The Artillery as a Determinant of the Army's Combat Power

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Any projection of the artillery profile without forming it as a sub-text of the profile of the defence forces would, obviously lead to flawed answers. The threat and security scenario are in a state of considerable flux. Planning on the basis of familiar parameters is unlikely to work or give us optimal solutions. The process has now to be infused with much greater dynamism and flexibility. The 15 to 20-year time horizon for perspective planning, that we are accustomed to, though desirable, would have to give way to shorter time-lines. Or, alternatively, considerable room for manoeuvre has to be built into the plan documents for periodic review and course correction. The catch is in getting the conceptual framework right.

What is the conceptual framework that we could be looking at? The prospects of conventional long drawn out wars are receding. But does this give us the luxury of planning for downsizing our conventional forces? Not yet. At least not till our border issues with Pakistan and China remain unresolved.

So the compulsion of planning for a two/ one and a half front war remains as it has been for some decades now. The only change that has occurred is the nuclear dimension. Till we and the Pakistanis tested in May 1998, the guessing game was on. After that, both sides have tried to crank in the nuclear overhang into their war-fighting doctrines. Even with China, we have begun to take into account the possibility of nuclear coercion and the dangers of a nuclear engagement.

In the last few years, there have been notable changes in our security environment. On the western front against Pakistan, force equations have been gradually tilting in our favour. The prevailing military balance would suggest that Pakistan would now find any conventional military action against us, even of the Kargil type, unthinkable.

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With some resolve and focussed action, it should be possible to graduate, within the next 5-10 years, to clear force superiority (surplus) making the exercise of punitive action a simpler choice.

Against China, regrettably, we have failed to create military capabilities that pose a credible military deterrent. Lulled by catch phrases like 'peace and tranquillity' and arguments that given the growing trade between us and our mutual focus on economic prosperity, the prospects of military confrontation are extremely improbable, we have done little to prepare ourselves for the hostile and belligerent missives currently being hurled at us. Had we been hard-headed and conscious of the imperatives of national security, the country would have displayed greater confidence in dealing with the kind of needling that the Chinese are currently engaging in. As a matter of fact, it can be argued that had we been militarily better prepared, the relationship would have been altogether different.

Thus, the prospect of a regular war with Pakistan alone appears to be receding. But a war with China or concurrent military confrontation with both China and Pakistan is a contingency that we must prepare for. The ever looming nuclear shadow will, of course, increase the complexity of the strategic matrix.

Besides the conventional war-fighting capability, the defence forces will need to be given adequate capabilities to deal with terrorism, domestic militancy and violent separatist movements. Conceptually, there can be no two opinions that the defence forces should not be involved in internal policing responsibilities. But given our domestic imperatives, the policy of keeping the military out will remain notional, at least for the foreseeable future.

So what can we deduce from the preceding discussion? Our force requirements mandate an amalgam of capabilities for three types of missions: defence of territories and our sea-lines of communications, combating of terrorism and militancy, and out of area operations to protect or expand our interests beyond national frontiers. Of these, conventional wars and counter-insurgency/anti-terrorism operations may have to be fought concurrently as happened during the Kargil War.

For optimal accretion and development of combat power, a better understanding of the capabilities of modern artillery is vital. For far too long, this understanding has escaped our planners. Brought up on the British Army's World War II concepts of the employment of artillery which confined its role to providing supporting fires and close support and also the prejudices that inter-arm rivalry

tends to mindlessly generate, the Indian Army leadership has been singularly remiss in not giving this combat arm its due importance. Consequently, our supposedly conventional dissuasive deterrence capability failed to dissuade. Militancy in Jammu and Kashmir (J&K) and the Kargil intrusion may not have taken place had our force structures been more potent.

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Of the three combat arms, technologies have brought about the most dramatic advancements in the capabilities of the artillery. This has extended the effective reach (range and lethality) of the land forces to almost limitless levels. Sophisticated surveillance systems now permit the exploitation of the extended reach of artillery weapon platforms, and advanced communications allow the application over the widest possible envelope almost instantaneously and at intensities that can be calibrated to optimally use resources for maximum effect. We should remember that the armour and infantry are for the contact battle, while the artillery is for both the contact battle and the distant battle. The key is to win the distant battle. If that is done successfully, the close, contact battle may not have to be fought.

Now for a closer look at the capabilities of modern artillery weapon platforms – guns, rocket and missile firing platforms and mortars. Technologically, artillery guns have stabilised at 155 mm. This is believed to be the optimum barrel bore for the best mix of range, lethality and platform mobility. In terms of barrel length, 45-52 calibres are the trend though it appears that the 52 calibre is what most gun makers will eventually offer.

The 155 mm 52 calibre gun can fire a standard projectile up to a range of 30 km. With extended range ammunition, the gun can fire over 40 km and with specialised trajectory correcting modules or other similar ammunition, it can reach to over 70 km albeit with some reduction in the warhead weight/ lethality (the cost versus lethality matrix should determine numbers in our inventory). This gun is becoming the mainstay of most modern armies. It is understood that the Indian Army has also taken the decision to have this gun as the basic standard weapon.

A few variants to the standard towed and self-propelled (SP) 155 mm have emerged in the last decade and a half. There are now mounted systems (gun-mounted on a vehicle), SP propelled systems, which instead of the traditional tracks now have wheels – similar to some of the infantry combat vehicles that most of us have seen. The wheeled systems have some distinct advantages, the main being strategic mobility. They ought to also be cheaper.

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Given the above mix, how should we structure our gun inventory? The standard SP gun (turreted), whether wheeled or tracked, remains a requirement for our armoured formations. There is some talk of employing mounted systems for this purpose. This needs reexamination. The artillery with armoured formations must enjoy the same levels of protection as the tanks and mechanised infantry. The protection of mounted systems is relatively lower. Besides, the issue of nuclear, biological, chemical (NBC) protection, it would be difficult to reengineer mounted systems with NBC filters.

For the rest of the army, the choice is between the traditional towed system and the mounted system. Analysis would reveal that the mounted system has distinct advantages. We must not be hidebound and come up with the archaic argument about what will happen if the vehicle breaks down. The artillery would do well to compare both the systems dispassionately before taking a final call.

We would also be requiring lightweight 155 mm guns for air-mobile forces and some select areas. For such requirements, we may have to accept shorter barrels of 39 calibre on account of the weight constraint.

Rocket artillery in the last three decades has evolved into a spectacular weapon platform. The calibre has gone to 300 mm, its range is now close to 120 km and with advanced smart ammunition, its accuracy and lethality has multiplied manifold. A wide variety of shells is now available for most conceivable missions. Altogether rocket artillery has become highly lethal as also extremely versatile. The other interesting feature of rocket artillery platforms is that they can also fire missiles. Compared to guns, the platform is also relatively cheaper. Conceptually, there is a case for increasing the quantum of rocket artillery. We could look at calibres ranging from the 214mm of the Pinaka to 300 mm.

The new generation of artillery planners must now learn to also closely consider missiles as an integral part of the artillery profile. The earlier belief that missiles were only strategic assets has to be jettisoned. In addition to the strategic forces, the army also needs missiles integral to its inventory. An examination of existing and emerging missile capabilities and operational mission analysis

would clearly suggest the necessity of authorising an array of missiles to the artillery division and perhaps to specially structured corps artillery brigades in the Eastern Command. When we do this, we may also consider deleting the 155 mm regiments from the artillery divisions. These units never really belonged, but were included for want of better options. However, while planning for the conventional missile inventory, an objective assessment of the pros and cons of using aircraft versus missiles must be made to determine the most cost-effective solutions. Whatever be the deduction, there is a clear case for the army to have a much larger missile inventory based on solid fuel propellants. The Prithvi system based on liquid propellant imposes avoidable limitations.

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The 120 mm mortar has very limited range. Besides, the 155mm calibre offers a wide variety of munitions capable of engaging most targets. It is, therefore, for consideration that the artillery sheds its mortars to the infantry.

We all know that the weapon of the artillery is the ammunition. Enormous advancements have taken place in the accuracy and lethality of artillery ammunition. We now have improved conventional munitions (ICMs) laser-guided bombs, and heat-seeking and millimetric wave shells. In addition, there are carrier shells other than the smoke and the illuminating. These can dispense mines, both anti-personnel and anti-tank chafes for electronic counter-measures. In addition, there are quite a few other applications. The challenge is in arriving at a scaling and inventory which offers the most versatile and effective pay-off. This subject needs considerable study before decisions are taken.

Our artillery's biggest weakness has been its communications. In the Kargil War, we operated at less than 30 percent of our capability because of poor communications. Without mobile, reliable, flexible and modern communications the artillery cannot be optimally exploited.

Similarly, increased ranges are meaningless if not supported by target acquisition and battlefield sensors of corresponding ranges. Simply stated, if our guns, rockets and missiles can reach 300 km, then our surveillance cover must extend to at least 350 km. The artillery's integral surveillance systems must be structured around such an approach.

While on the subject of surveillance, a brief comment on a turf issue that frequently surfaces. This is about who should manage surveillance and target acquisition systems. Some claim that these should be with the infantry; others say that the intelligence corps should operate these systems, another group suggests the Signals and the ultimate one is that such systems should be under the general staff. One can offer detailed arguments as to why the gunners must retain all surveillance systems, including unmanned aerial vehicles (UAVs). But one single reason should be enough. The application of combat power through the use of the artillery can be almost instantaneous, in almost real time. And we should also remember that the artillery is not some autonomous agency—it works under the general staff and is its commander's resource as much as the infantry or armour.

Another important matter is the issue of deployment and distribution of combat power. Till a few years ago, the Eastern Army was gravely neglected. Its artillery holdings were abysmally low. Given the unfolding threat scenario, we hope the imbalance is being addressed. The terrain in this command is quite unique. Hitherto, we have generally been deploying our standard formations in what could be termed as 'situating the appreciation' approach. A detailed sector-wise analysis may suggest the necessity of having tailor-made organisations for specific operational and tactical requirements; a suggestion that may have relevance to all arms and services and not the artillery alone.

Before concluding, a couple of conceptual issues merit deliberation. The first is the planning principle of close air support. With the increased ranges of the artillery and its enhanced lethality, do we still need the air force to provide close air support as a standard operating procedure? In certain circumstances, we may, but perhaps not always. Second, with the artillery acquiring the capability of 'one round one hit' with intelligent/ smart munitions and, thus, being able to kill tanks or destroy other value targets, we need to rethink our existing concepts of mobile warfare to include the much debated, discussed and practised manoeuvres for the tank versus tank battles.

Our artillery today has two serious limitations. The first is the voids. Manpower constraints and prejudices have tended to keep the artillery requirements, especially in the Eastern Command, at precariously low levels. There were glaring voids and our fixation with the West prevented the deficiency from being addressed. The second is the universally known problem of modernisation. Both these issues should be accorded overriding importance. The army's combat potential stands well below the desired levels and, consequently, there is the danger that the nation may have to pay an extremely heavy price for such shortfalls.