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WHEN THE SQUAD

DISMOUNTS

Armored personnel carriers (APCs) such as the M113A1s are just what their name implies: They provide the infantrymen with protected mobility, and their firepower is purely defensive, limited, and highly localized in its effect. Once the infantrymen dismount, the name of the game is simply to preserve the vehicle until it picks them up again.

By contrast, an infantry fighting vehicle (IFV) not only improves the combat worth of the squad it carries, it is a multipurpose combat system in its own right. In armies such as that of the United States, which recently introduced its M2 Bradley IFV, and in other armies that plan to introduce the IFV, there is understandable controversy over the handling of the vehicle when its squad is dismounted.

In considering this problem we need to examine principles and priorities without getting too bogged down in minor tactics and vehicle characteristics. And we need to take a look at those armies — Soviet and West German — that pioneered the IFV concept and have had a decade or more of experience with it. We should bear in mind that these armies are "apostles of mobility," which simply means that their operational and tactical doctrine is based on the theory of the movement of masses.

It is this theory, in fact, that gave rise to the requirement for an IFV as opposed to an APC. It is not surprising, therefore, that other armies whose doctrine is based more on seizing and holding ground, establishing a fire base, and modifying relative strengths by attrition have been slow to adopt an IFV and may be none too sure what to do with one.

What *do* we do with an IFV? In answering that question we need to look first at the roles and the fire missions of an IFV.

IFV ROLES

The roles of an IFV are, essentially, four:

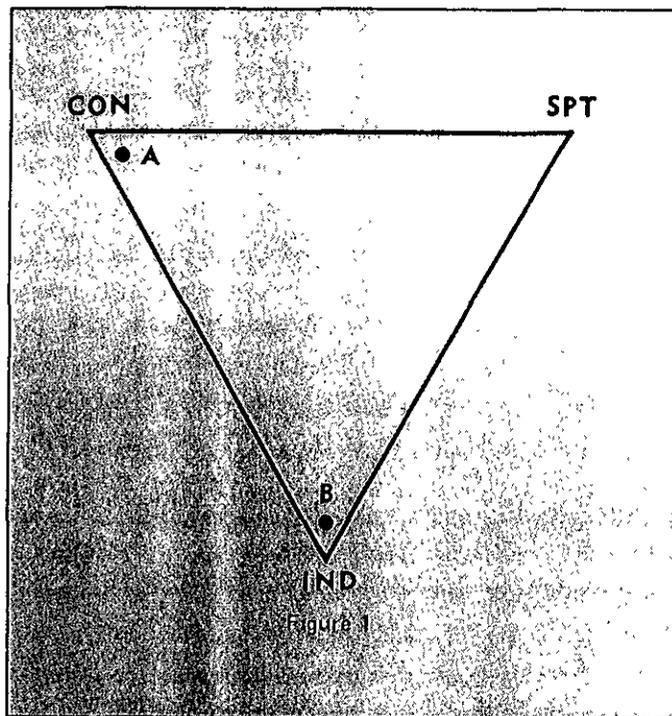
- Providing protected mobility for the infantryman.
- Conducting independent offensive action, employing both vehicle-mounted weapons and squad weapons firing through ports.
- Cooperating closely with tanks, again employing both vehicle-mounted and squad weapons, and maintaining mobility by sharing fire tasks and giving mutual support.
- Acting as a combat vehicle when its squad is dismounted.

As long as its squad remains mounted, the vehicle and all its personnel constitute an integrated, complex weapon system, and no real conflict of priorities arises. Admittedly, the fact that an IFV contains valuable infantrymen — a commodity that is apt to be scarce on the mechanized battlefield — does impose a measure of conservatism on the way it is handled, but no more so than its limited frontal armor protection. IFVs can become surrogate tanks when no main battle tanks

(MBTs) are present, but it is suicidal to handle them as boldly as tanks within the main maneuver force.

Once it has shed its infantry, though, an IFV becomes subject to an awkward three-way stretch, which, like so many intractable problems, can be well represented by the model known as the "marketing triangle" (Figure 1). The three calls on the vehicle are these:

- Conservation (CON) — ensuring that the IFV is available to pick its squad up again
- Support (SPT) — directly supporting its dismounted squad.
- Independent (IND) — firing and maneuvering as an armored vehicle weapon platform.



In the marketing triangle model, each angle represents a 100 percent priority for the named feature, and the side facing it represents 0 percent. Thus, point A represents handling the IFV like an APC, point B, divorcing it completely from its infantrymen once it has shed them. Just pause a moment and consider where your priorities would lie — where you would stick your pin into the triangle — for this is the nub of the whole problem.

IFV FIRE MISSIONS

For this reason, we must probe a little deeper into the firepower roles of the IFV's vehicle-mounted weapon systems. All three leading contenders — the Marder, the BMP 1 and its variant the BMP 2, and the M2 Bradley — mount a cannon-type weapon of 20mm to 25mm caliber and a coaxial machinegun. The Soviet vehicle has powered traverse; the Marder mounting is powered in both planes but not (so far) stabilized; the Bradley's mounting is stabilized, which is probably a key advance.

The Soviets appear to have retained an antitank guided missile system (ATGMS) — the 73mm gun-launcher plus a SAGGER mounting — on the platoon commander's vehicle only. The Germans are fitting one, the MILAN, to about half of its vehicles at the cost of one man per vehicle. And the Bradley has a TOW installation designed into it.

There are, then, six identifiable types of fire missions for these vehicles:

- Antitank (ATGMS).
- Anti-IFV.
- Air defense, mainly antihelicopter.
- Suppressive fires.
- Destructive fires against soft and area targets.
- Target indication and route markings.

All three of these armies — Soviet, West German, and U.S. — have dedicated tank destroyers armed with missiles (TDMs) in the shape of the BRDM 2 and 3, the Jaguar 1 and 2, and the ITV. Still, the Germans mounted an ATGMS on their squad IFV just as the Soviets were removing it from theirs, while the U.S. Army insisted on one from the start. All of them, though, seem to generally accept the IFV's antitank role as an emergency one or, at the most, as a stopgap mission. The known problems of handling the M60A2 armed with the Shillelagh, and British studies of mounting the Swingfire ATGMS on the Centurion tank in the 1960s, are highly relevant here. In sum, the ATGMS tends to drag the tank or the IFV back from where it ought to be into overwatching positions.

The anti-IFV role as a planned fire mission within the main maneuver force is also questionable, although no less a person than General Dr. Ferdinand von Senger und Etterlin, Commander of Allied Forces Central Europe, has made a categorical statement about "like fighting like." Even with the elementary APCs of World War II, many German armored commanders on the Eastern Front reckoned they would rather lose a tank than a laden APC. Outside the optimum tank versus tank range band, killing a laden IFV just has to be a prime mission for the tank gun. By contrast, the IFV can and must relieve the tank of this task during the climax of a tank versus tank firefight.

The Soviets seem entirely justified in leaving defense against the fixed and rotary wing threat to their combination of ZSU23/4 and GASKIN (or its successor), and to the PZRKs (*perenosnyi zenitnyi raketnyi kompleks*, portable air defense missile complex) in "the parts which other systems cannot reach." By contrast, for the NATO forces, which are faced with a massive and mounting rotary wing threat and still lack a comprehensive tactical air defense network, the antihelicopter role seems to be the key one for the IFV's cannon. In fact, it is the primary justification for introducing a cannon-type weapon on a powered mounting into the complex of direct fire weapon systems.

General support is very likely the other justification for this expensive step. As the struggle for antitank firepower has pushed tank gun calibers beyond the 90mm to 105mm

bracket, the tank has become a tank destroyer in tank's clothing. Modern main battle tanks (MBTs) are quite simply ill-adapted to giving the kind of general support fires that were the tank's dominant fire mission in the latter weeks of World War II. They carry too little ammunition; their rate of fire is too low; and their shell bursts are uneconomical in that they produce gross overkill within a very limited radius. Linked to a natural liking for rockets and mortars, this factor may well have been the reason the Soviet Army put the 73mm gun launcher on its 1967 BMP 1.

Regardless, the cannon-type weapon on the IFV is well suited to a general support role for both suppressive and destructive fires. In the antihelicopter and general support roles it is the ideal complement to the tank gun of 120mm to 130mm caliber. And the Bradley has a great advantage over its rivals in being able to apply both antihelicopter and prophylactic fires while on the move.

Finally, under this head is a fire mission of which, in these days of superb radio communication and of navigational aids, some younger readers may be unaware. This is target indication and route markings (the latter by night), a role admirably filled during World War II by the 40mm L70 light antiaircraft gun (the Bofors gun). If today's electronic warfare (EW) threat gets one jump ahead of electronic counter-countermeasures (ECCM), a maneuver force may be left without radio communication. The cannon is an excellent and economical weapon for target indication, for it has a longer and more accurate range than the machinegun, and its trace is visible over a much wider arc.

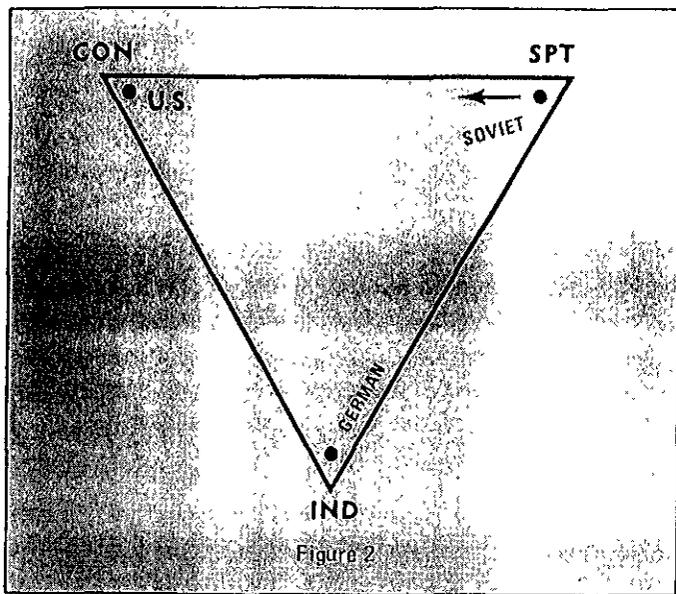
This discussion of firepower, which straddles all types of combat, poses the first question that an IFV user faces: Does he own a poor man's tank gun, or a weapon system that fits uniquely and vitally into the direct fire mosaic? How he employs the unladen IFV in a given type of combat will largely depend on his answer to this question. And his answer probably will depend on the doctrine of the army to which he belongs — Soviet, German, or U.S.

SOVIET TEACHING

We do not yet know how much the change of armament on the BMP to a cannon has modified Soviet practice. We need first to recall the dominance of the offensive in Soviet doctrine, which is now represented by the use of the BMP with the squad mounted for independent offensive action in reconnaissances by force, raids, and mechanized (all-arms) vanguards. This approach is perhaps best seen in the Soviet's standard enveloping attack by a point company combat team, which allows at least one fire squad to make full use of its weapons without dismounting. (The term "enveloping" is used here in its American sense, which differs from both British and Russian usage.)

The fact is, whether in the offense or the defense, the Soviets do not like to dismount their infantrymen. Addi-

tionally, the shortcomings of the armor on the BMP 1 and BMP 2 have led Soviet commanders to use increased caution in their handling of the BMP within the direct fire zone. This is doubly true when it is unladen, in this case, there is a readily perceptible shift toward the



“conservation” point on our marketing triangle (Figure 2).

Nonetheless, there is also considerable evidence (too much to include here) that the Soviet emphasis in employing the unladen BMP, both in a deliberate tank-infantry attack and in a defensive situation, lies squarely on giving direct support to its infantrymen. This is extended to, but not much modified by, the task of supporting tanks by engaging any enemy antitank weapon system that lies within the BMP's fields of view and fire.

BUNDESWEHR TEACHING

West German doctrine (as reflected in a *Bundeswehr* pamphlet and briefing presented at the Royal Armoured Corps Center and the British School of Infantry) appears complex and somewhat confusing — and not without reason.

The Marder was conceived, developed, and introduced under the sponsorship of policymakers who had been bred in the *Wehrmacht* tradition and who were experienced in both offensive and defensive operations on the Eastern Front — in a word, by true “apostles of mobility.”

Then came the 1973 German Army regulation with its emphasis on forward positional defense. Despite this, the value of maintaining the tank's mobility — of getting armor forward — in close and urban terrain still ranks high in German thinking. Here the tank, the IFV with its mounted weapons, and the infantry squad, whether mounted or dismounted, work intimately together as a small team.

By contrast, a forward positional defense, with everything in the shop window at battalion level, evidently dic-

tates the reinforcement of the maneuver element by unladen IFVs. Under this concept, the tanks and IFVs conduct a retrograde maneuver battle, falling back onto and through the dismounted elements. Then, if ground has to be given, the IFVs pick up their squads and fall back to a new line of dismounted action, covered on their way out by the tanks.

When one adds to this picture the possibility of the organized deployment of IFVs in the antihelicopter role, there is not much doubt of the basic German view. In defensive operations, at least, the Germans place little emphasis on the direct support of dismounted infantry, while the independent maneuver of unladen IFVs overrides any tendency toward conservation.

THE TACTICAL DECISION

An army converting from APCs to IFVs naturally and logically starts in the “conservation” corner of the triangle — the U.S., for example. The direction it moves in depends on whether its thinking is dominated by the offense or by the defense. In offensive forward movements at all levels, both in the attack itself and within the framework of an aggressive defense, *armored* infantry maintains the mobility of the tanks; the IFV supports both the tank and its squad and maintains the mobility of both.

In the *mechanized* combat team, which is supported today by MBTs but may be supported in the future by light mobile protected guns (LMPGs), it is the IFV's mobility itself that must be maintained. The infantry squad contributes to this either by firing its weapons through its weapon ports or by dismounting and clearing forward, with the LMPG giving fire support. All this activity lies near the line joining the “conservation” and “support” corners of the triangle, as in the Soviet case.

In a positional defense, or in the indispensable static element of an aggressive defense, a commander has a choice. He may deploy his unladen IFVs within the pivot (the anvil) to provide or thicken the fire base. Or he may use them to strengthen his maneuver element (the hammer). In either event he will use their firepower and mobility at a tactical level higher than the squad they carry, but not directly related to it. And when the chips are down, the conservation of the unladen IFVs to ensure the future mobility of their infantry is less important here. So the commander in this situation joins the *Bundeswehr* on the lower half of the “independent support” side of the triangle.

There does not seem to be any right or easy answer to this problem in general terms. The handling of his unladen IFVs is a tactical decision a mechanized combat team commander is going to have to make. Moreover, the problem seems to stem from the role assigned to mechanized (infantry heavy) combat teams and the way they fight. For many reasons, the armored (tank heavy) combat team does not suffer from the pull to separate the IFV from its squad.

Given the duration of the development cycle for a vehi-

cle and the time it takes to implement changes in force structure, one would be idle not to take a glance into the crystal ball.

Having pioneered the IFV concept both generally and within NATO, the Germans are now having second thoughts about it. In the 1983 edition of *Tanks of the World*, General von Senger writes: "Nevertheless the linked requirements . . . [have] led to jack-of-all-trades designs. For this reason the trend may well swing back towards two separate types of vehicle — the fire support (or 'escort') vehicle to relieve the MBT, and an armoured personnel carrier (APC) whose operational characteristics have yet to be defined."

From a searching scan of both sides of the hill, it appears that three types of vehicles would be required within this context — an IFV, an APC, and an FSV (fire support vehicle). These three vehicles with three more added — the MBT, the LMPG, and the TDM — would form the core of the armored vehicle inventory. (Although Fort Knox's earlier recommendation for a unified combat arm in the 1986 force structure was overridden, this kind of organization will surely come in the end. There will then be no need to get involved in the respective responsibilities and equipment of infantry and armor.)

A combat arm with these six principal types of vehicles would be immensely versatile without the need to reequip or reorganize. It could, in fact, form the three types of mechanized task force, formation, or combat team that the U.S. Army feels will be needed eventually:

- Light: IFV plus LMPG plus TDM plus FSV (air defense or screen only); useful for rapid intervention, extreme terrain, medium intensity or small-scale operations.

- Armored: MBT plus IFV plus TDM plus FSV (air defense or screen only).

- Mechanized: APC plus FSV plus MBT plus TDM.

This is, incidentally, the position the Soviet Army will reach — with its mix of BMPs and the BTR 60/70 family and with the ZSU 23/4 (or its successor) and the PZRK — once it is able to replace the MBT with an LMPG in its light task forces based on the motor rifle arm (advance guards, raid forces, and the like). As a guess, the Soviets must have an LMPG mounting the 100mm or 115mm tank gun on the BMP hull very near to introduction.

The point is that the IFV fills the needs of a light force in which the limitations of the LMPG make the IFV the dominant vehicle, as well as those armored infantry forces that operate in support of tanks. Here the FSV has only a limited role, albeit an important one.

By contrast, for mechanized infantry units supported

by tanks, the combination of APC and FSV is likely to prove more effective and more economical in the long haul. It collapses the marketing triangle but leaves a commander free to move along the "direct support" — "independent maneuver" axis. A two-way stretch is almost always manageable whether it is political, strategic, tactical, or whatever, but a three-way stretch generally proves to be intractable.

CONCLUSION

The IFV concept matches the mobile, tank-dominated concept of operations that gave rise to it. It is less suitable for positional defense, or for forming the framework and the pivot positions of an aggressive defense. Here the handling of unladen IFVs offers the tactical commander an awkward choice: He must decide how far to exploit the IFV's firepower, accepting the concomitant risk, and how far to uphold the protected mobility of his infantry.

There is no general solution to this problem. To reach a sound decision, a commander on the spot first has to evaluate the priority of the IFV's firepower roles in the given situation. Then, based on this, he has to make a "marketing triangle" assessment of the relative importance of giving direct support to the dismounted squad, of conducting independent maneuver, and of conserving his vehicles. This means that IFV-mounted battalions need to be trained in all three types of handling and that SOPs need to cover each. (Linked to this "trilemma" is the need to counter the fast-growing rotary wing threat.)

Although the IFV has an assured place in armored (tank-dominated) and light forces, the best solution for mechanized (infantry-dominated) forces, after all, may well prove to be a combination of APC (with only local defensive armament) and FSV. In any event, the FSV does have a place in the light and armored forces for screening and for the air defense (antihelicopter) role.



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