Transformation of India's Infantry

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Follow Me – I am the Infantry.

Transformation of the infantry is already underway. The pace perhaps is not as fast as some would like but the focus and commitment to transformation remains an imperative for the army's leadership. Today's operational environment requires that we remain receptive to change to exploit the phenomenal advances that have been made on the technological front. But even though change is inevitable, it would have to be accomplished by keeping unchanged the basic tenets and ethos of the infantry. Two aspects differentiate the infantry from the rest of the army. Firstly, for the infantry, the soldier is the weapon. Secondly, it is the infantry and infantry alone that fights the close quarter battle, captures and holds ground and fights to the last man and the last round. The infantryman's fight is always close and personal. His skill, courage, ingenuity, daring and guts, thus, constitute the infantry's core strength and *raison d'être*. These attributes are constants and do not change with time.

The moral and ethical soul of the infantry and the soldiers who personify it are reflected in the infantry's commitment to victory. This commitment leads to heroic actions in war as shown by Major Shaitan Singh and his men in fighting to the very end in Rezang La or the valiant defence put up by Subedar Joginder Singh and his platoon on a ridge on Tongpeng La on the Bum La Axis in the Tawang sector. The ethos of the infantry demands of the infantryman that he put his mission ahead of all else. He must always strive for victory, never quit, and never leave a fallen comrade. This ethos is not limited to the battlefield but to all aspects of an infantryman's life while in service and indeed even after he hangs up his uniform.

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Transformation for the infantry is much more than merely giving the soldier better weapon systems and communication means, however important these may be. It has to do in equal measure with training and conditioning of the soldier, with unit *élan* and *esprit de corps* and with organisational and group cohesiveness. The infantryman has to be both mentally and physically tougher than his opponent, because to simply survive on the battlefield is not enough. He must be able to endure the physical and mental hardships of combat and retain that inner determination to engage and defeat his adversary in any future battlefield.

The Future Battlefield Milieu

Glimpses of the future battlefield are visible in the conflicts that have taken place across the world in the decade gone by and those currently underway in parts of West Asia and closer home in the Af-Pak (Afghanistan-Pakistan) region. Advancements have taken place in situational awareness, precision weapon systems, digital communications technology, satellites and micro processing. How the military mind adapts to, and uses, this technology will redefine military structures, organisations, doctrines, concepts and tactics to transform war waging and war-fighting capability

No longer do we have a clearly definable, two-dimensional battlefield. This has given way to the battle space. In the Indian context, this encompasses our landmass and island territories, the high seas, ocean depths, air space, space, cyber space, and the electro-magnetic spectrum. It also includes the minds of our leadership and the population at large. Future conflicts will no longer remain confined to national borders but will be spread all across the battle space. The spectrum of conflict too cannot be perceived in terms of a neat, easily comprehended, linear escalator – with peace at one end and war at the other. It is a continuum within which lie a range of military and non-military conflict prevention, conflict and post conflict activities. The distinction between these is blurred.

Information superiority will be the key to tomorrow's war. In itself, this is not new. Commanders have always sought the best possible information of own and enemy forces as they sought to peer through the "fog of war". But information has sometimes added to, rather than diminished, the fog, as observed by Clausewitz:

> A great part of the information obtained in war is contradictory, a still greater part is false and by far the greatest part is of doubtful character.

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However, in the information age, space-based, aerial and remote sensors, harnessed to digital processing and communications, supplemented by more traditional capabilities, will provide commanders with unprecedented knowledge of their battle space. This does not mean that threats will reduce. The battle space will continue to be a place of immense danger, violence and chaos. The leadership challenge is to regulate the battle space for gaining a decisive edge over the enemy. Accordingly, war-fighting doctrines must enable the force to effectively operate in such an environment as also to adapt to changing circumstances.

Security Concerns

Pakistan's hostile stance towards India has already led to four major conflicts, the last being the Kargil War where Pakistan once again suffered a humiliating defeat. But this has not lessened the prospects for future conflict. On India's border with Tibet, differences with China over territorial claims led to a conflict in 1962 and could lead to conflict in the future. With two of our major neighbours then, the *casus belli* for future conflict exists. This necessitates that our field force must:

- Maintain a high state of operational readiness at all times for conventional conflict.
- Have the ability to mobilise and deploy in an acceptable timeframe with reference to the envisaged threat.
- Have the capability to dominate the battlefield by fully exploiting enabling technology with new concepts, doctrine and tactics, in conjunction with training and equipment of the field force.

Increasingly, conflict with non-state actors is assuming challenging dimensions. The infantry has been engaged in sub-conventional conflict for over five decades in parts of northeast India and for over two decades in Jammu and Kashmir. This commitment will continue as political solutions to problems

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remain elusive. Of major concern is the escalating level of Maoist violence in many parts of the country which has prompted the prime minister to declare this as the most serious security challenge facing the nation. While the local police and central armed police forces are currently engaged in conflict with the Maoists, the army may be required to operate against them in the future.

The spread of light weaponry, including precision tactical and man-portable weapon systems, explosives and information and communication technologies will significantly increase the threat posed by non-state actors to the Indian security establishment. Support to non-state actors from states hostile to India will amplify the threat from these groups. The trend we are likely to witness in the coming decades is conventional conflict giving way to sub-conventional conflict. Modern communication technologies such as satellite and cellular phones, the internet, commercial encryption, hand-held navigation devices, high-capacity information systems that contain large amounts of text, maps, digital images and videos are already in use by non-state actors and have enabled such forces to organise, coordinate, and execute dispersed operations. The non-traditional battlefield now includes space, cyber space, and the media, all of which can be accessed by state and non-state actors, providing advantages to each, thereby indicating the need to absorb and assimilate capabilities to envisage malignant use and counter the same appropriately.

The infantry would be the major player in both conventional and sub-conventional conflict. The coming decades will see the infantry, for the most part, being engaged in tackling insurgency in various parts of the country. However, it would have to be prepared at all times for conventional conflict as that will remain its primary role. The need for transition between two conflicting requirements of operating philosophy is a challenge the infantry will have to face. It would require high standards of training, motivation and leadership.

Infantry Transformation

The Infantry, while dealing with threats both at the sub-conventional and

conventional level would require a high level of situational awareness which would need to be translated into decision-making and finally into execution of command intent. The requirement is, hence, of having the following:

- **Information Superiority:** Intelligence, surveillance, target acquisition, and reconnaissance (ISTAR), supported by command, control, communications and computers, must provide timely, accurate, relevant and assured information and intelligence in the right form to support decision-making, planning and execution of operations.
- **Military Capability:** The infantry must have the wherewithal to successfully prosecute operations across the conflict continuum. For this, the infantry must be suitably organised, trained, equipped and led.
- **Command Structures***:* The command structure must enable the commander to exercise effective command, through leadership and decision-making and to access and coordinate rapidly a range of organic and supporting capabilities to achieve his intent. While command structures must suit our command culture, they must be sensitive to fully exploit planned capabilities that will actually be available to our commanders.

Information Superiority

As the information age progresses, the nature and prosecution of close operations will change. The focus for this form of combat will revolve around the brigade level and below. But even at this level, high quality relevant information will be provided by operational level assets, which, when combined with locally gathered information, will give brigade commanders and their subordinates an undreamt of information advantage over their adversaries. This will enable rapid decision-making and action and the application of appropriate and timely effects, including joint firepower.

Enhanced situational awareness is possible with the help of emerging technologies. It will involve employment of the global positioning system (GPS), global information system (GIS), laser range finders/sensing devices and real-time communication means. Infantry transformation would be looking at devices that have integrated these technologies in small hand-held machines that give to the soldier the facilities of location, direction-finding, navigating and enhanced communication facilities in a single palm top set. Such capability would produce great synergy in infantry operations across the conflict continuum.

The field force, for effective and timely force generation and battlefield domination, must have real-time intelligence, surveillance and reconnaissance

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(ISR) capability. In the operational/tactical sense, ISR, via aerial/ground platforms and sensors, means the integration of reconnaissance, surveillance and intelligence systems to permit commanders to comprehend the battlefield in a real-time mode. This would permit reduced force generation time tactically as also maintain the battlefield tempo. Human intelligence (HUMINT) and an aggressive peace-time ISR would enable both monitoring of the war preparedness of the adversary, and his intent. ISR, in the modern battlefield cannot be devoted to 'one run over the target area' surveillance. It has to be continuous and on line. Thus, the ISR architecture will entail the use of airborne warning and control system (AWACs), geo-synchronous earth orbit (GEO) satellites, low earth orbit (LEO) satellites, unmanned aerial vehicles (UAVs), unmanned combat air vehicle (UCAVs) and micro air vehicles (MAVs). Most of these will remain strategic or operational level assets. But their outputs must be leveraged, where applicable to support the tactical battle.

In the transformation process, the infantry would have to move towards greater use of unmanned systems. Unmanned aerial vehicles/ combat aerial vehicles (UAVs/UCAVs), as also unmanned ground vehicles (UGVs) would be required for reconnaissance, intelligence, surveillance, target acquisition, and destruction. They will form the core weapons of the future. UAVs have the potential to establish a persistent dwell over a target area, giving commanders the potential capability to have their own aerial view of their area of interest for as long as they remain interested, subject to system limitations and operational circumstances. Heron/Searcher UAVs with enhanced sensor packages would be needed at the divisional/brigade levels for situational awareness for tactical operations. At the battalion level, hand-launched mini UAVs would be required for tactical/ sub-tactical operations. Micro-UAVs of 300 gm and below with up to one hour endurance would be needed at the company/platoon levels. Reconnaissance and surveillance UAVs are likely to constitute the most significant technical infusion at the infantry level and are likely to produce extraordinary results in the sub-conventional and conventional domains.

Human Resource Development

Training for the infantry would be a key component in the transformational process. Stress on building infantry ethos and mental and physical toughness must go hand in hand with learning new skill sets for handling advanced weapons and equipment and for operating in an all arms environment. At the basic level, the stress on the regimental ethos and emphasis on physical fitness, field and battle craft, and good shooting standards will remain. Subsequently, training must focus on gaining and sustaining high levels of experience on the technical and cognitive skills essential for operations. This assumes importance as the most fundamental change that would occur in infantry transformation would be the empowerment of the individual. The coming decades would see the infantry soldier as more of a sensor or a caller for effect than the deliverer of firepower through individual or crew served weapons. At the intake level itself, the infantry would have to increase educational standards and recruit those who are preferably computer literate. During service too, soldiers would be required to pursue higher studies for self-development. Higher standards of education assume importance in the modern battlefield, as the soldier has to handle a vast array of sophisticated equipment for fighting a high technology war. There would be a constant need to innovate, learn, and relearn skills, new ideas, products, technologies and processes.

At the group level, training would have to be focussed on sub-units operating dispersed, joint operations with other arms, heliborne operations and indirect fire support measures. Attention must also be given to battle space awareness, execution of command intent, dominating manoeuvre and precision engagement of targets. Use of simulators would assume increasing significance for honing skills required by individuals and sub-units for accomplishment of missions and in imparting effective training at lesser cost.

Restructuring of the Field Force

Speed and precision will predominate over mass. New and radical concepts of war-fighting would come to the fore which would require a restructuring of the field force. As an example, in the plains, an attack would involve negotiating multiple defence lines based on ditch-cum-bunds, canal obstacles, rivers and *nullahs*. Simultaneity would demand addressing the enemy defences based on these obstacle systems non-sequentially. It would involve precision engagement and concentration of assets against enemy defences in those areas where decision is sought, mobility of strike forces to converge rapidly at the points of decision, ability to operate in the third dimension, air superiority in the area of interest, integrated air defence cover and

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control over the electro-magnetic spectrum. The force structure in such a scenario may dictate fewer and more capable infantry, helicopter support gunships, effects-based artillery support using precision guided munitions (PGMs), a well set-up command, control, communication, computers, intelligence, surveillance target acquistion and reconnaissance (C4ISTAR) system and a streamlined logistic set-up. This may lead to reorganising brigades and divisions as also restructuring headquarters and units in a manner best suited for fighting future wars. The infantry, with its ability to operate on the ground as well as in heliborne operations would remain the cutting edge and must be equipped accordingly. Proposed restructuring and war-fighting concepts need to be tested in battle laboratories through computer simulation and other means and, if found workable and cost-effective, need to be adopted.

Firepower, Protection and Mobility

For the infantry, the requirement to operate well dispersed, well concealed and well protected will become a necessity. To retain the ability to concentrate in time and space will hence assume a criticality. Improvements in precision engagement capabilities will result in a shift in emphasis from direct to smart indirect fire. There will be a greater focus on night capability with each infantryman having night sights. At the platoon and company level, short range and micro UAVs, linked to smart indirect fire systems, would provide the infantry with lethal organic firepower as the decisive weapon of choice which could potentially supersede direct firepower. The future infantryman will become much more a *'sensor'* or a caller for effect than a deliverer of firepower through crew served or hand-held direct fire weapons. Indirect precision engagements will increasingly dominate infantry tactics which would require infantry units to have weapon systems which can deliver precision munitions preferably to a range of 10 to 15 km. Infantry units would have to be reorganised accordingly.

In the field of small arms, the basics of firearms technology have matured. The infantry would, however, require a replacement for the present small arms family of weapons. The essential technological requirement is of a lightweight, user-friendly weapon with inbuilt laser range finder, night capability and ability to deliver both kinetic and high explosive munitions with a very high level of

assured operation in all visualised battle contingencies in the Indian context. The system could be based on the Russian Kalashnikov rifles, the German Heckler & Koch rifles or the US M-16 series of weapons. We could then be looking at phasing out the medium machine gun as its role could be performed by a more capable light machine gun. The 81 mm mortar will also see a replacement with a longer range weapon system capable of delivering PGMs along with standard munitions.

As the infantry will be the major arm tackling insurgency as well as conventional conflict, its needs for transformation must be placed at the highest priority in allocation of resources.

UCAVs such as RQ1 Predator and the MQ-9 Reaper would be the weapons of the future. They would be ideal for suppressing air defence, deep penetration strikes, interdiction, reconnaissance, electronic counter-measure (ECM), electronic counter-counter-measure (ECCM) and intelligence gathering including hyper spectral imaging. These assets would be centrally controlled but with greater availability of numbers would increasingly be used in conjunction with the infantry's ground battle.

Protective gear against kinetic attack will be lighter and polymer based. The infantry will also be moving in the direction of nuclear, biological, chemical (NBC) weapons protection for special forces tasked to operate in contaminated areas.

In the plains, the infantry must transform to full wheeled mobility. For operations in the mountains and in sub-conventional conflict, very heavy premium would be placed on tactical mobility using utility helicopters for movement and attack helicopters for fire support. Close integration would be required between the infantry and helicopter support which would necessitate such resources being made an integral part of army aviation.

Transformational Constraints

Size: The large size of the infantry by itself imposes constraints on the transformational process. Given the multifarious challenges faced by India on the social and economic fronts, there is a limit to which the defence budget can be increased. Over the years, this has remained constant in real terms. Within the army, the limited availability of resources when spread across the force imposes challenges for modernising and transforming the infantry. As the infantry will be the major arm tackling insurgency as well as conventional conflict, its needs for

transformation must be placed at the highest level in allocation of resources.

Technological Hamstrings: Defence-based industries and research and development activities are government controlled,with all the attendant problems. These manifest themselves in high cost of production, mediocre research and inordinate delays in the development process. A case in point is the delay in providing a suitable grenade to the infantry to replace the obsolete 36 HE hand grenade which is still in use. Many examples of similar nature can be quoted. The transformation process can be expedited by involving Indian industry in the defence sector in a big way. Another challenge in the field of technology is the technology gap which exists between the young officers who understand what they do not manage and their senior leaders who manage what they do not understand. This could be addressed by greater interaction across the Service spectrum with senior officers taking the views of the subordinates on board in the decision-making matrix.

Inertia: Large organisations tend to have inertia many times more than smaller ones. The sheer size of the army makes carrying out change difficult, slow and time consuming. Within the army, the size of the infantry leads to similar constraints.

Resistance to Change: Technology is constantly leveraged to enhance military capability. But changes made are generally incremental to structures, processes and people. The tendency to continue with the *status quo* is the result of existing structures working well. We, thus, improve our capability of fighting the 'previous war' at the cost of preparing for the next conflict. Changes in military thinking, doctrines and procedures, thus, remain evolutionary rather than revolutionary. Changing mindsets will remain a major challenge in the transformational process.

Conclusion

Transformation is more than technology—it is about training soldiers and developing leaders who are agile, versatile, and adaptive. While maintaining and further enhancing the tenets and ethos of the infantry, the need is to exploit technology and adapt to changing circumstances so that we can win the next war. Failure to do so will put the lives of our soldiers at risk and the security of our country in jeopardy. The need for transformation cannot be delayed or held at abeyance just because the nation is at peace and there is no threat of war in the near future. This precisely is the time we have for expediting the transformation process. The task needs to be taken up in right earnest lest we lose this window of opportunity.