Surrounded with security threats to its land frontiers since Independence and bedeviled with a paucity of funds, Indian defense industries for many decades plodded along alone striving for self-sufficiency as the western countries were loathe to part with the latest equipment or share their technology. The silver lining in this bleak situation turned out to be Soviet Union, which did not consider India strategically hostile and was willing to accept payments in rupees. However, in the unfolding geo-political scenario, besides Russia, countries like France, Israel, Britain, and America, each with well-established military-industrial complexes are keen to join hands with India to co-develop, co-produce and co-market defense equipment.

This change of political climate in favor of India has occurred primarily on three counts. First, despite sanctions and technology denial regimes, India has emerged fairly unscathed and stronger due to the genius and technical skills of its people. Both economically and militarily, making it an alternate geo-economic hub in Asia vis-à-vis China. Second, fear of a rising China that intends replacing American influence in Asia-Pacific and the pre-dominance of Islamic fundamentalism prevalent in most of the Asian countries has placed severe restrictions on selling of armaments to these countries by the West. India being a secular and democratic society, offers an attractive alternate market. Third, all four plus generation weapon platforms require IT engineering solutions in which India leads. Today, India is both a cost-effective hub for R&D investments and also boasts of the capability to absorb fair quantities of new generation weapon systems produced, due to the rapid modernization of its defense forces that is underway. To optimize monetary benefits as well as leverage the politically conducive environment, New Delhi needs to craft a holistic strategy instead of clinging to a piecemeal approach.

First, the Defense Research and Development Organization (DRDO) and other agencies must resist the temptation to reinvent the wheel. Instead of frittering their resources on systems that can be bought off the shelf or through transfer of technology (TOT), they should focus on mastering critical technologies that other countries will not share with us. Low-tech items like binoculars, or 9 mm carbines, crucial for success in close combat can simply be imported along with a license to produce them locally in the private sector. Yet, the Indian Army still awaits an ordinary item like a carbine! Similarly, instead of spending a fortune on research on the MBT Arjun, which the end-user is still wary of inducting, we could have easily evolved Mark–II and III versions of the world class T-72 tank series. Preferably DRDO and our scientists should, therefore, concentrate their energies

in developing nuclear powered submarines or re-jig the PSLV/GSLV technology to produce ICBMs as these form part of technology denial regimes. Nuclear powered submarines for completion of the nuclear triad and ICBMs are a necessity for an emerging global player, since the power of a country influences only as far as the reach of its sword!

Second, to sharpen the competition in wide-ranging research on future weapons, New Delhi should encourage and fund, both the government agency as well as a private sector company. The final selection of the weapon can be made by the end user but without the loser suffering a financial loss. This will ensure serious commitments in R&D, development of a superior weapon system, giving larger profitability and encouraging the private sector to become a significant part of the Indian military-industrial complex. Such inducement to the private sector in defense production is the key to development of a world-class infrastructure. To further familiarize and enable private sector entry, the Army, Navy and the Air Force should maximize outsourcing of maintenance and repairs of equipment to private vendors, thereby spurring their participation.

Third, no single vendor or country has the resources to invest individually to attain self-sufficiency in creating weapon platforms of the next generation. The future well being of nations will depend on their integrating their armament industries effectively between countries with shared perceptions of their national interests by creating joint ventures. This will bring diverse skills together to enhance the capabilities of the product, reduce the costs by sharing investments in R&D and achieve profits by jointly marketing to other friendly nations. Brahmos, the supersonic cruise missile produced jointly between New Delhi and Moscow is a case in point and an unprecedented success story.

A US Air Force General recently commented that F-15 Eagle fighters had lost 90 per cent of all simulated dogfights to Indian pilots flying Su-30MKI in the skies over Alaska causing quite a stir. The Su-30MKI, a four plus generation aircraft, owe their existence to the parameters set by the Indian military, creating a brand new fighter aircraft by harnessing Russian genius with skills of India, France and Israel. This joint approach and the experience gained with Su-30MKIs can be applied to MiGs too – a time tested machine. Therefore, it is worthwhile to examine the possibilities of investing twenty per cent into shares of MiG Corporation by HAL since we need a replacement for ageing aircraft in the Indian Air Force. Similar replication of projects with other partners in Israel, France and Britain can cut costs and create reverse dependencies, thereby creating mutual

economic stakes that can be politically leveraged. However, while working out joint ventures, one should be careful that it is dependent on ‘sunrise technologies’ that we require and not on transfer of ‘sunset technologies’.

Last but not the least, with fiscal restraints becoming greater in future, Indian military industries to prosper must go into an overdrive to export their hardware. A modest beginning in exports worth 1.4 billion dollars was achieved. A vast market exists for exports in West, East and Central Asia besides Africa. It is imperative that New Delhi set up a central mechanism, in consultation with both public and private sector partners. Besides recovering the R&D costs which can be recycled to create next generation weapons, this would help extend India’s geo-political reach. Military-technical cooperation has emerged as an integral part of international cooperation. It takes into account the political, economic and military interests of states and enables a push for exports to raise additional funds in order to improve the scientific and industrial infrastructure of the domestic defense industry. Therefore, this is the route the Indian military-industrial complex should devise to emerge as a global player by the end of this decade.

Fencing the borders

In J&K, the Northeast or anywhere else, insurgency or terrorism cannot be sustained by anti-national elements, unless they enjoy external support. To fuel it, a foreign power has to inject financial support, induct war-waging materials, facilitate the training of the locals and conduct detrimental psychological warfare through the local media to create social conflict between different ethnic or religious groups. If this external assistance can be reduced, contained or delayed by counter-measures of the state, the movement will either suffer a breakdown or die a natural death. While erecting a fence or any composite obstacle on LoC in isolation may not be an answer to

Pakistan's cross-border terrorism, but as part of an overall multi-tiered counter-terrorism grid, this supplementary measure augments the efforts of the Indian Army in fighting the proxy war being waged in Kashmir.

The primary task of the Army in J&K for the past several decades has been to ensure that the governance by the elected representatives and the civil administration continues unopposed by outside forces. In this, its counter-insurgency doctrine has successfully played a pivotal role without yielding an inch of land to the enemy. Recently, to further prevent the inflow of insurgents across the border, the Army has erected a 740-kilometre fence along the LoC. This formidable obstacle, as part of the grid, has started paying a fair amount of dividend. Insurgents who earlier entered in droves from Pakistan have diminished to a trickle.

The fence consists of two parallel rows, ten feet high, erected on concrete pickets with concertina coils in between. During night time, the fence is electrified as well as illuminated in large areas. The fence acts as a composite obstacle system along with surveillance radars. It is covered by observation and fire and is regularly patrolled by the infantry. In addition, the fence is also covered by artillery observation posts, which can direct devastating fire on infiltrators in the shortest possible time. In inaccessible snowbound areas, the fence is kept under constant surveillance by army aviation choppers. This obstacle has proved to be a major deterrent to the infiltrators, thereby successfully lowering their ability to cross over to our side. However, should odd attempts at infiltration succeed in

breaching the fence, various early warning systems consisting of sensors, radars and night vision devices monitoring the movement come into instant play. In such an eventuality, the fence acts as a tripwire directing the hostile elements towards pre-selected ambush sites manned by infantry personnel.

The military has to consistently employ various means to diminish the combat power of the insurgents by either eliminating them or winning them over. To be successful in either, it needs to attain favorable troop density vis-à-vis the insurgents in order to effectively neutralize them. For this, a quantum of force level is arrived at by taking into account factors like terrain conditions, type of communication network and local support available to the terrorists, assessment of their numbers etc. However, the most important ingredient for containing militancy is by putting a stop to further infiltration. In this, the fencing has proved to be a fairly cost-effective method to achieve substantial reduction in incidents of cross-border terrorism. A combination of present force levels coupled with a fencing network, far outweigh the advantages of a mere deployment of security forces. Besides, deployment of troops by itself would multiply the costs manifold. However, a word of caution, the employment of such tactical measures cannot permanently eliminate infiltration or ex-filtration bids. Such obstacles certainly impose a delay or act as a deterrent, putting terrorists in disarray. This opens a small but vital window of opportunity for the security forces to react effectively to contain an adverse situation.

During the peak period of insurgency in Punjab, it was the fence

that ultimately played a key role. Once the fence was constructed, tractor trolley loads of AK-47 rifles, medium machine guns and a plethora of other warlike stores, which were inducted earlier with ease, were denied access to the plains of Punjab. Due to a paucity of external support, the terrorists were on the run. This in turn provided breathing space to the government machinery, including military resources, to regain complete command and control and dominate the ground. This is a classic counter-insurgency success story.

Due to different ethnic composition, difficult terrain and extreme weather conditions, the success rate by replication of the fence along the LoC in J&K, or in Bangladesh may vary. However, it has a favorable cost benefit ratio and presents a formidable obstacle. Infiltration bids by Pakistan trained terrorists have reduced considerably. Today the fence is a cause of sleepless nights for the ISI mentors and is acting as a great impediment in thwarting their inimical designs. The counter-insurgency model of the Indian Army has stood the test of time since 1947 and the gigantic effort of fencing the borders has added another feather in its cap.

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