Then, I took over the planning session to show how to run a wargame (to the amazement of the O/Cs and my XO's amusement).

Ideally, you should be able to imagine, without the use of a map, the ebb and flow of the battle and the effects of, at least, major weapons and supporting systems. Then, with the use of a map or terrain model, refine that picture. How, then, can we obtain this training and use it on the battlefield?

First, officers should play wargames. How many of us will spend hours playing Trivial Pursuit or watching a football game and never think to play a wargame? In my years of service, when I mentioned that I played wargames to my commander or peers, I invariably received a response of "You do what?" However, I believe that wargaming enables me to understand terrain, friendly and enemy units, and weapons effects. There are several commercial board games that portray an accurate representation of the battlefield, such as GDW's *Sands of War*.

Second, we have several computer wargames in the inventory that allow us to wargame courses of action. The Brigade/Battalion Battle Simulation (BBS) and JANUS immediately come to mind. These simulations allow us to rapidly play (and replay) several courses of action and evaluate them. It is probably seldom used for this, and in preparing for an NTC rotation it would be of limited use because we cannot take all the equipment with us. Still, for the first mission a brigade could actually fight through several courses of action in a day and use that in its staff process. It must be emphasized that a success in a simulated battle does not necessarily equal a success on the battlefield. For the simulation to have any hope of portraying a possible result on the battlefield, the OPFOR must be thoroughly professional and trained in OPFOR doctrine and tactics.

This lack of portability drives a requirement for a simple, easy-to-use computer simulation. It should fit into one to four linked laptop/notebook computers that would enable a staff to input their information and rapidly play out different courses of action. Currently, there are no military simulations that are capable of this. No commercial game I have evaluated does, either. There are some new ones coming onto the market that may start to meet the requirement. Currently, commercial games do not support actual terrain in the detail we require, but I see this changing.

In the meantime, break out the board games and adapt them to your training areas by using clear hex sheets over the map. Use BBS as a training tool for staffs to evaluate courses of action, and perhaps even sponsor some wargame tournaments in your units.

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British Mark VII Tank — First In Flight

Dear Sir:

In reference to the interesting article, "When Tanks Took Wings," by Colonel Raymond Battreall in the May-June 1994 issue, this was not "the first combat-operational airlift of tanks in the history of warfare" as claimed. British Mark VII Light Tanks, Tetrarch, were carried in Hamilcar gliders to Normandy on June 6, 1944. About half-a-dozen tanks were involved, including one that was reported to have fallen through the nose of its glider over the English Channel. Some of the Tetrarch guns were fitted with the coned-bore Littlejohn muzzle adapter which, firing special projectiles, doubled the armor penetration performance, but I do not know if any of those tanks taken to Normandy were fitted in this manner.

While on the subject of Normandy and D-Day, some American authors were critical of the Sherman DD (Duplex Drive) tanks because nearly all of those launched at Omaha Beach "sank like stones." Although the idea was to save tank landing craft from the risks involved close to shore, in the prevailing rough sea they should not have been launched 6,000 yards out. According to "Armoured Fighting Vehicles in Profile, Vol. 3" (1976), at Utah Beach 30 DD tanks of the 70th Tank Battalion were launched at 3,000 yards from shore with almost all reaching the beach. Although the rough sea delayed their arrival until after the infantry had landed, they did give vital support.

Certainly, the invasion demonstrated that armor is essential to effective infantry operations, but armor itself needs support vehicles. Reportedly, General Bradley was offered specialized armored vehicles by the British, but he declined to accept them. These vehicles, which included crab flail tanks (minesweeping tanks) and Crocodile flame-thrower tanks, were used effectively by the British and Canadians and would probably have reduced the casualties sustained by the Americans at their beaches. In the end, of course, it was the courage and determination of the Allied fighting men that carried the day, in spite of all the unforeseen adverse situations.

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More on MILES as IFF

Dear Sir:

It was with amazement that I read 1SG Hecht's letter about using MILES sensors as a part of an IFF system (July-August 1994 *ARMOR*). I had just that day spent a great deal of time discussing the same idea with a colleague at work. I applaud the thought that has gone into this; however, I would like to make some modifications to 1SG Hecht's suggestions.

First of all, when I was involved with the OT III testing of MILES in Germany in 1979, I knew in my heart that this system was going to be an integral part of any Army training program in the future. If this was going to be the case, then why not integrate this into all vehicles produced for the field? Operationally, it doesn't detract from the vehicle, except when the laser systems are installed. Additionally, having the system integral to the vehicle would save on maintenance by not having to install and remove the system every time the unit went to the field for training (especially the onerous task of always having to reapply the Velcro to the vehicle!). Finally, the crew would be as familiar with the MILES system as they were with the vehicle itself, and would know how to fight their vehicle with either MILES or live ammo.

As for how to integrate this into an effective IFF system, this would involve several items:

First, all laser designator systems would have to have a basic IFF code integrated into them. There also would need to be another programmable code integrated into the system. This programmable code would be changed on a periodic basis and passed through IVIS or VINSON channels. The purpose of this additional code is that, should the base code be compromised (which given sufficient time will be, by either analysis or OPSEC violation), friendly vehicles could still be differentiated from enemy ones that might be able to detect and react to being lased. Also, for units operating on the flanks of divisional or higher units (where most fratricide incidents occur) some type of identification response would be received from these vehicles.

Second, a transponder would be required, either a return laser signal or a digital radio burst on a set frequency. In the first case, this could be done as an addition to the crosswind sensor and would consist of a rotating mirror synchronized to a laser that would pulse when the mirror was oriented in the direction that the original lase came from. In the second case, this would require either a separate system or integration into the IVIS network, with a separate protocol established within the system to handle this information.

With either of the systems, the operational scenario would be as follows:

The firing tank acquires the target and the TC initiates the fire command. The gunner lases to the target. The TC must acknowledge and enter the range. If the target is a friendly that has both the base and programmable codes, it responds to the lasing with a proper coded laser or radio burst. A RED light would then show on the

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