

opposing forces share on a battlefield are the terrain on which a battle is fought and the weather conditions that prevail at the time of engagement. Within this fixed framework, assuming the sides are evenly matched, certain variables will determine the winner and the loser — the principles of war that the leaders apply and the level of troop proficiency on each side. The units that are prepared, disciplined, and trained to carry out their missions under the most adverse, demoralizing conditions will have a distinct advantage over those that have not been conditioned to the hardships of a combat zone.

Training to be miserable could be accomplished within the existing framework of the Army Training and Evaluation Program (ARTEP) structure. For example, unit commanders and trainers could control and evaluate a unit's demonstrated ability to function under increasingly difficult conditions simply by modifying the conditions under which each task is accomplished. In ARTEP 7-15, The Rifle Squad, the forced march/live fire exercise can be used to illustrate this point most graphically. The task for Levels 3 and 1 could remain the same: to conduct a forced

march and a live fire exercise during daylight. Only the forced march distance would change between the two levels. The distance of 6 kilometers for Level 3 would double to 12 kilometers for Level 1. The evaluation standards between the two levels could be changed so that an extra hour would be allocated for the march, and the percentage of target hits during the live fire exercise could be made higher.

Thus, for all ARTEPs, the same task and evaluation standards could be maintained; only the conditions would change. After achieving Level 1 satisfactorily, for example, the unit could undertake the same missions during hours of darkness or limited visibility. Then it could try to accomplish the mission on a rainy night simulating at least one wounded team member. The soldiers might also try doing it with empty bellies and crossing unfamiliar terrain. These are conditions that unit commanders and trainers at all echelons could easily program into their exercises. Such variables as training locations, the time of day, the season of the year, and the duration of the training periods are controllable and could be programmed in a "misery escalation planning schedule." The absence of

precise long range local weather forecasts might preclude exact scheduling when that particular "element of misery" is called for, of course, so there would have to be a certain amount of flexibility in any planning cycle.

Our present tactical doctrine calls for our units to undertake offensive operations to control the combat zone. Accordingly, adverse weather and terrain conditions can actually assist an attacking force. In bad weather, defending forces often instinctively seek creature comforts, let their guard down, and lie vulnerable to surprise, enabling a well-trained, offensive-minded unit, secure in its abilities, to outwit, confuse, and destroy them, even when they are otherwise superior.

My proposal, therefore, is a simple one — let's train to be miserable!



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PMCS versus GITI

CAPTAIN ROBERT R. LEONHARD

Without a doubt, the longest nights for a mechanized infantry company commander in garrison are those immediately preceding an annual general inspection (AGI). And on those nights he probably spends more time worrying about his motor pool than about any other part of his com-

pany. The reason for this is that the company's maintenance managers seem to wait until the last minute to solve their problems. The company may pass its AGIs most of the time, maybe all of the time, but between AGIs the motor pool still has those problems.

Of course, the company commander is responsible for making sure that his equipment is ready for combat and that his troops are trained in combat maintenance. He must also attain such tangible peacetime goals as passing AGIs and roadside checks and having good mission-

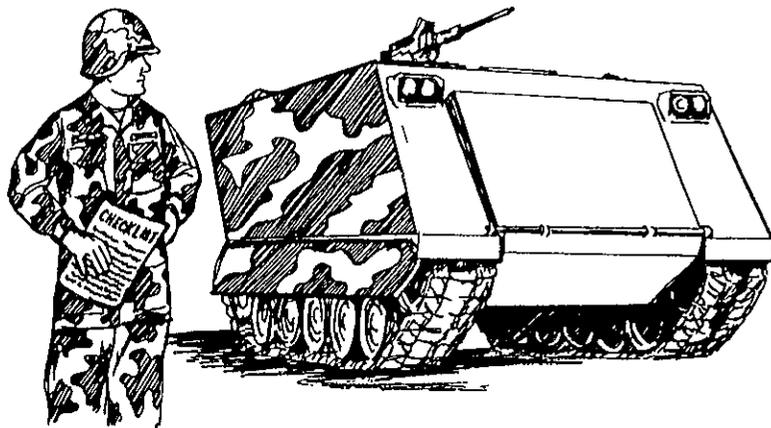
capable vehicle rates during field exercises. In his attempt to meet these responsibilities, he depends to a large extent on his chief maintenance manager — his motor officer.

Both of these officers have a readily available solution to all of their maintenance problems if they will just use it. The solution is PMCS, or Preventive Maintenance Checks and Services. Unfortunately, though, too many motor officers have not had the time to master TM 38-750 before assuming their duties. Even more unfortunate is the existence of another system that regularly competes with PMCS in almost every motor pool, a monstrous system known as the GITI — the Government Issue Technical Inspection. This is an unauthorized and generally overlooked activity in which a soldier inspects a vehicle without using the operator's manual for that vehicle.

Having served in several capacities in a mechanized infantry company and as a battalion motor officer, I have seen GITI at work many times, and I consider it a mortal enemy. Although the soldiers I have observed doing a GITI have picked up some of the problems with their particular vehicles, too often they have missed almost as many more. So why do we allow it in our motor pools? I'm afraid it's because of ignorance on the part of those of us in the chain of command.

As a new second lieutenant, I was hesitant to say anything or to ask any questions in the motor pool. I thought I was expected to know all there was to know about my platoon's four M113s. But this is not true. No one is expected to come to a unit carrying in his head a -10 or -20 manual for each vehicle. That's why these manuals are kept in the vehicles. The prudent course for a new officer to take is first to admit his ignorance to himself, and then to learn by reading and doing.

PMCS for the operator and crew of a vehicle are explained in the applicable -10 technical manual. Additional guidance can be found in AR 385-55 and in the somewhat more specific lists of vehicle *dos* and *don'ts*



that are published by every post Inspector General's office. Anyone who can read can service and inspect a vehicle if he will use these documents. The most common failure I found in managing my platoon's maintenance effort on our M113s was the failure of the operators and the crew members to use the manual and to do everything outlined in it.

For example, a squad leader once told me that the before-operation checks had been completed on his vehicle. But when I asked the driver if he had started the vehicle, he said he had not. And to complete the before-operation checks on the M113A1, the engine must run from 6 to 10 minutes to warm the oil. Obviously, someone had failed to read the manual.

Here's a simple test you can use if you think you have a similar problem with your platoon's tracks. Ask your drivers to point out the primary and secondary fuel filters. You might be surprised at how many of them do not know where (or what) those filters are. Yet draining them is an after-operation service that should be performed every day.

A PMCS performed by a driver must be properly recorded on a DA Form 2404. For a maintenance manager, this is an invaluable form. He must see that the drivers use the item numbers from the technical manuals when they fill out their 2404s. This not only impresses on the drivers the need to use the manuals, it also enables the maintenance super-

visors to determine whether the drivers have performed all the services completely.

The maintenance supervisor, in turn, must sign his block on the form. A 2404 should not be accepted unless the supervisor's signature is on it. (The supervisor might be a squad leader or, in his absence, a platoon sergeant.)

Finally, the company motor officer should screen all of his 2404s before he gives them to the motor sergeant. This step is most important. It enables the motor officer to check for complete entries on the form, and he can evaluate at a glance the thoroughness of the services that were performed. If he is not satisfied, he can stop the processing of what is probably a worthless form before the motor sergeant wastes his time on it. But if the motor officer is satisfied with the form, he should initial it and give it to the motor sergeant for processing.

I occasionally spot-checked a driver's 2404 against the results of my own inspection. If I found a deficiency that he had failed to detect, I would direct the platoon sergeant to assemble the platoon after duty hours to pull a proper PMCS on the platoon's vehicles. After only a few repetitions of this, I was rewarded with well-executed, efficient motor stables.

Field maintenance presents certain other problems. In garrison, for example, it is proper to allow one man,

the driver, to maintain a squad's vehicle (under proper supervision, of course). It may even be necessary for one man to do it, because in garrison operations, many of the soldiers in a squad are frequently detailed to other duties during motor stables. But during field operations most of the squad members are usually available when maintenance is required. Field maintenance, therefore, should be a crew responsibility. There are other reasons for this as well.

It takes one man from 20 to 40 minutes to pull a good PMCS under the right circumstances with the proper resources. In a field environment, a squad seldom has that much time for vehicle maintenance, and several men can service a vehicle much more quickly than one man alone can. Besides, levels of fatigue are higher in the field, and one man

working alone is seldom able to service and inspect his vehicle efficiently on a routine basis.

Here is one example of what a squad SOP for field maintenance might look like:

- The driver checks transmission, engine, fan tower, transfer gearcase, and hydraulic fluids. He also works the lights and observes the gauges, indicators, and the like.
- The track commander checks the engine compartment from the crew compartment for fuel leaks and any other problems. He also drains the fuel filters and checks the cupola and the armament.
- One man checks the differential and the final drives and services the air cleaner element from the front. He also checks the front lights.
- One man services the radios, fire extinguishers, batteries, and rear

lights and inspects the ramp.

- Two men (one on each side) maintain the tracks, the suspension systems, and the shrouds.

- The squad leader supervises all of the above actions and fills out the 2404.

These suggestions may help you in your maintenance effort. They will certainly help you to stamp out that monster — the GITI.



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Mortar 86

LIEUTENANT MARK L. TORREY

One of the key elements in the Army's new Division 86 organization — the mechanized infantry division — is the single-function unit, a unit that has only one major weapon system and one that should, therefore, be more flexible and maneuverable. One of these single-function units will be an infantry mortar platoon in which all the infantry's mortars are consolidated at battalion level. Each mechanized infantry battalion will have a six-tube mortar platoon in its headquarters company.

Unfortunately, the concept of this new platoon leaves a lot to be desired in organization, in doctrine, and,

most of all, in the mortar itself.

The new platoon is supposed to be equipped with the British 81mm mortar, the XM252, and this is a mistake. I feel that our own 4.2-inch mortar, the venerable M30, should be kept, because it has many advantages over the XM252 and only a few disadvantages. The advantages are that its illumination round is one of the best of its kind in the Army's inventory; its white phosphorous round is twice as effective in producing smoke; its high explosive round is far superior; and it is the only mortar we have that has a chemical round.

As for its disadvantages, it does have a lower rate of fire than the

XM252, but in a 10-minute barrage, the explosive weight delivered by the XM252 is only three-fourths that of the M30, even though it uses more than twice the number of rounds in that time. Besides, in most cases, a few more powerful rounds are more useful than a large number of less powerful ones.

The M30 is also a heavier weapon, but in a mechanized infantry unit this should not be a critical factor, because the mortar is seldom moved from its carrier anyway. And with its range of 7,000 meters, it gives a battalion commander a means of engaging deep targets with a powerful round.