Technological Developments and Border Security in India's North East - Part 1 of 2

August 25, 2014

Vivek Mishra, Doctoral Candidate at the US Studies Programme, Centre for Canadian, US and Latin American Studies, School of International Studies, Jawaharlal Nehru University, New Delhi & Associate at indicia Research & Advisory.

The Armed Forces Long-term Integrated Perspective Plan (LTIPP) is a composite document that reflects the vision for the modernisation of the Indian Armed Forces and hence an enhancement of the technologies being used by the institution. The Defence Acquisition Council (DAC) cleared the LTIPP, which lays out the acquisition road map for the armed forces over the next 15 years (2012-2027). This document intends to give India an edge by the year 2027 vis-à-vis its neighbours through the twin leveraging of technology and information by covering both conventional and non-conventional aspects of security. A significant chunk of this long-term security overhaul will benefit India's border security.

At a time when other factors (including nuclear issues) have attained near-parity levels, the Indian Army's edge vis-à-vis its neighbours, in both preparedness and capabilities squarely hinges upon superior technology and its effective execution. In this regard a report published by Vayu's Daily of 29 March 2012 rightly states that, "Technological superiority has to become the principal characteristic of our military advantage." The report further states that, in future three important concerns will influence India's choices for technology investments: leveraging the technology explosion, enabling the Information-based Revolution in Military Affairs (RMA) and asymmetric threats. Amidst these and other emerging concerns of a lack-of-technology induced security deficit, it is very important to analyse how technology is being incorporated in India's border security, particularly in its Northeast.

The use of technology near the border areas in India's northeast can be broadly placed in two categories: conventional (weapons) and unconventional (surveillance, reconnaissance etc). The use of technology for offensive purposes comprises the use of high-technology weapons systems including small arms, combat vehicles and ammunitions. The non-offensive military use of technology would mainly comprise information, logistics and surveillance in the border areas.

Military Technologies & Conventional Border Security in India's North East

The Indian Army is in the process of overhauling its small arms like pistols, carbines and LMGs, and improving the functionality of its armoured vehicles. The Russian Armoured Fighting Vehicles (AFVs) and Armoured Personnel Carriers (APCs) are handy for border patrolling and security. The Indian

Army is also looking forward to deploying some futuristic weapons in the border areas which are currently under development. Among them, the Future-Infantry Soldier as a System (F-INSAS) which is currently being developed for the Indian Army is expected to connect the commander on the ground with the command and control system through a round-the-clock situational awareness update in inhospitable terrain. Another technology waiting to be incorporated by the Indian Army is the boomerang warrior-X. It is a device located in the vest which is able to pinpoint sniper positions from the enemy side up to about 1000 yards. Besides these, the army is considering the use of Explosive Detection Kits (EDK), suitcase satcom terminals and other portable technologies to be used near its borders with China and Bangladesh.

Given the difficulty of the terrain in India's Northeast, India's natural reliance is rightly biased towards the strategic development of the Indian Armed Forces (IAF). The IAF is quickly willing to modernise and utilise its strategic ground positions in the Northeast. Its bases at Chabua, Guwahati, Bagdogra, Barrackpore, Hasimara, Jorhat, Kalaikunda and Tezpur with forward airbases at Agartala, Kolkata, Panagarh and Shillong provide the necessary strategic ground for an effective enunciation of technology in the forthcoming years. Among these, at least two bases host the Sukhoi-30 aircraft (one of the best modern fighter aircrafts in operation).

Military Technologies & Unconventional Border Security in India's North East

While long term military modernisation plans like the LTIPP are likely to modernise India's offensive and non-offensive technologies, India's development of its border technologies in its Northeast should focus primarily on non-offensive technologies, at least in the immediate future. The most persuading reason in support of this approach is the maxim that unlike the Line of Control (LoC), the Line of Actual Control (LAC) has not seen either military or civilian blood being spilt or bullets being fired for close to four decades now.

In many ways soldiers near the border areas, particularly the LAC, fight a persistent battle of secrecy with the military personnel across the border. In other words, India's Northeast borders face an incessant risk of a covert war, as opposed to the LoC where it gets down to conventional military confrontations involving firearms. Amidst such latent military intentions, information about the opposition and spying shapes the basic military moves. The contrasting nature of military threats posed in India's Northeast should necessitate a greater leveraging of technology in military affairs.

The strategic advantage likely to be gained out of its artillery and troop deployments can be sustained only if ground deployments are backed by necessary research activities in the defence sector. In this regard the Defence Research and Development Organisation (DRDO) has contributed substantially in boosting India's defence capabilities through R&D. With a special focus on

technology in areas such as information, communication, command & control, Air Defence Control and Reporting System (ADC & RS) and Battlefield Management Systems (BMS), the DRDO is involving the use of technology in ensuring effective border security in a big way. Especially the Centre for Artificial Intelligence and Robotics (CAIR) in DRDO has provided the Indian military with path breaking technologies which have relatively eased the job of providing security in the border areas.

Given the unforgiving terrain and mountainous topography of India's northeast, the task of laying down cables for the purpose of communication and other activities is an extremely challenging one. The CAIR under DRDO has worked to improve technology in this regard. The Radio Trunk System (RTS) and the Radio Local System (RLS) are two significant technology innovations to improve military communications in the border areas like in the Northeast. There are many other technologies developed by the DRDO to improve communication with secrecy in border areas. For instance, the Wireless Message Transfer Unit (WMTU) allows mobile commanders to have access to communication networks, apart from being used to transmit information through images from one place to another. The DRDO is also engaged in building a futuristic Tactical Communication System (TCS) for the Indian Army.

A technologically high-end command and control system for military equipment is must for maintaining an edge over the opposition in undefined or long porous border areas as in the Northeast. The DRDO has also developed the Artillery Combat Command and Control System (ACCCS) to operate field artillery automatically. The ACCCS helps in the calculation of trajectory of artillery and also in communicating with secrecy. Given the buffer zone near the LAC and the undefined nature of border, the ACCCS should prove to be an effective tool in preventing foreign troop incursions.

Another important component of an effective border security management is a strong and credible air defence system. Air Defence Control and Reporting System (ADC & RS) developed by the DRDO is "to detect all aerial targets and neutralize the threat well away from the vulnerable area/vulnerable point (VA/VP) by effective integration of all AD Weapon Systems." A squadron of the surface-to-air Akash interceptor missile is also placed in the Northeast for the same purpose. DRDO through CAIR has also worked on Command Control Communication and Intelligence (C3I) System consisting of networked computers which help in providing real time situation awareness of critical areas concerned with security. Apart from these, a lot of research in defence technology is happening in the fields of creating knowledge base, handling data transmission, information & communication technology and robotics, even as India dreams of placing robotic soldiers in inhospitable border areas by the year 2023.

Disclaimer: The views expressed in this article are personal.

Source: http://117.240.239.135/STSfor/content/technological-developments-and-border-security-indias-north-east-part-1-2