Modernisation and Future Equipment: Profile of Regiment of Artillery

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Introduction

In the current battlefield environment, artillery plays a predominant role by providing firepower in a combined arms battle. The present milieu focusses on precise stand-off strikes in a network-centric arena against a nuclear backdrop. The area of operations is characterised by non-linearity requiring battlefield transparency to ensure simultaneous operations at the strategic, operational and tactical levels. Future wars have to be short and the battle space could be along our borders or in our island territories. Classically, artillery undertakes surveillance, target acquisition, engagement of selected targets and post strike damage assessment. It shapes the battlefield by providing battlefield transparency and degradation. Further, it undertakes punitive fire assaults which pulverise the objectives, resulting in destruction of the enemy which eases the task of the assaulting troops exponentially. Operational fires undertaken during Operation Vijay in 1999 paved the way for the capture of critical enemy localities. While we have had no operational usage of firepower in the last decade, we need to modernise our guns, rockets, missiles ammunitions, surveillance and target acquisition (SATA) equipment to match our adversaries on the western, northern and northeastern borders. Any modernisation of equipment must result in equipment ratios of 30 percent state-of-the-art, 30 percent of which is current and possibly undergoing an upgrade or its first overhaul and the remaining

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which is in its final stages and would be obsolete in about five to seven years. The revolution in military affairs (RMA) is being undertaken by both the Chinese Army and Pakistan Army. RMA encompasses two aspects: technology and doctrine. While our doctrine calls for a two-front capability, our technological developments have not kept pace with our projected plans. To be successful in a full spectrum conflict, there is a need to modernise, have a balanced profile and upgrade our defence industry to achieve a reasonable degree of indigenisation, thereby enhancing our capabilities in a two-front war.

Technological Challenges

Technological challenges for modernisation relate to characteristics needed for platforms, munitions and SATA equipment. In as much as the platform is concerned, it relates to enhanced range, autonomous capability, high rate of fire, automatic laying system, and ability to shoot and scoot, as also being capable of firing tactical nuclear munitions. The scope for ammunition is to reach a maximum range in the intermediate battlefield, and further have a greater variety by combining with dual purpose improved converted munitions. In addition, we need ammunition which has a high degree of precision; this could constitute trajectory corrected, terminally guided (or designated) and sensor fuzed munitions. While guns could cover ranges which would be in the tactical space, we would need rockets to cover the operational battle space and missiles to cover the strategic space. With the battle ranging to strategic space, there is a need for SATA equipment to provide surveillance for these ranges. In this, we would consider unmanned aerial vehicles (UAVs) and aerostats for long range surveillance, which at some point of time could be supplemented with lunar orbiting satellites. For the contact battle, we would need battlefield surveillance radars (BFSRs), weapons locating radars (WLRs), sound ranging system and long range reconnaissance and observation system (LORROS). In addition, we would need modern survey equipment which would comprise electronic thedolites, inertial navigation systems (INS), differential global positioning systems (DGPS) and laser range finders (LRFs). In keeping with these technological considerations, our equipment needs to be correctly profiled to meet our operational needs.

Artillery Profile

Artillery equipment needs to be profiled in accordance with the terrain on which it is to be employed and the operational role of the formation to which it is affiliated. Based on the terrain and role, there would be need for multifarious

equipment such as the towed gun self-propelled (SP) (track), SP (wheeled), mounted gun system (MGS), ultra light howitzer (ULH) and mortars. While all these gun systems would be used for close support, there would be a need to reinforce them with rockets and missiles. Our present profile needs to be modernised to give us reach and flexibility.

Status of Induction of Future Equipment

The modernisation of the artillery, though conceptualised around the year 2000, has been progressing at a slow pace. This is mainly due to procedural delays and black-listing of potential manufacturers. We have declared our basic equipment obsolete but despite our best efforts, we are yet to make substantial progress in the procurement of guns. At best, we have made upgrades of our older equipment. However, the induction of the indigenous multiple land rocket systems and super-sonic cruise missiles is a heartening development.

Our force multipliers in the field of SATA devices have been optimised. We have stabilised our UAV platforms which are playing a stellar role in the field of spot surveillance. Our BFSRs and LORROS are operationalised and WLRs have been fine tuned. We have approved a new qualitative requirement (QR) for the sound ranging system and intend procuring a system globally. We are in possession of DGPS, GPS and laser range finders which have optimised our survey philosophy. Operationally we are focussed on achieving first salvo effectiveness. An accurate meteorological (Met) system is an essential ingredient of the same. Our Met systems have been provided with SATA units to ensure that accurate Met data is available to ensure that the first round lands on the target. The biggest force multiplication which has commenced from 2009 has been the introduction of the artillery combat command and control system (ACCCS) which has automated the computation and passage of data from the observation post officer to the command posts up to the corps level. Fusion of sensor data is undertaken by the battlefield surveillance system (BSS).

Industry and Efforts at Indigenisation

In the recent past, our indigenisation was based either on reverse engineering or licensed production. These methods do not result in technological advancement. However, our first breakthrough has come up with our multiplier launcher rocket system which is an original design by the Armament Research and Development Establishment (ARDE), in collaboration with two recognised industrial partners, Tata Power and Larsen & Toubro. We are also witnessing a similar breakthrough

with regard to our gun systems. The move of the private industry in collaboration with the Defence Research and Development Organisation (DRDO) will see us break new ground in the acquisition process of artillery systems. The indigenous supersonic cruise missile is another success story in the process of indigenisation. There is a need for collaborative effort by the Ordnance Factory Board (OFB) and other Defence Public Sector Undertakings (DPSUs) with the private sector which will pave the way for moving into higher levels of technology.

Prognosis

With the present state of acquisition, the future of the artillery is bright. Large numbers of guns, rockets and missiles are at various stages of the acquisition process. It can be safely predicted that there is a likelihood of a reasonable number of gun systems being procured by 2015. Further, our UAVs would be weaponised and be able to fulfill combat roles in addition to surveillance. It is anticipated that issues would be simplified and made more user friendly. The participation of the private sector in defence production, particularly in the manufacture of guns and rockets, is going to increase exponentially. This will enable easy procurement and timely maintenance of state-of-the-art weapons. Further, we will not be left high and dry when we are at war. However, we must be very careful in black-listing firms. This must be done after a fair trial. This would ensure that the tempo of procurement is not affected.

Conclusion

There is an urgent need to speed up the modernisation process of the Regiment of Artillery. Being the primary provider of firepower, the arm needs to have state-of-the-art, guns, rockets and missiles to deter our adversaries from undertaking any misadventure in the battlefield. Further, our SATA equipment must provide us surveillance, reconnaissance and target acquisition to destroy his war-waging capabilities. The delay in acquisition has been primarily procedural. With better comprehension of the Defence Procurement Procedure (DPP) 2008, most of our proposals are reaching the trials stage. It is heartening to witness the entry of the private sector as manufacturers of guns, rockets, missiles and SATA equipment. This would make acquisition and maintenance easy. The Ministry of Defence is aware of the need to modernise the Regiment of Artillery and, with persistent efforts, the pace would be enhanced to meet our operational needs.