usually. Usually the ground force just describes the target that it wants hit. The provider of the air support is usually responsible for determining the best aircraft and bomb load for that target. However, at a tactical level with ground units already in contact 'the best aircraft and bomb load' may be more often based on the location of the closest airborne aircraft rather than what it is carrying.

<<So, I select T80U ATGM tanks with preferences set to 5 (OPFOR tanks have thermals) & 7 (Improved OPFOR ATGM warheads.) Upon checking unit info I find that the T80U ATGMs no longer have thermals, but if I add a T80U it does have a thermal sight. Because T80Us with option 5 have thermal sights, exactly by what logic does the exact same tank (T80U ATGM) lose it's thermal sight simply because it uses a different--and limited--type of _on board_ ammunition?>>

Probably because at the time that you added the optional T80Us and T80U ATGMs you had your preferences set to '5 All OPFOR tanks have thermal sights' and '6 all OPFOR ATGMs have thermal sights'. After adding the T80Us and T80U ATGMs you probably then deselected preference 6 causing thermals to be stripped from all units having ATGMs. Solution - set your preferences before you add any optional units.

<<Arrgh... how likely is it that the Mac release won't happen [for new games]?>>

I expect to release a Mac version at the same time as the W95 version for whatever new game I do this year or next. I have no short term plans to abandon the Mac. The long term situation is up to Apple Inc.

<<Earlier, you had mentioned that 'Panzers East' for the Mac was essentially done, and was only waiting on completion of the Windows version for release...>>

That is a pretty liberal interpretation of what I said <g>. In any case, my concept of "essentially done" has had to change given the failure of TacOps to make it into the major chain stores.

<<.. is Panzers East the 'next game' or has it been bumped for some other project?>>

Panzers East is currently my 'next game' and I work on it all day every day, but there is always a chance that it could get bumped for some other project - gotta pay the bills <g>. Doing a couple more TacOps expansion kits comes up quite often.

TacOps Gazette 97.04

<<It [TacOps] does not support amphibious assaults...>>

Actually the game engine does, I just have never done a map with an ocean shoreline.

<<There is a Macintosh demo of TacOps available - I don't know about the current demo, but the original demo I saw was rather unimpressive...>>

True enough - the Mac demo is two years out of date in relation to the most current retail version - lots has changed.

<<Does the game account for the speed and stabilization systems on the M1 and M2/3 families?>>

Those units have better 'to hit' probability tables than most other units in the game but they are not portrayed as 'super weapons'.

<<Specifically their ability to dash at great speed ...>>

No - units in TacOps do not get the benefit of their technical top speed.

<<...and to fire with great accuracy while on the move? >>

They have lower moving penalty modifiers in relation to most other units in the game.

<<Does this impact the P(hit) and P(kill) both outbound and inbound?>>

Yes to outbound. No to inbound.

<<Is there only one movement speed in the game?>>

Yes and no. The player can not tell a unit to move at say 10 kilometers per hour but units do move at different speeds. The abstraction for movement in TacOps is based on a general combat situation of 'contact imminent'. Thus units do not typically move at their real world technically max possible speed but rather at a lower speed that is based partially on tactical caution and partially on limits imposed by the varying roughness/trafficability of terrain. All units of a given class have the same maximum game speed potential, however their speed at the instant is determined mostly by the class of terrain that they are in and if they are suppressed.

<<One technical note: the ATGM fired through the barrel of the T-80U is laser-guided, will the laser penetrate smoke in TacOps?>>

Yes.

<<... they said that the effective range of the missile is 6000 meters...is that modeled in TacOps?>>

No. At present, 4000 meters (i.e. max game visibility) is an artificial limit for any ground to ground or air to ground weapon system (exception - SAMs can shoot to their listed max range against airstrikes).

<<Are there ever weapons disabled without knocking out mobility?>>

Yes.

<< ...would it be possible to see a unit with a report "M3 Bradley mobile - TOW unit disabled?>>

When you click on one of your units, if the unit has mobility or weapons damage that info will be shown in the information line at the bottom of your screen.

<<There seems to be some discrepancies about the effective range from a helo attack. I read in an old gazette (I think), that although 8Km was possible, the version that was current as of the posting did not support laser designators and therefore the real range is 4Km. Is it still 4 Km or has this been increased?>>

It is still 4Km for all weapons except SAMs. The 4Km limitation is based on 4Km being the current max possible ground to ground or air to ground visibility in TacOps.

<<Does facing effect offensive ... or defensive/visibility ... parameters of helos?>>

No.

<<I think that entrenched or defiladed units should automatically face a unit which is attacking them, or at least this should be an option in SOP orders or preferences.>>

Automatic facing would be a little beyond the scale of TacOps - a TacOps turn only represents 60 seconds of real time. Allowing the computer to decide facing would also probably bother a lot of players who might not appreciate an armored unit repositioning its front against fire from a dismounted rifle team that occurred early in a combat phase and thereby exposing its flank to the fire of a larger antiarmor weapon that occurred later in a combat phase.

<<If a unit is on the move and is attacked - and you expect the attacking unit to be terminated within a turn or two, do you generally get more defensive advantage from continuing moving or from stopping and going into defilade? >>

In general, defilade provides more protection than movement but in practice it is a case by case thing as a lot depends on the terrain, situation, type of unit being fired at, type of unit that is firing, etc.

<<Can all units fight as effectively from entrenched positions as from open or defiladed positions.>>

Yes.

<<Is there any change in offensive capability [due to a unit being entrenched].>>

Being entrenched does not reduce a unit's offensive capability. Being entrenched could be said to increase a unit's offensive capability - since being entrenched reduces the likelihood of a unit being killed or suppressed then the unit has an increased chance of being able to fire effectively for a longer period of time.

<<If an onboard artillery or mortar unit is attacked, will it engage attacking unit with mortar/art, thereby superseding any operational orders which it previously received (i.e., is self-preservation a priority)?>>

Yes.

<<Also, I believe that I noticed that my mortar units would not execute movement orders unless I manually canceled indirect fire orders. Is this true?>>

Yes - mortar units will not usually execute movement orders unless the player manually cancels indirect fire orders.

<<I don't think I understand the difference between the altitude box and the up/down commands for the helos. As I type this though, I'm thinking that maybe one is immediate orders and one is delayed orders. Is this correct.>>

Yes - the altitude box/window menu gives immediate orders while the up/down buttons give delayed orders.

<<Also, for helos - I get confused as to how many times I should click on the up arrow to ensure that helo will be able to spot enemy units.>>

One click equals a one level increase or decrease in helo altitude. There are presently only three possible altitudes for a helo in TacOps - landed, nap of the earth, and medium altitude.

<<I also read in an old post or gazette, something about weather effects being implemented, but not fully as of posting. Are there any weather effects.>>

No, except that the player can specify different eye and thermal visibility parameters during the first/setup turn.

<<I've read discrepant things on whether or not SAMs and AAA can spot and shoot through smoke. What's the poop?>>

SAM/AAA platforms with thermal/radar sights can spot and engage helos and airstrikes through smoke. SAM/AAA platforms without thermal/radar sights can not engage helos through smoke. SAM/AAA platforms without thermal/radar sights can engage airstrikes if intervening smoke is not on or very near the SAM/AAA platform - i.e. if the line of sight goes over the top of the smoke. SAM/AAA platforms with or without thermal/radar sights can not usually engage ground units through smoke.

TacOps Gazette 97.05

<<In a future version, I think a very enjoyable scenario would be one where you have to get a certain number of lethality points across a river. I suppose this might entail several bridges...>>

The problem with doing scenarios that include river crossing is that I never got around to coding the AI so that it could deal well with crossing a water obstacle or with defending a water obstacle <g>.

<<...perhaps a scenario where you are trying to evacuate civilians and OPFOR harassment units are trying to blow up the hapless refugees. OPFOR objective is to destroy X number of trucks or prevent evacuation, US objective is to exit X number of trucks from combat zone.>>

That would be ok for a solitaire scenario where the human player was the US side but if two humans were playing the game such a victory condition would require the OPFOR player to act like a war criminal. I find such scenarios in games to be extremely distasteful. Example - the several scenarios in Command & Conquer where the NOD player must butcher helpless civilians and destroy their houses in order to 'win' the game.

<<Would it be possible to have the saved game and turn files sorted in reverse order, that is from most recent to oldest rather than the way it is now?>>

It would be possible if I ignored the Windows standard routines for displaying/loading files and wrote several pages of my own. I am afraid that would be too much work and too much bug risk.

<<As it stands, unless I remember to go in and prune out the older saved game and turn files, I have to scroll through anywhere up to 70 files to get to the one I need.>>

I recommend adding one to several folders named "oldstuff" or the like to your TacOps folder and dragging the older saved games into that folder to get them out of the way. That is what I do when I am playing a PBEM game. I also make a separate folder for each game. I name it for the person that I am playing and I put in a duplicate of the scenario and the map that is being used. That way I never have to wonder where Windows is sticking the saved game and orders files when I am playing several games at once - they always end up naturally in the folder with the duplicate scenario and map.

<<We couldn't play WARGAMES when I was in the Marine Corps. Maybe I should RE-UP! NOT!!>>

According to an official Marine Corps web site that I cruised recently, the Commandant authorizes and encourages the installation of commercial wargames on Marine Corps computers and their supervised play during duty hours.

<<If you smoke yourself and OPFOR does not have thermal sights (or you are using art smoke defeats thermal sights), does OPFOR art accuracy reset to zero?>>

Yes, eventually. Arty accuracy decreases one level per turn against target points that were initially under observation but later became obscured.

<<it seems that it would be nice to have a user-friendly way to set up kill zone (ironic wording I suppose). Like being able to draw a rectangle (or better yet, freeform zone) within which OPFOR could pass w/out being fired upon.....and then drawing a box or zone within the first one, which would be the kill zone, thus allowing for unmolested entry into the kill zone after which all eligible units would open up. This would be a lot easier than manipulating the fire control range of 15 different units...>>

Making things 'simpler' in one area tends to reduce the flexibility of a game in other areas. Game design is more than anything else a continuing exercise in 'tradeoffs'.

<<... and would encourage the use of this tactic whereas now, I suspect a lot of people just don't bother since its a lot of trouble.>>

Those who don't 'bother', deserve the punishment that they get <g>.

...

<<I've read references to US use of MRLS but I don't seem to have any MRLS systems in any scenario nor have I seen them in the US data base. I'm not suppose to have these am I?>>

The US MRLS is currently only available as an off map arty asset - it is not in the on map unit data base, it is in the off map arty unit data base. It is provided in only a few scenarios but the player is free to add off map MRLS to any scenario via the Options/Arty Support menu item during the first/setup turn.

<<My mortar units never seem to have ICM available. This is the way its supposed to be, right?>>

Correct. ICM is a 'bomblet/submunition' type of ammunition and to the best of my knowledge is not currently fielded for any US, Canadian, or OPFOR mortar.

<<Is the likelihood of getting additional artillery or air support partly a function of how much you have already used?>>

Never in the case of off map arty and not usually in the case of air support. A player can never have more than six unused air support missions - if a player already has six air support missions waiting to be used, no more air support will be forthcoming until at least one of those missions is expended - there is no such limitation for receiving additional arty ammo. The likelihood of getting additional arty ammo or additional air support missions is based mainly on a probability that is set during the first/setup turn of a scenario. Some scenarios have a higher probability of

receiving additional arty ammo or air support than others. Some have zero probabilities of one or the other or both. The player is free to change the probabilities in any scenario via the Options/Arty Support menu item and Options/Air Support menu item during the first/setup turn.

<<Do minefields have any added effect if doubled (i.e., do two mines stacked together attack the same unit twice)? Or would it be better to "double belt" the minefields?>>

Minefields have no added effect if doubled - in fact, stacking two mine markers together is a complete waste of one marker. It would be better to "double belt" the minefields.

<<Well I figured out why I couldn't set target priorities. I've been pressing on the indicator light and that don't work.>>

Ahh so ... pressing an indicator light just provides information on the current setting of that button.

<<In an earlier reply, it was said that the parentheses symbol doesn't necessarily mean defilade, it also means searching for best cover. Does this differ in terms of game play or is it a technical point concerning the definition of defilade?>>

That was just a technical point/clarification, mainly for the benefit of a lot of traditional board and miniatures gamers who have come to think that 'defilade' only means 'vehicle hull down'.

<<Does it mean that if unit is near the edge of woods and I click on button, that it will go to woods, for example?>>

No. After a few extra seconds of time have passed, the unit simply goes from fully exposed to defilade status. The unit marker does not actually move at all.

<<What weapons fire in a limited arc?>>

The only one that comes to mind is the main gun on the Canadian Chimera turretless tank (unfielded in the real world). At one time I intended to introduce different logic for spotting and firing depending on if a marker represented one or several vehicles/subunits - a data field for 'Firing arc' was originally put in each unit characteristic record to support that. I never implemented the different spotting and firing logic but when I added the Chimera (at the request of a member of the Canadian military) I needed some way to replicate the tactical clumsiness of a turretless vehicle for offensive missions and the 'firing arc' data item was a handy way to do it.

<<Does grouping effect visibility. Do the operations or proximity of other units effect the likelihood of a different unit being spotted?>>

No.

<<I believe that the game does automatically reset the range of fire for units that have been fired upon to max.>>

Correct - unless the unit has been give a 'hard' target priority.

TacOps Gazette 97.06

<<[I have a problem] running the registered version of TacOps under OS/2 Warp v. The error message is: "CTL3DV2.DLL has not been correctly installed". The session then closes. It doesn't happen using the demo version.>>

The demo version does not properly confirm the existence of the dll named CTL3DV2.DLL. A later bug fix corrected this in the retail version. CTL3DV2.DLL is a Microsoft file that provides improved appearance to buttons and decorative effects in dialogs, among other things. CTL3DV2.DLL should be located in the directory named 'SYSTEM' which is inside the directory named 'WINDOWS'. Try doing a file search for CTL3DV2.DLL. If you find a copy of it anywhere on your hard disk, make a duplicate copy of it and put the duplicate inside the directory named 'SYSTEM' which is inside the directory named 'WINDOWS'.

<<I think OPFOR often has preplanned artillery missions at points of obvious cover.>>

Correct. Such terrain targets will be engaged randomly if the AI has no recent, legally spotted, US unit targets.

<<I also recall seeing somewhere (TacOps Gazette or FAQ) that OPFOR artillery tends to be more accurate than our artillery.>>

OPFOR artillery is slightly, initially more accurate when you are playing against the AI. Against a human player, OPFOR arty is slightly less accurate than US arty and is somewhat slower to initially arrive. The AI has two advantages not allowed to a human player and I think both of these are documented in either the manual or in the FAQ file. The AI gets a one level advantage in first salvo accuracy of observed artillery fire (but not air) and its APCs can pick up dismounted troops at a slightly greater distance than the human is allowed to. Both of these items were compromises that eliminated huge blocks of AI code and they do not significantly affect game outcome.

<< ...using 'Blackhawks' to insert a/t teams (rifle squad +'javelin' team.) ... Even when there were no 'OPFOR' in view, the teams seemed to attract arty fire within a couple of minutes.... Does the A/I recognize this tactic in some way ... >>

It can - especially if there were not very many US sightings in a given turn. The AI maintains a running target list (just as a good human player would) that contains recent US unit positions that were legally acquired by spotting and it contains points on the map that would be good places for the US player to use for approach or defense in a given scenario. At the end of each combat phase, the AI plans its orders for the next turn just as the human player does. The AI looks at its target list and it usually selects arty and air targets based on the most recent spottings of valuable US units. If it doesn't have any solid unit spottings to work with, then it will randomly target terrain that would make good US attack or defensive positions. The AI also notices when it gets secondary explosions and may decide to "stick" to an area for several turns.

<<Is it best to use 'real-life' insertion techniques - i.e. dummy drop-offs?>>

Yes. Or approach the LZ at nap of the earth altitude via a path that you are sure can not be observed by OPFOR. In the case of moving units it is also helpful to not move long distances in a straight line. If the AI is going after a moving target it will often plot its arty targets to fall well ahead of the current position of the moving unit based on the speed and facing of the moving US unit when it was last observed. The AI can also shift arty fire that is already falling the same as the human player can but the AI is probably better at predicting a moving unit's future position (based on facing and speed) than most human players.

<<My experience tells me to move upwards of 500 meters to be sure of a "free" shot again but I often try to cut that short (must shoot on the enemy once in a while) which often sadly seems to be very lethal.>>

A better reason for units to generally move a few hundred meters away from the scene of a recent firefight is to avoid the enemy artillery fire that is likely to begin landing on their old positions in a few minutes.

<<You mentioned that you lowered the damage which a 7.62 mm sniper rifle could cause so as not to create an unrealistic situation of APCs being disabled by "critical hits". Aren't there long range teams which are armed with very large caliber sniper rifles ? I think they are called anti-material rifles which fire 0.50 caliber rounds.>>

You are absolutely right. Such weapons are in real world use, but I don't think they are particularly relevant to major battles between large mechanized forces. I did not include anti material penetration or heavy calibers for sniper weapons in TacOps mainly because I felt that 'plinking' vehicles with a sniper rifle was too likely to result in player abuse and arguments <g> in human vs human PBEM games. I realize that was kind of an arbitrary thing for me to do but that was the design decision that I made that particular day <g>.

<<I was just wondering: is there any way to capture a TacOps game screen and save it as a .BMP or .JPG file? I was going to demo the game for some friends and I would like a way to get some "action shots" without going through a whole scenario just to show one or two aspects of the game. Any help will be appreciated.>>

Under Windows, the following procedure will capture (place onto the clipboard) the screen or the current front most window in almost any application. While the TacOps map is visible, hold down the Alt key and then press the key at the top right of your keyboard that is labeled something like 'Print Screen'. This will capture the screen shot. Minimize TacOps and open any paint program - for example the accessory paint program that came with your Windows installation. Once the paint program is open with a blank document visible then either do Ctrl+V or select a menu item that says 'Paste' to transfer the captured screen shot into the paint document. You should immediately see your screen shot appear in the paint document. You can then use the paint program to save the screenshot as a bmp file or to print it.

<<I'd like a program that could take all of my turns and my opponents turns and play them all though continuously from beginning to end. ... How much trouble would it be to configure the game engine to do this?>>

On the wish list - has so far proven surprisingly difficult to do.

<<...a few things that might make the game a tad more realistic. For example how about scout units that are skillful at stealth i.e.. hard to spot but very good at spotting.>>

Already in the game engine - experiment with the US and OPFOR infantry units that have 'sniper' or 'recon' in their name.

<<How about a 'cautious move' for all units whereby they move slower but are not as exposed or spottable?>>

Too hard to add to the current TacOps engine, but it will be in my future games.

<<How about a command that lets moving units orient to any direction i.e.. retreat while showing their front, not rear?>>

Already in the game engine. Hold down the Macintosh option key or the PC Control key as you give a movement order (i.e. click on the map). When that movement order is executed, the unit will do so 'in reverse'.

<<Are M119s Marine or Army? I've been asking around but no one seems to know the answer for sure. Sir Myk thinks they're Marine. I figured I'd go to the 'source.'>>

The M119 light 105mm howitzer is a US version of the British Royal Ordnance 105mm light gun. I think it is only used by certain US Army airborne, air assault, and or light infantry units. I think it is intended primarily for use in rapid response missions where there is not enough time or transport available to move 155mm towed howitzer batteries or 155mm self propelled howitzer batteries. The USMC talked about buying some for a while for the same type of situations but I don't know if they did.

<<Also (while I'm at it) would an MEU, say one that has been dispatched to Bosnia, typically bring one battery of off-map arty or two? In Clancy's book (Marine) he says one (6 M198s), but I thought I read somewhere that 2 batteries are common.>>

A typical peacetime MEU [Marine Expeditionary Unit] would have one rifle battalion and one battery of arty however another arty battery could be added - its completely up to 'higher authority'.

TacOps Gazette 97.07

What follows is the current game logic controlling the TacOps surface to air missile (SAM) implementation. Most of the logic sprang from advice provided in mid 1995 by members of the TBRSTABVDM (TacOps Blue Ribbon SAM Threat Analysis Board and Volunteer Day Marchers). The TBRSTABVDM actually existed <g>. In early 95 (the Mac only days) neither I nor a lot of TacOps users liked the SAM routines. A group of 20 or so enthusiasts argued about the topic via email for a couple of months and I then implemented the group's consensus in an update to the Mac version - that new code was/is included in the original/current Windows version.

LINE OF SIGHT RULES.

Line of sight is determined for SAMs vs helicopters flying at nap of the earth altitude (NOE) in the same way as for ground units firing at ground units.

A clear line of sight is assumed to exist from a SAM launcher to a fixed wing airstrike or to a helicopter at medium altitude if there is no intervening woods or town terrain within 125 meters of the SAM launcher - or if a man portable SAM is dismounted in town terrain (assumed to be on a rooftop). Otherwise, if there is intervening woods or town terrain within 125 meters of the SAM launcher then the line of sight is usually blocked.

ACQUISITION AND TARGET EFFECT LOGIC.

SAM firing is a two step process. The first step is a target acquisition attempt. If acquisition is successful then the SAM is launched and a second step occurs in which the effect on target (if any) is determined.

STEP 1 - ACQUISITION LOGIC.

If there is a clear line of sight from the SAM launcher to the aircraft then the basic acquisition probability is 85%. The following cumulative percentage modifiers are then applied to the basic probability to determine the final acquisition probability. If the cumulative modifiers cause the acquisition probability to fall to less than 5% and if the SAM is not otherwise prohibited from acquisition then the final acquisition probability will be 5%.

If the SAM is a man portable weapon and is embarked aboard a vehicle: -20 for being mounted, -50 if the vehicle is moving, -70 if the vehicle is suppressed, -5 if in edge of woods, -5 if in edge of town, -50 if the SAM is in smoke, even if the SAM has a thermal sight. Man portable SAMs that are being carried in or on vehicles are limited to one target acquisition attempt per vehicle per fifteen second fire pulse. In other words, if you have more SAM's in a vehicle unit marker than there are vehicles, then the excess will not even attempt to acquire a target.

If the SAM is a man portable weapon and is dismounted: -30 if the SAM gunner is moving, -70 if the SAM gunner is suppressed, -5 if in edge of woods, -5 if anywhere in town, -50 if the SAM is in smoke, even if the SAM has a thermal sight.

If the SAM is not a man portable weapon (i.e. is permanently mounted on a vehicle): -30 if vehicle is moving, -50 if vehicle is suppressed, -50 if vehicle is smoked, even if the SAM has a thermal or radar sight, -5 if in edge of woods, -5 if in edge of town.

STEP 2 - TARGET EFFECT LOGIC.

Target effect percentages vary according to the model of SAM but in general ...

Versus fixed wing targets. In the real world, fixed wing aircraft are seldom shot down by man portable SAMs or by small vehicle mounted SAMs, even in high threat environments - in relation to the total number of sorties flown - but they frequently get discouraged and or handicapped. By discouraged I mean they miss the target. By handicapped, I mean that they are directed by higher authority or good pilot judgment to attack at altitudes/attitudes different from what would provide the best accuracy. In TacOps, if there is SAM launch against a fixed wing aircraft then the most likely thing to happen will be that the aircraft will unload and probably miss the target, the next most likely thing to happen is that the aircraft will abort the bomb run - actually hitting and or destroying the aircraft is the least likely thing to happen. If multiple SAMs are launched against a single airstrike, as each succeeding SAM is launched a bonus/cumulative modifier is applied to the chances that the aircraft will miss the target or abort.

Versus airborne helicopter targets. Small SAMs are very effective against helos. Accordingly in TacOps there is no discouragement result in SAMs versus helo engagements. The SAM either hits or it misses. If it hits, the helo will usually be destroyed.

TacOps Gazette 98.01

The publishing rights for the TacOps game title passed from Arsenal Publishing to The Avalon Hill Game Company on 1 September 1997. TacOps versions 1.0.4 and earlier (the versions published by Arsenal) are now out of print and unavailable.

A revised edition of TacOps is now available on CD from Avalon Hill under the title 'TacOps Classic Edition v2.0.0'. Avalon Hill began shipping TacOps Classic Edition on 13 March 98. Price \$19.95 (US) plus postage. Only available by direct order from The Avalon Hill Game Company via 1-800-999-3222, <ahgames@aol.com>, or <<http://www.avalonhill.com>>.

Below are the major differences between 'old TacOps' and Avalon Hill's revised edition.

Hybrid CDROM containing both Microsoft Windows (Windows 3.1x, Windows For Workgroups 3.11, and Windows95 compatible) and Apple Macintosh (System 7.5 and later) versions of all files.

TacOps Classic game engine v2.0.0. This is the same revised game engine that was recently licensed to the New Zealand Army. It includes additional US, Canada, New Zealand, and Australian units and weapons not previously available - thus it is incompatible with any previous version of TacOps.

Includes all previously released TacOps scenarios and maps, including those that were formerly sold separately as an expansion kit.

Includes an abbreviated user guide and a scenario guide/map index provided in online help format. A paper user guide is not provided but the CDROM does contain a complete, 173 page, user guide in Microsoft Word format that the user can choose to print.

Includes Windows and Macintosh printable versions of maps 1 through 16, 100, 211, 213, 220, and 230. A color version is provided for all these maps. A black and white version is provided for maps 1 through 100. Macintosh versions are in PICT format. Windows versions are in BMP format.

Includes the following extra battle maps:

Map 100 - 6km x 10km, low fidelity map based on the Greek Valley training area in South Korea.

Map 200 - 16km x 10km, low fidelity map of Gagetown training area in Canada.

Map 211 - 15km x 30km, low fidelity map of central corridor at NTC Fort Irwin, grid 3205 to 6119, topographic map scan background.

Map 213 - 15km x 30km, low fidelity map of southern corridor at NTC Fort Irwin, grid 3293 to 6107, topographic map scan background.

Map 219 - 6.5km x 15km, desert maps with 19th Century Fortress and nearby industrial area.

Map 220 - 12km x 15km, version of Map 219.

Map 230 - 11km x 10km, low fidelity map of area near Fort Knox, Kentucky, grid 6292 to 7102, topographic map scan background.

Map 321 - 20km x 30km, low fidelity map of southern Jamaica, grid 4170 to 7089, topographic map scan background, extensive coverage by sugar cane fields coded as being at maximum growth (i.e. woods), has about 25km of ocean coastline.

Map 323 - same 20km x 30km area as Map 321 but with sugar cane fields coded as being at minimum growth (i.e. clear terrain).

Below are new features in the version 2.0.0 game engine that are common to both the Macintosh and Windows versions. [The Macintosh version has a much longer list of features that are new only to the Macintosh game engine - i.e. they were in previous Windows versions but never made it into a previous Macintosh version.]

Increased the game engine's maximum map width limit from 15.6 to 31 kilometers.

Added the following special reports: situation report, spot report, logistics report, arty/air support report, and TRP report. These reports can be viewed on the screen or saved as text files for printing

Added the following New Zealand and Australian units to the game data base: NZ infantry section P10, NZ infantry section P6, AU infantry section P9, Land Rover 90 w auto grenade launcher, Land Rover 90 w heavy machine gun, Land Rover 90 w light machine gun, Land Rover JRA110HD, Land Rover SOV (Special Operations Vehicle) w auto grenade launcher, Land Rover SOV with heavy and light machine guns, Land Rover SOV with light machine guns, Leopard 1A5 Tank, Leopard ARVM (Armored Recovery Vehicle), M113 FSV (Fire Support Vehicle) w turreted 25mm auto cannon, M113 FSV w turreted 76mm cannon, M113 w T50 heavy machine gun turret, M113 w T50 light machine gun turret, and motorcycle.

Added the following OPFOR units to the game data base (some of these new units were available in previous Windows versions): 82mm Mortar Team (dismounted), 120mm Mortar Team (dismounted), 100mm AT Gun (towed), 125mm AT Gun (towed), 2S6 SP AAA/SAM Vehicle, AT3 Sagger ATGM Team, Infantry COP Team (Combat Observation Post - dismounted), Infantry Engineer Squad, Artillery Forward Observer Team (dismounted), MTLB APC, motorcycle, SA7 SAM Team, SA7B SAM Team, T55M M1974 Tank, T55M M1974+ Tank, T62M M1975 Tank, T62M M1975+ Tank, North Korean 1V14/15 ACRV, and North Korean VTT323 IFV.

Added the following US units to the game data base (some of these new units were available in previous Windows versions): LAV Command and Control Vehicle, M119 105mm Howitzer (towed), M163 Vulcan SP AAA, M168 Vulcan AAA (Towed), M198 155mm Howitzer (towed), M551 Sheridan Tank, Infantry COLT Team (Combat Observation/Lasing Team - dismounted), Infantry Engineer Squad, Artillery Forward Observer Team (dismounted), Infantry .50 caliber Machinegun Team (dismounted), and Infantry MK19 Auto Grenade Launcher Team (dismounted).

Added CPX (Command Post Exercise) Umpire mode and features. Selecting or checking the new Options/CPX Umpire Mode menu item enables a new mode of TacOps play called "CPX umpire mode". When CPX umpire mode is enabled, the program will allow most of the options and scenario editing menu items that are normally disabled after the setup turn to be used in any orders phase. Examples: Add One Unit, Add Optional Units, Change Air Support, Change Artillery Support, etc.

When CPX umpire mode is enabled, a unit can be instantly shifted from one map point to another in any orders phase. Units to be moved are selected by holding down the shift key while clicking on a unit marker or by drag selecting a group of markers. Once one or more unit markers have been selected, a subsequent click on an empty spot on the map will result in the selected units instantly being moved to that point.

When CPX umpire mode is enabled, the Options/Delete Unit menu item can be used during any orders phase to remove a unit from play. The unit is administratively removed as if it never existed. In other words - no wreck marker is drawn, the numbers in the game status report don't show that the unit was ever in play, and the opposing force does not get credit or points for the elimination that unit.

When CPX umpire mode is enabled, the Options/Kill Unit menu item can be used during any orders phase to remove a unit from play as if it had been destroyed in the previous combat turn. In other words - a wreck marker is drawn (if the unit is vehicular), the numbers in the game status report show that the unit started the game but was eliminated in action, and the opposing force gets full credit or points for the combat related elimination of that unit.

When CPX umpire mode is enabled, the Options/Preferences menu item can be used during any orders phase to change the maximum normal visibility limit and or the maximum thermal visibility limit.

When CPX umpire mode is enabled, units can be joined even if they are farther apart than the customary limit of 100 meters.

When CPX umpire mode is enabled, units can be manually loaded even if they are farther from the transporting vehicle than the customary limit of 200 meters.

When running in CPX umpire mode, the Game Run Out menu item is available after the end of the first combat turn in two-players-on-one-computer-mode as well as for solitaire mode. Due to

program constraints, this menu item can not be available for PBEM mode or for the network modes.

When running in CPX umpire mode, two engineering menu items are now available in the Options Menu- Delete Minefields and Delete Entrenchments.

Added an instructor mode for saving and loading of saved games. If the first character of the blue force password is an asterisk (*) then that is a flag that the saved game file is an instructor prepared saved game. Such a saved game file can be loaded and played by a student without the student having the instructor's password but all options relating to altering the game will still be password protected.

Entrenchments, minefields, and artillery registration points can now also be added to a scenario by using the Options Menu/Add One Unit menu item

TacOps Gazette 98.02

I guess 'the word' travels slowly in all armies <g>. I have gotten several requests recently from New Zealanders wanting to order or wanting info on TacOps Classic. Although I hate to turn down your money - if you are an active or reserve member of the New Zealand Army then you should be able to get a free copy of TacOps Classic Edition from a local military unit - under the title 'TacOpsNZ'. In January the New Zealand Army bought a license that allows it to freely duplicate and issue the game to all its members. Let me know if that applies to you and I'll send you the email address of the New Zealand Army staff officer who is handling the NZ Army license and NZ Army distribution.

<<...how to build a effective defense in the CRAIG scenarios? ... what is the best use for the LAV 25 IFV? Too weak for long distances, cannonfodder at point-blank range.>>

Use the LAV25s to ambush OPFOR APCs - preferably from the flanks and or rear. You can win the CRAIG scenarios just by killing most of the OPFOR APCs. The autocannon on the LAV25 can chew up BTRs and BMPs from all aspects at close and medium range. If you can find a way for the LAV25 to get a rear shot it can also kill tanks.

<<how to use air strikes in the MAP.001 scenarios? destroyed OPFOR troop transports just drop of too much SAMs!>>

Hold your airstrikes until later in the game when OPFOR has been somewhat attrited. Work over SAM sites aggressively with mortar and arty HE fire - especially in the turns leading up to an airstrike - suppressed SAMs have a greatly reduced chance of acquiring an air target. Use airstrikes mainly when OPFOR makes the mistake of grouping a lot of tank or APC markers close together or when you find a company of tanks or APCs still traveling as a company sized marker. In US Marine Corps scenarios (the Marines are usually weak in the area of mobile, heavy anti armor weapons that can deal with tanks), you might consider conserving your airstrikes for use only against tanks - leaving the APC targets to your ground forces. You might consider using your airstrikes in mass - i.e. present more air targets than the SAMs can effectively engage.

<<The units look like very thin paper counters in a board wargame. It's sort of hard to believe that these graphics would be offered in a game released in 1998.>>

I don't remember getting a memo from the game gestapo indicating that traditional square unit markers could not be used in computer games anymore after a certain date <g>. I think that traditional square or oval unit markers are more useful for communicating game relevant information in a crowded environment than photo realistic markers. I intend to continue using the traditional marker format in my stuff.

<<What does PBEM mean?>>

Play-by-email. TacOps players can play two player games by exchanging binary 'orders files' as attachments to email notes. Some people carry on games for weeks at a time this way.

<<... would love to see airborne artillery a.k.a the BUFF [B-52] in the game!>>

Easy enough to replicate. If you feel the need for mass destruction just use the Options menu to give yourself some MLRS salvos and pretend they are B52 strikes - a dead grid is a dead grid.

<<What is the relation between the saved game file and the play by mail orders file?>>

The play by mail 'orders file' only contains information on the forces and move orders of the sender. The game file is a complete 'snapshot' of all variables required to restore the game to where it was at the instant that the game was saved. TacOps uses both an orders file (sent to your opponent) a saved game file (never sent to your opponent) because it allows the orders file to be smaller and it simplifies the program checking for 'cheating' behaviors during PBEM games.

<<If my opponent and I are sending only play by mail orders back and forth, how are these random factors accounted for? Will his equivalent game turn see the exact same event at the exact same time?>>

Yes. In play by mail mode, the US player's computer generates an array of random number seeds when it saves every US orders file. That array of numbers is included in the US orders file. When the OPFOR computer reads a US orders file, it stores that array of random number seeds in memory and those are what are used by the OPFOR computer for the next combat turn - just as they are used by the US computer for the next combat turn. Thus when either computer pulls a random number during the combat turn, the same number will be pulled on both computers.

<<I figured: what the hell, I've got airborne platforms with 24 machine guns (2 ea on 12 helos)-let's go kill some rear area troops on the objectives. No matter what pattern I flew, over or around the enemy inf. squads, the transport helo's waist guns would not engage ground targets - ever. I ran several tests later, all of which proved that door gunners won't engage ground targets.>>

They will engage but the circumstances have to be just right. The current probabilities in TacOps make transport helo waist/door guns fairly useful while they are entering, are inside, or are leaving an LZ. They make transport helo waist/door guns very ineffective or dangerous to use in other situations. The problem (if this really is a problem <g>) is that in TacOps, direct fire weapons currently only engage targets that they have a reasonable chance of hitting and harming. In TacOps, situational modifiers are applied to transport helo waist/door guns that make them extremely inaccurate/ineffectual unless the helo is landed or hovering and the ground target is very close to the helo (i.e. the common situation in an LZ). Your transport helos did not engage the ground targets for you because the game engine deduced that at the instant they did not have an adequate potential for getting significant effect on the ground target. Sending UH-60's on ground strafing missions can be done in TacOps just as it can be done in real life, however in order to do so you are going to have to put the helo within effective small arms range

of the intended target and you are going to have to be willing to trade a lot of your expensive, hard to replace helos for a few of your enemy's easy to replace infantry squads.

<<Is there any practical way to stop TacOps Bradleys from reloading their TOWs unrealistically quickly?>>

I don't think the reload time for the Bradley's is unrealistic but alternate testimony is welcome - as always <g>. The TacOps game engine tracks the ammo and reload status for every TOW launcher in a Bradley unit marker - i.e. if there are 10 Bradleys in a given unit marker then the ammo and reload status is tracked for each of the 10 TOW launchers. A Bradley TOW launcher contains two rounds. In TacOps, a launcher's two rounds can be fired in semi rapid succession but the firing of the second round will not occur until a delay has been assessed for the time of flight of the first round plus a 5 to 15 second delay for target reacquisition. Once the second round hits or misses its target then the launcher will be out of service for at least two minutes for reloading. I was initially given the two minute value for TOW reloading by a Bradley gunner and it has been blessed by a couple of mech officers.

<<Or am I wrong in assuming it actually takes several minutes and that during the time after a platoon fires off all its initial TOWs and is frantically reloading it is, shall we say, a sitting duck?>>

You are correct in your assumption - if the unit fails to withdraw to a covered position after every launcher in the unit marker has fired its two missiles then it is a sitting duck for a couple of minutes. I have received a fair number of saved games from folks as 'bug reports' where they had a platoon of Bradleys or LAVs that was wiped out by OPFOR 'without firing a shot'. Upon inspection, in every case, the Bradleys or LAVs had fired all their missiles in a previous turn and were in effect reloading in plain sight of the enemy because the player had failed to have them 'shoot and scoot'.

<<Will any future TacOps expansions be usable with the old Arsenal published version?. Is TacOps Classic v2.0.0 compatible with older versions.>>

No and no. The Arsenal game engine had been stretched about as far as it could be with updates, hacks, and patches. It was overdue for a major rewrite. This won't be relevant to the average user but I rewrote a lot of the new edition (I did not code the majority of the original PC version) to simplify and rationalize the data structures used in the map and scenario files in the hope that a third party will someday hack out a public domain map making utility and possibly a public domain scenario making utility. Several weeks ago I cleaned up several of my personal tools and I used them to hack together a non hostile (but not exactly user friendly <g>) map making utility for the Mac version and I released that to quite a few folks as a public domain item complete with source code. At the same time I offered to publish specs that might make that possible for someone else to do for the PC version but I probably won't be able to actually do that until I get TacOps98 back on schedule again.

<<Major, are there any changes in the Avalon Hill edition compared to the one that was distributed by Aresenal?>>

Yes. TacOps Classic v2.0.0 includes the scenarios and maps that were formerly seperately published as an expansion kit. It has some more US and OPFOR units and has Australian and New Zealand units courtesy of the New Zealand license. LAN network mode works better. There is an 'extras folder' with some new large maps such as two, 30km by 15km, low fidelity representations of NTC Ft Irwin. A CPX Umpire mode of play with printable reports (sitrep, spotrep, etc) and assorted 'god tools'. No new scenarios - unless you never bought the expansion kit.

<<Does this new version of the game add any rules which will encourage a player to keep his companies & battalions grouped in a realistic way? (e.g., command & control rules, morale rules, etc.)>>

By my way of thinking (not always correct <g>) TacOps never discouraged or prevented a player from doing that. I didn't add anything new to TacOps Classic Edition that is related to command & control or morale.

<<Are you going to continue supporting the Apple Macintosh computer.>>

I intend to continue to code for both the Mac (MacOS only, not Rhapsody) and for Windows95 - maybe things will work out - maybe they won't.

<<I need a tactical primer ...>>

Below are some tactical primers that you might actually be able to find in a local bookstore.

"Armor Attacks" and "Infantry Combat" (large format paperbacks) by LtCol John Antal.

The following books are fiction paperbacks but for modern weapons and tactics info they are as good as a lot of nonfiction works: "Team Yankee", "Sword Point", and "Bright Star" all by Harold Coyle, and "Red Storm Rising" by Tom Clancy.

Or call the Marine Corps Association at 1-800-336-0291 and order their book called "Mastering Tactics" by Major John F. Schmitt, USMCR. \$11.95 for Association members and \$14.95 for non-members. This is a 8 1/2" x 11" work book that breaks down 15 of the Tactical Decision Games that appear every month in the Marine Corps Gazette. The scenarios cover everything from squad to battalion level engagements with detailed maps and the book includes an excellent Table of Organization for the USMC.

TacOps Gazette 98.03

<<Are the supply points used by a unit for a certain level of supply dependent on the item being supply (all else being equal)? I would think that the more complex the weapon or ammunition is, the more supply points it would take up to supply a unit of a given size.>>

In general the more complex the weapon/ammunition is, the more supply points it will cost to resupply a unit of a given size. Inside the game engine, each type of ammo has its own resupply cost - stated in supply points per round or per 100 rounds. The resupply cost for ammo items varies proportionally to the dollar expense to manufacture an item, the likely availability or scarcity of an item in a forward battle area, the amount of transport and effort required to move an item around (weight and bulk), the amount of effort required to unpackage or otherwise ready an item for immediate use, and similar factors.

<<I've played the Gallagher 6 scenario a few times and although I've won every time I end up with hardly any tanks or brads left at the end of the scenario. Sometimes I have to use my Arty battery to ambush OPFOR BMPs at the end.>>

Try doing the reverse - use your arty first/early in the game and preserve your ground units for use later, i.e. after the enemy formations have been weakened and broken up some.

<<How do I get my units to back up into low ground instead of exposing their ass end to the enemy when they displace?>>

Hold down the Control key (option key on the Mac) as you click a 'way point' on the map. When the unit later executes that move order, it will do so 'in reverse', thus keeping its front to the enemy as it 'backs up'.

<<By the same token I took your advice and set the SOP for most of my units to back up 200m when they receive enemy fire. The problem is every time they get attacked they don't back up. When I check the SOP the button to back up is not highlighted anymore.>>

They should begin to move back right after they are fired on but they may not cover very much ground before the 60 second turn is over. Also, whenever a unit executes an SOP order, that SOP setting is cleared so it would be proper for the buttons to be unchecked the next time you look at them if the unit did start to execute an SOP order.

<<Along the same lines I positioned my tanks so that they would be about 2000m from the lead enemy units when they entered my EA's and set their range to two thousand so they wouldn't just start firing and reveal their position. Every time my tanks get in contact though their range reverts back to 3200 and their shooting at everything and get themselves killed. Apparently they don't like my orders and are revolting, or is it part of the game, and why?>>

Units that have been given engagement range limits automatically revert to their maximum useful range when (1) they fire their first shot or (2) they receive enemy fire. In both situations

the unit has probably been spotted and the most reasonable course of action (from a game design stance) is to then allow it its full range for the rest of that combat turn. If it is still around when your next orders phase occurs, you can give it a new range limit if you want.

<<...should I use recon infantry by driving them up and unloading them in a strategic position?>>

Yes - if you can do so without any chance of their being observed while enroute to or while occupying the strategic position. A recon unit is no good if the enemy knows where it is - arty usually makes short work of them in such situations. It might be better for you to settle for setting up your observation and recon screen farther back (i.e. to the west) so that you can be sure that they get into position unobserved. Heck ... in the case of map 1, you have 15 kilometers to play with. Don't get hung up on trying to keep the enemy from gaining some ground. Let him have all the ground that he is willing to pay for. Cheerfully let him bleed across the whole length of it if necessary <g>. Once you kill the last BMP you can have all that ground back just by holding a parade <g>.

<<Once you see the enemy, put smoke between him and your main defensive position (not on the enemy, he'll just drive thru it)..>>

It can also be useful to put smoke directly on advancing units - if you mix in an ICM volley from a second arty unit. Units slow down while in smoke and thus become somewhat easier to engage with arty.

<<My question is how do I establish a Forward Observation position, or Ambush when my forces cannot see outward from a slope!>>

There is a 'magic' zone along the 'uphill' side of the TacOps elevation contour line. The contour line in most TacOps maps is a dark green line that separates high ground from lower ground. The zone is about ten screen pixels wide (a hundred meters more or less). If the center point of a unit marker is in that zone, then that unit can see both high ground in all directions and can also see the low ground that falls away from the nearby contour line. In other words, if you position a unit marker just 'uphill' of a contour line then that unit can observe both high and low ground.

<<I'm in the midst of setting up a game using the Canada.scn template and map 100 and I am wondering if there is any way that forces can be designated as "off map" and have an arrival time set for them or do all forces have to start on map in this case.>>

At present there is no way to designate units as "off map" and have them enter with a delayed arrival time. Some players use a workaround which is to place such units on the map during the startup turn, near a map edge but behind a hill or in the middle of woods so that they can not be seen and so that they can not spot and with the engagement ranges of any SAM units set to zero so that they will not fire on distant airstrikes. Later - at the desired time - they are 'put into play' simply by giving them orders that move them out of their obstructed position.

TacOps Gazette 98.04

<<Can Mac and Windows players play on a network or by email now?>>

I believe that the Mac and Windows versions of TacOps Classic Edition can now play each other via play-by-email but I am not going to guarantee it or list it as a feature until it has been proven out in the real world. Cross platform play has been tested by myself and others but it was such a bear to implement that I can't help but be cautious about it. They definitely can not play each other across a LAN or across the Internet unless you use the network simply as a means to pass play-by-email files.

<<... regarding spotting ... are vehicles more/less visible when on different terrain types, or are only terrain features taken into account here?>>

The rougher the terrain the less visible are all units (more relevant before they start moving or firing, less relevant after) - also harder to spot, and harder to hit by direct fire. Woods or town adds an additional reduction to that provided by any present roughness level.

<< I have four Jamaica maps that for the life of me I can't tell apart... Which of the four maps would be used for which situation?>>

These maps are in the 'extras' folder. A short description of each map in the folder is in the text file titled 'MapIndx.txt' which is also in that folder. Note that some of these maps are very large - 16 meg systems may not be able to load or display them.

Map 321. Low fidelity map of area in Jamaica. Grid 4170 to 7089. Topo map scan background. Extensive coverage by sugar cane fields (yellowish areas) marked as being at maximum growth (woods).

Map 321. 16 color version of map 321. [Mac version does not have this map.]

Map 323. Low fidelity map of area in Jamaica. Grid 4170 to 7089. Topo map scan background. Extensive coverage by sugar cane fields (yellowish areas) marked as being at minimum growth (clear).

Map 324. 16 color version of map 323. [Mac version does not have this map.]

The 16 color versions of the Jamaica maps are very blurry but the user who originally requested these maps needed these versions for some older, low memory computers.

<<Which of the four maps would be used for which situation?>>

Use map 321 if you want to fight on a map that offers very poor movement and almost no long range lines of sight. Use map 323 if you want more open/clear terrain. Use the 16 color versions if you don't have enough memory to use the 256 color versions.

<<I seem to recall (imperfectly, yes) the Major remaking in an old TacOps Gazette (remember those?) that units moving over open terrain "wink" in an out of view to simulate minor irregularities in the ground.>>

I don't think they randomly wink out when traveling over clear terrain. I think that only applies for travel through the levels of rough.

<<I have a PC that I usually keep at 1024 X 768 pixels. That seems pretty small when playing TacOps. Should the screen be at 640 X 480 or 800 X 600?>>

Before you run TacOps, you should use your Windows desktop screen properties menu item (left click on the desktop to summon it) to set the screen resolution to what you prefer to look at. I did a survey last year and most people seemed to prefer 800x600 on 14 and 15 inch monitors. I have a very clear and bright 17 inch monitor so 1024 X 768 pixels is my preference.

<<Should the game take care of setting the screen resolution ...>>

Not in my opinion. I think that screen resolution is something that should be left to the user to decide based on his personal preferences and his screen size - and I think it should be controlled from the Windows desktop rather than from within a running program. One of my pet peeves is the way a lot of programs arbitrarily pick a screen resolution for me and then force me to use only their choice. I didn't invest in a sharp, 17 inch monitor just so that stuff could be big and blocky looking - I wanted more actual width and height.

<<How do I use the medical units? Is there a special use for the command element? M577 Command Post M548 Load Carrier M88 ARV M578 ARV M977 HEMTT Cargo M978 HEMTT Fuel...>>

Those units have no special capabilities in the game. They were provided mostly to serve as placeholders at the request of military users who wanted to represent support units in CPXs. The M577 is a tracked command vehicle. The M548 is a tracked cargo carrier. The ARVs are Armored Recovery Vehicles. A HEMTT is a heavy transport vehicle for cargo or fuel.

<<What is the difference between a corpsman and a medic?>>

None other than the name. Noncommissioned medical personnel in the army are called medics - in the Navy they are called corpsmen. Medical personnel in US Marine Corps units are provided by the US Navy.

<<Is there a special use for the sniper and recon teams?>>

They are able to spot enemy units at greater ranges than other units. They are much harder to spot than are other units. They usually hit and kill one person per shot for any personnel target that they engage. They usually won't be spotted if they fire for only one minute or less and then move to another location.

<<What is the game purpose of the M113 PPS5 Radar?>>

It can see through smoke.

<<M113 FIST-V?>>

This is a specially equipped arty observation vehicle. If it has a clear line of sight to the impact of a friendly arty salvo, the accuracy of the next salvo on the same target will be increased by two levels rather than just one.

<<Canadian M113 w ADATS - is this a dual AD and AT?>>

Yes, it fires a missile that is effective against both air targets and ground armor targets.

<<Could anyone tell me exactly what the LAV 25 is good for? Out gunned, out armored, and only four troops per vehicle. I don't get it.>>

It is only out gunned and out armored if there are enemy tanks around. It is excellent for close, direct fire support of infantry vs infantry. It normally carries seven troops - four dismounts and three crew. In a pinch it can carry a couple more inside and a pot full on top. It provides good cross country transport. It is very fast on roads. It is easier and cheaper to maintain than a tank or tracked APC. It can be lifted by heavy helos. A lot of them can be squeezed into/onto amphibious shipping. All things considered, it fits overall Marine Corps doctrinal needs better than available tracked APCs.

<<How do I exit forces from the map?>>

The outermost ten screen pixels of any map edge comprise an exit zone. On most maps, that exit zone is a gray, frame like, border. Order a unit to move onto the 10 pixel wide, gray border that surrounds most TacOps maps. Any unit sitting on that border at the end of a combat phase will exit the map and will be removed from play.

<<As I played the Task Force Fenwick scenario, I noticed that my percent of forces exited remained at 0, even as I was sweeping in and picking my guys up with the transport helos and flying them back to the "off map squares" in the upper and lower left corners of the map.>>

The off map squares that you mentioned are not exit areas. They are artificially contrived administrative safe areas - i.e. places on the map to park your helos until they are needed for actually exiting troops.

<<I would really like to see units identified by company/platoon/squad. I think this would help the 'feel' of the game by giving you an idea of just exactly who it is that is in each fire fight.>>

Select a unit to open its Unit Orders Window. Click on the button in the Unit Orders Window labeled 'Name'. Type in a organizational name for the unit.

<<Correct me if I'm wrong on this... but I'd understood that the smoke in TacOps, when the "does not block thermals" is on, still degrades the Ph of units using thermals to fire into and out of it (but not through blocks of smoke in intermediary areas because of fear of overtaxing the CPU).>>

That is the way it currently works.

<<I've tried splitting units from the setup window without success. Instructions indicate I should be able to do this. Is there a problem with the Windows 3.1 version, or am I just not doing something correctly?>>

There are two ways to split units that are still in the Setup Window - I just did some experiments and I had no problem with either. I ran Basic Training and started with units in the Setup Window. I first selected the M1 tank marker and then I selected the Setup/Split Unit menu item - the M1 tank marker split correctly. I then selected the Setup/Split Unit menu item without selecting a marker first - the cursor turned into a crosshair and I clicked it on top of the LAV marker - the LAV tank marker split correctly.

<<Splitting units ... mounted mech platoon into two mounted sections, rather than splitting unevenly and unloading everyone. The current process requires me to perform multiple split/join/load keystrokes.>>

I won't bore you with all the problems involved with automatic splitting, but I'll give you one example. It is unusual for vehicles to contain consistent, easy to split cargo units. Say you have an AAV marker that represents 11 vehicles carrying a total of 9 rifle squads, 6 machine gun teams, 8 Javelin teams, 6 SMAW teams, 4 60mm mortars, and 2 stingers. You select and split the AAV unit into three markers. Given the mixed load that you started with, the computer can't just automatically divide out the cargo units so that a similar mix ends up in each new AAV marker. Now, assume that the computer did do some sort of automatic distribution of troops when you split a marker. In the above situation you would likely be very interested in which of the new markers had the javelins or some other weapon. You would probably feel compelled to open every marker to reassure yourself about what was in what. Now assume that you don't like the computer's division. Now you are in a situation of having to unload all the markers, do dozens and dozens of splits, joins and reloads to get exactly the mix and loading that you want. I think that the solution that requires the least number of user actions is the correct one.

<<...allow players to edit the various ratings of armor, penetration, gun size, ammo, etc. This could let people check out various "what if?" options.>>

Allowing the player to edit such things could create huge problems for the game engine and for customer support calls. The worst one would be how to deal with the potential situation where the two players of a play-by-email or a network game had 'edited' the unit and or weapons data bases and had edited them 'differently'. Customer support folks would be at a loss for figuring out if a game oddity was due to a bug in the game or due to editing done by the users.

TacOps Gazette 98.05

<<What is going on in the pic that appears in the splash screen of TacOpsCE?>>

A group of Marines are looking at a sand table terrain model. With typical Marine zeal they have painted in the road net and have marked off 2km grid squares with paper, string, and tent pegs.

<<Does TacOps factor in the speed of the target unit for combat resolution?>>

Movement is factored but not speed.

<<What about target size (I'd think an M60 would be a great deal easier to hit than a motorcycle, for example)?>>

Yes.

<<If an ATGM shooter is fired on while the missile is in flight does the chance for a miss go up?>>

Yes.

<<Show unit reports ... How to get unit ID#s in the little boxes to the left of each unit line like there was in that CPX that I was in?>>

Select a unit to open its unit orders window. Click on the button titled 'Name' then enter a name for the unit. That name will now be shown in 'friendly' CPX reports.

<< I just got TacOpsCE yesterday... I noticed that the unit and weapon data structures seem to have grown substantially in size (by 2)...does this mean that unit/weapon functionality has increased...or...does it just reflect a change in data structure organization for the pre-existing features? If the former, what can units/weapons do now that they couldn't before?>>

The change in unit and weapon data structures size has nothing to do with additional unit/weapon functionality. Most of the size increase was due to my changing bit and char sized variables in those structures into short integers. When I first coded TacOps I paid extreme attention to making variable types as small as possible- i.e. no larger than they absolutely had to be to hold the largest possible value that they would ever be asked to hold. Because Macs and PCs store data with different bit ordering, using variables smaller than a short integer added a great deal of complexity to my efforts to enable the Mac and Windows versions to be able to play each other. Using variables no smaller than a short integer simplified the cross platform data transfer issues. Some of the size increase was due to additional unit data that has to be remembered for the Situation Report. Some of the size increase was due to adding data fields to every unit record to handle unusual unit attributes that used to be hard coded as logic exceptions. And etc.

<<Could the collective wisdom of this list explain why 'Unit Value' (Points) is a reflection of lethality Vs cost. Would it not be realistic to build up forces with a dollar restraint rather than a power restraint?>>

Combat power/lethality is what matters at a tactical level not dollar cost. The lethality points have two purposes in TacOps. First, the game uses them to quantify casualty, exit, and or victory points as a means to determine mission accomplishment - depending on the scenario. Second, they are provided as a way to crudely scope the relative combat power ratio between two sides for folks who like to build custom scenarios. I don't think the dollar cost of a unit would be as relevant or useful a measure of unit combat power in a tactical game.

<< Question... As spotting is every 15 seconds, does this mean that a tank can run up a hill, cross it, and back down the other side (Small hill, or peninsula in this case) or between two clumps of trees or whatever, and not be spotted if they can do it in less than 15 seconds? (which is a lot of time to be out in the open).>>

Yes - in principle - but I don't think it can actually happen very often in practice (at least not simply because of speed) because I don't think there are many places in TacOps maps where there is '15 seconds' or less of open ground between covering terrain. In TacOps a screen pixel equals 10 meters of ground. Since terrain data cells are ten pixels (100 meters) wide, the smallest possible game relevant terrain feature must be at least 100 meters across. In TacOps, max speed for a tank on a road is 40kph or 166 meters per 15 seconds. Max speed for a tank in clear terrain is 125 meters per 15 seconds. Max speed for a tank in all other terrain would be less than 100 meters in 15 seconds. In order for your example to occur you would need to move from the last couple of pixels of a woods or town cell, cross an adjacent clear cell, and then move into another woods or town square. It would be more likely that something like this would occur due to several consecutive spotting die rolls failing - spotting is never guaranteed in TacOps.

<<I noticed that having units in large stacks seems to give better chances of their taking damage (or at least being suppressed). was wondering if they should also be giving a little better chance to damage the enemy when in large stacks as it would be easier to 'mass fire'... I guess I am suggesting that units in large stacks be giving increased fire (slight) to balance this increased risk. Even if it isn't 'realistic' I think it would be valuable from a wargame perspective. Smaller stacks are less likely to take damage (be suppressed) but are less likely to cause damage, large stacks are the opposite - balance.>>

I think an approach like that would be more appropriate to the abstractions of an operational level game than to a good tactical level game. It isn't being done at present but large stacks of units in TacOps really ought to be receiving movement penalties and firing penalties because in real life putting several companies into the same spot would cause confusion, blocked lines of fire, and reduced rates of movement. I never bothered to code these penalties in because my gaming experience indicated that sooner or later most people get taught by enemy air and artillery to not move around in large stacks <g>.

<<...several people asking that units that can't see an enemy unit still be able to be giving orders to fire at/into terrain in order to suppress possible enemy units that might be there. ... 'laying suppressive fire'. ...lay down massive fire on a It really is needed, even if it only has a small chance of suppressing the enemy.>>

On the wish list but be warned that it will have little effect beyond suppression unless carried on for very long periods of time. It will use up a lot of ammunition. A short stroll down memory lane <g>... Telling machine gun sections and sometimes whole rifle platoons to provide supporting/suppressive fire was always a very popular order in training situations in my infantry days. Rarely did the order giver seem to have an appreciation of how much ammo would be required to do what was being planned. As a 2d Lt weapons platoon commander I was often faced with the delicate problem of finding a way to let a fellow platoon commander or even company commander know in the middle of his giving a frag order that (a) with only a couple of thousand rounds per gun that I could not in fact provide 20 or 30 minutes of continuous suppressive fire on an enemy position while he worked his riflemen to the close assault line and (b) that I didn't think it was likely that enemy mortars and arty were going to let me rattle off rounds for that long from one position. This was in the low tech training/pre-MILES days so perhaps this lesson is sooner/easier learned these days. 60mm mortars would have been better for this sort of thing but company commanders seldom thought about them because they seldom bothered to take them to the field during training due to fear of breaking them and due to lack of personnel to hump them.

<<The other thing about the Spotrep is that they contain only units that are spotted at the time the report is generated, not units that were spotted during the turn and subsequently destroyed or disappeared.>>

That was changed before the release of TacOpsCE for everything except destroyed markers. The Spotrep shows all enemy unit markers (that are still in play) that were spotted at any time in the previous combat turn, even if they are no longer spotted. Units that are still in play but that have become unspotted are reported as being at their last known location. If a spotted unit marker was completely destroyed in the previous combat turn then it will not be shown on the Spotrep. I will try to change this at some point in the future. It was too hard to do when last I looked at it.

<<It would be cool if units that went hull down (and continued to receive hull down orders each turn) for a number of turns improved their defensive positions. Probably, only infantry would get this benefit as they continued to improve their hasty positions. You can do one hell of a lot with an e-tool and " I'm about to be shot at or shelled" motivation in 3-5 minutes.>>

On the wish list but the concept is surprisingly hard to implement accurately (I have made investigatory passes at it before). What can be done with an e-tool is dependent on soil conditions. To be handled accurately every terrain cell in the map would have to have a data base field for 'improveability'. Take the NTC Ft Irwin map - its 'improveability' would vary from areas so soft/sandy that a fighting position basically can't be dug without shoring material to areas so hard that a cratering charge would be needed. Also, I think for 'average' terrain that 15 to 30 minutes is the lowest time for some level of improvement for infantry units beyond what is already handled by TacOps defilade.

<<It is the opinion of myself as well as a small group of players that the kill ratio is unrealistic.>>

The kill ratio in TacOps may be unrealistic for the calm conditions of a garrison training range. I think it is reasonably realistic for combat conditions where gunners are tired and scared, where ammo and equipment has been bounced around for hours or days with little opportunity for care, cleaning, or boresighting, and where targets are not cooperative.

<<Even taking into account the moving and other factors of the fog of war an Abrahms will destroy a T- 55 on the first shot at 300 m!>>

Hitting a target does not always destroy it, not even by the M1.

<<In a game as an example a T55 took 4 hits, returned fire and killed the Abrahms on the first shot!>>

I ran several experiments and I could not replicate this. Sounds like (a) a fluke event and (b) that the T55 was behind the M1. Still, when dealing with probabilities there is always the chance that improbable events will happen.

<<Being in the military myself in a MOS (job billet) that specializes in the TOW missile, I know from personal experience that a Tow fired from a HMMWV at a BMP1 at 2800 meters (at the front even) will kill the BMP 1 WITH NO PROBLEM!>>

I agree - most of the time and assuming that you get a good hit. That is the way it works in TacOps - when TOWs hit BMPs the BMP is generally destroyed. Doesn't always happen though.

<<In the same situation in the game (at 1500 meters though) the missile registered a hit but didn't even damage it ! The specs. on the TOW state that it will penetrate in EXCESS OF 36 INCHES OF HGS!!!>>

Penetration is irrelevant in the unusual situation where you get a hit but you happen hit a fender skirt, or the TOW is a dud, or the TOW is deflected at the point of impact.

<<It is kinda frustrating to those of us who know the real capabilities of the weapons being used in the game are not being accurately portrayed, If the were this game would provide an extremely valuable training tool for us small unit leaders trying to improve our tactical skills to stay alive on the modern battle field.>>

I think the weapons that you have mentioned are quite accurately portrayed. You may be missing the real lesson <g> which is that under combat conditions, shooting doesn't always mean hitting and hitting doesn't always mean killing. A lot of good troops have died over the years because they wrongly assumed that an impressive explosion on a target meant that the target was dead.

TacOps Gazette 98.06

<<How do I use the new 'extra' maps with TacOps?>>

First load one of the custom template scenario files: usarmy.sce, usmc.sce, or canada.sce. As the scenario loads you will be asked to select a map to use.

<<How do I use a different map with a scenario?>>

You can't except for the following scenarios: usarmy.sce, usmc.sce, or canada.sce. All other scenarios are hardcoded to use a specific map. The AI would not know what to do with a different map.

<<I, for one, would like a "replay last turn" so I can see what I missed when called away in the middle of a turn.>>

Restart TacOps. Load the autosave file and run combat. The last turn will be repeated.

<<In a PBEM game, does my opponent get to see what happened from his point of view during my turn? Or do units just magically appear and disappear?>>

Your opponent gets to see what happens from his point of view - his legal point of view. It looks and works exactly the same as in a solitaire game. During a combat phase, a player sees everything that is done by his units but he can't see what is done by enemy units unless he has legal lines of sight to them. TacOps is not an 'I go, you go' game - not even in PBEM mode. TacOps orders phases occur simultaneously for both players and TacOps combat phases occur simultaneously for both players. The simultaneous nature of everything is not always intuitively obvious to folks who have not yet played a game via email or via local area network. Although it may seem like Player A and Player B are taking turns sending out orders files, they are both actually in their orders phase at the same and they are both actually in their combat phases at the same time. A combat phase can not be run unless TacOps has been fed new orders from both Player A and Player B. When Player A manually enters his orders into his computer he is feeding new orders to the game. When he finishes entering his new orders then he loads a file containing his opponents orders for that same turn - thus Player A has now entered orders from both players for the same turn. Player A can now begin a combat phase. Conceptually, while he was doing this, his opponent was doing the very same thing. If this still does not seem clear then the best thing to do is to just try a PBEM game with someone. It makes a lot more sense when you are actually doing it. I wish more people could experience a TacOps game played over a local area network (LAN) - i.e. real time turn exchanges without the lag of the PBEM file upload/download process.. IMHO LAN play is the ultimate way to play TacOps. This can be approached today if two people meet on an IRC chat channel to exchange PBEM files in rapid sequence but it is absolutely a lesser experience to true LAN play.

<<Does it support full turn replay for hotseated and PBEM games?>>

Yes but not in the way that you probably mean. You can't watch an entire game be replayed automatically with 'one click' and you can't watch a one turn replay without saving and quitting the current game session. You can however choose to have the program automatically save every one minute game turn and you can then later reload each of them individually (pick and choose) for a one turn replay.

<<I was hoping to also be able to run a two player game using a serial null-modem cable but I'm not sure if this mode is supported. ... Could you please tell me if a serial game is possible without having to transfer game data manually using a third party data transfer program.>>

I don't know of a way to do it for computers running Windows 3.x . It should be possible for computers running Windows95. The original release of TacOps for Windows had an optional, traditional serial connection mode of play. I eventually removed the feature because so many people could not get it to work. Some of the problem was attributable to the game program but much was due to folks not knowing how to set up their computers for serial communications. In any case it cost me a huge amount of time and effort in trying to teach people how to do serial comms settings.

You probably can use a serial connection (or even a parallel connection) if using Windows95. Under Windows95 the network mode in TacOps does not actually care whether the network is a real Ethernet LAN or if it is a direct cable connection via the serial or parallel ports. TacOps only uses the network to send files - much the same as if you just manually copied/moved a file from a folder on one computer to a folder on the other while using the desktop file manager. If you can setup two W95 computers (prior to running TacOps) so that you have a 'shared' folder that both computers can read from and write to, then you should be able to use the regular TacOps network mode of play. For instructions on how to setup two PCs for this type of network consult your Windows95 documentation. The setup info that you would be looking for is generally in the index of any good Windows95 reference under the title of 'Direct Cable Connection'. I don't think that there was a capability like this in Windows For Workgroups 3.11 but I could be wrong.

Reminder - you can also do a 'face to face' two computer game by having the players use play-by-mail mode. They could save their respective orders files to floppy disk and then simply exchange the floppies across the table. This can be a useful emergency mode for an exercise if for some reason a network card goes down at a critical moment.

<<... what I would like to see is this and other information (such as movement costs and defensive benefits for the various types of terrain) available in quantified form, preferably in the player's manual. This would not only enhance the player's awareness of what is happening as play proceeds, but would permit a degree of intelligent planning in troop disposition and utilization.>>

I don't believe that providing detailed technical details of the game logic would provide any meaningful advantage to a player. If it did then I would feel like I had completely failed at what I have been trying to do. I think a computer wargame should allow the player to intuitively employ his units and weapons as he would in real life without having to know game rules. If the

results of doing things the real world way are consistently unrealistic then I think there is a problem with the game and not with the player's command of the game's rules. The same concept should apply as much as possible to the game interface - the giving of orders, instructions, etc should be intuitive rather than rule bound. To me the ultimate compliment would be if someone thought that the best way to learn how to play TacOps was to read an Army Field Manual or a real world battle narrative. Also, a lot of the detail would have to be presented as page after page of tabular information. The data in TacOps is very differentiated by unit and weapon and other factors. The data is not organized in a simplified manner like it would be in a board game. In a board game, in order to keep things manageable for the player, the designer has to minimize as much as possible having small differences between reasonably similar things. In a computer game the designer is almost completely free to tweak and differentiate details precisely because the player does not have to look things up in order to make the next shot or the next move.

I can say with certainty that providing expansive technical detail would produce at least one very negative outcome. My email work load would go through the roof answering quibbles over the interrelationships of the details and their modifying factors <g>.

<<I do not think a disk cache would help, as I tried it and it didn't help me, but worth a try if nothing else works.>>

I have in the past recommended against using a disk cache/virtual memory with Windows 3.x or with an 'older' computer - it slowed my old, low memory, equipment down to a crawl and the hard drive seemed to be constantly grinding away. However once I moved up to a Pentium and installed Windows95 I switched over to using the Windows95 managed disk cache. I don't notice any speed drop and no unusual disk activity. My overall impression is that things in general seem to work better on a new computer running Windows95 if a disk cache is used. In my opinion the best and most economical thing that can be done to improve the performance of any computer is to add more RAM. Moving an older 8 meg machine up to just 16 megs can make an amazing difference.

<<Why do the MBTs fire their main gun at infantry? It seems that it is not very effective.>>

That is just the way that I coded it. OPFOR tanks tend to carry anti personnel (HE) shells for use against infantry. US tanks do not at present carry anti personnel rounds but have carried anti personnel flecheete rounds in the past. I chose to not bother with doing a lot of slow code to differentiate this and just went with the current abstraction.

<<... remember reading a review in cgw a long time ago... looks like the game was lacking moral for combat units? same again or...>>

I did not add any new morale or command/control logic to the TacOps Classic Edition revision. However, units do get temporarily suppressed (loose efficiency in various areas) by accurate fire and by taking casualties. Also, the infantry combat results tables are a bit liberal to reflect some troops conceptually choosing to stop firing or to otherwise remove themselves from harm's way.

That level of abstraction did not satisfy the magazine reviewer that you spoke of but it has satisfied most users.

<<How does one setup Direct modem play. I have played network and PBEM but would love to get a real turn game going by modem. any suggestions.>>

TacOps does not have a built in capability to administer a direct modem connection, however a workaround follows. Use a 'stand alone' modem comm program to dial up and establish a direct link with your opponent. Once you have a link going whereby you can type lines of text back and forth then you probably also have all the link that you need to send files back and forth. At this point switch the comm program into the background (it should continue to administer the phone link with your opponent even while running in the background) and startup TacOps as if you were going to do a play-by-mail game. Do your setup, give your orders, and then save your orders file to disk. Switch TacOps into the background and bring your modem comm program into the foreground. Use the comm program to transmit your orders file (the one you just saved to disk) to your opponent. Once he gets the file, he will load it into TacOps just as if he was doing a play-by-mail game. Your opponent will do his orders and send them to you in the same manner. Both of you can now run combat turns. Repeat above until exhausted <g>.

<<How do I deal with settling in a reconnaissance unit, and dig 'em in so they are as invisible as recon can be?>>

At present, TacOps does not model the best possible concealment capabilities of real world recon units.

TacOps Gazette 98.07

<<... TacOps is turn based ...>>

That needs a bit of qualification <g>. When I hear 'turn based', I think of the traditional 'I go - you go' system of board games. TacOps does not work that way. TacOps used (and TacOps98 will use) a modified turn based system. The game advances in one minute turns but movement and combat occur simultaneously for both players as does the giving of orders to the unit markers. The game pauses each minute to allow both players to enter unit movement orders and to fiddle with things like engagement ranges, priority of fires, call for air or arty support, etc. Once both players have finished their orders, the game runs one combat turn representing one minute. The units of both sides then move and fight simultaneously under computer control for one minute.

<<Does TacOpsCE work with MacOS 8?>>

TacOps Classic Edition works fine under MacOS 8 and under MacOS 8.1. I have personally run it under both systems.

<<Can you change the map scale now (i.e., zoom in and out)?>>

No.

<<Having the fixed scale was a real problem in the original, especially for things like trying to decide if you were in the woods or not.>>

Just visualize the center point of the unit marker. The center point determines a unit's game location for all combat and movement resolution.

<<How strict is the Sys. 7.6 requirement for Mac? Will it not run at all under say 7.5.5, will run with downloadable add-ons from Apple, or might run but no guarantees.>>

The program does not draw on any special System INITs or extensions so it should be OK under 7.5.5. The main reasons I said 7.6 were (a) to get away from any surviving black and white Macs and (b) Apple fixed a lot of lingering System 7 bugs when it released 7.6.

<<Can this be used with helicopter launched Hellfires to provide laser targeting?>>

Not at present.

<<I find that many units fire at the "wrong" targets. For instance, I once watched my LAV based anti-tank unit (the one with the TOW system) picking off BMP after BMP when it had visible to it a similar Red Force unit. On the next round the red unit fired back and destroyed the AT vehicle.>>

I don't see a problem with an LAV anti-tank unit engaging BMPs - BMP are very deadly units to an LAV. Units in TacOps, in general, automatically engage the closest enemy target that the unit is capable of harming. The user can override that default behavior if he wishes by using the priority targeting buttons in the Unit Orders Window.

<<Do you have any suggestions on how to deal with this issue?>>

No. I think the current default firing behavior provides the most realistic response for the majority of tactical situations.

<<Details....I like details. I assume TacOps has got them, and in spades. True?>>

I have been criticized for including too much detail and I have been criticized for not including enough <g>.

<<I've heard that the game is being used as a training aid in various armed forces. This would appear to indicate to me that it has a high degree of realism. Opinions?>>

TacOps has gotten good marks for realism except from some folks who are big fans of morale and restrictive command and control gaming concepts. As for the military users ... TacOps has had quite a few military buyers and continues to be of some interest in the military market due to its ability to work well on older computers. The New Zealand Army contracted in December 97 for an internal distribution license that will permit them to copy and issue TacOps Classic Edition v2.0.0 to every regular and reserve member of their Army. The US Marine Corps is supposedly in the process of contracting for a similar license (I'll believe it when I see the check <g>). Other militaries are currently evaluating the utility of such a license. Some schools and units in the Canadian Army, Australian Army, US Army, and US Marine Corps have used various earlier versions of TacOps in training courses for NCOs and junior officers to illustrate tactical principles and situations and to stimulate classroom discussion in tactical seminars. A US Army intelligence training course for junior officers used an earlier version to illustrate the build up of forces that would occur in a typical Soviet style, Motorized Rifle Regiment march to contact versus a mobile defense. A US Marine Corps infantry regiment has used TacOps to administer map exercises. The commander of a US Army armored battalion in Korea used an earlier version of TacOps in monthly training sessions for his NCOs and junior officers to illustrate tactical situations and to promote discussions on tactical principles and tactical problem solving. One or two Junior Reserve Officers Training Corps (JROTC) units have used TacOps to introduce high school students to tactical principles. A Canadian training mission to Jamaica recently used a version of TacOps to umpire a two or three day map exercise for junior officers/cadets. A US Army National Guard training unit has used a version to administer staff exercises for Reserve mech infantry battalions.

<<Is it playable by email?>>

Very much so. The game engine was designed with PBEM in mind.

<<I don't particularly care about graphics...>>

TacOps maps are very plain - they are meant to look like simplified paper topographic maps. The user interface - windows, dialogs, etc - is very plain because it was designed to be as unobtrusive as possible. The design priority was to show as much map as possible rather than wasting screen space on decorative borders and seldom used buttons, icons, etc.

<<I hate 'real' time games, but am aware that TacOps utilizes a si plot/si move system.>>

The game is played in simultaneous one minute turns. Each turn consists of two phases: an orders phase and a combat phase. In the orders phase you (and your opponent) give orders to your units using buttons in windows and by tracing the intended movement of your units with mouse clicks on the screen - but the units don't actually move until the combat phase. Each unit can have a maximum of 20 stored orders plus a panel of unit SOP settings. This allows you to provide fairly sophisticated route and disposition instructions for each unit. Once all orders have been given, the combat phase begins. During the combat phase the units of both forces, under computer control, simultaneously carry out their orders for movement and combat for one scale minute. You only observe during the combat phase; you can not give or change orders until the next orders phase. Units move and fight during the combat phase according to their programmed orders and SOPs.

<<Oh yes...is it true that the Major is working on Panzers East for Avalon Hill and that the game will be similar in nature to TacOps?>>

That is true.

<<Speaking of contours, I assume the elevated areas in TacOps are large "plateaus" not "hills"? The only slope is at the contour it self.

That is correct - at present. A literal translation of the current TacOpsCE high ground terrain would be pancake like mesas with 100 meter wide beveled edges.

<<Is this a more accurate reflection of reality or a limitation of the software.>>

It is driven by limitations of the original game engine. When the current TacOps elevation engine was first coded, 'average' PC and Mac CPUs were still at the 30 to 40Mhz level. They were not fast enough to allow adequate game performance with more than two or three terrain elevations - I did try more. A different elevation engine is now possible but it can not be added as a free update to the current program - the ripple effects of providing a more realistic terrain system are just too great to deal with in any way other than putting out a whole new box.

<<I admit I like the way it plays (and plan to adopt something similar for future miniature games I play) I am just wondering how accurate it is.>>

I think the two level approach is accurate enough for replicating the most critical elevation related aspects of ground combat - i.e. line of sight blocks due to elevation change, influence of elevation changes on maneuver and lanes of fire, reverse slope defense, importance of defending

along the military crest of high ground, etc. However it begins to prove inadequate very rapidly when you start trying to simulate real world areas that people are familiar with and that have a lot of sharply varying and or extreme elevation changes. For example - the Ft. Irwin National Training Center.

<<Judging from Avalon Hill's advertising, they are selling "Classic" TacOps as a one-off "special" to be followed by TacOps98.>>

Actually Avalon Hill plans to keep TacOps Classic in their catalog even after the release of TacOps98. 'Old TacOps' has a pretty good following for a game that never really made it into the big time and it runs well on a lot of older computer setups. Windows 3.1 and older computers are still surprisingly relevant among military and foreign users - we have several militaries working on licensing TacOps Classic. TacOps98 on the other hand will require Windows95 and a much heavier computer - probably at least a late model 486 with plenty of memory. TacOps98 could also prove to be too complex for the tastes of too many casual gamers. In which case it is possible that there could end up being two TacOps game lines - Classic for the beer and pretzels gang and TacOps98 for the grognards. If I had the time and money to do so I would have someone else take over the Classic engine and keep putting out scenario and map expansion kits for it while I focused on TacOps98.

TacOps Gazette 98.08

<< I'm curious about TacOps CPXs. They sound like a lot of fun. How are they conducted? I've always wanted to participate in one of these but never understood how they work.>>

Below is one way that it has been done ...

While a CPX is underway, only the umpire is running TacOps on a computer. The players do not run or even need to have the TacOps program. The umpire uses the TacOps program to control and generate the maneuver and combat results aspects of the CPX. The players participate by exchanging Internet email and Internet IRC chat messages with the umpire and with each other. Each player tracks his part of the war using only paper notes and a paper situation map.

One to two weeks before the CPX the umpire publicly announces what TacOps map will be used and a general starting situation. The players then print that map and organize themselves into US and OPFOR teams complete with a command structure. Once the teams have been organized, the umpire then privately provides additional info and a mission to the US commander and does the same for the OPFOR commander. The force commanders then develop battle plans with their volunteer subordinates.

On a Saturday or a Sunday the umpire and the players gather on specified Internet IRC chat channels and the CPX begins. Normally there is an admin channel that everyone monitors, a private channel just for the umpire and the US team, and a private channel just for the umpire and the OPFOR team. Each team privately gives its starting orders and intentions to the umpire (usually in military terms rather than game terms). The umpire then enters his interpretation of the players instructions into the TacOps game and he executes one or more TacOps turns. As significant events occur on the umpire's computer, he sends a summary of the action to the players and he gives them an opportunity to ask questions, to state new orders, to call for arty and air support, to reorganize their forces, etc. The umpire then again enters his interpretation of the players instructions into the TacOps game and he executes one or more TacOps turns. This cycle repeats until the game is over or until everyone is exhausted.

<<If we can't get a release date for TacOps98, how about some screen shots on the Avalon Hill Web page?

The problem with putting out screen shots is that what I have right now is ugly as hell <g>. I have an apparently eccentric approach to game coding - I start by coding and debugging the game engine and then towards the end of development I grudgingly start worrying about trying to make things pretty.

<<By the way, what kind of system requirements will TacOps98 require?>>

Windows95 or Mac System 7.5/newer, 256 colors (or 256 shades of gray for notebook users), somewhere between 16 and 32 megs of RAM, 90 MHz CPU will probably be tolerable - more than 133mhz would be overkill. Just about anything sold in the last two maybe three years ought

to be OK. Memory will be much more important than CPU speed - some of the maps are likely to be huge. So far I have not needed to use DirectX drawing routines (I don't want to use them if I can avoid it) but I will probably end up using DirectX sound routines. By the way, I am coding the map so that it will display according to what the user wants in the way of screen resolution (i.e. similar to the approach used in old TacOps). By that I mean that if you set your screen to 800 x 600 or 1000 x whatever then you will see more map rather than more detail. Pet game peeve ... I didn't shell out for a 17 inch monitor just so that everything could get bigger and blockier <g> - I got it to see more map!

<<When, if so, would you expect TacOps to operate at a level ...>>

Me being satisfied with TacOps? I do not expect that to ever happen.

<<What I am interested to know is if there are any plans to develop the game engine in the mentioned direction. If there are any such plans, when would you estimate them to be implemented?>>

I want to and I intend to increase the fidelity of the TacOps game system but I can't afford the luxury of having a detailed plan of how and when it will be done. I don't have a nice neat milestone chart linking specific concepts and blocks of code to completion dates. What I do have is a long list of items to add to the game that I and others think will improve it. I will add what I can from that list, in the time available between those periodic points in time when I have to stop coding and sell something in order to keep going.

<<If not, what are the main reasons?>>

There are only two that matter - niche market and lack of money.

<<My question is : Which web sites do you recommend for info and to find other PBEM players?>>

<http://www.feist.com/~chimera>
<http://www.delectables.com/tacops/tacops.html>
<http://www.avalonhill.com>

You might also subscribe to the TacOps mailing list. It is about to have to find a new list server but it will be up at its current address for at least two more weeks. To subscribe to the TacOps mailing list, send a message body of "subscribe TacOps" to majordomo@lists.stanford.edu

<<I'm having trouble reloading saved games in the PC version.>>

In order for the Windows version of TacOpsCE v2.0.0 to reload a saved game, the saved game file has to be located in the same folder as its scenario. I know that is a dumb way for it to work but it happened as a side effect of my fixing a file loading bug at the last minute before release and it slipped through the final testing. If you want to really simplify things for the Windows version of the game engine, move all the scenario and map files out of the folders that the

installer created for them and just put them all into the TacOpsCE folder, at the same directory level as tacops.exe. Some folks don't like the clutter of this approach but you will never again have to surf through the various folders for a scenario or a map.

<<This does not apply to fire and forget weapons, such as Javelin, correct?>>

In TacOps, the Javelin ATGM travels fast enough that a gunner firing from a previously unspotted position will probably not be fired at before his missile hits. Technically the game engine does not bother with 'fire and forget' for the Javelin but the game effect works out as if it did.

<<I've read that TOW cannot be fired from the Bradley while the vehicle is in motion, but if I'm remembering correctly I've observed precisely this in some of the games I've played. How is this accounted for?>>

In TacOps, moving Bradleys do a short halt during the time of flight of fired TOWs. They maybe should pause a bit longer but they do pause. When a moving Bradley has to do this short halt in order to fire it gets a 'to hit' probability penalty.

<<I am told that in the game, moving to an improved position does not alter the unit's protection from fire, but only the spotting distance to them. In other words, there are no true hull-down positions in the game save dug-in.>>

Entering an entrenchment increases a unit's protection from fire - the unit becomes harder to hit when shot at by direct fire, the unit is likely to take less casualties from accurate indirect fire, and the unit is less visible (until it does something to draw attention to itself).

<<My gripe is that there is no provision for attaining a hull-down position outside of an entrenchment. I also wonder about something similar for personnel units. Is the possibility of their getting behind something solid accounted for in the game?>>

Yes - two ways. It is handled abstractly by (1) units having three basic disposition modes - exposed, defilade, and entrenched and (2) by 'to hit chance' and 'casualty chance' modifiers that are associated with other than clear terrain. When you click on the 'defilade' button in a Unit Orders Window, you are giving the unit an order to spend a few seconds 'conceptually' finding the best cover and concealment in its immediate vicinity. The marker does not actually move. The assumption is that a unit can always find some better way to situate itself relative to the enemy other than just standing upright in the open, and that finding and occupying such a position is mainly a function of expending time. When a unit is in other than clear terrain, it is harder to hit. The rougher the terrain, the greater the 'to hit' penalty.

<<We want larger maps!>>

You will get them. You know 'bigger maps' is kind of like the 'if only I had more Tigers' mantra that I used to hear from opponents in my miniatures days. In the real world (where 'the map' is

infinitely large) you still can't usually maneuver around an opponent - all that happens when you move laterally is that you run into the defensive line of another regiment or division.

<<Lastly, could we change the East-West orientation of the game, which is linked to the graphics? The graphics of the units can be "flipped" using a graphics program, so that OPFOR can attack from the West and exit East instead.>>

TacOps98 works that way. The silhouette markers have two possible graphic faces - one faces East and one faces West. I thought about going to eight graphic faces but I decided that it would take too much memory.

<<In TacOpsCE, I can't find the 'run it' button under 'review Scenarios'.>>

The review button is not in the Windows version of TacOpsCE. Its support code provoked me once too often and I destroyed it.

<<Does TacOpsCE postulate combat by humans and try to model the critical aspects of command, communications, moral, and psychology ... ?>>

I don't have any new morale rules/logic in hand that I consider to be realistic or to be supportable against criticism given the TacOps grand tactical scale. In the last couple of years, I have had extended email discussions with a few folks who were willing and able to converse about morale and varying efficiency at more than the superficial level of 'I want it' <g>. None of those discussions led to anything that I considered to be codeable or defensible. The discussions always drifted to a close when we tried to get into the details of (1) identifying, quantifying, and tracking of recent combat stimuli that might be relevant to causing a modification in will or efficiency and (2) what detailed modifications would be appropriate given that stimuli have accumulated to a point where will or efficiency should be modified.

The current TacOps morale model for the most part assumes that the fighters are exhibiting the best case situation of morale and efficiency. They will continue to do their duty unless they are thoroughly suppressed by incoming or recent accurate fire. If you as their commander tell them to get up and move forward into harm's way they will usually do so. That is the situation that all competent commanders devote their training toward achieving. That is the most troublesome kind of enemy to have to fight. Until I can find a defensible approach to implementing stimuli based variable morale and variable efficiency then I will continue to cheerfully model just the best case.

Last shot ... the current TacOps combat results tables for weapons effects against infantry are a bit liberal on producing casualties. I originally made them so to partially reflect the combat attrition effect of people temporarily choosing to take themselves out of harm's way.

TacOps Gazette 98.09

<<My information is that while a tank may fire one shot in 4 seconds under optimum conditions, in TacOps the tank fires one shot in 15 seconds, ...>>

In game/simulation design there have to be other considerations than just the theoretical norms that can be defined with a stopwatch. Quantifiable real world details are always my starting point but they often have to be modified slightly to counteract some other aspect of the game engine that does not operate at the same level of detail - i.e. the dreaded word 'abstraction'. At an early stage of development, tanks in TacOps could fire more than one round per 15 seconds. The result, given the way everything else worked in the game engine, was clearly too much destruction too quickly when several minutes of game play were examined. Using one round per fifteen seconds produced game results that seemed more realistic in practice - when spread over several turns. I have never suggested that TacOps was accurate in its portrayal of every possible event down to a matter of seconds. The best that I have ever suggested was that the game results were generally plausible when averaged over a spread of minutes.

<<Another thing I noticed is that M1s does not fire their 12.7 mm machine guns when engaging BMP's despite it seems that they could take them out, from some angles, with this weapons. Can the M1s, by construction, not use these two weapons effectively at the same time?>>

In general, in TacOps, if a tank fires its main gun, it won't fire a coaxial mounted machine gun in that same 15 second pulse. An unsuppressed tank can sometimes fire a roof mounted machine gun in the same pulse as the main gun but due to other things going on in the game engine I suspect that this would usually only happen when the target was infantry. This seems close enough to reality. It is my understanding that in the real world it is technically possible for an M1 tank crew to fire the main gun and its 12.7mm roof mounted machine gun at the same time. However I don't think that a four man crew would try it very often in combat. There are four people in an M1 tank - driver, gunner, loader, commander - only three of these are available to fire/control weapons. In an anti armor engagement I think that the three 'firers' would almost always be focused on firing and identifying targets for the main gun. With regards to firing 12.7mm at a BMP or other thin skinned vehicle target. If someone tried that in combat, I suspect that the radio would quickly come alive with a comment from the unit commander - something along the lines of "you \$#%@#\$% idiot, quit playing around and kill it".

<<Concerning the machine guns...there are all sorts of funny quirks here. Consider a couple: All machine guns continue to fire against personnel targets even in smoke. Does this that they *all* have thermal sights? (I notice that personnel units whose primary weapon has thermal sights, such as Javelin, fire their personal weapons in smoke too.)>>

That first came up during early playtesting at a time when the game engine did not allow obscured units to fire weapons unless they were mechanically linked to a thermal sight. A majority of testers wanted thermal equipped weapons to be able to 'guide/adjust' the fire of other weapons in that same marker. So I changed the code accordingly, but I added a penalty to the 'to hit' probability for the non thermal personal weapons in that situation.

<<In looking at the TacOps manual's Preference section I came across something I hadn't noticed before dealing with item # 8 "Firing units are always spotted ". The book says (pg 58) "If this item is not checked, a hidden unit may or may not be revealed the first time it fires. Checking this preference adds significant realism to TacOps play....". Is this correct? I have always played with this unchecked under the assumption that it was more realistic that a unit in hiding would be able to get off a shot or two before being seen. If it is correct, why is it more realistic? >>

I messed up the language in the User Guide. It should say 'Deselecting this preference adds significant realism to TacOps play...'. I've always had problems with AND/OR/NOT logic statements <g>.

<<For some reason, the AI does not seem to learn this ever :-) It charges with 12 BMP -stacks across the map, and only when I start bombing it with artillery, it scatters the stacks all over in an unorganized way.>>

I prefer to look at that detail of the AI as being more realistic. The TacOps OPFOR does not slow down, or break its march formation, or disperse its units until it makes contact, receives direct or arty fire, or until it deploys at a precoded map point to conduct a point assault. Once they deploy, things may look disorganized but they are not really. The AI deploys companies and battalions according to various plans and drills. When terrain and enemy fire get thrown into the mix, the AI's desired formations get ragged - same as happens in real life.

<<Some kind of 'level of victory' at the end of each scenario would be nice. Just to let you know how you did. I got the idea the other night when I was wondering what would happen to "me" when I got back to the rear and my commanding officer go ahold of me (bad night at Degoe).>>

Biggest problem with my doing that is that I think that it would be presumptuous for me to be telling you (via the program) that you did good or bad in your choice of tactics or in your casualty level. Commenting on your tactics would require that I have a very secure ego with regard to what are good tactics and what are bad tactics - I don't <g>. Commenting on your tactics would require me to track in some way what you did through the game in response to many subsets of tactical conditions/problems - I wouldn't even want to try to scope that kind of coding/data base management problem. Casualty level is hard to realistically use as a good indicator of performance because what constitutes acceptable casualties varies according to the current political, strategic, operational, and tactical situations. In order for TacOps to provide fun scenarios where both sides have some reasonably even chance of winning, given more or less equal skill levels, the assumption has to be made that the big picture is sufficiently desperate or otherwise screwed up to such an extent that both sides are willing to fight in the described scenario situation and that both sides are willing to take whatever casualties are necessary. A real problem with game design is that in the real world, commanders usually try to avoid fights unless the outcome is very predictable as being very positive for their side. It is true that one can come up with victory conditions in lopsided situations that enable a player to 'win the game' while technically 'losing the battle' but a lot of people don't consider such scenarios to be much fun. Grognard level games on the American War Between The States do a lot of this sort of

thing for the Confederate player. The best that I could do and be able to defend to critics would be to play test a given scenario many, many times with a variety of players with a variety of skill levels and based on that have the program let you know how you did in relation to their experiences. There is no way that I could ever expect to have time to do that for more than a few scenarios. I would rather spend the development time providing more scenarios.

<<How much variety is there in the penetration value of a weapon? If a T62 has a penetration value of 360 at a certain range, can it penetrate something with armor rating of 380?

In TacOps, a weapon may fail to achieve its listed penetration value at a given range but it can never exceed it. If a weapon has a penetration value of 360 at a certain range, it can not penetrate something with an armor rating of 380 at that same range.

<<Are there armor units in the game with reactive armor?>>

I think I gave some of the tanks a little extra armor protection against chemical energy weapons as a way of fudging reactive armor somewhat but I didn't put in any code that specifically handles reactive armor. I don't think reactive armor is as relevant now as it might have been in the early 80s.

TacOps Gazette 98.10

Just in case this applies to anyone here... The folders titled craig, frolik, gallagh, hoeft, hurley, kaye, kelley, kincaid, low, mizokam, moody, and nankerv contain more scenarios.

I just handled a customer support instance where a user was annoyed 'at the lack of scenarios' in TacOpsCE. It turned out that he was only 'seeing' the few single variant scenarios that appear on the left side of the Windows file selection dialog. He did not realize that he needed to double click on each of the folders shown on the right side of the Windows file selection dialog to see and find the majority of the scenarios.

<<We are using TacOps CE to evaluate unit design concepts for the 2d Cavalry. I noticed that OPFOR has absolutely no respect for the Red Cross. (We are using Medics as civilians.)>>

In TacOps, the US units also shoot at OPFOR medical units. It is a limitation of the current game engine and not a political statement <g>.

<<I have noticed during battle, I know I kill the enemy (or he kills me) but we keep shooting at each other until the end of the round before the unit exits. does the game check to see if after being shot, killed or not killed, before returning fire?>>

A one minute turn is divided into four direct fire pulses. Each pulse represents fifteen seconds of combat action. Although the game displays the fire pulse as if the markers are shooting consecutively (mainly so that the player can get a better idea of what is happening), the concept of the game logic is that the fire is actually taking place more or less simultaneously. Thus 'dead' units sometimes appear to continue firing briefly and it sometimes happens that two units kill each other in the same fire pulse. All 'dead' units are cleared at the end of each fifteen second pulse - a 'dead' unit will never be carried forward into the next fifteen second pulse.

<<One way I have noticed this is my sniper group only has 1 person in it but shows more than one skull face while getting shot.>>

A unit can receive multiple 'killing hits' in a given fifteen second fire pulse.

<<I recall reading that AT guns get a to-hit penalty when firing at infantry. Is this true if the AT weapon is HE and not kinetic?>>

If a weapon was primarily designed to be an antiarmor weapon then there is usually a to-hit penalty when the weapon is fired at infantry.

<<Is there a difference between HE and Kinetic when it comes to to-hit/kill/damage/near miss/etc against infantry?>>

The current version of TacOps usually assumes that when a weapon is firing at infantry that it is using the best available ammo for that weapon to use against infantry.

<<When saving TacOps CE [Macintosh version] game files they always save with a generic document icon.

There is a typo in the Macintosh version of the program that messes up the icon matching for saved game files.

<<Would it be possible for you or Avalon Hill to convert UseGuide.doc to Adobe Acrobat Reader format and post it at AH's web site so that those of us who don't have Word won't have to buy it just to read the TacOps documentation? (Not that this wouldn't be a better reason than many!)>>

An Adobe Acrobat Reader v3 version of the TacOpsCE User Guide has been provided to the following web sites:

<http://www.delectables.com/tacops/tacops.html>

<http://www.feist.com/~chimera>

<http://www.grognard.com>

<http://www.avalonhill.com>

<<I'd really like to set up some solitaire scenarios myself to play against the AI.>>

The following scenarios are only playable in two player mode: Custom Scenario Canada, Custom Scenario Canada, Custom Scenario USMC, Capture the Flag Army, Capture the Flag Tanks, and Capture the Flag USMC

All other scenarios have some sort of AI unit control that will act in solitaire mode, but the marker by marker control varies according to the scenario. What will happen when you add units to such scenarios depends on what AI settings were originally coded into the scenario and how the units are added - understanding this requires more explanation about how the AI works.

There are two kinds of AI in TacOps - scripted and reactive. The scripted AI is in the scenario. The reactive AI is in the game engine but it is also influenced by the scripted AI. Scripted AI is the set of different OPFOR battle plans that are embedded in each scenario - there are anywhere from two to a dozen or more different plans per scenario. The battle plan script will accomplish the OPFOR scenario mission/victory conditions if there is no contact with the green force. One of the battle plan scripts is chosen randomly at the beginning of the scenario. The AI follows the scripted battle plan until contact is made with the green force. At that time the AI switches to reactive AI to deal with the contact. The best way to think of the reactive AI is as varying battle drills that are executed in response to varying stimuli - with some randomness thrown in to create a sense of unpredictability. If a contact is resolved then after the passage of several turns the AI will leave the reactive mode and it will usually return to following the originally chosen battle plan script, but sometimes it will switch to a different battle plan. The scripted AI and the reactive AI are coded to employ (usually) the red force by grouping its individual unit markers into subtaskforces. A given subtaskforce might be a platoon, or a company, or a battalion - or it might be anything. A given subtaskforce may be coded to act alone or it may be coded to act in

conjunction with another subtaskforces - conceptually as supporting, reinforcing, etc. A subtaskforce can even be coded to act in a somewhat contrary manner to one or more other subtaskforces - such a subtaskforce will actually try to avoid working with or in sight of other subtaskforces so as to avoid using the same route being taken by other subtaskforces or so as to avoid enemy contacts being fought by other subtaskforces.

When you add units to a solitaire capable scenario by using the 'Add Optional Units' menu item, those units will always be properly used by the AI. The AI knows what to do with them because I flagged each optional unit to be a part of a specific subtaskforce for later control by the AI in concert with the rest of its taskforce. That unit is blended into the subtaskforce that I wanted it to be in as part of the scripted AI. For example, say you are presented with three different tank companies (A, B, and C) as optional units. It is likely that each tank company will be assigned to a different subtaskforce as it is added. Lets say that optional tank company A is coded to become part of the third OPFOR subtaskforce and that the third OPFOR taskforce happens to be a two company main body of a battalion that begins the game (at say start time plus 30 minutes) strung out in column on a road. Optional tank company A will probably be blended into that main body and when that part of the battalion appears at the map edge and optional tank company A will probably appear with it - or just in front or just after. Similarly optional tank company B might be coded to be blended in with OPFOR subtaskforce number seven and Optional tank company C might be coded to join subtaskforce number ten.

When you add units to a solitaire capable scenario by using the 'Add One Unit' menu item, those units will not always be used by the AI in ways that seem reasonable to you. The reason is that when you add unit markers in this way, each unit marker is always flagged to become part of the first OPFOR subtaskforce. The added unit will do only what has been outlined for the first OPFOR subtaskforce. Lets say that the scenario features OPFOR in the attack and that the first OPFOR subtaskforce happens to be a recon platoon that enters Map001 on the northern road in game turn one. Every OPFOR unit marker that you add to that scenario by using the 'Add One Unit' menu item will be added to that recon platoon and it will enter on the northern road in game turn one (or maybe turn two or three). There are additional odd ripples that can occur - depending on the scenario involved - but it would take pages and pages to explain them.

So what does all this mean?

- A. If you add units to a solitaire capable scenario by using the 'Add Optional Units' menu item then those units will work well under AI control.
- B. If you add units to a solitaire capable scenario by using the 'Add One Unit' menu item then those units may or they may not work well under AI control. You will have to experiment with each scenario to see what happens as you add unit markers.
- C. If you exchange one type of unit marker for another via the 'Change Units' menu item, each unit marker will tend to behave under AI control according to what was coded for the original marker.

<<[When creating solitaire scenarios] try deleting everything OPFOR had to start, then adding optional units and/or one out at a time. Screws up the AI sometimes, but it works.>>

For those scenarios that are coded with an AI/computer opponent... Deleting all OPFOR units prior to adding optional or single units can work - sometimes. It can also sometimes cause program crashes. It can also cause some units to be 'in play' but they never actually appear on the game map. I can not predict which of the above will happen for every scenario nor for every randomly chosen AI battle plan within a given scenario. Experimentation is the best answer. Try something and save it. Then run several dozen turns with OPFOR fog of war turned off so that you can see what is going on. If nothing bad happens - keep that one.

<<Does the "Add One Unit" command work with more predictable results in OPFOR defensive scenarios?>>

Hmmm ... thinking ... yes I would say so. My recollection is that in most (if not all) OPFOR defensive scenarios the first subtaskforce has in most cases a static defensive mission. In fewer cases, the first subtaskforce has a 'fall back on contact' mission. Either situation ought to work OK for additions.

TacOps Gazette 98.11

<<... regards modern armor strategy, tactics, and doctrine. Is there a publication or an online source for this?>>

Try the Army Doctrine and Training Digital Library web site at <http://206.135.244.98/atdls.html>. There are many Field Manuals there that would be of use.

<<When a tank team is suppressed how long does it last?>>

One to two minutes per suppression event. Note that suppression is not additive - if a unit gets a new suppression result before the previous suppression has worn off then the remainder of the old suppression value is replaced with a new suppression value.

<<I tried the set thermals to 0000, but it gives me the message saying that thermal range can't be less than normal range.>>

You can not set thermals to be lower than whatever the current 'eyesight' setting is. Try first reducing the eyesight setting and then change the thermal setting.

<<How do you maintain a file to follow the troops that you are in charge of?>>

I am a fan of using a situation map. Print the appropriate printable copy of the map at an enlarged scale. Cover it with clear plastic or mount it in a cheap clear plastic poster frame. Use erasable markers to plot the unit locations and keep OOB notes on the margins of the map.

<<For the MBX I'm running (24 hours of recon/counter-recon fight prior to CPX), I just played from 0700 to 1607. After the 1607 turn it reverted to the 0700 for reports, but the status bar at the bottom of the screen reads '0-:0-' or something like that.>>

The TacOpsCE game engine was not designed to play a scenario for that long. I just spent several hours looking into this. The main game event timer in TacOps can hold a maximum of 32768 seconds (game start time plus 9 hours and 6 minutes plus a few seconds ... in your case 16:06:05). Once the timer passes 32768 it blows up - it becomes negative (i.e. $32768 + 1 = -32767$). Once the main game event timer goes negative, almost everything in the game that references it will fail. Units will stop moving, arty will not fire, suppression will never lift, ATGMs won't reload, etc and etc. I don't see any reasonable way to change this in TacOpsCE. It took me several weeks to change the TacOps98 code to use a non degenerating timer and I can't put that much time into TacOpsCE right now.

<<I am having trouble with the Gallagher6 scenario. If you could offer any advise on this I would greatly appreciate it.>>

Try not to get into a direct fire battle with OPFOR until after you have attrited him heavily with your artillery. Set the engagement range of your units to zero so that they will quietly observe

the approaching enemy instead of shooting at him and hit him just with arty for as long as you can. When you can't wait any longer then hit his leading units with ambushes that only last a volley or two. Then immediately fall your people back to a new position and do it all over again. Weaken him with arty ... then ambush him with short, violent spurts of direct fire ... then fall back. Repeat and repeat.

<<This group was a sitting duck, because I didn't want to move them out of their defensive position. I would like to make my defense less static and more spread out so that he cannot shell massed troops, but I want my troops to be in good defensive positions.>>

Holding ground is often not important. Killing OPFOR is what counts. When you first start receiving arty it is time to go somewhere else fast - you have to get out of there before his arty fire gets accurate.

<<[Team Krempp] What was the idea/thought behind this scenario?>>

The original idea was as for most TacOps scenarios. A fair chance of winning for either player - assuming skill parity. However, when the scenario was first designed, entrenchments were not as strong as they are now. After entrenchments were strengthened the scenario probably became more unbalanced in favor of OPFOR.

<<[Team Krempp] Was there any historical thought behind it?>>

Nothing other than it seemed at the time to be nicely representative of a common small unit tactical problem. I think the uncommon thing about it is that since it is a game you have been provided with unrealistically accurate information before the engagement that reveals how difficult the problem is. It might not seem so unrealistic if the situation were one where you didn't realize how much 'was really up there' before you crossed the line of departure.

<<[Team Krempp] I personally would regard any company commander who ordered me to take such a position with the resources available in this scenario to be off his bloody rocker, and more interested in kissing \$#%@ than looking after his soldiers.>>

That is one possible explanation. Another is that the local tactical situation is so desperate that you must try to take this area at once and what you have is all that is available.

<<In this last run through my M-60's [machine guns] refused to fire at specifically targeted units from their overwatch position around the 023008 grid position. They were targeted on a BTR in a improved position at 024018. This situation has occurred more than once, and it is bloody frustrating.>>

This results from an abstraction currently used in TacOps to prevent units from firing on and wasting ammo on targets that can not be harmed. M60 machine guns probably can't hurt an entrenched BTR from the front due to the combat results tables, so in TacOps they don't fire at all. A game mechanism for allowing units to be able to optionally lay down suppressive fire or demonstration fire or searching fire is something that I continue to work on. Everyone should

consider though that once I am able to implement this, you are just as likely to be on the receiving end of such fire as you are to be inflicting it <g> - after the change is made it may well turn out that in many if not most small arms firefights the end result will effectively be much like what the game engine portrays now. There will likely be at least one area of increased realism after the change - more firefights will be decided by one side simply running out of ammo. Obviously the side that is most likely to run out of ammo first will be the side that chooses to frequently fire at area targets and or poorly spotted units.

<<[Team Krempp] I must take issue with the amount of ammo available to the 81mm. It is, in my opinion, not enough.>>

I agree. But in this case it happens to be all that is available in the factory provided setup. The player is free to choose to add more ammo at game startup if he wants to by increasing the supply points available to the green force.

<<[Team Krempp] Time limit. Here I am required to take exception. 60 minutes! As this is one of a few platoon sized scenarios in TO, I really think a time limit is inappropriate.>>

I agree from the perspective of how things usually work in the real world. Time limits in TacOps are usually a completely artificial mechanism meant to apply constraints to the players that facilitate the conduct of a scenario within a limited time frame and or that force the players to do or not be able to do certain things that would unbalance the scenario. Using Team Krempp as an example ... if time was not an issue, the Green player could leisurely and safely walk completely around the objective - using the low ground on any side - and take the position much more easily from the rear. With the time constraint the Green player has time to try a frontal attack or a flank attack but not a rear attack. The time limit in Team Sposito is there for the same exact reason. However, the player is free to use the Options menu to make the scenario longer.

<<The use of AT4/RPG7/16 etc needs to be allowed for use against not just armor, but bunker/emplacement busting as well.>>

Agreed. I hope to implement that as an optional 'trigger' for the player. The automatic or default firing choices would be as they are today but the player could manually force a unit to fire differently from the default.

<<What I would then like to see is some likelihood of units breaking off the action and withdrawing from the scene of battle when their ammo starts to run low>>

Given that turns in TacOps are only one minute long, I don't think that I am going to add much in the way of additional automatic actions. My rule of thumb to date has been to stick pretty much to providing SOP or automatic actions only for situations where things would get too out of control or too unrealistic if some sort of response activity was not performed sooner than the next regular opportunity for player intervention/orders. I know that some folks would prefer there to be far more automatic actions. More automation to the point where the player wasn't doing much more than setting waypoints for groups of markers plus an order giving mechanism for giving orders to groups of markers rather than to single markers. Something conceptually

like, '2d Battalion, go take that hill from the left flank'. That would probably make for an OK game approach if I could ever get the 'agent' routines to work realistically and semi-clairvoyantly but at this point in time I am not really in a position to pursue such a drastic change in how TacOps works.

<<Umpiring seems to be a hard work while preparing the CPX. Has a team already tried to build scenarios, OOB, back ground ... together? maybe it could be less work.>>

The current CPX style seems to be to use custom scenarios created by the umpire - which is a lot of work for the umpire. Just a reminder, but the many scenarios that came with TacOps are already ready to go with much less prep time needed. I would think they would play completely differently (i.e. be a new experience) when used in a multiplayer CPX.

<<Has work on Panzers East resumed ?>>

Yes.

<<I remember reading about half a year ago or so that Panzers East had been permanently put on ice, which I thought was a shame because I had been looking forward to it.>>

Panzers East will follow TacOps98. Work on TacOps98 is also work on Panzers East because Panzers East will be spun off of the TacOps98 game engine. Actually the base code that now makes up much of the TacOps98 engine started out as the Panzers East engine. Various frictions developed last year in getting Panzers East finished and published and a point was reached where it appeared that the game engine could be finished sooner as a modern title rather than as a WWII title. Panzers East turned into TacOps98 and eventually TacOps98 will be turned back into Panzers East. Clear <g>?

TacOps Gazette 98.12

<<I believe Major H has been commissioned to write a special version of TacOps for one Army (Canadian, New Zealand??).>>

The New Zealand Army purchased a duplication and distribution license for an upgraded version of 'old TacOps' in late December 97 and took delivery of a master CD in January 98. The biggest changes were the addition of Australian and New Zealand units and weapons to the game data base and the addition of a CPX umpire support mode of play.

In March, The Avalon Hill Game Company started selling the NZ Army version of TacOps, with a different splash screen, under the title 'TacOps Classic Edition v2.0.0'. The title was not put into stores. It is only available by direct order from Avalon Hill.

A few weeks ago, the US Marine Corps contracted with Avalon Hill for a duplication and distribution license and a master CD for 'TacOps Classic Edition USMC'. I am working on their deliverable now.

Officially, TacOps was purchased by New Zealand and the USMC mainly as a vehicle to create and exploit semi-recreational training opportunities for junior personnel. The USMC contract describes the deliverable as a 'Computer Simulation Decision Game'. It was not purchased to serve as a tool for real world operational planning nor for exploring or validating real world battle plans - they use JANUS, BBS (Brigade Battle Simulation ?), and other sims for that.

<<I am simulating night turns by setting normal visibility to 400m and leaving thermal at 4000. I am still having recon units spot units beyond their visual range (beyond 400m).>>

That is correct behavior for sniper and recon team markers.

<<Was this TF Fenwick designed before or after entrenchments were upgraded?>>

Yes, but I don't think the stronger entrenchments are a problem in TF Fenwick.

<<Can TF Fenwick really be done with the starting forces?>>

Yes. The key is maximum violence during the first few minutes of the scenario. Use your snipers to kill as many of the SAM gunners as you can in the first few minutes of the game. After the SAMs are gone, use the snipers against crew served weapons. Use priority targeting to force the snipers to go after the best targets first. While the snipers are working over the SAM gunners, use your arty support against the various crew served weapons positions to attrit and suppress them. In the first minutes of the scenario, bring all of your air support in at one time against the various crew served weapons positions to kill and suppress them. Once you have the SAM gunners out of the way, and the crew served weapons somewhat suppressed then lay smoke into the compound and bring in the troop helos. But don't just crash them into the middle of the compound <g> - put them down on a flank. As soon as the SAMs are gone, use a couple

of helos to move your ATGM teams toward the East end of the map to be ready to ambush the OPFOR reinforcements.

<<One thing I read about in a review and also happened in my game that seems pretty unrealistic is that one side or another doesn't completely rout due to losses.>>

I have not yet found an approach that satisfies me for modeling what folks typically call 'morale'. At present the game handles 'morale' by being a bit liberal in its assessment of casualties to infantry - to somewhat reflect individuals who choose to remove themselves from harm's way for the duration of a scenario.

<<Major also says he "assumes in combat the men are constantly scanning 360 degrees," but it does seem that there should be some advantage to flanking them.>>

I think that flanking rules should not be based on thinking that infantry are fatally less alert to their sides and rear. Rather the rules should be tied to conceptual assumptions about the terrain that the unit is in and how infantrymen will utilize that terrain for cover. When possible, infantry pick hasty positions that offer the best field of fire to the expected approach direction of the enemy and that offer the best protection from fire and observation across the expected approach direction of the enemy. It often, but not always, happens that such hasty positions don't offer as much advantage when approached from the side or rear.

<<Maybe they would be less likely to see units to the side or rear, or maybe they shouldn't get the "under cover" deployment bonus if attacked from the side or rear.>>

With regards to receiving direct fire... For infantry units receiving direct fire, the defilade defensive modifier applies for 360 degrees. For vehicles receiving direct fire, who are not entrenched, the defilade defensive modifier only applies for fire coming through the unit's frontal facing and through one facing 'click' (45 degrees more or less) left and right of frontal. For example - if a vehicle is in defilade and it is facing due North, it will receive a defilade defensive modifier if it receives direct fire from the North, from the Northwest, or from the Northeast. The unit would not receive a defilade defensive modifier if it received fire from any other direction. For vehicles receiving direct fire, who are entrenched, the defilade defensive modifier applies for 360 degrees.

<<I've noticed that Recon and Sniper teams have better spotting than anyone else. And I know that when FO teams observe fire, the accuracy goes up twice as fast. But do Scout teams have any advantages?>>

'Scout teams' have no advantages in TacOps.

<<What's the use of having a special unit if it has no special properties?>>

The 'Scout team' marker was originally provided just as a dismount team for the M3 version of the Bradley. Just as an aside - recon and sniper markers should be added to scenarios very sparingly. They represent elite level training and experience.

TacOps Gazette 99.01

<<For the second year now, [names deleted] and I flew to Jamaica to assist in conducting a TacopsCE-based CPX (CROCODILE ROCK 98) conducted at the Jamaican Junior Command and Staff Course. I am pleased to report that the exercise was a complete success and proved to be a very valuable training tool.>>

<<Hmmm. Paid to fly to Jamaica to play TacOps. Cool job, eh?>>

Hmmm ... TacOps Classic Edition ... \$19.95 ... purchase provides one week in Jamaica annually. I have definitely not been charging enough for this product <g>.

<<While loading some Javelins into a plain hummer I accidentally clicked on a nearby hummer with LMG - it instantly vanished. A thorough search <g> revealed it inside the hummer, it had got loaded.>>

That is correct program behavior. In addition to loading troops onto a vehicle, you can use the 'Load' button to tell some vehicles to tow other vehicles. Conceptually, the plain hummer is now towing the hummer with LMG. In case it has not been noticed ... you can use this feature to cause some helicopters to be able to carry some vehicles ... good way to move a hummer based or LAV based raiding force around the map.

<<The "easy" answer is to declare that the off-map arty represents the fire available at any one time from a pool of batteries, all going through their shoot and scoot drills.>>

Which is exactly what the artillery abstraction in TacOps was intended to model. That is why 'off map' arty usually seems more capable than 'on map' arty. Except that I believe my original calculations for the killing effects of a TacOps arty salvo were based on the fires of a slightly degraded battalion grouping.

<<I read ... that it takes a full minute to reload the missile on a BMP 2/3 ... Don't the TacOps BMPs fire once every 15 seconds?>>

In TacOps, all BMPs have a reload delay for the ATGM. The base reload time for each model of BMP follows: BMP1 = ATGM flight time plus 50 seconds, BMP2 = ATGM flight time plus 50 seconds, BMP3 = ATGM flight time plus 20 seconds. Random combat modifiers may decrease (rarely) the reload time by five to ten seconds or increase (more often) the reload time by 1 to 60 seconds. Also, in TacOps, all US and OPFOR ground vehicles that fire ATGMs do so from 'the short halt'. If an ATGM vehicle marker is moving at the time that it decides to fire an ATGM, the marker will automatically pause in place for the time of flight of the ATGM plus a few seconds.

<<May I ask for the same information regarding the BTR90?>>

ATGM flight time plus 50 seconds. Same modifiers as for BMP1 and BMP2. IMHO, folks should not get hung up on feeling that they should know the exact seconds for things like this. Instead, I think folks should develop rough rules of thumb and follow good tactical principles. TacOps has a lot of detail and exactness in its combat rules but the results from event to event are intentionally made fuzzy by many modifiers. If folks try to deduce and predict events to the nearest second - i.e. rules lawyering - they are going to get pounded at critical moments <g>.

<<Am I missing something here? I thought the BTR-90 was a BTR-80 with a 30mm cannon on the turret roof?>>

It also has an AT5 Spandrel ATGM launcher on the roof.

<<BMP 3 fires its ATGM with its 100mm rifled gun/launcher tube, just like T-64/T-80. The 100mm is effectively a modification of the same gun used in T-55s.>>

The 100mm gun on the T-55 is a heavy, high velocity gun. I don't believe that the turret or suspension of the BMP3 could handle the weight, firing, or recoil of a 100mm high velocity gun. It is my understanding that the 100mm gun on the BMP3 is a low velocity gun that also serves as an ATGM launch tube. It is my understanding that the tube may also be used to fire an HE round but that the HE round is more like the rocket propelled grenade of the BMP1 rather than being like the HE round fired by OPFOR tanks.

<<I seem to recall that one difference between Bradleys and BMPs is that a Bradley will fire ATGMs in two consecutive fire pulses then 'reload' for thirty seconds, whilst a BMP has to reload every shot.>>

M2, M3, and LAV-AT have two ATGM tubes. In TacOps, the second ATGM can be fired 15 to 30 seconds after the impact of the first ATGM. After the firing of the second ATGM the launchers get a reload delay. The base reload time for the ATGM launchers on the M2, M3, and LAVAT is ATGM flight time to last target plus 60 seconds. Random combat modifiers may decrease (rarely) the reload time by five to ten seconds or increase (more often) the reload time by 15 to 60 seconds. The best rule of thumb for M2, M3, and LAV-AT launchers is to plan for the reload delay to be two minutes/two turns.

<<I am assuming that the vehicle must be stopped in place while reloading goes on. Correct or not?>>

The program just tracks the passage of time - it does not check to see if the vehicle is moving or not.

<<Hmmm. Can anybody tell me how easy it is to reload a TOW on a Bradley while in motion?>>

I suspect that it varies in real life from hard to impossible depending on the speed of the vehicle and the terrain that is being traveled through. Regardless, I don't view this to be a significant

detail given the game's other time and movement abstractions and the overall scale and scope of the game.

<<What were all the extra megabytes for [in the USMC version of TacOps]? I thought the USMC version was just a slightly altered version of Classic, or were there maps of USMC training grounds included as well or something else?>>

There were more maps in the private USMC package than in the public Avalon Hill package plus there was a folder of USMC field manuals/doctrinal pubs in Adobe Acrobat PDF format.

<<Any chance of the new maps [in the USMC package] being available for download?>>

They are or have been available on various TacOps fan web sites or else they are too large for reasonable downloading.

<<I keep hearing references to a version of TacOps which I obviously don't have. Mine is the Arsenal version. Can anyone clue me in on where I can spend some money on a more recent version?>>

The latest 'public' version of TacOps is version 2.0. That is the version that was being sold by Avalon Hill up until the sale of Avalon Hill to Hasbro. That version is temporarily unavailable. I am attempting to change that situation. The latest 'private' version of TacOps is version 2.1.1, but it is only available to members of the US Marine Corps and to members of the New Zealand Army.

<<If anybody here can help a poor Signal Officer find books that would help in learning tactics, strategy, and leadership, I'd gladly listen!>>

I recommended the following three books based on subject material, currency, inexpensiveness, and availability. All are by LtCol John F. Antal. One or all of these books can often be found at Army exchanges and at popular book chains like Borders, Barnes & Noble, etc.

Armor Attacks - The Tank Platoon: An Interactive Exercise in Small-Unit Tactics And Leadership. Presidio Press 1991. \$14.95 softcover. ISBN 0-89141-383-9

Infantry Combat - The Rifle Platoon: An Interactive Exercise in Small-Unit Tactics And Leadership. Presidio Press 1995. \$14.95 softcover. ISBN 0-89141-536-X

Combat Team, Presidio Press, 1998, ISBN 0-89141-635-8, \$17.95 list, \$14.36 at Amazon. Is in a similar format to Armor Attacks and Infantry Combat. Scenario is a battalion task force in Korea at opening of new war.

TacOps Gazette 00.01

>What are the qualifications to be a play tester?

A good play tester is one who is unlucky, can't read directions, and acts illogically. If a game instruction or feature can be misunderstood then he will misunderstand it and invariably take the wrong user interface path. If there is a bug that only has a one in a million chance of happening, it will always happen to him.

>...what did you do in the Marines?

I was enlisted for four years. After commissioning I was an infantry officer for five years then I switched to intelligence where I stayed for eleven years.

>In the vehicle specs, is front armor the front armor of the turret or
>the glacis or a combination of both?

It depends on the vehicle - I have used all three approaches. In general I use the glacis thickness with consideration given to its slope. When the slope of the glacis is factored in, there is often not a lot of difference between the turret and the glacis. This is an abstraction that I noticed while doing the original research on contemporary vehicles. I would not be able to get away with this abstraction with a lot of WWII vehicles.

>Do the FISTV, COLTs and ground radars have any direct effect
>on the game or are they window dressing?

FISTV and COLTs usually increase the accuracy of the first volley of arty fire on a target to which the unit has a clear line of sight. Radar units are just window dressing - they don't do anything special other than being able to see through smoke.

>The same question applies to Engineer units

In TacOps ... Engineers are far more likely to recognize an unspotted minefield prior to walking into it. Engineers are far less likely to be attacked by a minefield as they move through it - clearing a path as they go.

>An airstrike struck 600m south of an "observed" target.

Air strikes that are engaged by ground fire (whether it hits them or not) may drop their loads erratically. The more fire they receive the more likely they are to drop off target or to not drop at all.

>ATGM fire seems erratic. Sometimes ATGMs hit their target
>instantly after launch and sometimes they don't.

TacOps knows and tracks the flight speed of each kind of ATGM. Some of the OPFOR ATGMS are much slower than others. A one minute TacOps combat phase contains four 15 second fire pulses. At extreme ranges, some ATGMs can not get to their target within a single 15 second fire pulse. In such a case you would see and hear the ATGM launches but there would be no flight sound effect and no impact sound effect until the next 15 second fire pulse comes around.

>...I noticed that sometimes the M113 TUA fires its TOW missiles
 >at twice the speed of the BMP2 Spandrels. In other words, in
 >one combat phase, the BMP2s fires, but no impact yet, but the M113 got
 >off *two* full salvos in that same phase. The BMP2s rounds impacted on
 >the following phase.

Correct behavior. In TacOps the TOW travels at 280 meters per second while the Spandrel travels at 185 meters per second. Since the Spandrel can only travel 2775 meters in fifteen seconds, the situation can often occur where it can not get where it is going in one 15 second combat phase. Also, the single tube BMP must reload after each round while the dual tube M113 TUA can fire a second round as soon as the first one impacts.

>I was a little surprised the Osprey didn't move faster than a Blackhawk,
 >seeing as it is a fixed wing aircraft when moving horizontally...

Done to reduce 'gamey tricks'. The Osprey has to slow down to land and to transition the rotors from horizontal flight to semi vertical flight and vice versa. By the time it is on a TacOps map it should be considered to be either moving to an LZ or that it has just left an LZ. Either way it ought not to be able to zip around the map at technical max speed - folks would abuse this in very unrealistic ways.

>are the unit markers supposed to be an off/baby blue?

Yes. I changed the color of the 'Allied' force to blue to match the current wargaming terminology that is most often by the military users - i.e. Blue force and Red force. Plus it was time to start scrubbing out the 'US' orientation of the TacOps game engine. Also, it got too tedious to enable the program to keep up with 'who' was playing the friendly side - US, Canada, New Zealand, Australia, a mixed force etc.

> I noticed, in the Unit Orders window of the tank, their is now a button
 > named 'Tow'. I did a double take because it didn't seem familiar

That is a feature that was added to v3.0 at the last minute. The 'Tow' button instructs a vehicular unit to tow or pull another vehicular unit. For example a tank retriever can now be ordered to tow a damaged vehicle.

>Visibility is too limited in TacOps. Ground visibility in clear weather
 >for the unaided eye ought to be around 8 km.

It can be - when standing on a high point, feeling relaxed, and with all the time in the world to look. It is considerably different when crouched beside a crew served weapon or sealed up in a tank looking out over real world terrain with all its folds, depressions, odd small clumps of vegetation, etc - while looking at advancing units that are doing everything they can to take advantage of anything that can transiently block your line of sight.

>How do I do a screen capture in TacOps [using Windows]?

1. Simultaneously press the Alt and the Print Screen keys. This will copy what is on your screen into memory.
2. Go to the Windows Start menu and select programs/accessories/paint so as to run the paint program that comes with Windows.
3. Once the paint program is running, select the Edit/paste menu item to paste the contents of memory into the paint program.

>How many people in a typical battalion have a practical capability for adjusting artillery fire?

In principle - in the US military - anyone who has or is within shouting distance of any radio on any frequency. Any caller who can convince the receiver that he really is one of the 'good guys' and that he has a worthwhile target can eventually get fire support. If the caller is unskilled then the fire support folks will prompt and drag the necessary targeting and adjustment info out of him. Obviously it all works a lot faster and better if the caller has been trained, is using the right channel, and has been previously designated to handle calls for fire support. But ... the lowest private could find himself instigating a Brigade TOT in a crunch.

>...to shift fire or call in and adjust new fire missions
 >would seem to be beyond the technical/practical ability
 >of most of a battalion's personnel.

Laying and firing arty accurately may be rocket science but calling for it and adjusting it is not. Picking a junior troop at random and having him verbally conduct a call for fire drill was a standard practice for my platoon sergeants in idle moments. The hardest part of it for an infantryman used to be simply knowing exactly where he was on a map. Now all he has to do for that is punch a button on a GPS.

A modest exaggeration follows :)...

Private Jones: Help!

Bored Arty Spec5: Where are you?

Private Jones: This GPS thingee says 12345678. There's some tanks kinda in front of me.

Bored Arty Spec5: Cool ... rounds out ... splash.

Private Jones: Good gawd amighty ... would you look at that!

TacOps Gazette 00.02

- > In reading accounts of various engagements
- > during Desert Storm, it appears that tanks did most of the killing compared
- > with M2/M3's, and ATGM's played merely a supporting role.

In Desert Storm, M1 tanks were effectively invulnerable at almost any range. Bradleys were not. Accordingly M1s led everywhere. Load up a TacOps scenario, take away OPFOR's improved ATGMs and OPFOR thermal sights, substitute the Iraqi T72 and then lead with M1s. I suspect that you will get results similar to Desert Storm.

- > I don't know if the Major believes that the clear superiority of the
- > ATGM vs. MBT in TacOps will in fact obtain on the battlefield. Perhaps his
- > view is that, "Well, the weapons systems in TacOps are modeled objectively
- > based on real world data, and if that leads to the result that ATGM's will
- > dominate tanks on the modern battlefield, so be it." In a way, ATGM
- > dominance is one of the principal theses of TacOps.

I am neutral on the topic. The results of direct fire engagements in TacOps are produced by the interaction of many abstractions. If a critical abstraction is wrong then the end result could be wrong. Given sufficient evidence I am ready to revisit any abstraction.

With regard to this specific topic, if there is a flawed abstraction in TacOps the most likely candidate is the rate of fire of tanks vs the rate of fire of ATGMs. The current set of abstractions that influence tank fire effectively limits one tank to destroying not more than one target per 15 seconds but the tank can usually fire again in the next 15 seconds if there are still targets in view. At close to medium ranges ATGMs can also kill one target in 15 seconds but they can not usually get a round off every 15 seconds. Thus the TacOps abstractions give parity to tanks and ATGMs for the first 15 seconds of a perfectly mutual engagement but after the first fire pulse the tanks get the edge.

If the abstractions were altered so that tanks could potentially destroy more than one target per fifteen seconds or if the abstractions were altered so that it took longer for ATGMs to do their thing then the game results would change dramatically - given the generally good lines of sight that exist in most TacOps terrain. Now before everyone jumps on the bandwagon of saying just increase the rate of fire of tanks ... Before TacOps was first released, tanks were allowed to potentially kill two or three targets per 15 seconds. The combat results when spread over several minutes of game play were just plain unsupportable. It was as if everyone was armed with death rays.

- > I was left wondering if Infantry ever remount after having
- > been dumped due to incoming fire on their carrier vehicles.
- > The AI exited 10% of it's force, but that included quite a
- > few empty BMPs, and many machine gun squads, etc were left
- > on the map.

The AI will sometimes have surviving APCs pick up orphan infantry from destroyed APCs if they are nearby and 'on the way' but it will not usually make a special effort to round up distant stragglers. Troops who get left behind in the middle of a two or three kilometer, rolling assault are most likely not going to be looked for by the rest of the OPFOR force once the assault is over.

- > In a couple of cases, a company of BMPs would volley fire.
- > Once my unit was eliminated, the fire shifted to a second
- > unit not in the same general target area. Seems to me that
- > all of the fire should go into the same target, even with
- > this results in target over-kill.
- >

What you suggest was the way things worked in early versions of TacOps. Then folks complained that (a) too much ammo was being wasted on over-kill and (b) targeting was not being spread across a wide enough frontage - so I changed the abstraction to what exists now. The current abstraction still provides some overkill but not much. The current abstraction tries to prevent a given marker from being potentially eliminated more than two or three times in a single 15 second fire pulse. Also, the current abstraction mitigates (but can not eliminate) the gamey tactic of leading a charge with very low value units such as trucks.

- > Is it standard policy for all infantry squads to carry
- > radios?

Yes - for most Western armies. There are so many radios available today that constant effort has to be put into making people not use them - i.e. emission discipline. OPFOR probably should not be so well equipped but I didn't think it was worth the extra complexity in the code.

- > I have always been a little confused as to how a TacOps unit
- > (say with only one person left) can call in artillery
- > strikes -- or the larger issue -- allow me (the player) to
- > see units that the counter could see.

Both abstractions are driven mainly by the grand tactical scale of TacOps and to a lesser degree by a desire to reduce multiple searches all the way through the unit list during the combat phase. Now that CPU speeds are way up I could probably afford to do a second spotting check to determine the quality and capability of the best possible spotter and then somehow adjust the timing and accuracy of the arty service somewhat.

- > How about randomizing damage to infantry units to include
- > radio destruction (or non-operation)? How about the same
- > thing for vehicles?

There are a huge number of radios and frequencies in use on a modern battlefield. A unit marker can represent 1 to 15 squads/vehicles. A given unit could be carrying multiples of several

different kinds of radios. Tracking all that would get extremely complex - code wise - and would greatly enlarge the unit data being tracked.

- > I have always wanted to see tank crews represented in TacOps
- > (as they are in AH's squad leader). It would certainly
- > allow for more excitement when recovering damaged AFVs (and
- > console me with the fact that I saved some of the crew).

I don't think orphaned vehicle crews are significant given the grand tactical scale of a typical TacOps scenario. Also I don't think that recently orphaned vehicle crews would usually be inclined to immediately continue the battle as poorly armed and poorly trained infantry. I think they would either hang around their vehicle to safeguard it for recovery, or to await pickup, or they would try to escape and evade.

- >I have a concern regarding ATGMs.
- >they seem to fire and have
- >rounds impact within the same "impulse".
- >This results in ATGMs often out
- >performing tank main guns and IFV cannons at medium ranges.

Each type of ATGM travels at a different speed. At close and medium range, most can get to their target in less than one TacOps 15 second fire pulse. If an ATGM takes longer than 15 seconds to reach its target it is possible that the firer will be taken out by enemy fire before the ATGM arrives and the ATGM will miss. Units firing ATGMs from hidden positions, usually get away with it even if it takes two 15 second fire pulses for the ATGM to arrive. In such a case by the time the unit is spotted its too late to suppress it. I think most wargames overate/over reward the tactic of tanks firing at ATGM launch signatures so as to rattle the gunner. I first read about that tactic 20 plus years ago in reference to the manpack Swatter and the first version of the manpack Sagger - both very slow and very hard to steer ATGMs. The tactic seemed plausible then but I don't think it is today due to the much higher speed of today's ATGMs and their simpler guidance systems.

- > "Friendly" indirect fire appears not to effect the OPFOR. Rounds
- > landing on both my units and theirs seemed to suppress/kill my stuff and
- > have no effect on them. True or did I miss something?

All units - friendly and enemy - within the beaten zone of indirect fire get checked for effect. In general suppression is automatic for every unit in the beaten zone. The program only shows a suppression symbol for the first effected unit at or very close to the exact center of the beaten zone. Suppression still takes place for the other effected units but a suppression symbol will not be shown. This was added to speed up play in those cases where large stacks of units were being shelled. In the early days of TacOps people complained about having to wait for every suppression symbol to actually be drawn in such cases. Secondary explosions are shown in every case as are actual troop losses to each infantry marker (skull and bones). By the way, the game relevant beaten zone of arty and especially small mortars is usually somewhat smaller than the explosion 'blossom' animation.

- > a large number of Red BMPs attacked me backwards. I noticed
- > a few other vehicles doing the same. Is this a feature to
- > make the demo easier?

No. What you saw was probably a cosmetic detail that sometimes does not work as I intended. In the past, silhouettes on blue marker markers were always drawn as facing to the right and silhouettes on red markers were drawn facing to the left. In v3, I changed the display code for mid and large size markers to provide silhouettes that can face right or left according to an approximation of the unit's current game relevant facing or its most recent direction of travel. This is purely cosmetic - for internal program purposes, units actually face in one of eight directions. My intention was for unit markers to show a cosmetic face that was closer to their actual game facing. What happens though is that units that are moving or facing at an angle that is very close to true North or true South sometimes get drawn facing opposite to what the player feels is right. You can use the F5 key to cycle the unit markers through several 'informational' faces to confirm their true facing.

- > I miss the close window/"command key and w" option in the
- > file menu of [Macintosh version] 3.0.)

The traditional Mac 'Cmd + W' still closes most windows (as does Escape and just about any other keystroke), I just removed the menu item for it.

TacOps Gazette 00.03

> Do your Canadian ORBATs reflect our current structure?

The order of battle in the Canadian scenarios is a notional representation of the current 'best case' organization for a general war situation preceded by adequate warning and prep time. It is largely a tracked force built around the Leopard C1(+) and the M113 ISC. This notional ORBAT was specified by the Canadian Forces Command and Staff College. However, optional units are provided if you want to substitute a possible future, largely wheeled force, built around the LAV III family of vehicles.

> Canada does not use the M992 FAASV

The fictitious 20th Canadian Mechanized Brigade Group does. The 20th CMBG scenarios were designed per instructions from the Canadian Forces Command and Staff College.

> On the CA Coyote Recce units, what is that diamond with legs
> next to the unit profile? It looks like a stick figure

It shows the unit is the model of Coyote that carries a remote placement, tripod mounted, sensor array. Another model of Coyote has a sensor array permanently mounted on a telescoping mast. In both cases the sensor array is not actually modeled yet in TacOps. It is a mainly cosmetic detail that the Canadian Army wanted.

> Boy, them Canadians got some weird units. What can you *do*
> with all the medic tracks? And all those other vaguely M113
> looking tracks whose purpose is quite the mystery to this
> Southern boy?

Park them in the rear or simply delete them without prejudice. The support units were required for the Canadian Army version and I didn't have the energy to redo and recompile all those scenarios for the public version.

>What are AA AVC, AA VP, & AA VC7.

These are Assault Amphibian Vehicles of the US Marine Corps.

AA are vehicles that the USMC has now. Huge beasts that swim very well even in heavy surf. Fast in water but not fast enough.

AAVP7 - Assault Amphibian Vehicle Personnel
AAVC7 - Assault Amphibian Vehicle Command and Control
AAVR7 - Assault Amphibian Vehicle Recovery

AAA are developmental versions that are not anywhere near being in service. Picture a short cigarette boat with tracks, armor plate, and a 25mm auto cannon. Capable of over the horizon, high speed movement from ship to shore.

AAAVP - Advanced Assault Amphibian Vehicle Personnel

AAAVC - Advanced Amphibian Vehicle Command and Control

AAAVR - Advanced Assault Amphibian Vehicle Recovery

>[ATGM units] should halt and remain halted until the round
>impacts.

That is already in the code. If an ATGM platform is moving, and if it fires an ATGM, it will automatically pause for the time of flight of the ATGM.

> I this a mistake? All improved warheads except the AT-10i
> and the AT-11i still kill an M-1; the AT-10i and AT-11i can
> only get rear kills.

After much back channel lobbying :) I was convinced that it was too much of a stretch to allow even an improved version of the small AT-11 to kill an M1 from the front. Also contributing to the change was the popular analysis that OPFOR tanks were given this 'through the barrel' ATGM mainly as a long range countermeasure to APC mounted ATGM launchers such as the Bradley.

> What is the exact definition of an improved ATGM, both real
> world and in TacOps?

OPFOR ATGMs that include the small case letter 'i' are optional TacOps inventions. They were added to the game primarily as an optional means of mitigating the practical invulnerability of the M1 tank. Their performance was loosely based on the higher penetration ratios (diameter of warhead compared to penetration ability) that Western technology can produce through use of exotic shaped charge liners, tandem warheads, top attack mechanisms, etc. Technology that OPFOR could also employ if it were willing and able to pay for its development and fielding. A gentle reminder ... it is impossible for me to know and to perfectly replicate how today's equipment and weapons actually perform. Our various governments put a fair amount of effort into withholding such info for as long as possible. If I were able to provide perfect information I would expect to receive some inconvenient visitors in fairly short order :).

>One limitation to the present system is that the level of armor
>protection is considered monolithic across the front of the vehicle
>whereas in real life the level of armor protection changes depending
>on where the round hits. For example, in the Golan the only Merkava 2
>knocked out was by a frontal hit from an AT-4, a missile which
>theoretically should not be able to penetrate. The missile was fired
>from a slightly higher level than the tank and hit the driver's hatch
>and penetrated. All tanks have similar areas of vulnerability.

I did not overlook that - it was a studied decision on my part. I think that most players would complain if TacOps units were coded so that they routinely attempted 'miracle shots' - they would also run out of ammo very quickly. It would really mess up the plausibility of the automatic target selection routines. Replication of '1%' events should be done for flavoring whenever possible but I would not want them to drive the planning and conduct of battalion/brigade level fights.

- > Nothing like a board edge to destroy the
- > illusion of reality. I need more maneuver room!

In the real world, tactical maneuver to one's far flanks is usually constrained by the presence of adjacent enemy or friendly units. If you had unlimited lateral movement in a game and if you tried to exercise the capability you should just move into a new tactical problem vs a new enemy.

- > I'm basing my uninformed opinions on Close Combat, obviously!
- > There they have 3-man medium mortar teams with 40-50 rounds.

Simulating the ammo supply for crew served weapons is a tough design problem. The easiest way around it is simply to give them more ammo than they could possibly carry in real life and move on to more important realism issues. The problem is that in real life the crew of a crew served weapon are not the only people in a squad or platoon who are carrying ammo for the weapon. Additional machine gun ammo, mortar rounds, grenade launcher rounds, etc, are usually spread out among the combat loads of everyone in a squad or platoon. The distributed ammo later moves toward the gun or launcher as it becomes needed. Thus overloading the crew of a crew served weapon only becomes significantly unrealistic at such times in a game where the crew has become isolated from the rest of its squad or platoon.

- > Also, will the use of MRLS degrade a minefield?

No - neither does regular arty.

- > ...as long as a single Blue unit spots a Red unit, that Red
- > unit is deemed spotted by all Blue units with an LOS to it.
- > In other words, each Blue unit with an LOS to the Red unit
- > does not have to make its own LOS check.

That is not the way the game works. It is correct that simple spotting by one unit translates into simple spotting by all units, but each Blue unit will still have to pass its own subsequent LOS check and an acquisition check before it can fire at a spotted Red unit. In TacOps, being spotted means mainly that a given unit marker will be revealed on the screen of the enemy human player (i.e. plotted on the map), it does not necessarily mean that every enemy unit with a clear LOS will be able to or choose to engage that spotted unit.

TacOps Gazette 00.04

- > ...with regard to the French version ... I was wondering
- > what moved you to make it available?

I didn't have a choice :). The dual English/French interface and documentation were contractual requirements for the Canadian Army's custom version of TacOps (TacOpsCF). Since all that work was already done, it seemed smart to leave it in the retail version which was released a couple of months after I delivered the Canadian Army version.

- > What's the best way to pull out of an exposed firing position
- > in TacOps?

Hold down the Macintosh Option key or the PC Control key as you give a movement order (i.e. click on the map). When that movement order is executed, the unit will do so 'in reverse gear' thus presumably keeping its best armor toward the enemy.

- > Why are there 2 mech platoons in Gallagher with 5
- > Bradleys?

Those markers include the company commanders.

- > Regarding the wish list, any chance of a British TOE
- > appearing soon - so we can get some real soldiers in the
- > game <vbg>.

Not soon - its pretty high up on the list but still behind other things. On the other hand ... I could add it in 90 days given an adequate bribe by your government :).

- > The AH64 only appears in the US section of the Add One
- > Unit/Unit Data Base dialog boxes. Do the Canadians really
- > fly them? If not, should they be a part of the Canadian
- > scenario OOBs?

The Canadians have no attack helos at all. For the most part, I have removed all Apaches from the Canadian scenarios. I did leave them in a couple because those scenarios just won't work without them. In the later cases the assumption is that the US is providing support.

- >...the M113 TUA (whatever that is)

It is a Canadian M113 APC with a two round TOW launcher mounted on its roof. TUA stands for 'TOW Under Armour'.

- >What's a Grizzly RBB?

It is a Canadian radio relay/rebroadcast vehicle. Most Canadian Army headquarters above company level seem to have one or more of them.

>What's an M113 MRT?

Canadian Army Mobile Repair Team. In real life it carries a couple of mechanics and bins of spare parts. It doesn't have any special game capabilities.

> Those [Canadian] infantry sections w/ the Eryx are quite deadly
> tank killers. I'm doing better than I expected to.

In my opinion ... The problem with the Eryx is its short range. By the time that the Eryx can be used there is not enough space left for the infantry unit to engage briefly and then fall back to a new position. Eryx equipped units are therefore limited to a rather static or 'last stand' style of anti-armor defense. If the infantry unit can not kill everything in front of it in a few volleys then the unit is quite likely to get overrun.

>What unit does the "small" landing craft represent,

Large is based on the LCU classes 1627 and 1646. Medium is based on the LCM8. Small is based on the LCM6. This would be the closest modern landing craft to the size that was used in WWII and Korea.

>... and where is it [LCM6] typically used?

I don't know for sure but I think that the LCM6 is being or has already been largely phased out. Prior to the fielding of the LCAC, the small LCM6 would have been the craft most likely used to land infantry. The LCM8 and LCU would have been used mainly to bring tanks, arty, vehicles, and supplies ashore. See following web sites for current info on landing craft and larger amphibious shipping...

<http://www.chinfo.navy.mil/navpalib/factfile/ships/ship-lcu.html>

<http://www.surfpac.navy.mil/BUC/acu1/acu1home.htm>

<http://www.surfpac.navy.mil/acu5/>

<http://www.surfpac.navy.mil/EODC/acn.htm>

> Air support mission cancelled itself and went back to "available"
> within 52 seconds of arrival.

Air strikes do not get cancelled prior to appearing on the map in TacOps. I assume that you mean that during the orders phase before a combat turn you noticed that you had an air strike due to hit within 52 seconds. Since a combat turn is 60 seconds long that means that the strike should have occurred when you ran the combat turn. If an air strikes arrives at the target and

does not find anything there and does not find an alternate target within 500 meters then it does not drop its load. It then usually but not always returns to the ready queue and may be targeted again. Perhaps you did not notice it appearing on the map during the combat turn.

- > Is there any relatively easy way you could code an
- > instruction so that you would simply click on an entrance
- > point and an exit point on a road and the unit would
- > faithfully follow the road between those two points?

I could do that but it would not be 'relatively easy'. Auto path finding could bubble to the top of the to do list someday but at present there are too many things ahead of it that would be easier and faster to do.

- > Is there any method in TacOps to breach a mine field? When I
- > was stationed at twenty-nine Palms the Marines were testing
- > a line charge that shot out of the back of an AAV.

Clearing charges are not currently in the game. At present, mine fields in TacOps can only be cleared/marked by moving units through them. Movement may or may not result in a mine attack but each ten meters moved through will be 'cleared or marked' for subsequent units to pass through. The clearing efficiency of units varies by type with engineer units being the most likely to clear a path without being attacked by the mine field.

- > ...your original version of TacOps didn't include separate
- > FOOs which I thought was kind of odd. ... Was it a
- > conscious decision to omit them from play?

Admin and support units often almost double the number of unit markers in a battalion sized unit. When the US scenarios were first created there were no separate forward observer units in the game's data base. Later when I added separate FO units as well as numerous other admin and support units, the decision was made to not add such units to the factory provided scenarios for fear of overwhelming the game's primary target audience which was thought to be hobbyist gamers. When TacOps 3.0 came out, combat service support units were added to the 'new' Canadian scenarios at the request of the Canadian Army.

- > When I open a previously saved CPX overlay file, the dialog
- > box shows the passwords already typed in. I.e. the dialog
- > box tells me both passwords, negating the password
- > security. Is this a bug or a feature I'm misusing?

Correct program behavior. You are being shown those passwords because you are using the machine that authored the overlay. The last two passwords used on your machine are stored as preferences in your TacOps program preferences file as a convenience so that you do not have to keep entering them. If you sent the overlay to someone else, they would not see those passwords until and unless they correctly entered both of them. If you had received this overlay file from

someone else and if the file used different passwords then the suggested default passwords that you would be offered would not be the correct ones - except by coincidence.

- > I tried loading the big air cushion craft with a dismounted
- > company and it worked fine until a ATGM hit the @#\$%
- > thing!!

That is why current USMC amphibious strategy calls for landing at places where the enemy is not and then moving overland to contact - in concert with heliborne flanking operations. Assaulting a defended beach is the absolute last option that any amphibious planner would choose. That is the main reason why I put off adding landing craft to the game for so long. I have always been afraid that if I included an across the beach assault as a factory provided scenario that I would be laughed at by serving USMC personnel :).

- >I have weapons range = 0 for AAVs, to model poor ability
- >to fire from rolling surf.

I think you should dispense with that. The turret mounted .50 cal and auto grenade launcher are very important if there is resistance at the shoreline. You are way over penalizing them. USMC AAVs are very heavy and ride very low in the water. Their water propulsion system is very powerful. In my experience, there is nothing boat-like in their movement through water. They behave more like a submarine traveling on the surface. They don't 'bob' around. Waves and surf tend to flow over and past them rather than moving them around or up and down. I got to ride in the command seat once in an AAV as it drove out of an amphibious ship. The well deck was not fully flooded so we still had traction as we crossed the ramp and thus entered the water with a slight drop. It was an interesting experience to look through the vision blocks and to see several feet of water over us for a few seconds as the AAV recovered from the drop launch.

- > I was wondering whether there was a way to keep tab of
- > losses, and to estimate enemy losses a button that can be
- > pressed to get a summary.

Select the 'Reports/Game Status' menu item to see a detailed text report. Select the 'Reports/Order of Battle' menu item to see a graphic report.

- > When I add optional units under the options display, the
- > units already on the map switch to the next largest size
- > from the old one (15x15 I think). The same thing happens
- > if I have the unit sizes set to the smallest size (the
- > blank squares). Once the units are placed the units revert
- > to the correct size.

That is correct/intended program behavior. It simplifies coding and greatly reduces bug risk if the program can depend on the unit markers being of a certain size when certain special windows/dialogs are displayed - such as the optional units preview window, order of battle window, etc. So, the program temporarily changes the symbols to a 'standard' size when special

windows are displayed. When the special window is closed, the symbols change back to your chosen size for the battle map.

- > The option for changing the Green force name has
- > disappeared completely?

Yes. It made me angry one time too many and I killed it in a fit of pique <g>. Good example of something that seemed simple that ended up requiring several hundred lines of code in dozens of different places. It was producing a lot of context/semantic buglets with regards to the Canadian revision and looked to be a real nightmare for the French translation.

- >It is very strange to command blue troops.

True, but it does make life a lot simpler for me - especially in the future. The military users have always had a problem with having a 'green force' in the game instead of one that fit their customary gaming/exercise terms of 'blue force/red force'. Also once I start making real progress again with TacOps, it is going to get less and less 'US-centric'. A lot of little coding annoyances disappear now that I am free to change most user interface items (menu names, button titles, etc) to simply say 'blue' instead of having to differentiate 'US', 'CA', 'AU', 'NZ' etc. It also removes some weird administrative difficulties with eventually enabling the blue force to consist of OPFOR units/equipment and vice versa.

- >... cross platform play ...

As of version 3.0, the Mac and PC versions of TacOps can also load each others saved game files - if the appropriate PC extensions are added. In cross platform games, the Mac player needs to remember to set the 'Use PC filenames' check box in the prefs window before sending the first set of orders so that the pc extensions will be added to the orders file. Without the pc extension of 'bmo' for blue orders files or 'rmo' for red orders files the PC can not figure out what to load. If at some point in the game the Mac player should forget this you can easily salvage the situation by just manually adding '.bmo' or '.rmo' as appropriate to the orders file before sending it on to the PC player.

TacOps Gazette 00.05

- > That scenario [Task Force Fenwick] with the hastily mounted
- > heliborne raid on the terrorist training camp scenario has
- > got to be about the most gotched-up mess since the charge
- > of the Light Brigade... I've been banging my head against
- > that one for days .

The key to that scenario is proper use of the seemingly least powerful units in the Blue force - the snipers.

- >I'm a new player and would like to learn the
- >game in the most efficient manner.

First do the tutorial. A twenty minute investment in following every step in the tutorial will make everything that follows easier and more fun. Next play U.S. scenarios that have 'Team' in the title or Canadian scenarios that have 'Combat Team' in the title. They have smaller forces in play and smaller maps. U.S. Army scenarios are usually significantly easier than similar USMC scenarios because the Marines have fewer long range anti armor weapons. U.S. Army and USMC scenarios are usually easier than similar Canadian scenarios because of the limited range of the Canadian ERYX ATGM. USMC scenarios where the Marines are using LAVs tend to be very difficult and tend to require very different and very daring tactics. The hardest scenario set of all is the Team Kelley series. A single U.S. Company vs an OPFOR Regiment .

- >Can you place two mine counters together, creating a double
- >density minefield?

No. If they are both placed in the same turn they will just blend into the equivalent of one field. If they are placed in the same place over different turns, the newer one will just replace/replenish the older one.

- >Is the chance-to-hit reduced when firing at moving vehicles and at
- >vehicles in cover? If so by how much.

Usually. It varies by the weapon system firing. The factor is usually significant but it is not usually overwhelming.

- >The other question was about the H combat result. Does the program
- >calculate whether the target was hit and decide, if not, that the round
- >landed close enough to generate the H result or does it convert some
- >percentage of hits into H results?

The game engine converts a low percentage of 'hits' into a combat result of 'no significant effect' and displays an 'H' when that happens. The idea is to represent things like blowing a fender off, or an ATGM warhead being a dud, ricochets, etc.

- >This brings to mind a point I've meant to inquire on. I'm often tempted
- >to leave behind "sacrificial" observation or ambush teams, with no
- >realistic chance for their survival or extraction. Is that practice at
- >all consistent with Western (or, for that matter, OPFOR) doctrine?

Inserting observation posts into enemy held areas has been a standard tactic - especially in counter insurgency ops. However I think intentionally leaving a team behind to be bypassed by advancing enemy units would be an unusual tactic for a modern US commander. On the other hand, I remember knowing as a Marine infantry Lt that 'observe and report' was a standing order for cut off or bypassed units. Also, several times in field training I was told to leave a fireteam behind as a hidden observation post to adjust arty and air support while the rest of the company displaced to a new position - the team was expected to later escape and evade to a pickup point. Things like this don't seem particularly unreasonable to me for light infantry ops (i.e. everybody is on foot). I suspect the pucker factor would go way up if somebody told me to try it with a Bradley or a HMMWV. A brief search of my Military Reference Library CD produced one US doctrinal note on this. FM 7-93 Long-Range Surveillance Unit Operations, page 3-15 says ... 'Stay-Behind Technique. The [recon] team purposely allows itself to be passed by the enemy to perform a specific mission.' In the 80s I attended several NATO defense plan briefings which included predesignated 'stay behind' teams in the friendly order of battle. These teams were not comprised of US troops.

- >In playing Battlegroup Dennis I noticed sometimes the AI decides to order a
- >retreat of a group of units, say a company or so, after I have hammered
- >it with ATGMs or tanks for a couple of turns. If it was a real
- >bloodbath I can see this but sometimes it seems like the AI is giving up
- >a little too easily

Since the AI does not cheat, it does not know that you are getting weak in an area. All it knows is that it is receiving effective fire. The units may be retreating or they may be pulling back to reorganize into a line - it is a largely random response as to which happens.

- >Is this [the AI] the same as it was before...

It [AI] is working the same as before. I have not changed anything in the AI - I am too afraid of breaking something that most folks have found to be acceptable.

- >You can only add one LCAC at a time (OPFOR or US). No matter what
- >number you put in the Unit Quantity window, only 1 at a time is added.

Correct program behavior. LCAC and landing craft markers can never be larger than one item. This was forced on me by the surprising complexity of coding the game engine to insure correct landing craft loading.

- > Is there a way to instruct a unit to ignore certain types of
- > targets?

Yes and no. You can tell a unit to concentrate on one specific type of enemy unit such as BMPs, T80s, etc but you can't do something like 'engage or ignore all APCs of all types' or 'engage or ignore all infantry units of all types'. You can also tell a unit to concentrate only on targets within a circle within X meters of a certain point on the map. You can also tell a unit to concentrate on a particular enemy unit marker.

- > it's also particularly annoying when a concealed, dug-
- > in ATGM unit exposes its position to fire on some piddling
- > BRDM scout
- > section - instead of waiting for the BMPs and T-80s.

In a different situation, the user might prefer that unit to fire on such a target. The default target selection for a unit is generally the closest, most threatening enemy unit. If the default is not what the player wants, then the targeting priority orders and the engagement range slider should be used.

- > Is there no adverse combat result short of destruction?

There is transient suppression. In TacOps, suppression wears off in a few minutes if a unit does not continue to receive accurate and effective incoming fire.

- > Case in point; a big chunk of one of my infantry companies
- > gets hit with a ton of OPFOR artillery - including a rocket
- > battalion strike. A couple of APCs get toasted, but the
- > rest of them charge forward willingly the moment the last
- > rocket explodes. Wouldn't we expect some of them to at
- > least mill around in confusion for a moment?

In the example above, the effective survivors would usually experience several minutes of transient suppression during which they don't move well, don't spot well, and don't fire well. The conceptually unwounded troopers who might choose to remove themselves from harm's way for the rest of the one or two hour long scenario are reflected by the arty casualty tables being a bit liberal.

- > Does TacOps model unit quality in any way?

TacOps models the best case for a given unit type and or weapon system.

- > Or is every Motor-Rifle Battalion exactly the same as every other?

They are the same.

- > I'm a little surprised that the concept of formation and
- > cohesion hasn't woven its way into a game as excellent as
- > TacOps. A player's units are treated as one big

- > conglomeration of markers, and you can mix 'n' match them
- > any way you like.

The game engine does not enforce a concept of unit command relationships. If it did, users would then expect a game mechanism to exist to allow them to change those relationships (cross attachment) during the game. In my opinion that would just add to the player's work load while producing the same result as the current abstraction. Detailing this concept would be a lot more important to me if I was doing an operational level game.

- > Relating to the above, I'm a little surprise that a player
- > cannot (yet) move units by formation.

That is a user convenience item that is on the wish list but I just have not gotten around to working on it.

- > On small battles like "Team Cahoon" I can't get the game to
- > fill the entire screen even at 640x480.

If you want a different screen resolution for a particular map, use the monitors/screen properties control panel in the Windows operating system before running TacOps. TacOps does not take over the user's operating system. Thus TacOps does not automatically expand or contract its map art to fit the user's screen size. I prefer to have the game accept what the user has previously chosen for his system screen resolution via the Windows monitors/screen properties control panel. I want TacOps to peacefully coexist with Windows background operations and I want the user to be able to easily switch TacOps into the background so that he can do other tasks on his computer without having to quit a game in progress. This system cooperative approach is very important for PBEM and CPX game play and for military training use.

- > How do you know where your units center point is ...

Visualize the center pixel of the unit marker. That is the map point that the game engine uses for almost all game abstractions dealing with unit position.

- > and what terrain it is occupying?

There are several ways to determine the exact terrain under a unit. Select the Line-of-sight tool and move it around the map while looking at the text info line at the bottom of the TacOps map. As the cursor moves, the type of terrain under the cursor is shown in the text info line. Select a unit marker or open its orders window. The type of terrain under the unit marker is shown in the text info line. Press the F9 key and move the cursor around the map. The type of terrain under the cursor is shown in the text info line. Press the F9 key again to return to getting the regular transient game play hints in the text info line.

- > I have never been in the military ...
- > Is there some acceptable level of attrition and beyond that
- > you simply call off the operation?

It depends on the importance of the objective.

>It is not uncommon for me to have 50% or
>greater attrition.

This is mainly due to TacOps needing to provide a satisfying recreational gaming experience. In order to be a 'game', the typical scenario needs to provide a tactical situation where both sides have a reasonable chance of winning. In real life a commander would usually try to avoid situations where there was only a 50/50 chance of prevailing or where huge casualties would likely result. Another thing to consider is that in real life a lot of the casualties shown in a one or two hour TacOps battle would not be permanently lost. Much damaged equipment would be recovered and repaired. Many slightly wounded, or dazed, or demoralized troops, etc., would recover and be returned to duty fairly rapidly.

TacOps Gazette 00.06

TacOps Tactics - Defense Strategy

By Don Hill and Major Holdridge.

This article summarizes a few key tactical principles for modern combat that translate well into better TacOps game play. Due to space limitations, only the most important defensive measures are discussed.

Stay focused on your mission and your enemy's mission. In TacOps, scenario victory conditions are always stated as missions. Any action that does not support mission accomplishment will usually support mission failure. There is usually more to a TacOps scenario than just charging directly toward the nearest enemy unit and slugging it out. Do not get drawn into firefights that do not contribute to mission accomplishment.

Analyze the terrain. Identify high speed avenues of approach - corridors where clear terrain or roads allow rapid movement to enemy units. Always cover these with observation and long range direct fire weapons and be prepared to move rapidly to block them with additional forces. Critical high speed avenues may need to be physically blocked by dismounted rifle units. Identify areas of rough terrain and try to channel the enemy into them by covering the easier routes with high accuracy long range weapons and or mines. An enemy armored unit moving slowly in rough terrain makes an easy target for artillery and air support. Rough terrain can often be initially defended just with observation posts, but be prepared to move in real fighting units as it becomes necessary. Compare the terrain against the enemy mission. You will often find that the enemy does not have the time or resources to use certain avenues of approach.

Analyze the general strengths and weaknesses of your units and those of your enemy. For example, if you are a Marine commander, you should recognize that Marine units have large footprints with more riflemen per unit and a good short to midrange anti-armor capability, but that they are often not very tactically mobile and are often weak in long range anti-armor weapons. Your worst problem may occur when OPFOR concentrates on one part of your defense since the rest of your force may not have the mobility to rapidly reinforce. If you are commanding an Army mechanized unit, you should recognize that you have very good mobility and a very good mid to long range anti-armor capability but that you may be weak in rifle level staying power. In this case, OPFOR's best threat may be to utilize multiple simultaneous avenues of approach either hoping to find a gap, or intending for one axis to be the main effort while the others pin or mislead you.

Analyze the strengths and weaknesses of specific weapons, especially those on vehicles that frequently face each other. For example, the U.S. Bradley has a TOW Anti-Tank Guided Missile (ATGM) that can kill armor out to 3750 meters. The OPFOR BMP has the AT5 ATGM which is slower than the TOW, but it hits at 4000 meters and beyond. If the BMP can engage the Bradley at ranges greater than 3750 meters it can kill the Bradley without risk of return fire. On the other hand, if the BMP engages the Bradley from 3000 to 3750 meters, the Bradley may have

time to spot the BMP and fire the faster TOW, killing the BMP before its missile reaches the Bradley. Look for team solutions to tactical problems. The enhanced ammo of the OPFOR T-80 tank can not penetrate the front of an M-1 tank at more than 3000 meters. BMPs cannot kill the M1 tank from the front or side except with very slow to reload enhanced ATGMs. If the Bradley is teamed with the M1, the Bradley can kill the T-80 tanks before they close to within 3000 meters, the Bradleys can then pull back a bit and they and the M1 tanks can wreak havoc on the BMPs. Look for the peculiarities and advantages.

Gain and maintain contact and prevent battlefield isolation. The attacker has the initiative and will often attempt to isolate the battlefield by maneuver by concentrating his main force against only one sector of the defense. The focal point of the attack becomes isolated from reinforcement when more distant defensive units are unable to maneuver towards the point of decision either through faulty intelligence (fog of war) or due to being pinned by minor enemy supporting attacks. Early and constant observation of the enemy forces are the keys to avoiding isolation. The defender must be able to observe the attacking forces early enough to both attrit them at long range and to assess their intended focal point so that the defense may be reinforced at that point. To do this the defender must not confine himself to the initial deployment limitations of the set up. Scouts and observation posts (OPs) should be pushed forward to cover all mission significant enemy avenues of approach. OPs should be redundant and they should be positioned to provide overlapping coverage of critical areas so that the loss of one OP to enemy action or its being masked by smoke or terrain does not create a large blind spot. OPs should generally not fire and reveal their position unless they are about to be overrun. Some defensive OPs should allow themselves to be bypassed so that they may continue to provide intelligence and to control long range artillery fires from behind the attackers.

Once the attacking forces are discovered, they usually should be engaged immediately. Generally it is best to first engage distant attackers with artillery and air support rather than direct fire to avoid prematurely revealing the trace of the positions of your short to medium range weapons. This is especially true if the attacker is deployed with much of his strength forward. Artillery can destroy anything on the battlefield, particularly with ICM, but artillery must have forward observers for maximum effect. The proper use of forward observers and artillery will go far in disrupting an enemy attack. If the enemy is leading with a small reconnaissance force, it may be more appropriate to engage the scouts with a few high accuracy, long range direct fire weapons so that you can immediately blind him and to prevent the reconnaissance elements from exposing your main positions. Try to take out such small advance forces with only a few concentrated volleys and then move any of your units that have fired to nearby alternate positions to await the main body. This is best done with forward deployed units, skirmishers, if you will, that briefly engage the lead enemy units and then retire using terrain and smoke to cover their withdrawal. This screening force must avoid becoming decisively engaged by the main enemy force.

The defender also has a means to isolate portions of the battlefield. The key to the concept is to concentrate units and to position them in a manner that allows them to momentarily engage a smaller piece of the enemy force. For example, as OPFOR units advance to contact, they will often be strung out in a column of variable density and length. The defender can place himself at an angle to or on the flank of this advance, using elevation differences, towns, and or

woods to initially screen himself from direct observation by the attacking units. As enemy units begin to pass through the screening terrain, the leading elements will become exposed. Since trailing enemy units will not yet be able to see the defenders, the defenders will be able to destroy the more forward attackers piecemeal without being subjected to return fire by the entire enemy force. If enemy reaction is sluggish and he continues to feed his troops into the kill zone after the initial ambush, this tactic can be continued from the same or nearby alternate firing positions. If the enemy reacts well and begins to deploy against your flanks, then immediately move to positions that will provide a similar terrain advantage against his flanking maneuver. This technique is known as terrain masking by angle.

The same tactic can be based on terrain masking by elevation. In this case, the opposing forces are on significantly different ground elevations. The opponents cannot see each other until the leading attacking units crest a hill. The defending force can then engage and destroy just the leading units, again without being exposed to return fire from the entire enemy force.

There are variations, such as using smoke to separate the leading attacking units from following units, but the concept remains the same.

Whenever possible the defense should be conducted as a mobile defense that withdraws through a series of temporary fighting positions to a final point of decision. Until the attacker is heavily attrited, the defender should avoid decisive engagement. The initial formula should generally be: observe, engage with artillery, engage briefly with long range direct fire weapons and withdraw those weapons, engage briefly with mid range weapons and withdraw those weapons. Repeat this until either the enemy has been reduced to a manageable size or there is nowhere left to withdraw to - this is the point of decision. Assuming surprise fire is still possible, the defender's first goal at this last position is to kill as many targets as possible in the first few volleys of direct fire. After that the only choice remaining is usually to maintain fire, maintain position, and ride out the attack.

TacOps Gazette 00.07

TacOps Tactics - Offensive Strategy

By Don Hill and Major Holdridge.

Mission accomplishment is the standard by which success or failure is judged. Focus your plan of attack primarily on the mission and secondarily on the enemy. Individual enemy units are only relevant to the degree that they can interfere with the accomplishment of your mission. Do not become so caught up in fighting that you forget your mission.

Once you understand the mission, the next step is to analyze friendly and enemy forces and their capabilities. If you are commanding OPFOR and your force is composed of T80s and BTRs, the T80s will be about the only effective weapon you have for engaging enemy vehicles at long range. In this case, you cannot afford to pause and slug it out with a mechanized defender. You must rely on speed, artillery support, and the mass of numbers to close with and overwhelm the enemy. If your force is composed of T80s and BMPs you will be able to engage in a more deliberate attack, perhaps even a multi stage approach, since your BMPs can engage enemy APCs and IFVs at long range, and can even kill the M1 tank if enhanced ATGMs are being used.

As the US commander you should note that the M1 can kill anything on the battlefield from any aspect at great range, and that it has superior armor to the OPFOR tanks. Without improved ATGMs, only the T80 can kill the M1 from the front or sides. This usually makes the M1 the best choice to lead any advance. If your force consists of M1s and Bradley IFVs the Bradleys should usually trail the M1s by 500 to 1000 meters. If your force consists of LAVs and M1s, the M1s should usually still lead but you will have to approach the enemy more carefully, taking maximum advantage of terrain masking. Only the M1s and a few LAV TOW vehicles will be able to kill T80 tanks and just about anything can kill an ordinary LAV25. The same applies with a force of AAV7s and M1s, but you must be even more careful in your attack. The AAV7s simply carry too many Infantrymen to be rashly exposed to enemy fire. If there is enough time, dismount the Javelins in the AAV7s to overwatch the advance, but never lead with these huge APCs.

When analyzing the enemy force you must consider his ability to maneuver and his fire capabilities. If the enemy force consists almost entirely of unmechanized infantry, then he will not be able to reinforce the point of attack rapidly. In this case, you may want to focus your attack on a rapid assault of one small area of the battlefield. Attacking unmechanized infantry on a wide frontage will usually only work to your disadvantage as it exposes you to a greater number of short range infantry weapons. If the defender is mobile, attack at multiple points but focus on one as the main effort and threaten the others with supporting or diversionary efforts. Supporting attacks will tend to keep the defender from being able to shift his troop line and from being able to concentrate artillery and air support at the point of decision. Be alert to exploit unexpected success on the part of a supporting attack. A supporting attack may find a gap in the defense or the enemy may recognize the main effort early on and choose to ignore the supporting

attacks. In such a case it is possible that a supporting attack will encounter so little opposition that it should immediately assume the role of the main effort.

Analysis of the enemy fire capability is important for choosing target selection. If the enemy forces consist of BTRs or BMPs without improved ATGMs, then only the T80 will be able to kill the M1. In this case, the T80 should be the US's priority target. Once all are eliminated, the M1 will be able to dominate the long and mid range battlefield. When fighting Marine forces, TOWs and M1s should be the priority targets due to their maneuverability, and long range lethality. All exposed infantry and ATGM teams are highly susceptible to casualties and suppression from artillery fire. Just a suppression result will greatly reduce infantry's movement speed, rate of fire, and accuracy. ATGM teams should always be a special priority for artillery.

When analyzing the terrain for offensive operations you should first consider the time available to accomplish your mission. Next identify all reasonable attack routes or avenues of approach that will meet your mission time limit. Mentally identify likely enemy unit defensive positions along each route and select the route that offers the best potential for coping with them. The obvious advantage of a high speed avenue of approach, such as a road or open terrain, is that it takes the attacker less time to close with the defender and thus the defender has less time to adjust artillery and to engage in direct fire. Fewer shots by the defender translates directly into fewer kills. Being able to speed through incoming artillery is especially advantages to the attacker. The primary considerations in deciding whether to attack using a high speed avenue of approach is the expected density of enemy long range weapons defending that route and how much of the route they command. High defender density combined with long range line of sight usually means disaster for a high speed attack. In such a case, you should look for a more covered route, take the time for an extended artillery bombardment, and in general make a more deliberate attack. However, if you have very little time allowed for your mission, then you must use the most direct attack route, regardless of consequences. In such a case, using your supporting artillery for widely roving general suppression may prove more beneficial than concentrating it for killing effect.

Using a low speed avenue of approach through rough terrain, woods, or a town also has its advantages. They generally offer long range concealment from enemy observation and best case, some units may avoid detection altogether. Even if you are spotted, such terrain often reduces the enemy's direct fire hit probability significantly. It is also likely that these approaches are less heavily defended than the high speed avenues. The disadvantages are that once attackers are spotted in rough terrain, their slower movement makes them easier to hit with artillery and allows the defender more time for direct fire. Also, the slower rate of advance will give the defender more time to shift reinforcements to directly face or flank your attack.

Both the attacker and defender struggle to control the pace and events of the battlefield. One way to achieve control is to isolate a portion of battlefield so that only a portion of the enemy's forces are able to participate in an engagement thus enabling you to overwhelm them with firepower. One way the attacker can isolate the battlefield is by maneuver. If the defending force consists mostly of unmechanized Infantry, then the attacker can use either surprise or superior mobility to focus his forces at one point faster than the enemy can reinforce .

Another way the attacker can isolate the battlefield is by using the terrain to restrict observation and exposure to direct fire. Attacking formations can take advantage of terrain elevation masking to advance in tighter formations while out of the line of sight of known enemy positions with a pause just before an elevation change to deploy into a more on line attack formation. As discussed in a previous article, terrain masking by elevation can work to the defender's advantage by suddenly exposing the attacking forces piecemeal to defending units at a different elevation. The attacker can reduce the effects of this by crossing elevation changes with his units more on line. When the attacker crosses elevation changes in this manner he is more likely to achieve fire superiority in an isolated enemy kill zone and to avoid piecemeal attrition.

As extended formations pass around woods or hills, leading elements may become exposed to fire while trailing units are still out of sight. For a moment, trailing units cannot support the leaders since their line of sight is still blocked by the nearby terrain feature. This is terrain masking by angle. The attacker can take similar advantage from terrain masking by angle as was discussed for masking by elevation. Crossing such terrain in mass or on line is just as helpful in reducing the effectiveness of masking by angle as it is against masking by elevation. If the attacker has enough time he can reduce the threat of terrain masking by moving through or over terrain that blocks line of sight in mass or on line. If the terrain feature is woods or town, the leading units should pause at the edge of the terrain feature and provide overwatch as trailing units move up to and perhaps pass through their position. Not only will the attacker have more forces to return fire, the units providing overwatch will be stationary and in cover thus increasing their chances to spot and hit and giving them added protection from fire.

TacOps Gazette 02.01

The following items went into the v4 release at the last minute and are not documented in the user guide.

Weirdest new feature in TacOps. Added a folder of 58 sounds (bugle calls, music bits, and misc odd sounds) that an umpire can cause to be played on remote computers in a multiplayer game by using the "Network/Send Sound" menu item. I have no explanation for this other than I just wanted to do it.

Fixed wing air sorties are now allowed to attack RPVs/UAVs - works similar to air strikes going after helicopters.

Added US EOD/UXO Team and Civilian EOD/UXO Team to unit data base. These units can disarm portable and transportable bombs. The unit is ordered to attempt to disarm a bomb by using a button in the unit orders window. Disarming will take from five to ten minutes and the player will not know the exact time that will be required. There is a slight chance that an EOD disarm attempt will detonate the bomb.

Some bridges can now be destroyed by artillery fire. AVLB bridges have a chance of destruction similar to that of artillery vs a stationary tank. Permanent bridges from MLC10 through MLC90 have a slight chance of destruction (2% or less per salvo). Bridges with an MLC greater than 90 can not be destroyed by artillery. All bridges can now be destroyed by an air strike. The chance of destruction is similar to that of an airstrike vs a stationary tank. Any bridge has a 95% chance of destruction if a portable bomb or a transportable bomb is detonated on the bridge. The center point of the bomb marker must be located inside the bridge marker.

>Can you just confirm that the CD contains both a Mac version
>and a Windows version of the game?
>I'm happy to buy 2 CD's if required.

You only need to buy one. The TacOps v4 CD is a hybrid CD that contains both a Windows version and a Macintosh version of the game package. We ask people to pick a version at the time of purchase just for market research - i.e. to determine if developing for the Macintosh is still justified.

>Can you advise how the artillery salvo button works in TacOps 4.

The new salvo button/control that is now in the Arty Support Window allows you to control how many salvos will be fired at a target. This feature was requested by the CPX crowd. If the button shows a "?" symbol then that mission will be fired until you tell it to stop or the unit runs out of ammo. This is the default setting whenever you mark a new target. If the buttons shows a number, then that is the number of salvos that will be fired.

>It was stated that some bridges can now be destroyed by artillery

>fire. Are we talking about AVLB or any bridge on the map?

AVLB bridges have a chance of destruction similar to that of artillery vs a stationary tank. Permanent bridges from MLC10 through MLC90 have a slight chance of destruction (2% or less per salvo). Bridges with an MLC greater than 90 can not be destroyed by artillery.

>How would you do that on a bridge that is on the map?

Bridge destruction is only possible for bridges that have been placed on a map as bridge "markers". Bridges that were permanently encoded into a map when it was built with the map utility can not be destroyed.

>What would you use to represent that the bridge is destroyed.

You could create and place an impassible obstacle marker.

>If Blue drops a bridge then only Blue will know it. Red should see an
>intact bridge until their Recon units are within sighting distance and can
>determine if the bridge is intact or not.

The game engine does not work that way. All of the bridge markers are held in game memory in a linked pointer list. When a bridge is destroyed its pointer and record is deleted from game memory. Therefore the bridge should disappear from the map. Any force color that had previously spotted that bridge marker is probably going to notice that the bridge is gone. Unless I did something different and forgot about it due to my fatigue induced, near zombie mental state of the last few months :). I wouldn't be surprised if details about the engineering items will need to be revisited in coming months.

>...Mi-26 Halo ... Jane's Book says that it can only carry 80 troops
>+ crew. So how did 142 people get on board that helicopter?

The "official" capacities for military helicopters as well as for vehicles are almost always an artificially low number that is based more on doctrine and or safety considerations than on what the platform could actually carry if the platform and the passengers were stressed. That is why TacOps almost always allows a nine or ten percent overload for helicopters and vehicles.

>Is the speed of tanks effected by an attached mine plow?

Not in TacOps. However, speed does drop dramatically when the vehicle actually begins to clear something.

>If I "replace" a plow for a roller or blade or another plow,
>the old attachment is "lost", it does NOT become "free" again,
>as it should! it seems necessary that one can detach a plow
>PLUS load it on a truck for transport...

I spend a fair amount of time restraining myself from doing things simply because they would be a "cool" detail. :) Transferring blades, plows, and rollers from one tank to another should not be relevant to the time frame of a typical TacOps battle which only lasts a few hours. It might be relevant to a multi-day military exercise. For the present, I choose to leave the support of that special case to the umpire. I don't want to do the pages and pages of code nor add the fields to every unit record that would be needed in order to enforce the real world time delay that should accompany allowing a player to realistically mount and dismount such attachments.

>Can both a plow and rollers be attached to a tank ?

No. In TacOps you can attach a blade OR a mine plow OR a mine roller to a tank. You can not attach a combination of these items. It may look like you can, but the game only actually recognizes the last item that you attach. Example: If you attach a mine plow and then you attach a mine roller, then the mine roller replaces the place of the mine plow - and vice versa.

>Question still unanswered: Is there any difference in the game for
>plow, roller and plow PLUS roller?

No, because the game only actually recognizes the last item that is attached.

>Why does adjusting fire have no effect at all?

A. Its a matter of scale. Accounting for one arty round is beneath the intended scale of TacOps. The arty combat tables are more abstract than that.

B. Gameyness/loop holes. If adjusting rounds had a significant effect then some players would split batteries into single tubes and spend the whole game firing "adjusting" rounds.

>I can see ... ongoing artillery missions out of my LOS, too. This
>surely is not intentional, is it?

Yes it is intentional. This is an artifact from the early days of TacOps when it took ten to twenty seconds to check all units of a given force to determine if any unit in that list had a line of sight to the impact area of an arty mission. That much delay was unacceptable then so I opted to just make all arty impacts visible as well as any secondary explosions. Computers are fast enough now that there is no technical reason why I could not change this but it was too much code and too much risk to do for the v4 release.

>I've long been curious about the human cost simulated by
>KIA/WIA/MIA in my games. It's not too difficult to
>multiply vehicles X number of crewmembers, etc., but it
>would be interesting to see the % casualties in these
>terms.

Most of the infantry casualties typically shown in TacOps would not be permanent losses in the real world. Many of the vehicle and equipment losses in TacOps would also not be permanent

losses. The casualties reported in TacOps represent units losing their combat effectiveness - for whatever reason - for the duration of the given scenario. Some of the TacOps casualties are certainly attributable to KIA/WIA/catastrophic destruction but probably not the majority.

James Dunnigan has a good chapter on attrition (casualties) in his book 'How To Make War'. Below are some paraphrased excerpts/bullets from Chapter 24. It should be noted that my copy of this book is dated 1982 so Mr. Dunnigan's comments must be taken as based on data that can no longer be described as 'contemporary'.

The types of casualties are combat, noncombat, and troops taken prisoner.

The forms of combat casualties are fatal, wounded, and mental.

Historical experience suggests there will be one fatality for every three wounded troops. About 80 percent of these injuries will be caused by fragments (i.e. not bullets).

During WWII, the U.S. Army had three combat fatigue cases for every two combat wounded troops. For every 100 men killed, 125 were discharged because of mental breakdown.

Historically all men who surrender are not captured alive by the enemy. Up to 50 percent of those surrendering do not survive the process. They are either killed on the spot or die in captivity. Troops in combat quickly learn this, which explains why surrenders are not more common. When they do occur, they tend to be in large numbers or by negotiation.

Once in combat, a soldier is effective for about 200 days of action. After that point if he hasn't become a physical casualty, he will be a psychological one.

Generally 60 percent of combat wounded who eventually recover return to duty within three months. 85 percent return within 6 months and over 95 percent within a year. Fifty percent of non combat casualties return within a month, 85 percent within three months and nearly all by six months.

At division level, one day of heavy combat or several days of light action usually results in 10 percent combat losses. [That is 10 percent of the division - the percentage is several orders of magnitude higher in the front line armor and infantry units.] At 30 percent most divisions show serious signs of disintegration. [Again that is 30 percent of the division - at that level 60% to 70% of the front line units may be gone or ineffective.] Combat beyond this point will practically wipe out a division's combat power. Once the 50 percent level is reached there is little left in the division except support troops and artillery. Continuing the fight past the 50 percent level quickly results in the complete destruction of the division.

Historical casualty rate for WWII, US infantry battalions [theater unspecified]. D = defending, A = attacking. Inactive (not in contact with the enemy): 2.6% per day. Meeting engagement: D4.9% to A7.5% per day. Attack of position (1st day): D6.1% to A11.5%. Attack fortifications (1st day): D9.8% to A18.7%.

Mr. Dunnigan speculated that future casualty rates could double or triple due to enhanced artillery ammunition and due to an expected general increases in infantry firepower (spread of personal grenade launchers, greater numbers of automatic weapons at lower levels, and greater linkage of infantry squads to the heavy weapons of AFVs).

TacOps Gazette 02.02

>Will there be a network CPX this weekend?

One of these days, I am going to start a crusade to liberate adults from weekday phobia. With some exceptions, we do not have Mom saying "Its a school night" anymore. :) What would be a good scientific sounding name for "fear or guilt about recreation on a weekday night"?

>Can the umpire in a multiplayer game give orders to units?

Yes. Give them PIN 0, and they then belong to the umpire. Actually, the umpire can give orders (that will be carried out) to any unit with any PIN (and arty and air support) so long as there is no player currently on the network who has that same PIN. If there is a player on the network with the same PIN then that player's orders will overwrite those of the umpire at the next orders exchange.

>This goes back to what I consider the most important lesson to
>come out of CPX San Splendido, the need for adequate time for
>planning. When I run "Return to San Splendido" in October, (to
>accommodate Ralf's vacation plans) I am planning on sending out
>the game materials two weeks before the game so that the players
>have time to meet, either via IRC or email and plan and sent the
>exported OOB file around to get the forces deployed. Time to plan
>makes game day much easier for everybody concerned.

It would be equally valid to have an exercise where no more than an hour was allowed for pregame coordination. Could call this a "FRAGO" style exercise. When the players first assemble online they have no choices with regard to the initial tactical disposition nor organization of their unit markers. They get a simple frag order and one hour to cross the line of departure. The only thing they get before game day is a warning order and a map graphic (for informational use only) showing their units plus known/estimated enemy positions.

>From an umpire's view, this is probably one of the most important
>things to come out of 4.0. It moves the burden of unit deployment
>and assignment of PINs from the Umpire to the players leaving the
>umpire more time to deal with the myriad of other details that crop
>up during a game.

Interesting interpretation and reasonably valid for recreational gaming but one of the first lessons to come out of the early Army testing at Fort Knox was just the opposite. Their request was to move as much pregame setup work as possible from the players to the umpire. The Army wanted minimal student exposure to game mechanics so that their focus would remain on tactics and communications. "Gamey" details were transferred to the umpire. The students are busy. They don't have time to do pregame setup activities. The umpire is generally the most skilled TacOps user. He can do setup activities faster and with less chance of error than the students. In

prolonged offensive operations in the real world, commanders seldom have the luxury of perfectly organizing their units for a set piece battle. More often their units are where they are because of earlier operations and events. They must continue operations based on where they are and not on where they wished they were. Repositioning and reorganizing units for the impending operations is part of the exercise but it is done during game play via orders and movement and not as a pregame setup activity.

>Is it planned or even now possible for the umpire to change the
> amount of ammo a vehicle has on board?

It is on the wish list but it has no priority.

>Does map size affect orders exchange time?

No.

>Can you advise why the chat utility within TacOps is seldom used in
>TacOps multi-player CPX's.

The chat feature in TacOps is far less capable than the numerous available IRC chat clients that have been designed specifically to support group chats with lots of bells and whistles.

>When combat is forced by the umpire computer, can you send a
>message "last orders" for like 2 or 5 seconds and afterwards change
>to combat mode?

Noted as a possible future option. I can not make this an "all the time" feature because many users (particularly the military users) do not want anything hard wired into the program that would slow the progress of a game session - not even by only a few seconds per turn. In general these users want faster game play than is currently possible and actually want fewer options because they don't want to have to do very much training with the users on game mechanics.

>In a multiplayer network game, after the combat phase is over,
>it takes a while for the menus to become available again.
>The unit markers, however, are available earlier.
>Is that correct?

Yes. The combat phase can finish on one computer in a network game much sooner than it finishes on another due to (a) a mix of newer vs older computers on the network and (b) the use by one or more players of the "click sound" instead of full battle sounds. It is important that the game engine not allow a player to start messing with his unit markers until the combat phase has finished on every computer on the network.

>Hmm, is it possible to change PINs if I am umpire/host in a two
>player network game?

The umpire can change PINs on the fly in a multiplayer game but not in a two player game. In a two player network game, the program needs Blue to always be PIN 1 and Red to always be PIN 2.

>So I will have to host a pseudo multiplayer game, import the OOB,
 >change the PINs to 2, export the OOB, host a two player game,
 >import the OOB... and the same for BLUE, too, of course.

You are on the right track here but using the import/export feature is inefficient for the goal of converting a multiplayer game to a two player game. It would be much faster to use the PIN setting items in the Network Menu list and you would not lose any current game information. Use the "Network/Change PIN Selected Units" menu item to assign PIN 1 to all Blue units. Use the "Network/Change PIN Selected Units" menu item to assign PIN 2 to all Red units. Do the same with "Network/Change PIN Off Map Artillery" . Do the same with "Network/Change PIN Air Support"

>I would appreciate having a depot unit where I can resupply
 >a limited amount of all kinds of ammo.

Select "Options/Enable Umpire Tools" (if necessary). Select "Orders/Do Blue, red, etc" (if necessary). Select "Options/Add One Unit". Select "+ Logistics Package" and add that marker to the map.

>Unit Status information is displayed in the bottom status window
 >for about five seconds and then clears. Is this correct?

That is correct when in Multiplayer Team Play mode. In that mode, many windows automatically close after 5 seconds of inactivity. This is done to prevent those windows from interfering with network data flow.

> it didn't seem possible to allow player to magic-move TRPs I gave
 >them, neither with or without the relevant umpire option (instantly
 >reposition) checked. I think I tried all combinations of getting
 >orders from the player and sending updates.

TRPs that are received at game startup as reinforcement type unit markers can not be magic moved once they are transformed from unit-like markers to actual TRP markers. The transformation takes place at the beginning of the first combat phase after this kind of TRP marker is placed on the map. TRPs that are created by buttons in the Artillery Support Window can never be magic moved. They can only be deleted.

>When I deactivated enemy OOB thereafter, nobody, including the
 >umpire, could ever see a OOB again.

The umpire and any observer/spectator can see all Order of Battle windows as well as the complete contents of the Game Status Report - at all times. If the "No enemy order of battle"

preference is check marked, all other players are only allowed to see the Order of Battle window for their force color and those parts of the Game Status Report for their force color.

>does random artillery ammunition resupply
>work in multiplayer?

No. Random additional airstrikes are also disabled in multiplayer team play mode. If additional arty ammo or airstrikes are desired in multiplayer team play mode then the umpire has to add them manually. The Army wanted it to work this way for their exercises.

>I assume that right now you do the orders exchange with all players
>(and observers) in strictly sequential order, that means one after
>another, ...

Correct. The umpire computer draws information from each remote computer in turn, merging that information into a new situation as each block is received. It then sends a situation update back out to each remote computer in turn.

>Today we ran a seven station LAN game.
>We had an average wait of about 3 minutes while data was passed.
>With more machines I presume it only gets longer, but not as long
> as during an Internet session!

You have a LAN problem! Orders exchange on a seven player LAN should take 30 or less seconds. The Fort Knox gents are doing 20 to 30 station LAN games and their orders exchanges take less than 60 seconds. Something is dragging your LAN speed way down - that is worse even than the exchange time for an Internet game. I assume that none of your players is dialing into the game via the Internet. My best guess is that you are using one or more computers with older networking cards in them and or an older LAN hub and or an older LAN router. Network cards, hubs, and routers used to have a speed of 10 MBS. Network cards, hubs, and routers made in the last couple of years work at a speed of 100 MBS. I suggest that you get your resident computer tech to examine every network card, hub, and router on your LAN and determine which components are obsolete.

>I only had one glitch when a body
>didn't understand the phrase "Do not touch your mouse or keyboard
>for the duration of orders being passed!" Even after causing the
>failure of the cycle, he was prone to attempting to keep "using"
>the mouse while idle! I can see I'm going to have fun with a
>bunch of over eager students!!

The v403 update is less sensitive to user interruption but it is still best that the remote players remain idle once they hear the alert sound and see the message to stand by for a situation update or to standby for orders exchange.

Miscellaneous CPX/network stuff ...

It is possible for a helicopter or a vehicle belonging to one player to pickup and transport a unit belonging to another player of the same force color. However this must be done very carefully or the game order of battle may be damaged. The player whose units are to be transported must not load, unload, split, join, or otherwise manipulate those units during the same orders phase in which the other player intends to load them. Doing so may cause the units to be duplicated or trashed in unpredictable ways. During an orders phase, when a helicopter or a vehicle belonging to one player instantly loads or unloads a unit belonging to another player, a hidden message is sent to the umpire and to all other players that causes this change to be instantly implemented on all computers. A marker that is loaded will instantly disappear on all computers. A unit that is unloaded will instantly appear on all computers.

TacOps is not designed to run as a server based program. Every computer in a net game must have a complete TacOps installation on it. Not only the game engine, but also every support file - OpenPlay modules, maps, scenarios, etc. Network problems, mysterious hangs, crashes, and loss of game sync will eventually occur if any TacOps file (game engine, map, scenario, OpenPlay modules, saved game file, etc) is shared across a server.

Users should avoid checking, sending, or receiving email during a TacOps network game session - particularly if there is any chance that an orders exchange or situation update is imminent. Users should not surf the Internet with a web browser during a TacOps game session - ever. The following programs are suspected of periodically interfering with a TacOps network on some computers if run at the same time as TacOps: Microsoft Outlook, Microsoft Word, Microsoft PowerPoint, Microsoft Explorer, and Microsoft Messenger. Some players have reported being disconnected from the TacOps network anytime that they send or receive email while using Microsoft Outlook.

Any program that is run at the same time as TacOps has the potential to interfere with the TacOps network, with orders exchanges, and with situation updates. The more activity that the user does with TacOps in the background, the more likely that a network problem, an orders exchange failure, or a situation update failure will occur. Reasons: Memory shortage. System resources shortages. Hanging the network while the user browses through menu lists and modal dialogs in the program other than TacOps. Many programs contain an option or preference that causes the program to automatically access the Internet to check for an updated version of itself on a company internet site anytime that the program is started. Many programs have a help feature that accesses the Internet for help information. Many programs do not cooperate well with other programs that are running at the same time - especially programs that access the Internet. A web browser that has reached a web site, even when running in the background, may be constantly generating network traffic and running Java applets due to changing popup ads on the web site.

TacOps Gazette 02.03

- > What are the chances of more types of munitions being added
- > with later patches? The specific one's I'm look for are
- > biological/chemical ... oh and nuclear

NBC weapons won't be added unless they are required by a military contract. In my opinion, NBC weapons are boring in a tactical or grand tactical level game.

- > What resources are out there for TacOps enthusiasts? I
- > google'd but mostly got MODs for FPS and such.

99% of the hits that you will get by searching on "TacOps" are for Infogrames' "Tactical Operations - Assault on Terror". That game was originally going to be released as "TacOps - Assault on Terror" but in the end Infogrames reasonably agreed to change to "Tactical Operations" and to refrain from using "TacOps" in any materials that they had control over. Unfortunately the TO-AOT fans/users went ahead and shortened the title to "TacOps" anyway. Realistically there isn't much that I can do about the wrongful usage by the AOT fans. I do check the net periodically in hopes of finding someone out there who is identifiable and who has enough money to make it worthwhile to sue them. Same with the warez/piracy sites.

The most useful links for "the real" TacOps are below.

The TacOps forum at Battlefront.com ...

<http://www.battlefront.com/cgi-bin/bbs/ultimatebb.cgi>

The TacOps mailing list ...

<http://lists.perilpoint.com/mailman/listinfo/tacops>

A new forum recently started by Maddog at www.warfarehq.com ...

<http://www.warfarehq.com/forums/forumdisplay.php?s=ea35f26a6635856a841a4269b4a39078&forumid=21>

- > How does the umpire download the orders? Is it one at a time
- > or is it simultaneously?

Orders exchange happens automatically once all players and the umpire have selected "Begin Combat" or when the umpire selects "Begin Combat with Options". The latter approach of the umpire forcing the start of the orders exchange and combat turn is normally what is done in CPXs.

- > does TacOps 4 allow two players against AI?

Not at present. Currently, multiplayer teams play requires an umpire to establish the game network and to admit players to the group game and it requires human players to run opposing forces. Technically, the umpire can also command units in play but that would not provide a fair fight since the umpire can always see all unit markers with no fog of war.

- > I'm confused. When the umpire forces the start of the orders
- > exchange, are the orders files queued and downloaded one
- > file at a time? Or are they downloaded all at once?

Don't think about this stuff, just run the game :). Most of what you are asking about happens transparently and automatically. It is way harder to explain than it is to do.

The general flow of a typical Multiplayer Teams network game turn is as follows - most of this stuff happens automatically after a menu item selection or one or two mouse clicks. A turn consists of a simultaneous orders phase followed by a simultaneous movement and combat phase. During the orders phase, each player gives orders to the units, off map arty elements, and or air support sorties that he controls. When a player has finished giving orders he selects the Combat/Begin Combat menu item. This causes his computer to automatically send a ready signal to the umpire computer. Once the umpire has received a ready signal from every player, the umpire computer will automatically begin to obtain orders from all players. Once all orders have been received, the umpire computer will automatically combine them into an orders/situation update and then transmit it back to all players. Once all players have received the orders/situation update, the movement and combat phase will automatically start on their computers and on the umpire computer. Movement and combat will then be displayed more or less simultaneously on all computers. Players can not issue new orders to their units until the movement and combat phase has finished on all player computers. When the movement and combat phase is completed on each computer, another ready signal is automatically sent to the umpire computer. Once the umpire computer senses that the movement and combat phase has been completed on all player computers, it will automatically authorize all players to begin a new orders phase by sending a signal to their computers that re-enables their menus. This cycle is then repeated for the duration of the exercise. The umpire has the option to alter this cycle somewhat. Instead of waiting for the players to signal that they are ready to proceed to the movement/combat phase, the umpire can use the Combat/Begin Combat w Options menu item to force the immediate start and display of a movement and combat phase on all computers – whether the players are ready or not. The umpire can also choose to use an orders phase timer that will automatically force the start of a movement and combat phase after the expiration of an interval specified by the umpire. "Forced start" plus an automatic time limit on the amount of time allowed to the players to give orders is the method most commonly used for both hobby and military game sessions. In this mode, the game runs on full automatic and the umpire is free to step away from his computer to do other tasks.

- > What is a tac file? What is a tprf file? How do you open said files?

Files that end in ".tac" are saved game files. They should never be opened except via the TacOps startup window. Opening them any other way may damage them.

Files that end in ".tprf" are temporary, user preference files. These files are used by the program to remember how the user preferred certain interface items to look and work in the last game session. These files are automatically loaded by the TacOps program each time that it is started and these files are saved each time that TacOps is closed. They should never be opened any other way. Doing so will likely damage them which may cause odd program startup behavior. If you ever encounter odd startup behavior you should trash all files that end in ".tprf".

There is more information in the User Guide on the various file types and file extensions that are connected with TacOps. See Page 2-12 through 2-14, section 2.2, TacOps Files in the TacOps User Guide.

- > I had a crash while playing TacOps. Now when I start TacOps
- > my user interface is in French!

Your TacOps user preferences file is corrupted. Look in your TacOps folder. Find and delete any file whose name starts with "zTacOps Prefs" and ends with ".tprf". This will force TacOps to create a new preference file the next time that it is run and that will banish the French language interface.

- > I am curious why you all are using "GM" as an abbreviation for
- > Germany / German when the standard practice in English publications
- > (both military and civilian) is "GE"?

While searching the Internet for the most appropriate 2 character code for Germany, I came across a current U.S. Government document titled "U.S. Federal Information Processing Standard No. 10" which contains lists of officially approved codes and abbreviations for U.S. government use. The document states that these codes **MUST** be used by U.S. defense agencies. So, if I should use "GM" in the U.S. Army version of TacOps, then I might as well use it in the civilian version also.

- > What is the difference between a "bomb, portable" and a "bomb,
- > transportable"

A portable bomb can be carried by a dismounted personnel marker. A transportable bomb can only be carried by a vehicle marker.

- > The "Info" button does not work on bomb markers.

You are not allowed to see some information if you do not own the bomb that you are trying to get information on. If you are the same force color as the bomb, you will be shown its detonation time and casualty radius. If you are not the same force color as the bomb then you will only be shown its casualty radius.

- > I just loaded an infantry unit onto a vehicle that was at least 2 Km
- > away from the vehicle. I repeated this several times with the

> same result.

I suspect that you had previously check marked the "Options/Enable Umpire Tools" menu item. When this menu item is check marked, dismounted units can be loaded without regard as to how far away they are from the loading vehicle.

- > In v3 in the reports menu list, there was a unit info option that would
- > allow a person to get info on spotted opposing units. I really miss this
- > feature in v4, especially in multiplayer games where time is critical.

There is an easier and faster way to get unit info in v4. If you have a two button mouse, right click on a unit marker and select "Info" from the popup menu list that will appear. If you are a fanatic Mac user who refuses to buy a two button mouse, then hold down the Control key while clicking on the enemy marker.

- >I thought that I saw a truck towed mine roller in the US equipment list.
- >Now I cannot find it anymore. Is it there or do I recall this
- >faulty?

That was probably a language translation error as I think it would be hard to find soldiers willing to "tow" a mine roller with a truck :). In TacOps v403, mine rollers and mine plows can only be mounted on tanks. There are some other tracked vehicles in TacOps that have organic blades but there are no wheeled vehicles with blades, plows, or mine rollers. There is a truck in TacOps v403 that carries the Volcano mine dispenser as well as a tracked vehicle and a helicopter.

- > When I wanted to resupply a unit I was surprised
- > to see that besides the "conceptual" resupply
- > it is now possible to also resupply from a "logistics package"
- > How can I put a "logistics packages" into a game?

Select the "Options/Add One Unit" menu item. When the window appears, double click on the line in the US/Allied list labeled "Logistics Package" then place the marker for this item on the map.

- > A logistics package (frequently referred to as a "logpac") is a
- > convoy of trucks providing supplies to companies.

In TacOps v403 a "Logistics Package" is a transportable marker that is created by a player (usually the umpire) by using the "Options/Add One Unit" menu item. The map marker for the Logistics Package can then be propositioned somewhere on the map or it can be loaded onto a truck and moved around the battle field. Thereafter, any unit that is adjacent to an unloaded Logistics Package marker can choose to draw resupply points from that marker instead of from the normal force wide pool of supply points.

- > Is it possible that you add a warning sign when you hit the abort
- > mission button for aircraft (say accidentally).

I think that solution would be worse than the problem. I would rather put up with an occasional error rather than to be required to close a thousand "are you sure" windows during the course of a game to allow for every detail that could lead to a mistake.

- > The blue units at 078018 don't have an ability to "dig in" even though
- > they are sitting on top of an entrenchment. They've been sitting there
- > for several turns. They were placed there with Umpire Tools.

Open the unit orders window for each unit, then click on the defilade/seek cover button. If a unit is on an entrenchment, this button will order it to enter the entrenchment in the following combat phase.

- > Artillery smoke clears faster than before.

No change from v3. Smoke from small mortars lasts 2 to 4 minutes with a chance of lasting a bit longer. Smoke from medium/large mortars lasts 3 to 4 minutes with a chance of lasting a bit longer. Smoke from artillery lasts 5 to 7 minutes with a chance of lasting a bit longer. Smoke from multiple rocket launchers lasts 5 to 7 minutes with a chance of lasting a bit longer. Dust from some artillery/MRL explosions lasts one or two minutes.

- > Does the AVLB drop its bridge over a water obstacle/minefield/river?
- > And if so, how do you tell it to do that?

The M60 AVLB deploys an MLC 60 bridge. The M1 Heavy Assault Bridge Vehicle deploys an MLC 70 bridge. There is also an OPFOR AVLB.

To deploy a vehicle launched bridge ... Open the orders window for an AVLB or a HAB. Then look in the "Orders" area on the top right side of the orders window. You should see a button labeled 'Deploy Bridge'. Click on that button. The cursor will change to a bridge sized, white square with a cross in the middle. Click the cursor on the map where you want the bridge to be deployed. If necessary the program will automatically add movement orders so as to drive the vehicle close enough to the target point for a legal deployment. Close the unit orders window and run several combat turns. The AVLB/HAB will move adjacent to the chosen point, it will then pause in place for two to three minutes to extend the bridge, and then a yellow bridge marker will appear on the map. When the yellow marker appears, the bridge is ready to use.

In TacOps, the newer M1 tank models can not use the MLC 60 bridge laid by an M60 AVLB. The newer M1s will need the MLC 70, M1 Heavy Assault Bridge.

Some wire/ditch/barricade obstacles can not be breached by a vehicle launched bridge. The methods by which a particular obstacle can be breached are specified by the umpire when he creates a wire/ditch/barricade obstacle via the Engineering menu items.

To recover a vehicle launched bridge ... Open the orders window for an AVLB or a HAB that was already deployed its bridge. Give movement orders to the AVLB/HAB to move adjacent to

its yellow bridge marker. Next look in the "Orders" area on the top right side of the orders window. You should see a button labeled 'Recover Bridge'. Click on that button. The cursor will change to a crosshair cursor. Click the cursor on the yellow bridge marker. Close the unit orders window and run several combat turns. The AVLB/HAB will move adjacent to the bridge, it will then pause in place for two to three minutes to recover the bridge, and then the yellow bridge marker will disappear from the map. When the yellow marker disappears, the bridge is back onboard the AVLB/HAB vehicle.

> How do I get a unit to breach a minefield?

Checkmark the "breaching speed" radio button in the unit SOP window and then give the unit movement orders that cross the minefield. This works for all units except the MICLIC. The MICLIC must be given a specific order to launch its line charge across a minefield. The MICLIC firing sequence uses a button in the unit orders window similar to the AVLB's deploy/recover bridge button and procedure.

>When splitting a group of vehicles they disgorge their contents.
 > Is there a way to keep passengers inside vehicles until
 >you unload them?

No.

>Have you considered including a BAT-M Soviet earth moving,
 >ditch filling obstacle breaching machine?

The BAT-M is 30 plus years old - I figured it was probably gone by now. v4 has the OPFOR IMR2 and IMR2M Obstacle Clearing Vehicles and the MTK2 Mine Clearing Vehicle.

> You have an OPFOR 10 man Engineer group - the only APC that will
 > carry this is an MTLB, is this correct, or should they also fit
 > into a BTR80/90?

The 10 man Engineer unit will fit in a BTR90 but not in a BTR80.

>Can you advise how the artillery salvo button works in TacOps 4.

The new salvo button/control that is now in the Arty Support Window allows you to control how many salvos will be fired at a target. This feature was requested by the CPX crowd. If the button shows a "?" symbol then that mission will be fired until you tell it to stop or the unit runs out of ammo. This is the default setting whenever you mark a new target. If the buttons shows a number, then that is the number of salvos that will be fired.

> Any suggestions on the optimal number of
 > participants for a bunch of newbies trying out multiplayer?

I suggest an umpire plus four to six players. This advice is based on the qualifier "for a bunch of newbies trying out multiplayer". In my opinion, a "newbie" umpire should start out with a very simple scenario with a modest number of units in play and with a minimum number of players. Multiplayer network mode is a very different beast from all other modes of TacOps play. It most definitely has non intuitive quirks.

> The packaging TacOps packaging is a bit dull.

Spending another 25 to 50 cents per copy to provide a color, photo box insert won't sell any more product in my case. A typical TacOps customer seldom uses or views his TacOps CD or its packaging after the first install since I don't use copy protection and I don't require the insertion of the CD with each game session. However, you are welcome to print a snazzy illustration to your liking using your own color printer, trim it, and insert it on the outside of the provided DVD box. :).

> I can only reach the engineering menu if I choose to
> give some color's orders (not only red and blue, but any).

That is correct program behavior. Most of the scenario editing features work that way. Selecting a particular "phasing" force color first is required so as to enable the program to deduce which force color is being worked on. Otherwise I would have to either throw up a window with every item selection asking "which color do you want to work with" or else wastefully provide eight menu items for each of these features - such as "Do Blue Engineering", "Do Red Engineering", etc.

> If I put a bridge onto my map under "blue orders", blue can
> see this bridge, even if I uncheck all colors there!
> Is that by design or a (minor) flaw? I didn't check this in multiplayer
> mode so far.

I would class it as a minor irritant that is caused by you working on a multiplayer teams scenario while in two-player-on-one-computer mode. If you are going to work on a multiplayer teams scenario then always do so while in host mode and in multiplayer teams mode. Let me say that again for emphasis ... If you are going to edit a scenario for use in a multiplayer teams game then always do the editing while in host mode and while in multiplayer teams mode. There is a similar issue when editing a scenario intended for use in a two player network game. In that case you must remember to always assign PIN 1 to the Blue player and PIN 2 to the Red player.

TacOps Gazette 02.04

Hmmm ... I seem to have left the portable and transportable bombs out of the user guide. Portable and transportable bombs can be added to a scenario by use of the "Options/Add One" unit menu item. The power of the bomb is defined by the user (normally an umpire) when it is created. A portable bomb can be carried by dismounted personnel and by vehicles. A transportable bomb can only be carried by a vehicle. Bombs are activated by the owning player opening an orders window for the bomb and setting a detonation time. If an umpire opens an orders window for a bomb, the umpire may also specify or change the casualty radius of the bomb.

Bombs have the following attributes ...

- A. Bombs do not spot. An exposed bomb marker will be revealed if/while any enemy unit is within 50 meters. A bomb that is being carried by a person or in a vehicle will not be revealed while it is being carried.
- B. On map units will not engage enemy bomb markers with direct fire. Bombs may be coincidentally disabled or destroyed by indirect fire. An umpire can remove a bomb by using the "Options/Delete Units" menu item or the "Options/Kill Units" menu item. A US EOD/UXO Team or a Civilian EOD/UXO Team can disarm portable and transportable bombs. The unit is ordered to attempt to disarm a bomb by using a button in its unit orders window. There is a slight chance that an EOD unit disarm attempt will detonate the bomb. Disarming will take from five to ten minutes and the player will not know the exact time that will be required.
- C. The power of a bomb marker is defined by its casualty radius. The casualty radius is defined at the instant of the bomb's addition to the game. An umpire may also change the casualty radius of a bomb at any time. A bomb should not be given a casualty radius larger than 100 to 200 meters unless it is equivalent to a nuclear device. The special bomb markers are not really intended to represent nuclear devices but the following casualty radii are suggested if the user wants a gross approximation of the blast effects of a nuclear device: .5 kiloton - 600 meters, 1 kiloton - 700 meters, 2 kiloton - 900 meters, 5 kiloton - 1000 meters, 10 kiloton - 1100 meters. Note that crater effect, blow down, fire, and radiation will not be represented when the bomb detonates.
- D. Armored vehicles located within the first 12.5% of a bomb's casualty radius will be automatically destroyed. The risk to armored vehicles then declines linearly to zero at 50% of the bomb's casualty radius.
- E. Dismounted personnel in entrenchments within the first 12.5% of a bomb's casualty radius will be automatically destroyed. The risk to dismounted personnel in entrenchments then declines linearly to zero at 50% of the bomb's casualty radius.

- F. Unarmored vehicles located within the first 25% of a bomb's casualty radius will be automatically destroyed. The risk to unarmored vehicles then declines linearly to zero at the bomb's maximum casualty radius.
- G. Dismounted exposed personnel within the first 50% of a bomb's casualty radius will be automatically destroyed. The risk to exposed dismounted personnel then declines linearly to zero at the bomb's maximum casualty radius.
- H. All surviving units located anywhere within the bomb's casualty radius will be suppressed.
- I. Any bridge has a 95% chance of destruction if a portable bomb or a transportable bomb is detonated on the bridge. The center point of the bomb marker must be located inside the bridge marker.

Battlefront.com has dedicated forums now for people who are looking for a pickup game. The feature is called the Opponent Finder Forums and there is a separate forum page for English, French, Finnish, or German speakers. Go to your appropriate forum and post a "New Topic" note with a subject line that includes the name of the game that you want to play. Coordinating info goes in the body of the note. When you enter one of these forums, the notes are displayed in "reverse order" so that the most recent notes are listed at the top of the page. To the right of each note there is a box that shows the date and time that the note was posted.

All

<http://www.battlefront.com/cgi-bin/bbs/ultimatebb.cgi>

English speakers

<http://www.battlefront.com/cgi-bin/bbs/ultimatebb.cgi?ubb=forum;f=24>

French speakers

<http://www.battlefront.com/cgi-bin/bbs/ultimatebb.cgi?ubb=forum;f=25>

Finnish speakers

<http://www.battlefront.com/cgi-bin/bbs/ultimatebb.cgi?ubb=forum;f=26>

German speakers

<http://www.battlefront.com/cgi-bin/bbs/ultimatebb.cgi?ubb=forum;f=27>

> Is the Stryker in v4?

The "Interim Armored Vehicle" family is represented in TacOps by vehicles that have "XIAV" in their name. Select the "Options/Add One Unit" menu item. Look for the following vehicles in the US list. US APC, Ambulance XIAV, US APC, XIAV C2/TOC, US APC, XIAV Engineer, US APC, XIAV ICV AGL, US APC, XIAV ICV HMG, US ATGMV, XIAV TOW, US FSV, XIAV FSV, US Gun, XIAV Mobile Gun System, US Howitzer, SP 155mm XIAV, US Mortar, Carrier 120mm XIAV, US RECV, XIAV NBC Recce, US RECV, XIAV Recce AGL, US RECV, XIAV Recce HMG, US RV, Recovery Vehicle XIAV MRV.

- > And you just know that some of your military clients are
- > going to ask for a videocam view from these simulated UAVs.
- > Then again, they can afford to pay for the code.

One of the problems that I have in getting more military work is that I will only agree to work on a prioritized list of changes and additions that I know that I can deliver in a reasonable period of time.

- > We want to stock your products in [country name deleted].
- > It would be nice to have a [country name deleted]
- > distributor.
- > ...having difficulties convincing them this is a good idea.

My past experience is that distributors and publishers/developers usually have very different views on what "a good idea" is as well as on what is "a good deal". The first thing that always pops into my mind when I read the word "distributor" is the phrase "roast in hell". :)

>So I take it you don't really like distributors then ...

Roger that. You can also add traditional publishers and retail chain stores to the list. There is a reason why I am with Battlefront. The folks at Battlefront are honest and fair - as ordinary people would define those words rather than according to the slippery ethics exhibited by so many others in the game business.

- > regarding a class I'll be conducting in Feb on Combat
- > Service Support operations at battalion/squadron level. I
- > was going to use a sand table to show how the trains would
- > be echeloned & how the echelons would interact. Then I
- > realized that I can probably use TACOPS 4 to show this
- > since it's got all the medics, recovery vehicles, etc.
- > ...can I run a Blue only scenario?

Yes. In the "normal" scenarios you can use the umpire tools to delete any Red marker once it appears on the map. Or you can start with "Custom Scenario US Army.sce" (or its USMC or Canadian equivalent), pick any map, and add just Blue units via the "Options/Add One Unit" menu item or the "Options/Add Optional Units menu item".

- > Also, can I edit a vehicles weapons? Our trucks mount M2
- > .50 cal's, not just the crew's M16s.

You can not edit weapons. However, I was working on an update anyway so I added the following vehicles to v404AA for you - Truck M977 + HMG, Truck 939 + HMG, Truck M923 + HMG, Truck M35A2, and Truck M35A2 + HMG. You owe me a unit coffee cup. :)

- > I noticed that amphibious operations can be done. What kind
- > of amphibious craft are available in TacOps? LCACs?
- > Amphibious support ships?

Maps can have water terrain. The unit data base includes many swimming vehicles, rubber boats, and four sizes of landing craft - small, medium, large, and LCAC. There are no amphibious support ships other than the landing craft.

- > I recently purchased TacOps because of interest in the
- > Army's new medium brigades. Unfortunately for me, the
- > scenario downloads from team trackless claim to be
- > incompatible with v4. Have I made some silly error?

Assuming you are using Windows. The Team Trackless file that ends in ".sce" is an actual scenario/custom template file and it still works with v4. However it must be named "Team Trackless 001.sce". The "Team Trackless 001.sce" file has floated around a lot over the years and some people changed the file name not realizing that would create problems in the future. If you are talking about files that end in ".tac" then those are saved game files. If those files were saved by TacOps v3 then v4 can not load them. "Team Trackless 001.sce" uses LAV 25s armed with 25mm auto cannons in the optional unit OOBs because it was created for v3 before the Stryker family of vehicles was added to v4. Thus the units in Team Trackless have much more firepower than what was actually implemented with the Stryker family. In other words, the Team Trackless scenario is largely obsolete. If I had remembered that detail I would not have included it on the v4 CD.

- > I use WindowBlinds (actually the entire object desktop suite
- > StarDock Systems) for customizing and increasing my
- > productivity. Unfortunately, when running TacOps with
- > WindowBlinds the game speed slows to a _crawl_, with each
- > 15 second tick taking about 15 REAL seconds. Disable
- > WindowBlinds, and it works fine. It's the most annoying
- > thing, especially as MS uses Stardock technology to handle
- > the skinning process. Any idea what could be causing this?

Windowblinds may be trying to change the size, color, and look of the TacOps windows, dialogs, and buttons a zillion times per second and if so TacOps is telling Windowblinds to go to hell with equal ferocity. Your CPU is probably being drug down by the battle. Or Windowblinds could be looking for some standard, slow, white flashing, Windows screen update and redraw routine that isn't in TacOps. I spent quite a bit of the last two years getting the TacOps code to effectively hide its windows, buttons, and controls from damaging mods/interference from the Windows OS and third party hackers. A lot of TacOps windows are overloaded with small buttons and controls - many of them located very close together. And all designed so that they are easy to find and use with minimal chance of missclicks while still enabling the dialogs to be as small as possible so as to obstruct as little of the map as possible. The text labels, button colors, etc are standardized for maximum clarity. (Well actually they would be clearer if they could be black on white but users will not accept that kind of display anymore. The whole thing would fall apart if a user could change the size, shape, and color of all these details.

- > keep in mind that the civilian version of
- > civilian TacOps will only handle 20 participants

Internet play is much slower than LAN play. Having 20 players/spectators in an Internet game is likely to produce very long times for sit updates and orders exchange, especially if some of the players are using 56K dial up connections.

> I WANT ADD ON MAPS!

Look in the "TacOps Extras" folder in the TacOps4 folder on your hard drive or on your TacOps4 CD. Inside you will find the "More Maps" folder which contains 50+ additional maps.

> Does Tacops 4 allow two players against AI?

Two players can play each other via LAN or Internet without needing an umpire. More than two players (multiplayer teams play) requires an umpire to establish the game network and to admit players to the group game and it requires human players to run opposing forces. Technically, the umpire can also command units in play but that would not provide a fair fight since the umpire can always see all unit markers with no fog of war.

> What is a tprf file?

> What is a tac file?

Files that end in ".tprf" are temporary, user preference files. These files are used by the program to remember how the user preferred certain interface items to look and work in the last game session. These files are automatically loaded by the TacOps program each time that it is started and these files are saved each time that TacOps is closed. They should never be opened any other way. Doing so will likely damage them which may cause odd program startup behavior. If you ever encounter odd startup behavior you should trash all files that end in ".tprf". Files that end in ".tac" are saved game files. They should never be opened except via the TacOps startup window. Opening them any other way may damage them. There is more information in the User Guide on the various file types and file extensions that are connected with TacOps. See Page 2-12 through 2-14, section 2.2, TacOps Files in the TacOps User Guide.

> Major H has more or less hinted that Map001/015 and similar

> were made for monitors that could display only limited

> colors

The original map patterns were developed when 256 colors were a big deal and many people were still limited to 16 colors. In the 16 color days, one did shades of color by developing a pattern that varied primary colors in adjacent pixels so as to fool the eye into seeing shades other than the basic 16. In my opinion, information communication is more important in a map than color and detail. If a map maker can use more color and more detail without decreasing the information provided to the user then fine. However, if more color and more detail actually makes it harder for the user to rapidly recognize terrain type then I think the map maker is off target.

> Blade teams, currently Blade assets (M-9 ACE for example)

- > cannot be teamed up. Our TTP's normally call for using
- > two ACEs or Dozers in a team. They normally finish a job
- > in roughly 40% of the time required by a single blade
- > working alone.

That feature is already in TacOps. An ACE unit marker (as well as the unit markers for other obstacle clearing vehicles) can only represent one vehicle per marker but if two ACE markers are directed to work on an obstacle then the game engine will notice and reward the team effort. Similarly, team assistance by dismounted engineers is also noticed and rewarded. The game engine also enforces a ceiling on the reward for team work under the principle that at some point adding too many people and or too much equipment becomes counterproductive. The teamwork ceiling is specified when the game umpire creates the obstacle marker.

- > I can connect to others that are hosting, but am unable to
- > host myself. Very frustrating. Any further help would be
- > much appreciated.

The IP address that is shown in the TacOps host network logon window is the IP address of your computer - which will be different from your router/modem IP address. The IP address that is shown in the TacOps host's network logon window is usually only valid for LAN play. For hosting an Internet game you need to discover the IP address that is your actual gateway onto the Internet and give that address to the people who you want to join your game session.

Before running TacOps, run your web browser and enter the following URL ...

<http://www.ipchicken.com>

You should immediately see a web page which shows your actual Internet gateway IP address. That is the IP address that you should give to people to join your hosted game session.

- > Was the theme playing during installation the old horse cavalry song
- > "Gerry Owen"?

Yes - as played and recorded by the Army band at Fort Knox.

- > The start-up theme continues your old practice. Is there any
- > way to choose Gerry Owen as the start-up theme?

1. Open your TacOps folder.
2. Open the folder named "zSounds".
3. Delete or rename the file named "zFanfareB.wav".
4. Make a copy of the file named "Band - Garryowen.wav" and rename the copy to be "zFanfareB.wav"

Garryowen will now play when TacOps starts up - unless you have used the Preferences window to disable the splash screen. You can change the end game music to something else by following the same procedure for "zFanfareC.wav".

- > Could a digger/dozer unit be given a command button
- > [create entrenchment]?

That may be explored in a 2003 military contract.

- > How long does it take in real life to dig a position
- > which gives the level of protection as abstracted in
- > a TacOps entrenchment

12 to 24 hours or more, assuming plenty of mechanical help and construction supplies - and no enemy fire. The current generic entrenchment marker in TacOps represents a 100 meter by 100 meter area that is moderately fortified with a combination of open connecting trenches, infantry fighting positions with moderate overhead cover, and ramped vehicle pits without overhead cover. I would be glad to have the data if someone would like to translate 100 meters by 100 meters into meters of connecting trench, number of dismounted fighting positions, and number of vehicle pits for a platoon or platoon (-) defensive position - and then translate that into man/blade hours. :)

- > Ouch! That's a lot longer than I was expecting.

I invite anyone to try the following experiment. Find shovel and pick. Go into backyard. Note the time. Dig a hole five feet deep, five feet wide, and four or five feet front to back. Add grenade sump. Find steel pickets or find and hack timber to size and use it to build a frame to support overhead cover. Fill bags with dirt from hole sufficient to stack bags two high on top of and around the overhead cover frame. Move all remaining dirt far enough away from the hole so that it can not be seen from the enemy side of the hole. Camouflage the area around the hole to include breaking up the outline of the overhead cover. Note the time. Take a brief break, congratulate yourself, and then start work on a communication trench.

TacOps Gazette 04.01

> This [suggestion] shouldn't be difficult to do.

Nothing seems difficult to you gents. :) I on the other hand have to work within the framework of the existing body of code which consists of 383,000 lines for TacOps v4 , 408,000 lines for TacOps v5, and 204,000 lines for the current map tool.

> Why do so many small units, even trucks, have RPGs and LAWs?

In contemporary combat one can not reasonably predict who on the battlefield might have a low tech or disposable antiarmor weapon. Many wargames treat ordinary dismounted infantry as merely speed bumps vs armor which is very untrue in real life. I found that giving at least one disposable RPG/LAAW to almost every unit type (even trucks) in the game handled this issue very simply.

> I was wondering how you decided

> to load some of the infantry teams as you did.

The ammo load for small arms and crew served weapons is abstracted to be slightly heavy. I took the normal combat load that each person carries for his weapon and I then added more for the extra ammo that is typically a shared load spread across a squad and or that is normally located fairly close to units in contact. For example, a machine gunner does not usually hump more than one belt or drum for his weapon. If he did then he could not have his weapon at the ready for instant employment. The rest of the machine gun ammo is a shared load of the team or squad. Ammo for the M203s is handled similarly. A dismounted unit located anywhere near an APC would have access to even more ammo. More ammo would also be floating around in the hands of numerous two to four man teams of ammo bearers (that are not represented in TacOps) that would usually be constantly moving ammo up to units in contact. The later item plus prestaged ammo is also the basis of the instant resupply abstraction.

By simply overloading dismounted units I saved several bytes of memory use for every unit in play, avoided thousands of calculations per minute of game play, avoided inflicting more trivial detail work and mouse clicks on the player, and avoided thousands of lines of complicated logistics tracking code that would have in the end produced almost exactly the same game play results as the simple overloading solution.

> I am also curious about some of the soft vehicles, like

> trucks, carrying a couple of AT-4's.

Supply trucks move around a lot without escort. In a general war situation drivers tend to accumulate personal stashes of small arms ammo including grenades and disposable rocket launchers.

> Doesn't this entice players to go tank-hunting with a

> deuce-and-a-half?

That would be an unrealistic/gamey employment of trucks but I don't see a reasonable way to prevent it.

> Will we be seeing any new units such as terrorists, suicide
> bombers, etc?

They have been in the TacOps4 unit data base since 2002. Portable and transportable bombs and a variety of "civilian" and irregular forces unit markers were added to v4 as part of the U.S. Army contract for TacOpsCav. They are already included in the retail v4.

> I tried to add bombs [portable bomb and transportable bomb]
> to a scenario tonight, but they kept blowing up on the first
> turn, even though I had the time values set for greater lengths.

The numbers that you enter into the bomb timer are not "lengths" they are the hour and minute parts of a clock time. In other words, you enter numbers that indicate at what clock time the bomb is to go off. Example ... say the current time in the game is 0800 and you want the bomb to go off in 15 minutes, which will be a game clock time of 0815. Then you would enter 08 and 15 in the bomb timer window.

> Do you plan to implement CAP type air patrols?

I have no plans to implement fixed wing aircraft vs fixed wing aircraft combat in TacOps. If an incoming air strike had not been intercepted well before it reached the air space over a typical TacOps sized map then it would probably be too late to do so anyway. If you want to simulate that one side has air superiority then just don't give any air strikes to the other side.

> I would like to be able to have a flight loiter a bit above the
> battlefield.

Ground attack aircraft do not loiter over a tactical battlefield unless there is absolutely no SAM or AAA threat. They usually loiter several minutes away from the tactical battlefield. A jet aircraft can cover a lot of ground in one or two minutes.

> I would like to be able to mass set firing ranges for
> all units or all units of a particular type (e.g. the ability to set all my
> M1A1's to 2000 meters in one button click). Copying and pasting
> ranges would be nice too.

Select a group of unit markers by dragging out a selection rectangle and or by "shift + click" on each desired marker. Then select the "Orders/Set Engagement Range" menu item. Enter the desired range and close the window. The range setting will be applied to only the selected markers.

- > Being able to mass set SOPs by unit type would be
- > nice also.

Adroit use of the Copy SOP feature, the Paste SOP feature, plus the group marker selection features will accomplish just about the same thing.

- > How are the logistics packs counted towards the load
- > capacity of a vehicle?

If I explained it accurately, you would just say "What?". :) Log packs are highly abstract and so are the program routines that handle them. The program enforces an unscientific, fuzzy logic limit (TRANSLATION - a 2:00 am Jim Beam inspiration) whose main purpose is to prevent blowing some program cargo routines that were not originally intended to be used for this task. Basically, larger vehicles can carry more log packs than smaller ones. Other than that you will just have to experiment.

- > If a unit is spotted by a helicopter or UAV, or I guess any
- > friendly unit, does that raise the chance that it will be spotted
- > by all other friendly units as well?

Yes. An enemy unit that is spotted by one friendly unit is spotted by all friendly units of the same color. However, that does not mean that every friendly unit that is capable of shooting at that enemy unit will choose to do so. Spotting is very transient and is linked as much to target activity as it is to visibility and line of sight (assuming a clear line of sight). In other words spotting can often be lost if a target unit stops moving and shooting. That is why firefights sometimes seem to fade away even though all the participating units are in the same stationary positions and then ramp up again when somebody moves.

- >If I have a counter with 4 tanks, that counter makes one
- > spotting check for all four tanks, correct?

Yes and no. There is a gross spotting check that only happens once per friendly marker per 15 second pulse. This check has no random factors so there is no reason to repeat it for each strength point in the marker. If the gross spotting check reveals an enemy unit then there is a targeting or acquisition check that is done by each strength point in the marker.

- >And if one tank fires at a target, that counts towards raising
- > the chance of a hit for the remaining 3 tanks in the counter,
- > correct?

Yes but not until the next 15 second pulse.

- >Can TacOps handle 1000 units each BLUE and RED?

Yes. Games have been played with 1000 to 2000 markers in play. There is no hard coded limit on the number of unit markers that can be in play. However, at some point an extreme number of unit markers would exhaust memory or could be expected to cause game variables to malfunction.

- > I have four colors with together some more than 10,000 units.
- > In order to speed up network traffic I tried to delete about
- > 1300 of them in one step. Since then my TacOps hangs
- > (5 minutes or so). Is this explainable?

The program was probably not hung or crashed - it was probably just still processing the deletions. It takes a bit of time to delete a unit. The memory occupied by that unit record must be released (trivial) and the record for every other unit in play must be checked (not trivial) to see if it knows something about the deleted unit, has some sort of relationship to that unit, or has a pending order that involves that unit. Do that for an exaggerated number of units (such as 1300) via a group selection and the time becomes significant. I just did an experiment on a Mac G4 tower. It took 2 minutes and 17 seconds to delete 1300 group selected unit markers. It took 3 minutes and 15 seconds to delete 2000.

- > I am looking to change my PC for Apple Mac and wonder if my
- > TacOps4 CD is compatible.

Both versions of TacOps are on your CD. The TacOps4 CD has always been a hybrid CD that contains both a Windows and a Macintosh version of the TacOps game package. If you place the CD in a Windows computer you will be shown only the Windows version (actually a Windows installer package). If you place the CD in a Macintosh computer then you will be shown only the Macintosh package. However, TacOps4 is not compatible with the Macintosh OSX operating system. You must run TacOps4 on the Macintosh in OS9 native mode or in OS9 Classic mode (which used to be part of OSX but may not be anymore). It is possible that the new Macs that are currently on sale do not offer OS9 or OS9 Classic modes anymore. The Military reference library has no conflict with Mac OSX since it only contains Adobe Reader PDF files.

- > I would like to have floating palettes that are always present for
- > common user interface functions.

I prefer to devote every bit of screen possible to unobstructed map display. That means no decorative borders, no borders filled with short cut buttons, and no permanent floating palettes. Floating palettes obstruct the player's view of the map and the unit markers on it. They complicate the ability of the program to track what it is that the user is really doing at the instant which is very important in order to not present choices to the user that are confusing or inappropriate for the current program state. They complicate and slow the program interface and network event sensing and response processes. I can't afford much complexity or sluggishness in event sensing and processing when there could potentially be 30 to 50 work stations in a military multiplayer game session.

> Why are there letters in the TacOps version number?

The traditional version number convention of "x.y.z" doesn't lend itself to the way that I simultaneously maintain and enhance the retail and the several military versions of TacOps, especially when I am testing one of the versions. So several years ago I began using two additional characters in the TacOps version string. Instead of frequently incrementing the "x.y.z" part of the version string, I usually just increment the two characters at the end. AA leads to AB which leads to AC, etc. Once the second character gets to Z then I increment the first character and start over with A in the second character. AZ leads to BA, etc.

> Why do I have to change to 256 colors to get some user made
> maps to open in TacOps?

If the total size of a map (width in pixels x height in pixels) is greater than 8,355,839 pixels then the map can not usually be loaded on obsolete versions of Windows if monitor colors are set at greater than 256 colors. The exact Windows call that is failing at higher color settings is CreateCompatibleBitmap(...). This is due to a bug in the Windows OS that was not fixed until Windows XP. If you want to avoid this issue, move to Windows XP.

> I don't think either of us are zipping our PBEM orders, though I'm
> not certain what Apple's Mail program does with multiple
> attachments. I simply drop the two orders files on a new message
> and send them.

If PBEM orders files are not zipped then you have no protection from Internet mysteries corrupting the orders file. It seldom happens but when it does the game goes awry. However, usually when this happens the result is far more noticeable than what you encountered. Unzipped orders files can also be corrupted by various "helpful" things that some email programs try to do to attachments based on preference settings. Even zipped orders files can be damaged, especially on Macs, if the email program has a preference setting to automatically unzip and or open a zipped attachment and or if the associated unzip/unstuff program has its preferences set to something like "convert text to Mac format".

> Why are there no cargo trailers in TacOps. I
> know that they don't shoot but they would add realism to OOB's.

The number of trailers in an Army battalion is staggering. I don't see much advantage to adding so many markers and so much new work for the player when the capacity that they provide can be abstracted simply by allowing cargo vehicles to be somewhat overloaded.

TacOps Gazette 04.02

> What is planned for TacOps?

Maintenance, customer support, and new features. I can not predict when there will be a retail release of TacOps5. Probably not earlier than late 2004 and I can not promise that.

> Are future updates free, or do we pay for major upgrades

> like if TacOps 4 goes to TacOps 5.

Minor version changes (second and third digits in the version number) have been provided for free for the last ten years via frequent patches. Major version changes (the first digit in the version number) have required and will require a new purchase. Major version changes so far have occurred at roughly two year intervals. I can't provide free stuff forever nor special upgrade pricing for a game that sells for only \$25 plus S&H. TacOps is the only thing that I do and I have bills to pay.

> When was the ORIGINAL release of TacOps?

TacOps v0.0 for Macintosh was released by Arsenal Publishing in early 1994 (January, I think). TacOps v1.x for Windows was released by Arsenal Publishing in early 1996 (March, I think). So we are now past the tenth anniversary of TacOps.

> ... did the features included in the [early] game ALL work?

TacOps was often complimented in the early days for being stable and bug free. However I have probably fixed a 1000 or more bugs since 1994 (most of them in testing rather than in released versions) but I have had my share of post release embarrassments.

> Is TacOps primarily designed to portray Bn level, or will Company and

> Platoon level work out fine?

TacOps scale and design intent can best be described as "Grand tactical". A map marker can contain one to fifteen vehicles or can contain one to fifteen dismounted units where a unit usually represents a team or squad. One pixel on the screen represents 10 meters. The largest possible TacOps maps is roughly 31 km x 31 km. My design goal for TacOps was for the combat and movement results to be reasonably realistic at the Company and Platoon marker level when such results are averaged over several turns or several scale minutes.

> Is European equipment portrayed? German, British and French?

There are Canadian, Australian, and New Zealand units that use some European equipment. There are a few German units which were added mainly as a favor to a reserve officer in the German Army. No British, no French.

> Can you play OPFOR? And/or have a OPFOR vs. OPFOR engagement?

You can play OPFOR in a human vs human game that you or someone else has designed. You can play OPFOR in a solitaire game but you would need to use the options menu to convert the Blue force to use OPFOR units and equipment - a tedious process.

> Do the game come with any cold war scenarios?

Most of the factory provided scenarios can be considered to be cold war scenarios since they portray modern, well trained, well equipped, and well motivated forces - on both sides.

> How long backwards in time is equipment portrayed? 50thies, 60thies,
> 70thies or...

Most of the equipment is what was in common service from 1990 to the present which include items that were introduced in the 60s, 70s, 80s, and 90s.

>Can a player play a small part of a force, and leave the rest to the ai?

No.

> Map making idea

An experiment for someone with time on their hands to try. :)

For use as background art or as an idea generator for a TacOps map ...

Run Microsoft Flight Simulator. Fly over an area of interest and pause the game. Switch Microsoft Flight Simulator to "windowed mode". Select "Top Down View". Do a screen capture using Alt + Prnt Scr key sequence. Switch to a paint program and paste in the screen capture. Stretch or shrink to TacOps scale.

For the benefit of those who have never used Microsoft Flight Simulator and its worldwide data base ... Major terrain features such as airports, mountains, rivers, and major roads are correct at a gross level. Details such as wooded terrain and towns are almost entirely notional with only the outline of a given area being somewhat correct. In other words, the outline of a town will be fairly accurate but the minor streets, minor roads, and 99% of the building portrayed within that outline are not real at all - you won't actually find the street you live on. There are some exceptions where Microsoft or a third party has created "add on" scenery for a particular small area which is much more accurate. Such as the main strip at Las Vegas, Paris, Washington D.C., and well known large buildings in other major cities.

> If TacOps off-map arty represents units that have completed
> a " deliberate
> occupation of a position area " ... I'd guess the quick
> action we can get out of arty in the game might not be far

> from the truth at all.

My original intent was that off map arty represented the number of fire missions which were available at the instant of need from a pool of batteries rather than from specific batteries. In other words, if a scenario had three "arty lines" in the arty support window that might represent the battlefield presence of nine to twelve batteries with most of the batteries not actually being available for fire at a given instant of need due to their being in the process of displacing to new firing positions, replenishing ammo, cooling the tubes, etc. A big plus to that abstraction was that it neatly sidestepped the need for off map counter battery play.

> The major unrealism in TacOps arty is that you can change a
> shell's path in flight.

Consider how much new work would be inflicted upon the player if that abstraction were to be replaced by a more realistic "appearing" procedure. The final result of which would be similar if not the same as the current simplified approach.

> I dare to tell you that I am working on a translation of the
> TacOps 4 Manual

I do not mind if someone translates the user guide so long as my copyright and trademark notices are preserved in the final product. A large group could do a translation in a few weeks of spare time activity. One or two people will probably never finish one. The Canadian gentleman who did the v3 French Canadian language documentation was a professional military translator - it took him two months of full time work to get it done. I can provide the game documentation in Microsoft Word format should a group want to work on a translation.

> [CPX multiplayer network mode] So what I'm gathering here, is that
> not only do we have to plot our movement, we need to check
> the SOPs on certain units because of the different things
> that can happen on the battle field and we also need to
> inform the Commander on what is happening in front of us
> because of FFW. And we have to do all that and more
> within the set time limit for orders. No wonder headaches
> are part of the norm for playing in a CPX :)

Or CPX players and their commanders could stop trying to cram so much activity into each orders phase and into each 60 second combat/movement phase. Give fewer orders to your unit markers and fewer orders to subordinate players. You don't always have to be doing something or moving every single turn. Have everybody stop in place or at a phase line once in a while for a leaders meeting. If the situation permits, have your meeting and just ignore the fact that the host runs several combat/movement turns while you are planning, talking, etc. You don't have to fill each unit orders queue with ten to twenty complex actions and way points or fiddle with every single unit every orders phase. Don't plot a long list way points for a unit that is only going to be actually able to move a few hundred meters over the next turn or two. Something that occurred to me during a recent CPX was that perhaps an informal, optional rule needs to be

developed that limits how often a force commander can give instructions to his subordinate players. In the real world you don't get new orders from your commander every 60 seconds. As always, the use of a detail like this should be based on the pre agreed entertainment goals and or experience level of the players. Etc and etc.

- > Will we ever see more than the 20 player limit on the retail
- > version?

Not unless I abandon the sale of military versions. So long as I am doing military work there needs to be some significant difference between the retail version and the military versions. Without a significant difference I could easily find myself forbidden to sell the retail version. The 20 player limit was the least obtrusive thing that I could come up with that I thought would stand up as a significant difference.

- > If I imagine some 6-8 players for a big action over a LAN +
- > observers in staff function the limit is reached quickly and a new
- > stage of fun deprived to us paying fans

If you ever reach the 20 player limit in an Internet game I think you will find that orders exchange and the situation update take so long that you will have to reduce the number of participants anyway. The military users can achieve 30 to 50 participants because they normally have everyone on a LAN. Even so, things start to drag a bit when they pass about 30 participants.

- > I recently purchased your Military Reference Library Volume 1.
- > As the product is described as Volume 1, I was interested in inquiring as
- > to whether there is a Volume 2 in the works and if so what would be the
- > general direction of its contents?

Ouch ... another side project that I can never seem to find a bit of time to continue :). Volume 2 was going to be a CD full of U.S. service branch and unit histories of WWII and Korea - edited, linked, and reformatted like the FMs in Vol 1 for easier computer navigation and consistent screen appearance. I don't know when I will be able to make some progress on it. I occasionally think about hiring someone to finish the project.

- > Do logistics packs get any protection from being on a fortification tile?

Yes but only if the logistics marker is actually entrenched (i.e. shows the entrenched symbol when you choose to display tactical disposition symbols). A quick check of the code revealed the following quirks. Log pack markers use the combat results tables for thin skinned vehicles for resolving direct fire and arty fire attacks against them. When a log pack is first placed on the map via the "Add One Unit" window, it is placed on the map as being in defilade. If the log pack is placed on an entrenchment marker and if it is the first turn of the game then the log pack will be automatically awarded entrenched status at the beginning of the following combat/movement phase. If it is not the first turn of the game then the newly placed log pack will not automatically change to entrenched. If a log pack is unloaded from a vehicle onto an entrenchment, it will

have the same status as was held by the vehicle. If the vehicle was entrenched at the instant of unloading then the log pack will show up as entrenched. If the vehicle was exposed at the instant of unloading then the log pack will show up as exposed, etc.

- > looking again at the supply tables. Are the point
- > values based on the effectiveness/kill power or on size/weight.

When I originally SWAG'd the supply costs I was mainly thinking about relative availability (expense/technology) and the effort required to move an item around.

- > I don't seem to be familiar with the acronym 'MEU'

MEU - Marine Expeditionary Unit - usually one Rifle Battalion (+).

MEB - Marine Expeditionary Brigade - two or three Rifle Battalions (+).

MEF - Marine Expeditionary Force - a Marine Rifle Division and Air Wing Team.

MEUs float around all the time. There is almost always one somewhere in the Pacific and one somewhere in the Atlantic/Mediterranean.

MEBs float around occasionally however usually a couple of MEUs will come together to form a MEB just long enough to conduct a major exercise.

If a MEF ever sails, somebody is going to get their butt kicked real soon.

TacOps Gazette 04.03

This issue focuses on the TacOps map making utility.

> How large can a TacOps map be?

I think that the map tool instructions say that you can build a map up to 31 or 32 kilometers across. That is an error. I recently found out that some older PCs and obsolete versions of Windows have trouble loading a very large map at more 256 colors if the map exceeds the following guidelines (Windows 95, Windows 98/98SE, Windows ME, Windows NT earlier than NT4).

If one axis of the map is 31 Km, the other axis should not be more than 26.

If one axis of the map is 30 Km. the other axis should not be more than 27.

If one axis of the map is 29 Km, the other axis should not be more than 28..

Or more technically, if the total size of a map (width in pixels X height in pixels) is greater than 8,355,839 pixels then the map can not be loaded on obsolete versions of Windows if monitor colors are set at greater than 256 colors. The exact Windows call that is failing at higher color settings is CreateCompatibleBitmap(...).

Confusing minutiae: The map tool limits width to 3100 pixels. It should also limit height to 3100 pixels but I recently discovered that it does not due to a typo in the code. The TacOps program limits width to 3250 pixels and limits height to 3100 pixels. I don't recall why the program is different from the map tool. Probably another detail that slipped through the crack due my falling asleep at the keyboard on some late night coding binge. :)

- > Just how big a map could TacOps handle under the newer
- > operating systems if you removed the hard coded limits? Is
- > there any game logic which will fail before reaching the
- > new map size limit?

There is another Windows OS related issue not too far beyond 32km x 32km but I don't recall exactly what it is or where it occurs. Advancing the map engine got sidelined two years ago when I started working on the multiplayer network mode. I will get back to it one of these days. However, indiscriminately adding more and more kilometers/pixels to the maps in pursuit of ever bigger maps is not a good idea. At some point it would make more sense to just change the TacOps map scale or to write an operational level game engine.

- > Does anybody have any suggestions for topo map software to
- > use as a starting point for TO maps? I am looking for maps
- > in the NE United States. I have seen packages by DeLorme
- > and National Geographic.

I have used "Topo USA" by Delorme as a starting point for a few TacOps maps. It has a clunky user interface and is poorly documented, so you will have to go through an annoying amount of trial and error experimentation before you will be able to extract a useful bmp file from it (for further scaling and skewing with an art program). "Topo USA" provides an option to display UTM grid lines and coordinates. I used "Topo USA" along with military paper maps in the production of recent maps for MCB Quantico, MCB 29 Palms, and MCB Camp Pendleton. The UTM grid in "Topo USA" was a reasonable match for the UTM grid on the paper maps. I have not used the National Geographic bundle.

- > The National Geographic bundles advertise that maps can be displayed
- > and printed with UTM coordinates. I don't believe that this is the coord
- > system used by the military and TO, if not, is there any relationship
- > between the the two grid systems?

UTM is UTM. If the UTM numbers seem different than what is in TacOps it may be because more digits of accuracy are being used. For example, military users at the tactical level usually omit leading digits that are related to the "world" part of a UTM sequence.

- > What is the scale that I need to shoot for?

One screen pixel per ten meters of ground. If the illusion of a real world location is required, I usually start with a scan of a 1:50,000 scale paper map. Transforming a scan of a paper map to a finished piece of art at the TacOps scale of 72 dpi and 10 meters per pixel is a tedious, error prone process. It is usually a challenge to get the UTM grid lines on the map scan to line up with the UTM grid lines in TacOps since grids are seldom perfectly square nor perfectly aligned vertically and horizontally in the real world. Except for very flat terrain, the final product will never perfectly represent the real world terrain due to the two elevation level abstraction in TacOps. It is a heck of a lot less work to create a fictional map that is based on a simple free hand sketch. Especially if one borrows the patterns and textures that I used to make maps 1 through 16.

- > What resolution should I use when saving the map artwork?

It should always be 72 dpi for the final map artwork. No other value is acceptable.

- > What Photoshop mode should I work in?

I suggest that you work in Photoshop RGB mode and save in ".psd" format until the map is completely finished. Most if not all Photoshop filters and tools work best in RGB mode and in ".psd" format. However, you should convert a copy to single layer, indexed colors, 16 bit (256 colors), bmp format before passing the map art to the TacOps map tool. Some of your map colors may change slightly in the conversion from RGB to 16 bit indexed but the change is usually not severe. TacOps will display 24 bit maps, but the cost in computer memory and hard disk space is very high - I would prefer that 24 bit maps not be deposited on the Battlefront sponsored web site.

>When scanning the map it must be scanned at a perfect right angle on the
>scanner. Right?

That will almost never happen. Your scan will almost always be slightly off. If you want the grid lines to be perfectly north to south and perfectly east to west you will have to rotate and or skew them with a good quality paint program. You will probably also end up needing to shrink or expand the scan to some extent in order to get the scale perfect at 1 pixel per 10 meters.

> How do I scale a paper map scan so that the UTM grid
> lines up with the TacOps UTM grid?

Here is a very simple and very fast shortcut for scans of real world maps that contain a UTM grid. First, rotate and or skew the artwork so that the north/south lines are as vertical as possible and so that the east/west lines are as horizontal as possible - Photoshop allows one to do separate rotate or skew operations on both the vertical and the horizontal axes. This step will also help "square off" the grid squares on maps that have a significant variance in the width of grid squares as one moves from the bottom of a map to the top. Now trim the map scan so that it contains only complete grid squares - no partial grid squares on any edge. Count the width and height of the trimmed map in grid squares (kilometers). Multiply that by 100 (in TacOps a 1000 meter grid square has a width of 100 pixels). Open the Photoshop "Image Size" window and enter the converted width and the converted height in pixels into the width and height pixels boxes. Click the OK button. Photoshop will then automatically scale your map scan to the precise TacOps scale in one step. The result of all of the above steps is usually the best possible convergence of the UTM lines of the scanned map and the UTM lines that will be drawn by TacOps. The two grids will not always match perfectly when displayed by TacOps but they will usually match within one or two pixels.

> To get the UTM grid numbers to match the map, I am guessing that
> you must start with a trimmed map, one that is trimmed right on
> the grid lines?

Correct. But the leftmost grid line should actually be ten (maybe eleven) pixels east of the left edge of the map and the bottommost grid line should be ten (maybe eleven) pixels north of the bottom of the map to allow for the ten pixel border that people usually choose to put around a TacOps map. Check the documentation that came with the map utility. I think it talks about where the leftmost and bottommost grid lines are supposed to be and how many pixels they should be away from the edge.

> Do you have an idea of how to put an area like the enclosed
> map snipped into a TacOps map?

I don't have an easy to explain, step wise, or even consistent method of translating real world mountainous terrain into a two level TacOps map. The best I can say is that I try to interpret and represent the tactical significance of the most important high ground that is on the real world paper map. It is all about trade offs and compromise. Sometimes I go by the contour line at the

bottom of a hill or mountain, sometimes I guide on a middle contour line, or sometimes I go by a contour that is near the top of the hill or mountain.

> Is there any way to code swamps

I used some or all of the following to represent swamps and marshes on the Camp Lejeune map.

1. Water (unit has to be amphibious to enter or cross).
2. Water + woods (unit has to be amphibious to enter or cross).
3. Rough1 through Rough4 (any unit can enter and cross). Rough can not be combined with water.
4. Woods + Rough1 through Rough4 (any unit can enter and cross). Rough can not be combined with water.

Woods + rough4 is the worst terrain possible in TacOps - that is still passable to all units.

> What do the different categories of rough stand for?

The info below is an approximation of the effects of rough1 through rough4 terrain for a given unit type. There are other things going on in the game so this may not always be exact.

Rough1 - 50% of cross country, clear terrain speed
 Rough2 - 25% of cross country, clear terrain speed
 Rough3 - 12.5% of cross country, clear terrain speed
 Rough4 - 6% of cross country, clear terrain speed

The level of 'roughness' affects both speed of transit and visibility. You can mark an area as 'rough' either because it is (a) actually slow to cross due to poor trafficability or due to a vehicle not being able to drive very far in a straight line [i.e. move around boulders, bogs, vegetation] or (b) you can call an area rough because it has a lot of local minor elevations changes or vegetation clumps that tend to cause vehicles to disappear from LOS as they move around or (c) because the area has a lot of local folds that make it easy for a vehicle to choose to hide itself momentarily. 'Rough' works OK for any of those conceptual abstractions. Rough terrain does not block line of sight (unless combined with woods, town, or a misc LOS block) but it will cause spotted enemy units to randomly disappear from the map display. The rougher the terrain, the more often that happens. This is more of a distraction to the human watching the screen than it is to his units on the map. In June of 2002 I added three levels of "impassible" to the terrain types. Unless a road is present, Level 1 can not be entered by wheeled vehicles. Level 2 can not be entered by wheeled vehicles or tracked vehicles. Level 3 can not be entered by wheeled vehicles, tracked vehicles, or dismounted infantry. The presence of road terrain negates any level of impassable terrain.

> I don't know if you have a Rough0

That would be 'Clear' terrain. In TacOps 'Clear Terrain' is easily trafficable to both tracked and military style wheeled vehicles, is reasonably level, and is mostly free of tall vegetation. The only thing in TacOps that is better/faster than 'Clear Terrain' is 'Road Terrain'.

> Do you tie line-of-sight to the Rough levels?

Line of sight - No. Transient visibility potential - Yes.

> if you have 1000 meters of non wooded terrain that is uniformly labeled

> Rough2, can an observer see across the entire space?

Yes - with regard to having a technically unblocked line of sight to an active or spotted unit. But, if a unit becomes motionless and passes a combat phase without firing then the game engine assumes that the unit has taken some sort of small movement action to reduce its vulnerability to being spotted - the game engine then lowers that unit's transient 'visibility' classification. In other words enemy units will have to get closer to such a unit in order to spot it well enough to justify firing on it. If the unit moves or begins firing then its 'visibility' to the enemy instantly jumps back up to maximum. The 'rougher' the terrain then the lower the unit's potential visibility - until it either moves or fires.

> In woods in TacOps, units seem to be able to see about

> 200-300 meters. Is this limitation because you have it

> labeled as Rough2, or because of some other coding you use

> to indicate that the woods block line-of-sight?

This LOS limitation is linked to the coding of 'woods' and not to 'rough'. There are two main abstractions regarding 'woods' terrain. Units that are 'deep' inside 'woods' terrain can only see into adjacent wooded 100 meter squares - this is linked to the terrain being coded as 'woods' and is not due to whether such wooded terrain is or is not also some level of 'rough'. Units that are located in the outermost 100 meters of a body of woods terrain cells can see out of the woods into non wooded terrain the same as if they were in clear terrain - this is also linked to the terrain being coded as 'woods' and is not due to whether such wooded terrain is or is not also some level of 'rough'. To understand the latter abstraction, picture having your vehicle parked just inside the edge of a wood line. You can see out of the woods just fine but distant enemy units have a hard time spotting you because your motionless silhouette is broken up by vegetation beside and behind you. But if you move or start shooting then they can often pick you out instantly. The most basic principle of fieldcraft is that activity draws fire.

> Any tips for Using Photoshop to make TacOps Maps?

A TacOps map must have an image resolution of 72 pixels/dots per inch. Use the 'Image/Image Size' menu item to set this.

Photoshop works best and fastest when the artwork is saved in PSD file format. If your source art is in any other format then the first step is to immediately save the art in PSD format, close the current file, and then reopen the PSD version.

Do all editing and filtering work in RGB color mode. The only time that Indexed mode should be used is just prior to saving a copy of your work in BMP format for subsequent use by the TacOps program. If your artwork is not initially in RGB color mode then use the 'Mode' menu item to change it to RGB.

A perfect TacOps grid square measures 100 pixels by 100 pixels. If you are starting from a scan of a paper map you will almost certainly have to rescale the map image. The easiest accurate way to do this is to 'Edit/Crop' the map so that the canvas consists only of complete grid squares and then count the width and height of the map in complete grid squares. Multiply each dimension by 100 to arrive at the desired map height and width in pixels. Then use the 'Image/Image Size' menu item to set the artwork's width and height to those pixel dimensions. In the window that is summoned by the 'Image Size' menu item, there is a check box labeled something like 'Constrain Proportions' - make sure that box is not checked. Note that if you check the dimensions of individual grid squares after doing this resizing, you will find many that do not turn out to be perfect 100x100 pixel squares. Just ignore this - there is no reasonable way to make every grid square on a map scan end up as a perfect 100x100 square. However, it is critical that the overall map border dimensions in pixels be correct. Sometimes, resizing blurs the map a bit. To correct this, first select the entire map then select the 'Filter/Sharpen' menu item.

Important - save and or backup your PSD formatted work in progress before doing any of this paragraph. When you are eventually ready to output your PSD formatted work in progress to BMP format, first change the color mode from RGB to Indexed. You will likely be asked to select a new color resolution - choose 'Other/256' colors. Then do your save in BMP format being sure to use a different file name from your PSD master file. While saving to BMP format you will likely be asked for file format - choose 'Windows' - and you will be asked for a Depth - choose 8 bit.

> The hi/low and misc Los block buttons in the map utility have
> me confused.

If the hi/low button is check marked then the cursor will create high ground when you click on the map at a point that is currently low ground. If you click on a point that is currently high ground then that point will be converted to low ground.

> The question was asked can we use the USGS 1:24,000 or the
> 1:24,500 older version with the map tool and still get the
> UTM reading to come up on the information bar when running
> the game.

Yes - more or less. To build a TacOps map you must start with an art file in BMP format that is scaled so that one pixel equals 10 meters. When you later run the TacOps map utility and try to begin coding a new map using that artwork, you will be asked to enter the UTM grid coordinates of the lower right corner of the map art. Those numbers and the scale of the artwork will determine if the UTM info is correct when you later use the map in TacOps play.

- > As to Hi/Lo terrain I look at the contour lines and the
- > triangulation points and make a decision as to which
- > contour line is the cutoff point between Hi and Lo. Then I
- > make a new layer in Photoshop and draw freehand around
- > these contour lines and fill it with a darker shade. Then I
- > select all the woods bit by bit and COPY the shape of the
- > woods. I PASTE this onto a new layer and make it darker
- > green and put that on top of the Hi-Lo layer.

This is how I handle that. I prefer that the edges of details in the terrain art such as (woods, elevation changes, etc) match the edges of the 100 meter terrain cells as much as possible. This makes the map art a bit "blocky" but makes it much easier for the user to position his units with minimal map study and experimentation. I accept the blockiness that this adds to the presentation as a reasonable tradeoff for user convenience. So, instead of drawing the edges/boundaries freehand I use the map tool to actually code them. I then do screen captures of the result and I put that into a Photoshop layer to use as a guide. This probably does not make any sense to you if you are not familiar with Photoshop editing layers and its cross layer selection options. When I do need to do something freehand, I have Photoshop display a ten pixel by ten pixel grid layer and I use that as a guide.

- > I have gotten the go ahead to get some maps scanned into the 256 bitmap
- > format and to see about building the FT DIX terrain as a map for
- > TacOpsCav. Any suggestions before I start?

I think everything was pretty much covered in the messages that I sent you previously. The only other thing that I can think of is that I strongly recommend that you try to get your command to purchase the professional version of Adobe Photoshop for you. It costs around \$600 but it will make the work of reducing and or converting paper map scans to TacOps scale a lot easier and you will end up with much cleaner looking artwork. MS Paint just does not have the horsepower to manipulate large map scans. If you can't talk them into the full version then the next option would be Adobe Photoshop Essentials at around \$100. The cheaper version will leave you with a few unsolvable problems but it is better than MS paint.

- > I am missing something with the map tool. It generates dat
- > files, but I can't see a way to load dat fills into TacOps.

Run TacOps. Load one of the following custom scenario templates, Custom Scenario US Army.sce or Custom Scenario USMC.sce or Custom Scenario CA CMBG.sce. As the scenario template file loads, a window will appear that asks you to select a map to use with that scenario template. At this time you can select any map dat file.

- > I'm a bit befuddled by the version number feature in your Map Tool. It
- > allows me to set a number 100-999, but traditionally versions of files
- > are single-digits with one or two decimal points (1.0, e.g.).

Visualize a dot between each digit. Thus 100 translates into 1.0.0.

- > I'm using Paint to design a new TacOps map and am coming up with
- > some tedious workarounds to place the various artwork terrain
- > features in good alignment with the editing utility's coded
- > terrain.

A better art program would best solve your problem but here is a cheap, low tech, and surprisingly effective work around. Use an art program (or PowerPoint?) to create a letter sized document with a 10 pixel by 10 pixel grid drawn on a plain white transparent background. A shortcut would be start with a piece of a screen capture from the map utility showing its dot or line grid on a blank/white map. Print the grid document onto clear transparency film of the type that folks often use to prepare PowerPoint slides and then tape the film onto your monitor with scotch tape.

- > An experiment for someone with time on their hands to try.

For use as background art or as an idea generator for a TacOps map. Run Microsoft Flight Simulator. Fly over an area of interest and pause the game. Switch Microsoft Flight Simulator to "windowed mode". Select "Top Down View". Do a screen capture using Alt + Prnt Scr key sequence. Switch to a paint program and paste in the screen capture. Stretch or shrink to TacOps scale.

Note that terrain features in Microsoft Flight Simulator such as airports, mountains, rivers, and major roads are correct only at a gross level. Details such as wooded terrain and towns are almost entirely notional with only the outline of a given area being somewhat correct. In other words, the outline of a town will be fairly accurate but the minor streets, minor roads, and 99% of the building portrayed within that outline are not real at all - you won't actually find the street you live on. There are some exceptions where Microsoft or a third party has created "add on" scenery for a particular small area which is much more accurate. Such as the main strip at Las Vegas, Paris, Washington D.C., and well known large buildings in other major cities.

- > Can the misc LOS block be used to ...

A "misc LOS block" completely blocks LOS through it (actually past it) for two units that are at the same level. You can see into and out of a misc LOS block but you can not see past it. It can be used in conjunction with any terrain type, though it is pointless to combine it with woods or town terrain. I think that a unit that is on high ground can see over a misc LOS block that is on low ground but I didn't take the time to confirm it with an experiment. I don't have any real guidance for you as to when to use the "misc LOS block" terrain type. I have only used it a few times myself - in Task Force Davis to represent rubble under several bridges and in Task Force Hurley to represent a sand berm. Some military map makers have used a line of them across high ground to represent a crest or ridge. I never really intended for TacOps to be used to model real world terrain. I have been grudgingly dragged into that a little more each year by military users and over enthusiastic hobbyists. I wanted to leave the maps as simple and abstract as possible so that players could concentrate on weapons and tactics instead of map interpretation.

- > I'm currently looking at ways to reduce the file size of a
- > few TacOps maps a bit. I understand that TacOps maps must
- > be in .bmp format, but is there a specific color setting
- > that they must adhere to?

All of the maps that I produce are saved at 8 bits or 256 colors. End users have occasionally contributed maps that were saved with a greater color setting (16 bit or higher) but I have always converted them to 256 colors before adding them to the TacOps CD. Even at 256 colors a 29km by 30 km map file will weigh in at 7 or 8 megabytes. The size of map files can be reduced significantly for storage by zipping them. Of course they will have to be unzipped before being usable for TacOps play. TacOps does not take over the OS when it is launched. It will not insist that a player change his OS setting based on how maps were saved. The game engine will display the maps at whatever color setting the player is currently using on his OS. If the user has his OS set at thousands or millions of colors then TacOps will load the maps at the higher setting. The user won't see any more colors than what were already in the maps and much more memory will be required but TacOps won't object.

TacOps Gazette 04.04

- > My wife thinks I'm nuts when I come home with military
- > books. Or talk to her about a game or researching an
- > OOB. Women.....

All you have to do is remind her that your hobby takes place in your home where she can easily see exactly what you are up to and with whom. :)

- > I've been critical of those elements of the defense sim
- > community that look down on commercial games as mere
- > entertainment, because they haven't been validated.

Serious commercial wargames are validated in excruciating, usually tactless, detail by their beta testers and then by their customers. Many of these guys have been wargaming and studying military affairs for twenty to thirty years. There is no protective contract, no cushioning chain of command, and no obsequious word smiths between the hobby users and us. I doubt that the average DoD sim project is ever subjected to the frankness, quantity, or quality of the criticism that we get in the final surge just before and in the first months after a new game release or a maintenance update. Heck, some of our customers begin bitching before they even have our product in hand, based only on rumors about what we might be doing.

A recent TacOps military contract included a V&V step before final acceptance. I worried about that for nine months. Needless as it turned out because it consisted of nothing more than objectively checking that every contract detail had been addressed. I think it took me longer to write the V&V procedures than it took for the client to actually do them. The client's testers (reservists) did a decent job and noticed a few cosmetic bugs and a few minor contract details that I had overlooked or interpreted differently - all easily fixed. At the same time I was doing my own private testing with a cadre of hobbyists and the few military users that I could find who were not in or on their way to Iraq. The V&V procedures were just a warm up for these unofficial testers as they had been playing TacOps for one to nine years. They went beyond the V&V procedures and found many bugs and oddities, they challenged my abstractions, they argued about weapons and unit characteristics, they demanded changes and additional features without regard to their impact on the contract specs or deadline, and in general gave me hell about providing way too little new stuff for nine months of work. They did what hobbyists always do. :)

- > [Multiplayer network mode CPX]. So I went to the Network
- > Tools and check marked the "Allow players to instantly
- > reposition their unit markers" What was happening by me was
- > that the program kept saying that I had to send a Situation
- > Update before the orders phase begin. My questions is this,
- > after they did a magic move, what was I suppose to do next
- > after they were all done?

Step 1: Use menu item, Network/More Network Tools/Button labeled "Get Orders From All Players".

Step 2: Use menu item, Network/Send Situation Update to All.

- > What can I use for bunkers in a TacOps scenario?
- > Would it be entrenchment? If it is would it give the
- > same type of protection as a bunker would?

An entrenchment marker in TacOps represents an area of field fortifications that measure about 100 meters by 100 meters. If you absolutely must represent a single bunker then I suggest that you pick an armored vehicle that has the weapons, protection level, and troop capacity that you want for the bunker and then use the "Options/Damage Unit Mobility" menu item to immobilize it.

- > The question is this, if I use a radius of fifty (50) (which
- > is the minimum radius) and the bridge MLC is 100+ (which is
- > the maximum) why is the bridge destroyed so easily? I would
- > figure that the radius for the demo charge is the blast
- > affect for it.

If someone can safely place one demo charge onto a bridge then it isn't much of a stretch to presume that they could place 100 of them. I didn't see a need to make things more complicated.

- > Sometimes my units seems to disappear in multiplayer. Later
- > on, they reappear. This may have something to do with
- > interaction with the AIM message system ...

I originally started writing a vicious diatribe against all instant messaging programs but then my second cup of coffee kicked in to produce the following. :) Next time that happens try using the "Map/Redraw Map" menu item. That will force TacOps to reload and redraw the map, markers, everything - even if the normal Windows/Mac system variables say that it is not necessary.

- > What is the visibility you assume in smoke for non thermal sight
- > weapons?

Around 100 meters, measured from the center point of one unit map marker to the center point of the other marker. There is an accuracy deduction for such engagements. In TacOps, line of sight always exists at ranges less than or equal to approximately 100 meters. i consider 100 meters to be "point blank fire". Part of this abstraction is an expectation that units at such ranges would maneuver on their own initiative so as to be able to acquire a target and or that they would be able to sense a target sufficiently to engage it. Another consideration is that using the center point of a map marker as being a unit's position is not a high fidelity approach and thus some looseness in interpreting position vs range is appropriate.

- > I assume driving a tank by a squad with a LAAW would still

> get it shot it, does it?

Usually. There is also an abstraction in the code that awards a side or rear shot to infantry who are engaging vehicles at point blank range - even when the visual positions of the map markers clearly do not support that construct.

>> Bug Fix. Linked the thermal sight on GM RECV Fennek

>> Recce to its AGL. Marked its AGL as not an exposed weapon.

>Could you explain to me, please, what this means?

It means that the auto grenade launcher or the heavy machine gun on a Fennek can engage targets at thermal sight distances. A thermal sight on a vehicle is not always useful to all of the weapons that might be in or on that vehicle. Many units (most ?) in TacOps have a thermal sight that does not allow all of the weapons in that unit to engage targets at thermal sight distances. The most common examples of weapons that do not get the benefit of a vehicle thermal sight would be the rifles and LAAWs that are carried by most minor vehicles and roof mounted heavy machine guns whose gunner is not under armor. I made the change for the Fennek because I noticed this week that the roof mounted weapon is aimed and fired by a gunner who is fully inside the vehicle. Thus I thought it reasonable to give that weapon a thermal observation advantage.

> I think [artillery and mortar] range does not play a role

> on current TacOps maps, does it?

Maximum and minimum range limits are enforced for artillery and mortar units that are on the map. "Off map" artillery and mortar have no range limits.

> I have a question about the TacOps license: My family

> has a "family" computer; I also have my own. Does the

> "family" computer qualify as the "second computer"

> mentioned in the license?

Yes - or third or fourth or however many you have. You may install TacOp4 on all computers in your home and even put a copy on your laptop and take it to work- without guilt. :) It doesn't seem right to me to try to force ordinary users into buying more than one copy for their own personal use in a multi computer household. I trust that most folks will not abuse the lack of copy protection in TacOps. I only ask that if your friends want a copy then they should buy their own.

>What's the difference between the US Recon Team

> and those new Sharpshooters?

US Recon Team has a 5.56mm "sniper" rifle, gets a sniper concealment bonus, and gets a sniper observation/spotting bonus. It is a "Rambo" unit that is probably way too capable for routine game use. I have always slightly regretted coding it that way.

- > Did you have some sort of method that you used to
- > generate/calculate the purchase costs of units and
- > organizations?

Yes but I lost the formula chart years ago. When I add a new unit now I just estimate a value based on what older similar units were given.

- > When we resumed last Saturday, my units would *not*
- > cross that bridge, although their orders still were there, ...
- > I even deleted several units' orders entirely and ordered
- > them anew to cross the bridge, but they wouldn't.

I checked the saved game file that you sent me and the units could not cross the MLC 50 bridge because a 44,500 KG MTU72 bridging vehicle was parked on it. In my test, I gave the MTU72 orders to get off of the bridge marker. As soon as it did so then the other vehicles began moving across - in turn - in single file. Moral of the story - don't park vehicles on bridge markers.

>Can you tell me what TacOpsCav stands for?

Officially "TacOpsCav" is just a product name and has no expanded meaning. However, most English speakers would interpret it as being an abbreviation for "Tactical Operations - Cavalry". The Armor School at Fort Knox (actually the 16th Cavalry Regiment) purchased an internal TacOps duplication and distribution license on behalf of the U.S. Army for a military version of "TacOps". The tankers wanted to add "Cav" to the product name for their edition of TacOps and I did not object, although I did point out to them that doing so would likely irritate the other branches of the U.S. Army. :)

> A comment about editing a TacOps map for a CPX.

This is just a reminder to folks to be careful with editing maps.

When TacOps checks to see if players in a two player or multiplayer game are using the same map, it checks the filename, the internal map number, and the internal version number. All must match but the detail that those items match obviously can not guarantee that the data inside the maps are the same. If the data in the maps are even slightly different then the networked game using them will go out of sync as soon as the game engine adjudicates some battle or movement activity differently on one or more computers because of the differing terrain.

As a general rule, if you make a change to a TacOps map that is not yours (i.e. you did not create that map in the first place) then you should give that changed map a completely different map number via the appropriate menu item in the map utility. It isn't enough to just change its file name - you have to also change its internal map name/number. This is partly about avoiding out of sync situations and partly about courtesy to whoever it was that originally made that map as well as giving consideration to users (particularly training users) who have made scenarios for the map as it originally existed.

If you make a change to a TacOps map that you originally created then you should at least be very careful to increment its internal version number via the appropriate menu item in the map utility. Even if the map was yours to begin with there may still be a need to consider users of the earlier version if it has been out for a while.

For example, suppose that someone changes a map just for a single CPX but doesn't bother to change the version number or use a new map name. A dozen or more users download that map and the CPX is played to completion. Months later one or ore of those players may find themselves in a PBEM game, the game goes out of sync, and nobody remembers about the changed map. I am the guy who is going to be fielding the bug report. :)

> I think even for the GM MILAN team P3, 6 rounds are
 > slightly overweight. I think they shouldn't have more
 > than 4 rounds.

Many dismounted infantry unit types in TacOps have more ammunition than they could actually walk around with in real life. It is an abstraction that solves many problems without requiring additional and tedious work from the player.

>But those [suggested new details] could be modeled
 > quite easily ...

Of course you want all this new detail while expecting to still be able to quickly attend to the orders needs of hundreds of unit markers. I don't think you guys consider how easy it would be to "detail" TacOps into unplayability and thus code myself right out of business. :)

>But what if ...

Damn the "what ifs", full speed ahead! :)

Have Abstraction. Will travel.
 Wire MajorH in San Antonio.