

# EDITOR'S NOTE

A momentous year is coming to an end. The year witnessed Crimea breaking away from Ukraine to join Russia, and continuing turmoil in that troubled land. China's brinkmanship continues unabated and the pulls and pressures in the South China Sea are increasing. American supremacy is ostensibly being challenged. There is considerable flux in international relations. The dangers of the so-called Islamic State are increasing and the situation defies an early resolution. A number of other such happenings can be cited but in all such situations, the strong relationship between *Defence and Diplomacy* is marked, proving yet again that this journal has been appropriately named.

As this issue goes to the press, the visit of the Russian president is just over, with the strategic relationship being again emphasised. The visit of President Obama is due in January 2015 and again some momentous statements are likely. Yet, the friction between Russia and the US is increasing and given the supposedly coming closer together of Russia and China, the cauldron of power politics is being well and truly stirred. In this milieu, the article by **Chandra Rekha** on a possible New Cold War is timely. The Sino-US relationship has global significance and **Hina Pandey** suggests that China's unceasing quest for influence and resources can be viewed as China directly challenging US hegemony. The implications are serious. Nearer home, **Sanjay J Singh** discusses the role of defence and military diplomacy in India. In a scholarly work, he argues that defence diplomacy is an inescapable part of national security and its salience will increase with time. In a related vein, **Vivek Kapur** discusses out of area contingencies in an Indian scenario. He gives a historical perspective and deals with the likely implications.

Space and the cyber world have a great impact on military power but in this issue, the two topics are tackled somewhat differently. **KK Nair** examines the progress made in recent years by Japan towards military applications of space. Japan is in the

process of rapidly changing from a civilian space power to a military space power as well. The Japanese are evidently adept at adapting to changing times. In a few short years since they decided to procure military space capability, they can now boast of operational use of military space. Our own space capability is more rounded but we could take a page from their book regarding the build-up of independent military space capability. **Ashish Gupta** proposes the need for the adoption of conventions and laws governing cyber warfare. Military use of the cyber world can neither be ignored nor wished away and the need for some regulations is obvious. Unfortunately, although the need is well appreciated, unanimity is elusive and is likely to remain so.

The march of technology and its significance in the military field requires no emphasis. **Sheel Kant Sharma** tellingly and convincingly explains the imperative of creating a knowledge society and the recognition that the place of knowledge in national security can be ignored only at our peril. On a slightly different tack, **Manoj Kumar** says that innovations that are created for defence can, and should be, transferred to the civilian sector to advantage. He quotes some examples and the thought process is compelling.

Also in this issue, **Sitakant Mishra** says that parity with India is a constant peeve and a desire with Pakistan. Much as Pakistan may want to, the past cannot be ignored, and nuclear rehabilitation of Pakistan remains distant. In a thought provoking article, **Ankit Kumar** suggests that climate change is developing into a major concern and could lead to global insecurity. Finally, **Simrat Virk** peeps into Tibet and sees lack of integration, and exploitation of people and resources in a land bountifully endowed by nature.

Happy reading.



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# ROLE OF DEFENCE AND MILITARY DIPLOMACY IN INDIA

SANJAY J SINGH

## INTRODUCTION

As India pushes forward to 'redeem its pledge' and fulfill its 'tryst with destiny' in the coming decades, its core national (grand) strategy must *per force* remain comprehensive national development. Pursuit of this strategy requires proper, coordinated and synergised use of all tools of statecraft, ensuring that the right enabling conditions are provided. This includes provision of peace, stability and security, both within India and in the surrounding environment. In this, the role of military power would be relatively clear and evident. However, the role of defence diplomacy, and within it, military diplomacy, has been less clear in terms of both doctrinal clarity and policy.

India has observed an evolutionary model, wherein it is the military needs that largely steered its defence and military diplomacy, with the options and primacy of the broader foreign and security policy developing only in later years. Most defence and military diplomacy initiatives have grown without a central owner, agency or strategy, and originated from either the other country or were

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proposed by the respective armed forces Headquarters (HQ) as per their independent needs. Whilst this has facilitated evolution of defence diplomacy in India, it is not the most efficient or beneficial model for the future.

In the decade ahead, in keeping with the importance of regional stability and security to India's national strategy, the role of, and imperatives for, defence diplomacy can be expected to grow. However, there has been little dedicated study of this important subject, with the exception of a seminal work by Col KA Muthanna (Retd) in the USI project, "Enabling Military-to-Military Cooperation as a Foreign Policy Tool: Options for India", published in 2006. There is a need for more studies and debate, for development of supporting thought, doctrines, strategy and structures, towards shaping and harnessing of defence diplomacy. In this light, it is proposed to explore the following issues:

- Doctrinal perspective of defence diplomacy and its facets.
- Contributors for the growing role of military diplomacy.
- Role, objectives, missions and tasks of military diplomacy.
- Structural support for the improved conduct of military diplomacy.

### **DOCTRINAL PERSPECTIVE**

The phrases defence diplomacy, defence cooperation and military diplomacy are used to describe various initiatives related to defence relations. However, they are often used variably and interchangeably, at different times and with different agencies. There is, presently, no common understanding of what constitutes *defence diplomacy*, or on classification of measures thereunder and their handling by various agencies. Any development of doctrines and concepts regarding defence diplomacy, therefore, requires that we first develop a common understanding, lexicon and classification of its various facets. An endeavour to derive doctrinal distinctions and functional definitions is made hereunder.

#### ***Defence Diplomacy***

The phrase '*defence diplomacy*' can be understood as relating to the aspects of diplomacy in the conduct of defence policy. Hence, defence

diplomacy can be defined as the art and process of conducting India's defence relations. This would include various measures for inter-state cooperation in the field of defence, as also the handling of relations between the respective defence agencies, including the armed forces. Evidently, defence diplomacy would have multiple stakeholders, including the Foreign Ministry, Defence Ministry, the respective armed forces, and agencies therein. It may also cover efforts of other institutions that affect defence relations and its components, such as by 'Track-II' institutions, 'think-tanks', etc.

### *Defence Relations*

Defence relations may be seen as a component of the broader foreign relations between states, which are steered by foreign policy and handled through diplomacy, primarily by the Ministry of External Affairs (MEA). However, it is also progressed by other agencies and institutions, including the Ministry of Defence (MoD) and the armed forces, albeit within the ambit of the broader foreign policy. Presently, the concept of defence relations is not handled as a dedicated field or specialised department within our MEA.

### *Defence Cooperation*

Defence cooperation has been defined differently in various countries, wherein it is often used interchangeably with defence diplomacy and even with military diplomacy. If defence diplomacy is to develop as a key tool of foreign relations, then there is a need to distinguish its functions and scope, including categorisation of measures to be handled by different agencies. Accordingly, it is proposed to define defence cooperation, for India, as the activities and measures encompassing inter-state cooperation in the field of defence that are primarily handled by the MoD. These would include all aspects of cooperative defence policy and plans; mutual support arrangements (operational, training, logistics); development, production and transfer (sale, purchase, lease, gift) of defence weapons and equipment; defence technical and technological cooperation, etc. Evidently, these measures would also involve other agencies, especially in the implementation, but would primarily be under the control and coordination of the MoD.

### *Military Diplomacy*

There is a large number of measures that are progressed directly by the armed forces, both singly and jointly, within the approved defence cooperation and defence relations policies. Military diplomacy is best understood as covering these operational aspects of defence relations, which are undertaken by the armed forces, in implementation of the defence cooperation policy. This would include aspects such as conduct of training, exercises and operations; development and implementation of common procedures and protocols; mutual contact, visits and exchanges, staff talks, etc.

### **CONTRIBUTORS FOR GROWING ROLE OF MILITARY DIPLOMACY**

The entire gamut of governance and statecraft is becoming increasingly interconnected. Actions and policies of one department or ministry can affect, and bear upon, the functions and functioning of other departments as well. In the light of the same, and in the wake of expanded awareness and communication amongst various stakeholder agencies, there has also been increasing recognition of mutual linkages and dependencies. Traditional silos in governance, especially in the fields of national development and security, have become outdated. The emerging and future models will, of necessity, have to be more interlinked and interconnected. In the pursuit of national security interests and policy, there are consequently increased aspects and perspectives to be considered, while there is a wider range of tools also available to the policy-makers. It bears no reiteration that the development, maintenance and employment of all tools of diplomacy are essential to promote and safeguard national interests and progress the national (grand) strategy.

Looking beyond our own imperatives, it can be seen that the realm of security is a core national interest across all states and is an essential component of their foreign relations. In the 21st century, there is a continuing, vital role of force and violence, and correspondingly of their state instruments, viz. the armed forces, for the safety, security and sustenance of the nation and its denizens. In fact, the word 'strategic', defining longer and larger term national interests, is invariably related, directly or indirectly, to the safety and



security of the state. There is also increasing commonality of national security interests in the globalised order, with concomitant need for cooperation or, at the very least, coordination and communication.

The military capability of a state also affects the security interests of other states, especially those in its strategic neighbourhood. Hence, developments in military technology, military industry, war-fighting doctrines, training and preparedness, military relations, and military policy of one state have a significant bearing on other states. Defence and military diplomacy provides a means for improving mutual understanding and cooperation in the fields of defence policy and posture, which is essential to prevent strategic misunderstanding and misjudgement, and in promoting cooperative security.

In view of the foregoing, the factors contributing to a growing role of military diplomacy can be summarised as follows:

- In the conduct of foreign relations, a wider set of tools is available for diplomacy, wherein the tools governing security are common to, and have a resonance across, most states.
- The demands of modernisation and future governance encourage the various organs of a state to work in an increasingly coordinated, even joint, manner.
- The requirements of future security between states warrant development of coordinated, cooperative and mutually considered, if not balanced, security policies and frameworks.
- The linkages between militaries of different states have increased and provide a medium for enhancing mutual understanding and security needs.
- The tools of defence and military diplomacy are being used increasingly by all states. A state that is unable to use this tool properly and efficiently will limit its ability to effectively conduct foreign affairs and pursue its national interests.

## **ROLE, OBJECTIVES, MISSIONS AND TASKS OF MILITARY DIPLOMACY**

### *Role*

In the coming decades, the role of defence (and military) diplomacy can be expected to move outside the ambit of purely military strategy

into a direct subset of the national security strategy. In this case, defence and military diplomacy will play a larger and more direct role in the pursuit of national security interests, and form a distinct pillar of the nation's foreign and security policy. In this framework, the future role of defence and military diplomacy in India may be derived as:

To strengthen the regional security environment, safeguard and promote national security interests, and support the national (grand) strategy of comprehensive national development.

### *Objectives and Missions*

In keeping with the above role, the broad objectives and associated missions (wherein some missions may serve more than one objective) of defence and military diplomacy in the future can be derived as follows:

- **To understand, and prevent misunderstanding of, military capability and intentions of both potential adversaries and friends.** The associated missions would be to:
  - Maintain lines of communication.
  - Promote mutual transparency and interaction.
  - Develop mutual understanding.
  
- **To shape the external military environment in support of national security and foreign policy goals.** The associated missions would be to:
  - Conduct defence consultations and strategic dialogues, at relevant levels.
  - Develop appropriate military-military relations.
  - Institutionalise means for maintaining and developing defence relations with other countries.
  - Observe Confidence-Building Measures (CBMs) with potential adversaries.
  - Develop mutual understanding and interoperability with potential friends.
  - Maintain appropriate presence and participation in national and common, regional and global, security interest zones.

- Provide assistance in Peace Support Operations (PSO), Humanitarian Assistance and Disaster Relief (HADR), Non-Combatant Evacuation Operations (NCEO), etc.
- Develop capability of friendly military forces – by means of military sales, training and education, technical and logistics support, etc.
- Participation in (and support of) regional forums that deal with security issues, such as the Indian Ocean Naval Symposium (IONS), Indian Ocean Rim Association (IORA), ASEAN Regional Forum (ARF), etc.
- **To obtain better understanding of the operating environment and hone own capacity and capability.** The associated missions would be to:
  - Carry out single, joint and combined exercises in the areas of interest.
  - Examine best practices, procedures and technologies of other militaries, and apply necessary improvements to own military.
  - Obtain access to better military technology, promoting joint ventures, absorption of technology and indigenisation.
- **To develop political relations, and signal political interests and commitments.** The associated missions would be to:
  - Use military relations to develop larger political relations (recognising that while ‘strategic’ may carry different connotations for different states, national security would remain a common factor to all).
  - Convey appropriate political signals – of national interest, friendly relations, political commitment, *et al* in nuanced or open manner.
  - Obtain higher access to, and influence with, other states’ institutions and decision-makers.
  - Address common security concerns and develop mutual cooperation.
  - Enhance security cooperation under UN and bilateral/multilateral auspices, including PSO, counter-piracy, counter-terrorism, etc.

- **To strengthen national image and portray credible deterrence.** Deterrence, to be credible and effective, requires the other side to be convinced of own capability and intention. Accordingly, the international image of own military forces is an essential component of own national security posture. The associated missions under this would be to:
  - Project own military capability and intent.
  - Conduct/participate in appropriate unilateral, bilateral and multilateral military exercises, efforts, and forums that can showcase own perspective, capability and interests.
  - Maintain military relations and engage defence and security establishments of important states, especially potential adversaries and significant regional/global players.

### *Tasks*

The tasks of military diplomacy would broadly remain the same across most missions, and serve to meet the respective objectives. The range of military diplomatic tasks, which provide the basic means for conduct of defence cooperation and military diplomacy can be summarised as follows:

- **Military Diplomats** – to select, train and direct.
- **Military Visits** – of personnel, ships and aircraft.
- **Military Training and Education** – both as recipient and provider, in India and overseas.
- **Military Staff Talks** – to progress other tasks and missions.
- **Military Protocols, Procedures and Agreements** – development and implementation of Memorandums of Understanding (MoUs), CBMs, logistics support for Operational Turn Round (OTR), interoperability, confidentiality, end-user, etc.
- **Joint Military Exercises** – covering conduct, timing, participants, scale, complexity, etc.
- **Military Operations** – such as PSO, HADR, NCEO, maritime patrols, counter-terrorism, counter-piracy, etc.
- **Military Equipment and Technology Sales** – including equipment performance evaluation, training, follow-up support, etc.

- **Military Equipment and Technology Purchases** – including technology access/transfer, joint ventures – Research and Development (R&D), production, financial and technical terms, contractual aspects, etc.

## **STRUCTURAL SUPPORT FOR IMPROVED CONDUCT OF MILITARY DIPLOMACY**

### *Current Challenges/Limitations*

The main challenges/limitations in the organisation and support for conduct of military diplomacy are assessed as follows:

- Centralised vision and strategy for defence and military diplomacy.
- Clear, joint structure to support the development and implementation of defence and military diplomacy.
- Dedicated funding, at all levels, for the conduct of defence and military diplomacy.
- Role and responsibilities of defence attachés and professional military, technical, training, logistics and oversight teams.

### *Centralised Vision and Strategy*

The various initiatives and growth of military diplomacy, defence cooperation and defence relations in India have followed an evolutionary path, in response to external and internal stimuli. The external stimuli comprised initiatives by another country, acting as per its requirement/strategy, and internal stimuli included the 'bottoms-up' need of the armed forces, such as in technology, training, etc. The responsive, and reactive, approach nevertheless facilitated development of basic concepts and structures, with respective stakeholders contributing in a flexible growth, and benefits also accruing on 'case-by-case basis'.

The process has now reasonably matured and the capacity of each department—in understanding and supporting the national strategy – has undoubtedly improved, even as the reactionary model has run its course and will fall short of our needs in the coming decades. There is consequently increased scope for making prior assessment and plans, as well as increased importance of providing centralised

vision, focus and drive. This should chart the overall foreign relations strategy, with the role of defence and military diplomacy therein, and provide longer term, integrated, defence diplomacy plans and guidelines for better implementation.

The centralised strategy must encourage action, by focussing on what effect and outcomes are to be achieved and where, and accordingly provide resources and guidance for the same. There is a risk, however, that such centralised plans could get entwined into bureaucratic processes and narrow interpretations, if the vision is clouded or else gets limited to a list of 'authorised/cleared activities', providing an 'auditors guide' to be applied/added onto each 'case-basis'. To obviate this risk, improved structures and mechanisms are required, for working in a coordinated, even joint, manner.

#### *Structural Support and Joint Processes*

In keeping with the proposed doctrinal distinctions of the various levels of defence diplomacy, there is need for corresponding structures and joint mechanisms for synergised conduct of defence and military diplomacy.

- **Defence Relations (DR):** DR is clearly a subset of foreign relations, which comes under the MEA. Conceptualisation and implementation of DR policy should, accordingly, be handled by the MEA [or, alternatively, the National Security Council (NSC) Secretariat]. Presently, the subject is segregated and mostly handled by the respective territorial divisions in the MEA. There is no dedicated institutional mechanism within the MEA for centrally examining or guiding defence relations, other than in some security aspects handled by the Disarmament and International Security Affairs (DISA) Division. In recent years, the MEA has accepted Economic Relations (ER) and International Organisations (IO) as specialised realms, and has established dedicated branches within the MEA for handling the same. A similar approach to DR is the next logical step, since it is an essential, increasingly important, component of foreign and security relations. A DR department will require staff support and linkages to the armed forces, to facilitate continuous and institutional consultations between the armed

forces HQ, MoD and MEA (and NSC Secretariat). This will also require positioning of the requisite numbers of armed forces officers in the MEA, to provide resident expertise, advice and staff support. A Joint Defence Relations Committee (JDRC) could also be considered under the MEA, to periodically examine and progress ongoing and new initiatives, with members from the various stakeholders.

- **Defence Cooperation:** India's defence cooperation with various countries is growing, while the MoD structure for managing the same remains limited and under strain, in terms of staff support and expertise available as also overlap of functions between the Planning and International Cooperation (PIC) Wing and corresponding Army/Navy/Air Force/ Integrated Defence Staff (IDS) Wings within the MoD. It is time to augment these structures and update the existing mechanisms/processes, including rules of business or guidelines for swifter, smoother and seamless conduct of military diplomacy. This must, especially, cater to the issues of defence industry and technology.
- **Military Diplomacy:** The conduct of military diplomacy is handled by the respective armed forces HQ and HQ IDS. However, this requires each case to be processed separately with the MoD, and mostly thence with the MEA. There has been a steady rise in workload and requirements over the past decade, in particular, which has strained the original mechanism and is slowly impinging on the scope and progress of military diplomacy. In response to the increasing demands, the armed forces HQ have augmented their capacity and structure for undertaking military diplomacy over the past decade. These have provided strong support in assessing and meeting policy requirements, and in the implementation of defence and military diplomacy. However, these structures bear further strengthening and integration into a broader defence diplomacy framework for the future.

### *Defence Diplomacy Funding*

There is no dedicated budget for defence diplomacy, other than military training and education activities that are included within the consolidated International Technical and Economic Cooperation

(ITEC) programme/ Special Aid Programme (SAP) of the MEA.<sup>1</sup> There is also no provision for funding of defence diplomatic activities at any level, other than for hosting/deputing foreign delegations and ship visits. Administrative processing of these and funding approval for each activity has to be taken up on a 'case-by-case' basis with the MoD, and often also with the MEA. This limits the organisational ability to plan and derive maximum benefit thereof from the activities. There is a strong need for budgetary planning and allocation for defence diplomacy activities.<sup>2</sup> Provision of dedicated defence diplomacy funds to the MEA, MoD and armed forces HQ, with allocation for various countries under suitable budget heads and approved range of activities, would enable improved defence diplomacy planning, with increase in efficiency and efficacy.

***Role and Responsibilities of Defence Attachés (DAs) and Professional Military Teams***

India has about 100 officers posted to defence wings across 50 countries. This stands out starkly against more than 110 countries hosting Chinese DAs.<sup>3</sup> The role of DAs was earlier restricted to representing and dealing with own armed forces HQ only, with limited involvement in the broader functioning of the embassy. The defence wings are *de jure* 'attached offices' at the embassies, and not integral to them. In fact, procedurally, even the MoD is not represented by the DA but by the consular staff, and the channel of communication for the DA is still through the respective armed force HQ/HQ IDS – even to the MoD. This limits the capacity of the defence wings to serve broader defence diplomacy needs.

Practically, however, the role and participation of the DAs has evolved, with their increasing integration within the embassy, in a natural, evolutionary manner, even as professional military teams are positioned for bilateral projects and specific requirements. This needs to be taken forward, wherein the DA should handle the gamut of defence relations under the ambassador, including progressing

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1. VK Muthanna, *Enabling Military to Military Cooperation as a Foreign Policy Tool: Options for India* (New Delhi: Knowledge World, 2006), p.142.
  2. Total estimates of expenditure for defence diplomatic activities across all ministries was Rs. 200 crores in 2005. *Ibid.*, p.147.
  3. *Ibid.*, p.9.



the DR policy of the MEA, defence cooperation plan of the MoD, and military diplomacy requirements of the respective armed force HQ. Professional military teams could handle specific issues, such as logistics, technology, projects, training, etc. on behalf of the armed force HQ, as presently.

## **CONCLUSION**

Management of our defence diplomacy has been done in a largely incremental and evolutionary manner. This has enabled the concept of defence diplomacy and measures thereunder to grow and mature, albeit not optimally and short of its potential. All major and middle powers in the world have a strong role for defence diplomacy, encompassing management of defence relations, defence cooperation and military diplomacy. In today's globalised world, the imperatives and tools exist for an integrated approach towards defence diplomacy. The current model in India has run its course and will not be able to meet future imperatives.

An integrated approach towards defence diplomacy is, therefore, necessary. A start can be made by debating and discerning doctrinal norms and distinctions, developing the concepts, and defining the required structural changes in the MEA, MoD and Air Force HQ. These need to be followed up by developing appropriate strategies and integrating defence diplomacy, which must be steered from the earlier process driven to a goal-oriented and output driven framework, with suitable structural support and mechanisms for monitoring and coordinating implementation.

# KNOWLEDGE SOCIETY, TECHNOLOGY AND NATIONAL SECURITY

**SHEEL KANT SHARMA**

The half century of the India-China War had prompted exhaustive reviews two years ago. That war exposed the utter lack of capacity not only in regard to the defence forces but at the broader societal scale in general, so much so that, as John Kenneth Galbraith mentioned in his memoirs, even a reliable coaxial telephone line between Delhi and Calcutta was lacking at the time of the Chinese threat to Assam.

India made a determined push after the chastening experience of 1962 and as a result, the defence forces apart, in selected areas like space, nuclear technology and higher education, its prowess grew steadily and culminated, for example, in the record success of the Mangalyaan earlier this year or the Information Technology (IT) miracle around the turn of the century. As is well known, the success in the space and nuclear fields so far has been possible due to advances in specific domains facilitated by the interconnected niche development of science and industry. Imitation of such a trajectory in other areas has been tried, but with a mixed record of success, say in Information and Communication Technology (ICT) and biotechnology, but a real broad-based Science and Technology (S&T) structure has languished

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in the twilight of assurance and despair. Such a structure rests on a knowledge society. A knowledge society has been created in niche areas in the country, including in selected academic institutions and industries; but the unevenness and lack of it seems to be reflected in the overall picture of human resource and technology planning. The enormous size and population of India warrant a far more intensive and coherent march towards technology.

This is particularly so at the present juncture. The world today is at the cusp of a transforming moment when technologies in the human grasp in diverse fields will bring far-reaching change encompassing every aspect of society. Developments rooted in defence technologies alone are so astounding and varied that, if the nation is not smart in coming to grips with them, the slide that may come upon it could well be, in relative terms, worse than 1962. Advanced materials and sensors, nanoscience and technology, robotics and artificial intelligence, metallurgy and chemical technology, computer driven manufacturing and 3-D printing, bio-informatics and quantum computing, smart maritime platforms, advanced avionics and hypersonic missiles, as well as the whole gamut of missile defence technologies, green energy and efficient transportation are all, as drivers for Research and Development (R&D), critical to security. Ideas and research on the frontiers in these fields have moved rapidly from conception to production stage over the past decade.

Technology makes a difference to military engagements, as was witnessed, for example, in the first Afghanistan War against the Soviets, with shoulder-fired Stinger missiles tipping the balance against the Soviet forces. The challenges faced in low-tech wars in the Middle East have compelled revolutionary changes in approach to defence, and organisation of security in the US and its European allies. China and Russia are hard put to catch up and look for asymmetric options to overcome the wide differential. Where does India see itself in this evolution in the 20 years timeframe? The pace of change does not give the luxury of endless contemplation and debate – vision and planning, instead, must move up quickly to capacity building for innovation and a comprehensive bid to go up on the technology ladder. The cost of acquisition for off-the-shelf is going through the roof, apart from the infamous controls and uncertainties about after

sales service. At the same time, globalisation of production chains and markets offers scope for harnessing its advantages – for which smart external interface at corporate and government levels needs to be found, nurtured, enhanced and sustained.

A few examples will illustrate the point.

Take armed unmanned aerial attack drones and their spread. The United States today has utilised drones far more than any other country. It has the most advanced drones in terms of range, staying power in the air without refuelling, as also size. Israel and the United Kingdom have also used lethal drones in combat; Hezbollah tried them in its 2006 War with Israel. China and Iran are considered to have capabilities for attack drones and have demonstrated their technology and intention to be prepared for their use in a crisis. According to a US Congressional study, Russia, South Korea and Taiwan are developing sophisticated lethal drone capabilities. The US study estimated that at least 76 countries had some kind of drone programme in 2012 as against 41 in 2005. India figures in this study in the lower rung among those with *interest in acquiring it*, namely, Pakistan, Turkey, Saudi Arabia, and even the UAE.

Drones offer capabilities, for instance, to hover above a targeted area for an extended period and provide an instant strike option with precision, thereby limiting collateral damage. Drones are relatively inexpensive (< 2 million dollars) and, being remotely piloted, avoid risk to pilots. US drones attacking the Af-Pak region were flown by pilots from their consoles at the Nevada Air Force Base. It is not for nothing that the Pakistan Army and political leaders make such a hue and cry about the US drone attacks, but in the same breath, make demands for US supplies of the same for countering terror.

With falling prices and rising sales, drones may become banal tools, not only for the military but even for street crime, outlaws, drugs mafia and terrorists. For instance, in France, giving headaches to the law enforcement guys are more than a dozen illegal drone flights detected over nuclear power plants.

Another example concerns the entire range of technologies for defence against cruise and ballistic missiles. Recent US tests in the Pacific of the improved SM ABM (Anti-Ballistic Missile) system intercepts were claimed by the Missile Defence Agency to be among

64 successful attempts out of about 75 in all. The latest tests were configured not only to destroy the attacking missile, but also for detecting, tracking, disrupting and damaging it throughout the course of its trajectory, from the launch stage onwards. Beneath the stormy debate about the pros and cons of missile defence, the technical pursuit and funding for it have continued through several administrations.

The vexed problem of deterrence stability continues to challenge researchers on the frontline and avenues continue to be explored for disabling the enemy's vectors as much prior to mass destruction as possible. Not only the missile defence technologies of the earlier era, but interception through space-based systems and cyber attacks are also on the anvil. Survivability of maritime assets and requirements of ocean surveillance also have a technological facet where challenges abound.

Nanoscience is being literally brought home in diverse uses. An advanced material like graphene has a unique chemical structure with endless chains of carbon atoms arranged in a honeycomb layer one atom thick. It is harder than diamond and far superior to copper as a conductor. Its commercial applications are being explored in diverse industries, including aerospace, electronics, medicine and even sporting and domestic goods. Its invention in 2004 was awarded with the Nobel Prize, and in 10 years' time, "There are huge opportunities for graphene. It will change fundamentally how we make and design things," says James Baker, Director of business at the National Graphene Institute in the UK. Baker, who formerly ran the technology commercialisation division at BAE Systems, said graphene would one day be used to make things such as ultra-strong wings for aircraft. The magazine *Science* reported recently about prospects of aircraft with wings which could be strong and flexible to imitate how birds fly and conserve energy. This wonder material has huge potential in areas such as foldable screens, high-capacity batteries and the next generation of super-fast microchips. Funding for its commercialisation is also reported by companies outside Europe.

For India 'nano' is the smart slick name of a car which, doubtless, a global path-breaker in small and cheap cars, has none of the nanoscience to justify the name—though, while on the subject, it

must be stated that the breakthroughs of the kind in Nano and Tata Indica are certainly niche areas of a laudable quantum jump in the automobile sector which is suited to Indian markets with technology which is tried and tested.

At the same time, for a rapid climb up from, what an author called the “foothills” of the technology mountain, the Indian industry and government require an unrelenting drive and all-embracing thrust as has been witnessed in China. To cite examples :China’s comparative advantage lay in low end manufacturing for the world market but it has, over the past ten years steadily climbed the tech ladder. It did so by gaining access to new technologies by copying, buying and cajoling foreign investors to transfer technology in return for greater access to its huge market, cheap and plentiful Chinese skilled labour and the advantage of economy of scale that it offered — the combined lure of which proved a powerful bargaining counter for the “second tier multinationals” [James Wilsdon and James Keeley (2007), *China: The Next Science Superpower*].<sup>1</sup> The industries that have migrated to China after succumbing to Chinese hard bargaining are legion: Microsoft, Motorola and Nokia or the Italian textile industry and France’s Lucent-Alcatel; they all moved to China in a big way during the last decade.

China did not rest on these laurels but has moved further; letting its professionals partake increasingly of the R&D activity of these multinationals, realising that in the long run, China’s prowess will rest on its own high level R&D capacity. This process has enabled rapid progress over the past six years since the financial crisis, with China enhancing its R&D spending from \$24.6 billion as 1.23 percent of its Gross Domestic Product (GDP) in 2004 to 2 percent in 2010 —spending a whopping \$45 billion, which is larger than the entire military budget of India today; and China plans to raise this R&D spending to \$123 billion by 2020. This scale of dedicated funding has resulted in transforming the R&D scene in China. This is also bolstered by its strength in a large number of highly educated and skilled professionals and an ethos where education figures high. As far back as 2008, China was producing 900,000 science, engineering and management graduates while the expatriate Chinese students were leading the numbers in top American universities, at least 20 percent

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1. Martin Jacques, *When China Rules the World* (Allen Lane, 2009), pp.174/175.

of whom are assessed to return. During these years, the Chinese companies' tally in the Fortune 400 lists has gone up progressively; with more and more Chinese public sector giants making it.

The purpose of this brief detour of China is to see how government policy, corporate culture and higher education can cohere to produce a mammoth R&D drive to climb up the tech ladder. There are synergies at each stage: higher education provides skill sets which drive and attract business to greater profits, which, in turn, increases employment, and produce greater tax revenues and, thus, enables the state to plough back more funds into education and R&D.

We had this process in India in fits and starts in a small niche but the society at large appears to have grown more unfriendly to knowledge economy due to the downsides of a democratic and inclusive polity. Since China's experience is not far from our own in the basic barrenness of the colonial legacy with which both had started, Chinese success stories should inspire introspection and proaction instead of envy or hostility or subservience. Our years of lost opportunity outnumber those when we had a short window of flowering, while the Chinese build-up, by and large, retains and sustains a large measure of coherent synergy.

To cite an example of contrast : in precisely the past six years since the nuclear deal with the US when our intelligentsia wallowed in monumental second thoughts on the virtues or perils of nuclear power, China commenced nearly 10 nuclear power plants and has already built and commissioned them. We had at least two in our grasp of which only one is working and that too in fits and starts due to the pressures and faultlines of our political economy. The contrast applies to every other area of India's technology climb. There is a crying need to get out of the crunch of sub-critical achievements.

The opportunity lies in our hands and imagination. Sustained push for advanced technology can be configured and activated through institutions that are at hand and creation of many more, with coordination at a high level. At the next contingency if, God forbid, security vulnerabilities are allowed to mount and prevail, India ought to be able to do much more than a *cri de coeur* about being the world's largest democracy under threat.

# CHINA INSIDE THE TIBETAN AUTONOMOUS REGION

**SIMRAT VIRK**

China's endless interests in the Tibetan Autonomous Region (TAR) are well-known. While, on the one hand, Tibet fits into China's sense of *nationalism*; on the other, even geo-politically speaking, it has served as a strong wall of defence from Europe and the rest of Asia. More recently, however, there has been an acknowledgment of the environmental significance of the Tibetan plateau. The inauguration of a massive hydropower project on the Brahmaputra (in the Tibetan Autonomous Region) in November this year (2014) is indeed reflective of this fact. Besides this, China has undertaken several infrastructure and mining projects within the resource-rich region. This is primarily because after having seen unprecedented growth, China realises that in order to sustain its economic rise, it ought to tap into the Tibetan resources. As a result, China is undoubtedly keen on using Tibet's abundant natural resources for its economic interests; which partly explains why it is aggressively pushing for integration of the TAR with the Mainland.

Tibet, however, continues to be one of China's restive regions. With the Dalai Lama living in exile in India, and a growing resentment among the locals, the Chinese government faces a tough task in trying to integrate the region. The leadership has consistently been

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of the view that while one way to integrate is an enhanced security presence, the other is to accelerate infrastructure development. Keeping this in mind, this paper is an attempt to look at some of the major developments inside the TAR—developments undertaken primarily by successive Chinese regimes. There is no doubt that China has invested several million dollars in the region, but many believe that not much has changed on the ground for the local population. Is it, therefore, true that all development inside the TAR is just a step to consolidate China's control over the restive region?

Some of the major steps towards infrastructure development undertaken by China in the region are: the Great Western Development Plan, Han migration, hydropower and mining projects, and the Patriotic Education Campaign.

#### **GREAT WESTERN DEVELOPMENT PLAN**

The main aim of the Western Development Plan, which began in 2000, is to bring the western region of China at par with the relatively more prosperous east. Its key components include infrastructure development, attracting Foreign Direct Investment (FDI), pushing for increased environment protection and promoting education. With this in mind, the central government has increased fiscal transfers to local western governments. For example, since its inception, a steady rise in transfers has been observed: while in 1999, 29.01 percent of government transfers were allocated to the west, the number increased by 2010, with the ratio being 39.42 percent.<sup>1</sup> The figures clearly reflect the central government's keen interest in the region. Included in infrastructure development is building a network of roads and railway across the Tibetan plateau, connecting it with the Mainland. Some of the flagship projects undertaken by the central government in the period between 2000 and 2010 are: the Qinghai Tibet Railway link (which began operations in 2006), and rail links connecting Guiyang and Guangzhou, Lanzhou and Chongqing. China plans to spend US\$ 3.13 billion in the coming years for construction of more than 100 additional highways. Primary among these are the Western, Central and Eastern Highways. Also included in the plan

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1. Zheng Lu and Xiang Deng, "China's Western Development Strategy: Policies, Effects and Prospects," *Munich Personal RePEc Archive*, MPRA Paper No. 35201, December 5, 2011, at <http://mpra.ub.unimuenchen.de/35201/>, accessed on October 25, 2014.

are various other projects, like airport construction, infrastructure construction of the western regional universities, the West-East Gas Project, rural roads construction and reconstruction projects, as well as other water and power projects. China is also investing heavily in various projects like the South-North Water Transport Project, with the primary aim of diverting water from rivers in the southwest to the arid northern part of China.

In an attempt to encourage investments in the region, several tax reductions and exemptions have also been implemented. These include reductions and exemptions in the enterprise tax, business tax, value added tax, and sales tax. Beneficiaries include domestic and foreign funded enterprises in western China, as well as new enterprises. Tax exemptions have also been given for key infrastructure development projects like the Qinghai Tibet Railway. Further, in a move to give a boost to the capital shortage, various state governments and the People's Bank of China (PBS) have introduced measures to encourage financial institutions (in particular, national banks) to provide loans to support infrastructure development, as well as create an environment for greater private participation in the region's development.

Creating a more stable environment in the region with the help of infrastructure development and an economic push has resulted in a sharp increase in foreign investments in the region, for example, foreign investments grew from US\$1,837 billion in 1999 to US\$1,922 billion in 2011. However, even within the region, certain discrepancies prevail. Many argue that this could be due to the central government's excessive involvement or interference in the economies of certain provinces which has led to some level of mistrust in the minds of the foreign investors.

However, many claim that infrastructure development has brought few benefits for the region which faces high rates of unemployment. Because, although infrastructure projects generate employment, for Tibetans the opportunities so far have been limited, with many of them having to settle for low end jobs; the reasons for which will be discussed in the next section. Further, reports suggest that the primary beneficiaries of the major power generating plants are far-flung Chinese cities and not the Tibetan villages. So, while

there has been development in the region, what is undeniable is the fact that it will be primarily China which stands to gain from it, with few benefits for the region.

### HAN MIGRATION

A somewhat related outcome of infrastructure and economic development inside the TAR has been an increase in the number of Han migrants. The fundamental thinking behind the concept of migration was that an increase in migration would lead to more competition between the locals and the migrants; which would, in turn, result in giving the economy a much needed boost. As Hao Peng, Party deputy secretary of the region, claims, "The flow of human resources follows the rule of market economics and is also indispensable for the development of Tibet."<sup>2</sup> But, this is the central government's claim. Many pro-Tibet analysts, however, are of the opinion that the move is yet another attempt by China to strengthen its hold over the TAR.

Under the scheme, migration from other regions of China to the western regions is encouraged. Incentives for migrants include altitude allowance, remoteness bonus, tax concessions, leniency on work permits, fewer working hours, longer holidays and better market opportunities than in China.<sup>3</sup> As a result, there has been a steady increase in the migrant numbers. Statistics show that while in 1949 there were only about 400 Han people in Lhasa, the figure jumped to over 40,000 in the year 1992.<sup>4</sup>

How does all of this translate on the ground? Although China has invested more than \$ 3 billion in the TAR, it continues to face severe criticism for what is known as the "*sinicisation* of Tibet".<sup>5</sup> Moreover, the heavy rioting that took place in 2008, during which the Han and Hui establishments were specifically targeted, shows the deep resentment among the locals. Their complaints remain that despite

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2. Edward Wong, "China's Money and Migrants Pour into Tibet", *The New York Times*, July 24, 2010, at [http://www.nytimes.com/2010/07/25/world/asia/25tibet.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2010/07/25/world/asia/25tibet.html?pagewanted=all&_r=0), accessed on October 24, 2014.

3. "Chinese Presence in Tibet: Population Transfer", *Tibet Online* at <http://www.tibet.org/Activism/Rights/poptransfer.html>, accessed on October 28, 2014

4. "Sinicization of Tibet", Wikipedia at [http://en.wikipedia.org/wiki/Sinicization\\_of\\_Tibet](http://en.wikipedia.org/wiki/Sinicization_of_Tibet)

5. *Sinicisation* is a term used to refer to China's cultural assimilation of the region by means of population transfers and policy changes.

economic advances in the region, opportunities for them are limited. Han labourers, workers, merchants and teachers continue to pour into the remote areas of Tibet (often aided by the huge railway networks) and set up businesses in Tibetan cities. The locals lose out on most jobs to their Han rivals, resulting in high rates of unemployment. Another disturbing fact is that the Tibetans earn far less wages as compared to their Han counterparts. This, many claim, can be attributed to several factors. The fact that the Chinese language is now a prerequisite for most jobs, makes the migrants relatively better qualified. Further, since they are equipped with higher degrees, the prospects of the Han people getting better jobs as compared to the locals are much better and the locals have to make do with low end jobs.

The locals are also resentful of the fact that constant migration has resulted in them becoming a minority group in a region that was once theirs. A claim vehemently denied by the government, which states that Tibetans make up more than 95 percent of the total population in the TAR. Surprisingly, however, they fail to give any estimates of the number of Han migrants. There is no doubt, however, that there are areas in several towns where Han homes outnumber Tibetan homes.

What further adds to the bitterness of the locals is that 'sinicisation' has led to a change in the original structure of Tibetan society. Limits on religious freedom have also been a major cause of discontent. However, what remains the biggest cause of anguish for the Tibetans is the fact that the Dalai Lama, who is almost like an anchor, is, due to circumstances, forced to live away, with little hope of returning any time soon.

## **MINING AND HYDROPOWER PROJECTS**

As previously stated, with a fast growing population and limited resources, China is well aware that one way to maintain its sharp economic growth is to successfully exploit Tibet's natural resources. However, it is difficult to ignore the impact this is having on the region's ecological system.

China's 12th Five-Year Plan clearly reflected the government's intention of making Tibet a mining hub and a hydropower centre. There are several reasons for this. Firstly, the Tibetan plateau ranks first for 13 minerals in terms of net output. Primary among these

are copper, chromium, sulphur and magnesite. Secondly, in a study undertaken by the Chinese government, Tibet is believed to have deposits of copper, iron, zinc and other minerals worth \$128 billion.<sup>6</sup> Most importantly, nearly half of China's key mineral reserves face potential depletion in the next ten years. As a result, China is rapidly moving into areas considered rich in minerals. However, many pro-Tibet thinkers are of the view that one of the primary reasons behind China pumping so much capital into the TAR is that it is more keen on the extraction of assets from the Tibetan areas, than on actual infrastructural development with the aim of modernising it.

Besides this, China has also actively started gold mining since 2001; massive projects are underway at the Tanjianshan mountain in the TAR which is estimated to have gold deposits worth more than \$335 million.<sup>7</sup>

However, illegal mining has led to several mining related accidents in the region, the deadliest being in Gyama in March last year. A landslide occurred at the mining site, killing more than 80 miners. Expert opinion suggested that the disaster was due to inappropriate and illegal mining work, and could have been avoided. As Gabriel Lafitte stated, "The fact is that this huge mine, despite an extremely steep mountainous range, is open cut, avoiding the expenses of tunneling. The walls of an open pit mine are prone to collapse, especially in a young and unstable land such as Tibet, which is still rising. The mining company took a calculated cost-cutting risk, and the mine workers paid the price."<sup>8</sup>

Further, several people have been forcefully moved out of areas where massive mining projects are underway. Apart from this, many Tibetans have lost their lives after the consumption of contaminated water.<sup>9</sup>

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6. "Tibet: China Increases Its Exploitation of Natural Resources", *The Indian Express*, February 8, 2011, at <http://www.unpo.org/article/12230>, accessed on October 28, 2014. With 40 million tons of copper, the Tibetan plateau has nearly 40 percent of China's copper deposits.
  7. Patrick T. Hughes, "Environment Degradation in the Tibetan Autonomous Region", 2006, at <http://www1.american.edu/ted/ice/tibet.htm#r5>, accessed on November 2, 2014.
  8. Gabriel Lafitte, "Mining Tragedy Casts Shadow over Industrialising Tibetan Plateau", *The Third Pole*, April 4, 2013 at <http://www.thethirdpole.net/mining-tragedy-casts-shadow-over-industrialising-tibetan-plateau/>, accessed on November 6, 2014.
  9. This has been particularly common in the Amdo region, the site of a uranium mine.

There have been massive protests by the locals in the area who also have to face severe crackdowns by the police. There are believed to be two primary reasons for the demonstrations. Firstly, several areas where work is on, are revered by the locals and, therefore, any kind of mining activity there is considered as complete disregard of religious sentiments. Secondly, the protests are due to the fact that mining projects in these areas are not in accordance with the basic principles of the Sanjiangyuan National Nature Reserve (SNNR).<sup>10</sup> Although the Chinese leadership has repeatedly assured that it is committed to protecting the areas covered under the plan, not much is happening in this regard.

Shifting focus now to the hydropower projects, Yan Zhiyong, general manager of China's Hydroelectricity Engineering Consulting Group has said that, "by 2020, the focus of hydropower development will be shifted to Tibet's rivers." He further stated that "twenty percent of hydropower produced in China could eventually come from Tibet."<sup>11</sup> Hydropower too, like mining is believed to cause serious environmental degradation along project sites. Moreover, because it provides cheap power supply, hydropower also results in the rise in the number of heavily polluting factories, close to project sites. Environmental experts also claim that many hydropower project sites are in close proximity to each other, often causing *desertification*. The problem of regulation and monitoring further aggravates the situation. Most of the environmental assessment of mining projects in Lhasa is done without visiting the actual sites; therefore, it is difficult to gauge the real impact that such projects have.

There has been a continued debate over whether economic development can come at an environmental cost. Many locals believe that although development is much needed in the region, there may be a different approach which is more eco-friendly such as production of eco-products like Lhasa beer, which could push forward the economy, and is often cited as a more environment friendly alternative.

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10. The SNNR was formed in 2002 with the aim of protecting the Mekong, Yangtze and Yellow river source regions, with huge nomadic populations.

11. Hongxiang Huang, "The Silence Around Tibet's Ecological Crisis," *The Atlantic*, May 7, 2013, at <http://www.theatlantic.com/china/archive/2013/05/the-silence-around-tibets-ecological-crisis/275617/>, accessed on November 10, 2014.

## **RESTRICTIONS ON RELIGION AND THE PATRIOTIC EDUCATION CAMPAIGN**

The Patriotic Education Campaign which was officially launched in the early 1990s fits into the concept of Chinese nationalism, which has been spoken of previously. "It was mainly directed at redirecting the Chinese people's political beliefs and loyalties to the communist state." Similarly, when it was launched in the TAR, its aim remained to urge people to shift their loyalties away from the Dalai Lama towards the Communist Party. The campaign was first launched in monasteries and was part of China's 'strike hard' policy. The campaign has often been viewed as being part of China's anti-Dalai Lama propaganda. Under the scheme, work-teams visited monasteries in an attempt to convince and, in some instances, force, nuns and monks to understand that China and Tibet were one. The other major task of these teams was to identify dissidents (often labelled separatists). The teams were mostly made up of both Chinese and trusted Tibetan officials. The work teams required monks and nuns to accept a five-point statement, which stated the following:

- Opposition to separatism.
- Unity of Tibet and China.
- Recognition of the Chinese-appointed Panchen Lama.
- Agreement that the Dalai Lama is destroying the unity of the Motherland.
- Denial that Tibet was or should be independent.

Monks and nuns are required to study subjects like history that clearly state that there is no difference between the history of Tibet and that of China. Several sessions on Chinese law are also held. The target of the campaign, however, is the Dalai Lama, who is labelled as a 'spilttist'. Those who reject this are punished, expelled and even imprisoned. As many as 3,993 expulsions had been reported in February 1998, according to the Tibetan Centre for Human Rights and Democracy (TCHRD). The campaign was later extended to schools and universities. Soon after the unrest and rioting in 2008, the Patriotic Education Campaign was relaunched to "exert greater control over religion".

Although the Government of China claims that the campaign (which it now calls "Legal Education" and "Love your Country, Love

your Religion”) has met with great success, it is difficult to ignore the statement that previous UN High Commissioner for Refugees Rudd Lubbers made, when he said “that one- third of Tibetan refugees’ claim that they left because of the patriotic re-education campaign”.<sup>12</sup> Also, doesn’t the rise in the number of self-immolations also tell a different story? Human development figures have also been rather poor compared to the rest of China. For example, illiteracy in Tibet is at 45 percent, while for the rest of China, it is only 10 percent.<sup>13</sup>

Another factor that has caused deep resentment within the local Tibetan community is that the Chinese language has become the medium of instruction in almost all schools. All subjects, with the sole exception of the Tibetan language course, are now conducted in Mandarin.

Undeniably, the campaign has resulted in massive protests, particularly by the monks and nuns. The general feeling being that under Chinese control, their expression and practice of religion is being thwarted. The Chinese response, however, has been consistent: heavy deployment of security forces to control the protests from spilling over to other regions; this because, as previously stated, China reasons that one way to maintain stability in the restive region is through a heavy security presence.

## CONCLUSION

While there is no doubting the fact that there has been large-scale development in the region, it is also vital to see what this means for the locals. Also, the prime question that needs to be addressed is: can development come at the cost of humanity? If the primary aim of development in the TAR is to integrate the region with the Mainland in order to strengthen China’s control, this question becomes particularly significant. Further, as noted above, massive infrastructure projects have forced many locals to move away from their homeland; and have also resulted in large scale migration into the region. As a result, the environment and the physical landscape

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12. Anand Upendran, “The Patriotic Education of Tibet”, *Canada Tibet Committee*, August 26 , 2013, at <http://www.tibet.ca/en/library/wtn/12722>, accessed on November 6, 2014.

13. Usman Butt, “Tibet: China’s Secret War”, September 3 , 2013, at <http://www.catch21.co.uk/2013/09/tibet-chinas-secret-war>, accessed on December 30, 2013.



have been adversely affected too. Besides this, local Tibetans also see major changes in the social and religious realms. Not having the Dalai Lama or a representative government adds to their despair.

Having said that, however, there is no doubt that many locals have indeed benefitted from the developments; in addition, even the living standards of many have improved. But despite that, a deep sense of suspicion remains. China's excessive control over monasteries (as it views monasteries as breeding grounds for pro-independence activism) remains one of the prime reasons. Many inside the TAR also state that religious concessions are limited to particular areas; the rising number of self-immolations from other parts is indicative of that. However, all this is done under a veil of fear and suspicion. There are limits on freedom of expression, with most locals fearing imprisonment.

Therefore, although China has shown initial signs of a softening of stand, a lot more needs to be done. For this, China needs to understand that changing its stance is in no way reflective of a loss of face.

With the ageing Dalai Lama and a China that seems to be biding its time, until it can prop up its choice of the highest Lama, an end to the struggle isn't in sight. In the past, Tibetans have often been referred to as 'orphans' (although this term has been used in the context of the Cold War). With little support from the rest of the world, this description, today more than ever, appears accurate.

# THE PARADOX IN US-CHINA RELATIONS: A COMMENTARY

HINA PANDEY

Almost a decade and half ago, a leading thinker and strategic expert on China, Gerald Segal prophetically described the implications of Chinese power especially in the East Asian region. He argued, "... There is no more weighty uncertainty for East Asia, than the future of China. If China staggers amid leadership struggles and perhaps even disintegrates as a state, the region will fear mass migration and spreading chaos; if China forges ahead with a double digit growth, East Asia will fear the implications of Chinese power.."<sup>1</sup>

Segal in the concluding remarks of his article titled, "Tying China into International System" (*Survival* 1999) presented a few assumptions. He foresaw that uncontrolled economic growth in China would result in an increasing need and desire to trade with the outside world and that China needed to be tied into the international system on the basis of these assumptions about its future. These were (a) that it will not disintegrate into chaos but will have a looser political system; (b) that the East Asian region will fail to develop any serious multilateralism. There will be much talk in the region about the need to work more closely at the Association of Southeast Nations (ASEAN) and Council for Security Cooperation in the Asia

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1. Segal Gerald, "Tying China Into International System", *Survival*, vol. 37, no 2, 1999, p. 60.

Pacific (CSAP) fora on the security of the region, however, no real action was perceived. Surprisingly, the East Asian region will bear the ramifications of Chinese power, and the lead in dealing with China in the coming years would not be initiated by the East Asian countries. This would leave China unchallenged in the region. He also asserted that China was also likely to have a major long-term adversarial relationship with the West.

The aforementioned analysis describes some of the reality of the rise of China as of today. Beijing has certainly not disintegrated into chaos—through a steady projection of its influence, it has established that it is indeed a rising power and would continue to rise. The West, especially the US, may not have a direct adversarial relationship with China, but all is not hunky-dory in the Sino-US relationship. Interestingly, this becomes evident when the trajectory of the bilateral relations is analysed at a profound level. Both the US and China are ambitious countries as far as projecting their influence is concerned. China is the only country which has directly challenged the US hegemony after the Soviet Union. In the post-Cold War era of multipolarity, the decline of the West (US) has also been juxtaposed with the rise of the rest (China) even by American scholars (Zakaria, 2008).

While the US was preoccupied with the campaign on the global war on terror and entangled in Iraq and Afghanistan, the People's Republic of China (PRC) effectively utilised this opportune moment of US preoccupation to its advantage, by extending its international interactions and maximising its inventory of allies in the international political system. Chinese influence in international politics was regarded as significant, to the extent that the US too responded to the emerging threat discourse with an accommodating view. In a Congressional Report (2008) and the US Quadrennial Defence Review (QDR-2001), the US Administration was counselled to adopt "engagement" as the best way to integrate China into the prevailing global system.

Today, China is engaging itself with the international community like never before by crafting a multitude of bilateral agreements and partnerships. Beijing has sought trade agreements, oil and gas contracts, scientific and technological cooperation, and

de-facto multilateral security arrangements with countries both around its periphery and around the world such as in Africa, Asia, and Latin America. It has also signed oil and gas exploration contracts with Brazil, Ecuador, Bolivia, Colombia, Venezuela, and Cuba; and with Central Asian states such as Uzbekistan and Turkmenistan, in the attempt to satiate its hunger for energy security

### **INTERNATIONAL NEGOTIATIONS AND DIPLOMACY**

The emergence of multiple centres of power in international politics has not only decreased the preeminence of American power but have also made space for China to exert its influence in various spheres such as the international economy, international negotiations on significant issues such as climate change, the South and East China Seas and even in the nuclear realm. On all these issues, China has adopted a powerful stand.

For instance, on the issue of currency, China maintains a low exchange rate of its currency for its economic growth. Financial experts from both the US and Europe have asked China to allow its currency to rise. This sentiment was resonated even by the US president himself during his first visit to China in 2009. The same year, the presidents of major banks like the European Central Bank, Jean-Claude Trichet, and Dominique Strauss-Kahn, the former managing director of the International Monetary Fund (IMF) also called for a stronger yuan but China did not adjust its currency in response to foreign pressure.<sup>2</sup>

China has boldly stood up against the US on the issue of climate change too. It is referred to as the world's largest Green House Gases (GHGs) emitter and suffers from a poor record as far as environmental issues are concerned. In fact, China occupies a unique position in the climate change negotiations. It is one of the largest emitters of CO<sub>2</sub> but it is also a developing country and possesses a valid right to further develop like the US. It is one of the major voices in the climate change talks and some experts have suggested that it was China that blocked the last Copenhagen (2009) talks by asking for such an appalling deal

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2. "China's Exchange-Rate Policy: A Yuan-Sided Argument", *The Economist*, November 19, 2009, at <http://www.economist.com/node/14921327>, accessed on November 21, 2014.

that made the Western leaders walk out, thus, creating a stalemate. At Copenhagen, China not only insisted on removing the binding targets for itself but also for other countries.<sup>3</sup>

The strange power play by the Chinese delegation can also be viewed as an effort to weaken the climate change regulation regime. Very recently, the UN Climate Summit at New York was concluded in which both the US and China agreed to reduce emissions from 26 to 28 percent for the United States by 2025, and for China to reach the emissions warming peak by 2030 or earlier.<sup>4</sup> Being a top emitter of CO<sub>2</sub>, China agreed to a substantial position on emission cuts, only after the US had promised to take a step ahead on emissions thereby reflecting the geo-politics manifesting at the negotiation table.

### NUCLEAR RELATIONS

In the realm of nuclear security as well, China's behaviour has been similar—pushing the US to do its bit first. Nuclear capability symbolises power in international politics. While China is far away from matching the US inventory of nuclear weapons, it cannot be ignored that being the only P-5 member that is increasing its nuclear arsenal, China's potential in influencing the nuclear debate at the international multilateral forum remains strong. It is interesting to note here that the official Chinese position on the nuclear arms race is that "... the nuclear-weapon states with the biggest stockpiles should undertake special responsibility for nuclear disarmament and take the lead in reducing their nuclear arsenals and delivery systems,..."<sup>5</sup> China expects the US to first pave the way for the other nuclear-weapon states to join the nuclear disarmament process.

Furthermore, the 2013 nuclear notebook of the *Bulletin of Atomic Scientists* describes the Chinese nuclear capacity as growing slowly

3. Mark Lynas, "How Do I Know China Wrecked The Copenhagen Deal? I Was In the Room", *The Guardian*, December 22, 2009, at <http://www.theguardian.com/environment/2009/dec/22/copenhagen-climate-change-mark-lynas>, accessed on November 25, 2014.
4. Laura Barron-Lopez, "US Climate Envoy: China Deal Boosts Paris Talks, But Uncertainty Remains", *The Hill*, November 14, 2014, at <http://thehill.com/policy/energy-environment/225206-us-climate-envoy-china-deal-boosted-paris-talks-but-uncertainty>, accessed on November 24, 2014.
5. "China's Contributions To Nuclear Disarmament", Ministry of Foreign Affairs, People's Republic of China, at <http://www.china.org.cn/e-caijun/e-caijun1.htm>, accessed on December 1, 2014

but increasing in capability. Many in the US presume that China's growing nuclear capability, especially its missiles which include as many as many as 60 Long Range Ballistic Missiles (LRBMs) can reach some portion of the United States. In fact, according to the US intelligence community's prediction, by the mid-2020s, China could have more than 100 missiles capable of threatening the US.<sup>6</sup>

In fact, the American experts on nuclear issues believe that there is a need to maintain long-term stability in the US-China nuclear relations even though the nuclear dynamics between the two countries are relatively stable at present. The exponents of such beliefs base their judgement on the US' concerns about the expansion, in both quality and quantity, of China's nuclear arsenal. An analysis of US-China nuclear relations by the working group reveals a possible intensification of the strategic arms race between the two countries. This might manifest in increasing the uncertainties about nuclear deterrence and, thus, crisis management between the two must take effect. In fact, it will be advisable for the US government to take up informal ways to shape China's nuclear decision-making.<sup>7</sup>

### **GEO-POLITICAL ENDS AT THE ASIA-PACIFIC REGION**

The current Chinese Ambassador to the US, John Kerry, has described the US-China bilateral relations as "*the most important as well as the most sensitive, the most comprehensive as well as the most complex, and the most promising as well as the most challenging ...*"<sup>8</sup> and referred to the relationship as a most consequential one, determining the shape of the 21st century world. While officials from the White House have diversified adjectives to describe the US-China synergies, they have also acknowledged the differences between the two countries. Moreover, these two distinguished countries also have comparable power interests in the same geographical entity called the Asia-Pacific region.

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6. Hans M. Kristensen and Robert S. Norris, "The Chinese Nuclear Forces", *Bulletin of Atomic Scientists*, vol. 69, no. 6, 2013, pp. 79-85; and Hans M. Kristensen and Robert S. Norris, "US Nuclear Forces, 2014", *Bulletin of Atomic Scientist*, vol. 7, no. 1, 2014, pp. 85-93.
  7. John K. Warden, Elbridge Colby and Abraham Denmark, "Nuclear Weapons and US-China Relations: A Way Forward" *Report by PONI*, a Working Group on US-China Nuclear Dynamics, Centre for Strategic and International Studies, at [http://csis.org/files/publication/130307\\_Colby\\_USChinaNuclear\\_Web.pdf](http://csis.org/files/publication/130307_Colby_USChinaNuclear_Web.pdf), accessed on September 1, 2015.
  8. John Kerry, Remarks on U.S.-China Relations, November 4, 2014, at <http://www.state.gov/secretary/remarks/2014/11/233705.htm>, accessed on November 23, 2014.

For both countries, the region is a crucial one and the most promising as far as security is concerned. The US has blatantly announced its pivot to the Asia-Pacific in order to execute its rebalancing strategy. And it needs to be noted that in recent years, China too has started looking at the region more prominently. The US has categorically announced its reservations on China's assertive foreign policy behaviour in the South and East China Seas region. Even though the US is not directly related to any of the South China Sea disputes, it maintains a strong position on the Chinese claims on the South China Sea vis-a-vis the claims of the other littoral states.

The South China Sea region is a strategic passage comprising critical sea lines of communications. It is also a region through which half of the world's oil transport passes. Connecting the Pacific Ocean with the Indian Ocean, the South China Sea has utility for major naval powers. The United States considers itself an influential player in the Asia-Pacific region and has sustained its preeminence over this region for over six decades.<sup>9</sup> The region not only has symbolic utility for the United States but is also practically being used as a transit point and an operating area for its navy and air force to shuttle between the military bases in Asia, the Indian Ocean and Persian Gulf.

Similarly, on the East China Sea, the similarities in the ambitions and the differences in the policy approaches towards the region also appear to be clear. Very recently, the US deepened its commitment to the East Asian region and invited Japan and Australia for military cooperation towards collectively working on strengthening maritime security in the Asia-Pacific region. It is noteworthy that on the same platform, President Obama gave a subtle hint to China that aggressive acts on territorial disputes concerning the region might, "...*spiral into a confrontation*."<sup>10</sup> In addition, President Obama categorically conveyed his idea of an effective security order in Asia that ought to be based on alliances of mutual security and driven by international norms and laws instead of spheres of influence or driven by the acts of intimidation of big nations ( such as China).<sup>11</sup>

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9. Hina Pandey, "Recent Developments in the South China Sea: US-China Confrontation", *World Focus*, 201, pp. 261-268.

10. Jamie Smyth, "US, Japan and Australia to Deepen Alliance", *The Financial Times* 2014, at <http://www.ft.com/cms/s/0/3a34e028-6cb3-11e4-b125-00144feabdc0.html#axzz3KuFyTEkN>, accessed on December 3, 2014.

11. Ibid.

## CYBER SPACE

It is a known fact that the United States was the progenitor of what we know today as the worldwide web/internet. The internet owes its birth to the US Department of Defence in the 1960s when it was developed and used for defence communication. Today, the commercialised internet has grown so big and forms part of a much bigger virtual domain known as cyber space. This cyber space in its totality is, practically not in the complete control of any one country, not even the United States, which ironically gave birth to it. Cyber space has become a powerful domain in international politics. It is regarded as one of the battle domains for future wars among countries. China is known for perpetrating all forms of cyber crimes—theft, hacking, cyber terrorism, etc.—towards the United States.

China is an increasingly growing player in the cyber security realm. It is the only Asian country with one of the largest numbers of internet users which is state controlled. While the domestic environment of China's internet is largely defined as strict; externally, China is identified by the United States as a real cyber threat for other countries. According to the US reports, China uses cyber warfare for data gathering, to constrain an adversary's effective communications, etc.<sup>12</sup> The United States has suffered the most as a result of these tactics of China. Many instances of cyber attacks such as 'Titan Rain' from China have been reported. In fact, it was revealed in 2004-05 that Chinese hackers had compromised the computers of the National Aeronautical and Space Agency (NASA) and other military and technological centres across the United States. Not only have the Chinese denied all these allegations, they have also refused to cooperate with the American investigations.

The White House has recognised cyber security as linked to America's economic prosperity, national security, and individual liberties. Indeed, the cyber space touches American lives closely on a daily basis and to safeguard security in this realm, the US has been evolving a policy to shape the future cyber security regime. It starts from domestic ownership of critical infrastructure combined

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12. E. Dilipraj, "Mapping the Cyber Dragon: China's Conduct of Terror in the Cyber World", *Defence and Diplomacy*, vol.3, no.4, July-September, 2014, pp. 85-97.



with improved reporting of incidents and responses. Since the cyber domain involves virtually all countries, with no boundaries, any cyber policy would be effective only if international partners are engaged effectively. In this context, the coopting of China becomes critical.

The United States seeks to build a consensus-based approach as far as implementing international cyber norms is concerned.<sup>13</sup>

The American concern for the increasing Chinese cyber warfare capabilities appears evident from the statement of a former US Defence Secretary Leon Panetta two years ago, wherein he has reiterated the need for both countries to work together in the realm of cyber security as both of them have developed technological capabilities in this arena to a great extent.<sup>14</sup>

### CONCLUDING OBSERVATIONS

China too has registered its presence as an influential player in international politics. Interestingly, it has raised concerns in the US about its ramifications upon the US goal of sustaining its preeminence. Indeed, China continues to ameliorate its presence in the strategic calculus of the US almost daily with the American strategic narrative painted with shades of the Sino-US strategic partnership, competition, bilateral ties, cooperation, etc.

A number of American experts such as Selig Harrison, Aaron Friedberg, David Lampton, etc have predicted the rise of a peer competitor in Beijing, especially bearing in mind the Chinese power and influence in the Asian region. These experts have categorically highlighted the prospects of an extra-regional threat to the US from China. The China watchers in the US, even after a decade, have expressed that China would look outward, as its foreign policy ambitions are as aggressive as those of the United States.<sup>15</sup>

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13. Cybersecurity, December 4, 2014, at <http://www.whitehouse.gov/issues/foreign-policy/cybersecurity>, accessed on December 4, 2014.

14. David Alexander, (2012), "US- China Must Work to Avoid Cyber Conflict: Panetta", *Reuters*, at <http://www.reuters.com/article/2012/05/08/net-us-usa-china-defense-idUSBRE84700Q20120508>, accessed on December 4, 2014.

15. Selig Harrison, "China And The US in Asia: The Threat Perception in Asia", cited in Carpenter and James A. Don, *China's Future: Constructive Partner or Emerging Threat* (CATO Institute, 2000), p.109; and Robert Kaplan, "The Geography Of The Chinese Power: How Far Can Beijing Reach on land and at Sea?" *Foreign Affairs*, May/June 2010.

The US views on China could be assessed from various perspectives such as the realist and liberal and each lens is likely to put forward a conflicting rudimentary divide between the two countries. This is clear from the analysis of former Deputy Assistant for National Security Affairs Aaron L Friedberg and even the greatest practitioner of diplomacy in America, Henry Kissinger himself. While Friedberg argues that both countries have locked themselves in an increasingly intense struggle for power and influence, Kissinger has advised the US that in dealing with China, both sides should be open to convincing each other about their activities as a normal part of international life. He has further argued that “...*the inevitable tendency to impinge on each other should not be equated with a conscious drive to contain or dominate...*”<sup>16</sup>

The US-China interaction in international politics covers so many arenas that it has become rather tricky for scholars to identify any one set of variables to describe the bilateral relations that they share. In recent times, the labels for US-China relations have ranged from business partnership, strategic partnership to strategic competitors and even Sino-US cold confrontation.<sup>17</sup>

Finally, the graph of US-China relations that started officially with the US Secretary of State’s “open door” notes, has fluctuated from estrangement to strategic partnership, and today has become the one of most significant bilateral relationships, defining the shape of international politics. History, it is said, repeats itself. It is ironical that several decades ago, the United States was driven to China for trade prospects, so much so that Chinese silk and tea can be credited with creating the first set of millionaires in America. The American fascination for oriental products dates back to the year 1784 when a commercial (US flagged) vessel, the *Empress of China*<sup>18</sup> sailed the Chinese seas. It was the trade issues that normalised the US-China

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16. Aaron L Friedberg, “The Future of US China Relations: Is Conflict Inevitable?”, *International Security*, vol. 30, no. 2, Fall 2005, pp 7-45; and Henry A. Kissinger, “The Future of US-Chinese Relations: Conflict Is a Choice, Not a Necessity”, *Foreign Affairs*, vol.91, no.2, 2012, p. 44.

17. Chintamani Mahapatra, “US-China Cold Confrontation: New Paradigm of Asian Security”, Institute for Peace and Conflict Studies, at <http://www.ipcs.org/article/us-south-asia/us-china-cold-confrontation-new-paradigm-of-asian-security-4333.html>, accessed on August 1, 2014.

18. Song Yuwu, *Empress, Encyclopedia of Sino-US Relations* (McFarland & Co., 2009), p. 99.

relations during the 1970s. While the US cut the Chinese melon into spheres of influence for economic benefits, today, it is the American markets that are flooded with Chinese goods. Moreover, it is the American 'Apple' that is now being reverse engineered in China. The United States, in the first part of its relationship with China, dominated the terms, but today, China has turned the dynamics of relations into a partnership. It may not be incorrect to suggest that history indeed might be repeating itself in reverse.

# INDIA'S MILITARY SPACE COMMAND: LESSONS FROM JAPAN'S PROPOSED MILITARY SPACE FORCE

KK NAIR

## BACKGROUND

Resilience is an outstanding characteristic of the Japanese, profoundly manifest in their space programme which has experienced sporadic bouts of spectacular failures, bringing it almost to the brink of collapse only to bounce back stronger and more resilient than ever before. Decisiveness is another remarkable attribute amply manifested in their military doctrines like the *Kantai Kessen* (decisive battle doctrine), the decisive interoperability doctrine as also in their reported political decisiveness.<sup>1</sup> The above attributes of the Japanese are reflected in their space programme, begun post World War II (WW) by a people reeling under the degradation and humiliation of nuclear bombardment and military defeat. For a programme begun under such trying circumstances, the Japanese space programme, starting with a 200 grams "Pencil Rocket" has come a long way in the past five decades with Japan today recognised as a formidable space

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1. There is a variety of reports on political decisiveness. For the above context, see Jacob M Schlesinger, "Trading Places: Decisive Japan, Dysfunctional US", *Japan Real Time*, October 1, 2013.

power to be reckoned with not just in Asia but in the entire world. Until the previous millennium, Japan was a formidable civilian space power. The geo-politics of the new millennium is in the process of converting it into an equally formidable military space power. Ever since the Japanese pacifist agenda was revised to enable military space capabilities with the passage of the Basic Space Law in 2008 and revision of the basic law of the Japan Aerospace Exploration Agency (JAXA) in 2012, Japan's evolution into a formidable military space power continues. Thus, Japan's present decision to launch a space force by 2019<sup>2</sup> is but a natural progression of its revised agenda of containing the insecurities of the new millennium with the technologies of the new millennium. The revision is remarkable. Equally remarkable is the comprehension of the issue, the decision and the apparent integration of air and space capabilities for aerospace defence. The alacrity to perceive change and adapt is equally manifest. All of the above is in sharp contrast to India, which has been seeking similar capabilities for over three decades. Prudence, hence, demands a brief look at the Japanese model, to examine, emulate and obtain similar capabilities to fulfil the demands of national security.

### **JAPAN'S EXPANSION FROM CIVIL TO MILITARY SPACE CAPABILITIES**

Following Japan's defeat in WW II, the General Headquarters of the allied powers had banned Japanese armaments completely. Additionally, a resolution adopted by the Diet on May 9, 1969, in the House of Representatives relating to the basic principles of development and use of space, approved a narrow definition of Japan's space development policy which prohibited the use of advanced space technology by the Japanese Defence Agency (JDA), thereby committing Japan to "peaceful uses of outer space" in the strictest sense.

At this stage, it may be pertinent to note that the Outer Space Treaty of 1967 was already in vogue as also a wider interpretation of "peaceful uses of outer space" that considered satellites used for communication, navigation, observation, etc., as peaceful,

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2. Refer AFP, "Japan to Launch Military Space Force: Report", *AFP News*, August 4, 2014.

regardless of their military or civilian purposes.<sup>3</sup> A number of military satellites were already in orbit and yet so stringent was the Japanese interpretation of “peaceful uses of outer space” that Japan’s 1969 space resolution had to be altered by the then Prime Minister (PM) Yasuhiro Nakasone to make it possible for Japan to use some space technologies for military purposes provided that the technology was commercially available. It was only then that Japan could use its JCSAT and Super bird satellites, both run by private companies for the land and sea forces to communicate with each other.<sup>4</sup>

The above, however, was perceived to be inadequate by the Japanese in view of North Korean belligerence as well as Chinese military advances. Thus, by 1994, Japan began a serious reconsideration of its long held policy prohibiting the use of space for military purposes. Finally, on August 31, 1998, North Korea ignited the simmering tensions, fears and concerns of Japan by launching a “Taepo-Dong” missile across northern Japan. The first part of the missile fell into the Japan Sea and the second part (and, probably, a third part) flew across the Japanese territory of Honshu and fell into the Pacific Ocean. By November 6, 1998, the Cabinet decided to develop and launch four Information Gathering Satellites (IGS) with reconnaissance capabilities by 2002, citing security concerns over North Korea’s rocket launches.

By early 2000, Japanese impatience with the pacifist manifesto had reached a crescendo and a House of Representative research commission was established in January 2000 to revise the “Peace Constitution” that the occupying US forces had drafted nearly half a century earlier. Revising or abolishing the war-renouncing Article 9 of the Constitution to enable the armed forces to execute the right to collective self-defence was the core issue of the commission’s 700-page report that was submitted to the Parliament in 2002.<sup>5</sup>

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3. For the arguments on the wider and narrow interpretation of peaceful uses, refer Max M. Mutschler, *Arms Control in Space: Exploring Conditions for Preventive Arms Control* (New York: Palgrave Macmillan), ch. 5, pp.114-115; and Maj Elizabeth Waldrop, AFSPC/JA “Weaponization of Outer Space: US National Policy”, *High Frontier Magazine*, vol.1, no 3, pp. 37-39.

4. Paul Kallender, “Japan Seeks Dual-Use Space Technology OK”, *Defense News*, July 19, 2004.

5. *Interim report on the Constitution of Japan*, at [www.shugiin.go.jp/internet/itdb\\_kenpou.nsf/html/.../interimreport.htm](http://www.shugiin.go.jp/internet/itdb_kenpou.nsf/html/.../interimreport.htm)

The above had significant implications on the overall Japanese policy and by September 2003, press reports indicated that Japanese officials wanted to have both of their big military space projects—a satellite imaging system and a multi-tiered missile defence system—fully operational in the next two to three years in addition to a Global Positioning System (GPS), an augmentation system that could be used for military communications and, if required, missile targeting, by the end of the decade.<sup>6</sup> The above was a tall order and was fulfilled by organisational review and restructuring to ensure concerted efforts and timely dividends. The constitutional and legislative revisions ensured that the military space capabilities sought were provided well before the end of the next decade. The usual attributes of resilience and decisiveness were amply manifest. Vociferousness, unlike in the Indian case, was typically absent. Instead, what was manifest were capabilities spanning almost the entire spectrum of military space force enhancement missions like satellite navigation, satellite communication, satellite observation, etc. The achievement was remarkable and attributable in large measure to Japan's ability to adapt to the changing times, the changing geo-politics and the security needs. Driving the adaptation was a review of Japan's strategies, doctrines as also reorganisation of its national space organisation. The reorganisation was particularly relevant and is consequently examined in some detail below.

#### **REORGANISATION FOR MILITARY SPACE CAPABILITY**

The fountainhead of the reorganisation was an enactment of the "Basic Law on Space" in May 2008 to regulate all space activities, public and private. This regulated all space activities, public and private, into a common strategic direction in line with Japan's unique needs. In order to consolidate all space activities, once the basic space law was enacted, the strategic headquarters for space policy were established at the Cabinet level with the prime minister as chairman. Thereafter, to implement a comprehensive space strategy, the

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6. Paul Kallender, "Japan Aims for Operational Military Space Systems by 2006", *Space News*, September 2, 2003.

strategic headquarters released the “Basic Plan for Space Policy”<sup>7</sup> that represented a shift of research from civil to military applications and also served as Japan’s basic space policy document for implementation of the basic law on space.<sup>8</sup> In line with the above, various institutional structures were created to ensure that security needs were fulfilled, and satellites for security needs were accorded special attention and priority. With the basic law, strategy and policy in place, committees and working groups dedicated to specific systems like the Quasi Zenith Satellite System (QZSS) for fulfilling the position, navigation and timing needs as also the Information Gathering Satellite (IGS) system for observation from space were formed that put in concerted efforts to ensure that the systems were in place within the proposed timelines.

#### **THE RESULTS OF THE REVIEW AND REORGANISATION**

The results are astounding and most demonstratively apparent amongst the areas of application of satellites like observation, navigation, etc that enable militaries to perform their tasks more efficiently, safely and rapidly. Unlike the Indian case wherein the military sought space-based observation capabilities since the 1971 Indo-Pak War<sup>9</sup> and received some fringe capabilities three decades later, the Japanese got what they sought within the next three years. They apparently have not rested at that and keep adding capabilities, as evidenced from the statistics below. By any yardstick, their space-based observation capabilities for security purposes far exceed those of India. India, for that matter has no dedicated military observation satellites; all it has is a couple of dual-use satellites. By contrast, the Japanese achievement is remarkable.

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7. For details, see text at site of Japanese Cabinet Office, “Basic Plan for Space Policy”, available at <http://www8.cao.go.jp/space/english/index-e.html> accessed on October 5, 2014.
  8. Ref Jana Robinson, “Europe-Japan Strategic Partnership: the Space Dimension”, Report 40, April 2012, *ESPI Report*, available at [www.espi.or.at/reports](http://www.espi.or.at/reports) accessed on October 5, 2014.
  9. Ref Sqn Ldr KK Nair, *Space the Frontiers of Modern Defence* (New Delhi: Knowledge World Publishers, 2007), p. 61.



**Table 1: Japan's Space-Based Observation Capabilities<sup>10</sup>**

Information Gathering Satellites (IGS)									
Electro-Optic					Radar				
Name/ Launch	Config	Altitude	Inclination	Status	Name	Config	Altitude	Inclination	Status
IGS-1A/ 2003	Dual	490	97.4	Non-ops	IGS-1B/ 2003	Dual	500	97.4	Non-ops
IGS-2A/ 2003	Dual			Failed	IGS-2B/ 2003	Dual			Failed
IGS-3A/ 2006	Single	485	97.34	Ops	-	-	-	-	-
IGS-4A/ 2007	Dual	475	97.32	Non Ops	IGS-4B/ 2007	Dual	490	97.33	Ops
IGS-5A/ 2009	Single	585	97.81	Ops					
IGS-6A/ 2011	Single	588	97.69	Ops	IGS-6B/ 2011	Single	515	97.46	Ops
IGS-8A/ 2013	Dual	523	97.50	Ops	IGS-8B/ 2013	Dual	515	97.50	Ops

The above satellites are for space-based surveillance and, to a very limited extent, early warning against missile launches. The configurations typically are a combination of two electro-optical satellites with one metre resolution or sub-metric resolution and two Synthetic Aperture Radar (SAR) satellites with resolution of one to three metres. Thus, what is missed visually is picked up by the radar. On the anvil also is Japan's ongoing super low altitude test satellite programme to develop the 400-kg-class reconnaissance satellites that would use ion engines to dip into orbits as low as 230 km to take high-resolution images using radar or optical sensors. The security implications of such capabilities are apparent and, hence, any attempt to belabour the obvious is dispensed with.

In addition to that, Japan has formidable capabilities in space-based Position, Navigation and Timing (PNT) capabilities. Notwithstanding the availability of the US NAVSTAR navigation system, Japan has gone in for its own unique navigation system called the Quasi-Zenith Satellite System (QZSS). The QZSS system augments the US NAVSTAR GPS system rather than replicate it. Three satellites, each 120° apart are placed in highly inclined, slightly elliptical, geosynchronous orbits. Because of this inclination, they are not geostationary; they do not remain in the same place

10. Data for the table has been obtained from a variety of sources including Global Security. Org, Gunter's Space Page, Jonathan's space report and notification from Japan in the UN register of objects launched into outer space.

in the sky. Instead, their ground traces are asymmetrical figure-8 patterns, designed to ensure that one satellite is almost directly overhead Japan at all times. The system enables Japan an enhanced coverage and accuracy over its area of interest as also a certain level of independence from the US system. The first QZSS satellite was launched in 2010 and the system is presently operational with plans afoot for an extension to a seven satellite constellation for increased coverage and accuracy.<sup>11</sup> The contrast with India is starkly evident; the Indian Regional Navigational Satellite System (IRNSS) begun at the same time as the Japanese one and slated to be fully operational by mid-2014,<sup>12</sup> is yet to be operationalised, with the launch of the third satellite that was due on October 10 being postponed. In addition to the above, with regards to dedicated military satellites for communications, Japan's Ministry of Defence (MoD) is reportedly seeking the help of its country's private sector to finance and build two geostationary communications satellites, provisionally due for launch in 2015 and 2016.<sup>13</sup> All in all, with regards to the military mission of space-based force enhancement that aims at using satellites to enhance the capabilities of the military forces, a fair amount of progress has been achieved. The moot question would continue to be whether the North Korean missile is but a pretext, a perceived threat or a real threat, causing Japan to bolster its capabilities so significantly and rapidly. One may also surmise that it is the Chinese build-up that spurs the Japanese or perhaps it is the simple need to possess a modern military aerospace force capable of meeting the security challenges of the new millennium that causes the surge in Japanese military space capabilities. Either way, the extant and foreseeable capabilities are formidable and demonstrate the likely path the Japanese would take. It portends a lean, modern aerospace force capable of comprehensively fulfilling the security challenges

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11. Refer presentation of Cabinet Office, Government of Japan, "Quasi Zenith Satellite System", at <http://www.oosa.unvienna.org/pdf/icg/2012/icg-7/5.pdf>, accessed on October 7, 2014.

12. Refer presentation of ISRO, N. Neelakantan, "Overview of Indian Satellite Navigation Programme", at <http://www.unoosa.org/pdf/icg/2010/ICG5/18October/05.pdf>, accessed on October 7, 2014.

13. Refer Paul Kallender-Umezu, "Japan asks Industry to Finance Military Support Satellite" *Space News*, February 13, 2012 and Japan Press Service, "Defence Ministry to Own Military Satellites", *Japan Press Weekly*, December 14, 2011.

of the new millennium. Japan fully comprehends that the threats of the new millennium are no longer confined just to its air space but have evolved higher to outer space. To prevail in its neighbourhood amongst the rising threat of ballistic missiles, it would need to counter challenges from both air and space. This realisation spurs the development and acquisition of capabilities for aerospace surveillance, as its space surveillance model demonstrates.

### **THE JAPANESE SPACE SURVEILLANCE MODEL**

With the amendment of the Japanese basic space law in 2008, military use of space is no longer a taboo. At the same time, offensive uses of space continue to be frowned upon. Thus, while Anti-Satellites (ASATs) and other offensive weaponry may not be on the anvil, defensive counter-space capabilities aimed at protecting Japan's assets in space are becoming increasingly visible. Protection of satellites entails not only mitigation against debris but also from man-made threats like hostile missiles and satellites.<sup>14</sup> Protection demands the ability to be comprehensively aware of the situation in the entire vertical dimension of air and space. This ability is provided by a Space Situational Awareness (SSA) system.

SSA is the prime component of any defensive or offensive counter-space capability. The ability to observe, track and predict the position of space objects with some level of certainty is the most elementary capability to identify, categorise and mitigate aerospace threats. SSA capabilities are typically dual use and enable protection against natural threats like debris, asteroids and also man-made threats like ASATs, ballistic missiles, etc. Across the world, SSA capabilities are an amalgam of conventional air surveillance sensors and space surveillance sensors. Thus, the SSA system is nothing more than a mix of radars surveilling the air space complemented by special telescopes and radars surveilling outer space.

The Japanese SSA model is no different conceptually from other models across the world. Existing national air force capabilities are extended further upwards. The standard air defence radars are employed and complemented by specialist radars and telescopes

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14. For details, see Yasuo Otani, "Dual Use System Architecture for SSA using Design Structure Matrix" at [cesun.2014.com](http://cesun.2014.com).

for space surveillance. The same personnel employed on routine air surveillance missions are employed for space surveillance and the operational procedures in either case have little difference. The pressures of defending against threats from air and space are obviously well comprehended by the Japanese and, hence, instead of vacillating on organisational issues as in the case of India, the Japanese government has straightaway handed over the mission of SSA to the Japanese Air Force or Japanese Air Self-Defence Force (JASDF) since it believes space defence is an extension of the JASDF's air defence function. Consequently, the JASDF which is solely responsible for air defence and is equipped with the command and control of the Japanese Aerospace Defence Ground System (JADGE), has now been directed to evolve further to comprehensively defend against threats from the entire vertical dimension of aerospace. Conceptually, as in case of the Indian Air Force (IAF), and perhaps most air forces across the world, the present JASDF system comprises ground air defence radars like the J/FPS-5, which is used for air and ballistic missile defence. A total of four J/FPS-5s are located in Japan as of 2013. These radars were originally developed to fulfil the primary air defence role of detecting and identifying air threats, and possess some incidental capability of detecting ballistic missiles that come from outer space. These form the base structure of the Japanese SSA.

On this base structure, are its space sensors. There are primarily two facilities providing SSA data: the *Bisei* Spaceguard Centre, which operates optical telescopes capable of tracking geostationary orbiting objects as small as one metre in diameter; and the *Kamisaibara* Spaceguard Centre, an S-band radar. The radar has a battery of phased array antennae which coordinate to scan the low earth orbit region to a distance of approximately 1,000 km. Thus, the system affords a rudimentary awareness of the situation in both Geostationary Earth Orbit (GEO) and Low Earth Orbit (LEO). The above are augmented by inputs from the US' Space Situational Network (SSN) system.<sup>15</sup>

As of now, the above complement of four air defence radars for air surveillance, optical telescopes for surveillance of the upper atmosphere and LEO and a radar for surveillance of the GEO

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15. Warren Ferster, "US, Japan Sign Pact on Space Situational Awareness", *Space News*, March 12, 2013.

provide a rudimentary capability for aerospace surveillance and, consequently, aerospace defence. It would be safe to infer that incremental progressions on the above system would continue. Consequently, the proposed move “to launch a military space force by 2019 that would initially be tasked with protecting satellites from dangerous debris orbiting the Earth”, may be seen as nothing more than an organisational construct aimed at facilitating operational progress. This is especially so since the Japanese now allude to space as the “fourth battlefield”.<sup>16</sup> More radars and telescopes would be progressively acquired and piled upon existing conventional air defence radars. The challenges of seamless integration and operations would demand a ready force of suitable personnel, organisation, infrastructure, etc and, hence, the need for the proposed military space force. The above conjecture is further validated by the report that the Japanese Defence Ministry is looking at creating a new force using personnel from its JASDF. By contrast, in operational terms, the IAF has a much more formidable mix of ground and airborne radar systems unlike the archaic Japanese system. However, the IAF is constrained to air surveillance and is yet to make the transition to aerospace surveillance in any manner. India does not have any sensor enabling space surveillance though the number of satellites enabling military and civil services to India keeps rising.

## CONCLUSION

By any yardstick, the number of Indian assets in space exceeds those of Japan. The number of adversaries also far exceeds those of Japan. The Japanese are attempting to leapfrog the entire span from air to space by employing ground and space surveillance sensors and existing personnel. At present, their system is rudimentary and there would be gaps in it. However, a system is in place. In our case, no system is in place. The Japanese model shows the way and there would be little to lose in considering an emulation of the same.

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16. Quoting Kyodo News Agency in AFP, “Japan to Launch Military Space Force: Report”, *AFP News*, August 4, 2014

# IS THE WORLD ON THE BRINK OF A NEW COLD WAR?

**CHANDRA REKHA**

The accession of Crimea, Kremlin's support to pro-Russian rebels in eastern Ukraine and the response by the international community to the contemporary developments in Ukraine all have aggravated tensions between Russia and the West. This is seen by many political analysts as a flashpoint for the emergence of a 'new Cold War' between Russia and the West. At this critical juncture, it is, however, important to evaluate whether the US can succeed in isolating and encircling Russia's resurgence in the new world order and also whether the brewing tensions between the trans-Atlantic countries and Moscow, as predicted by analysts, is indeed leading to a Cold War-like situation. Are these concerns being overstated? Or, will it be possible for both sides to find common ground in the future? The objective of this paper is to evaluate whether the resurgence of Russia will lead to a geo-political discourse in international politics.

## **COLD WAR POLITICS**

Post World War II, the United States and Soviet Union were in direct confrontation and a unique competition. Tensions between the two superpowers were driven by a complex interplay of ideological, political, and economic factors that led to bitter superpower rivalry.

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The distinct differences in the political systems of the two countries often prevented them from reaching any mutual understanding on key policy issues. The Cuban missile crisis even brought them to the brink of a direct confrontation.<sup>1</sup> Moreover, events such as the shooting down of the U2 spy plane and the success of the Soviet Sputnik programme further deteriorated the relations. The superpower conflict during the Cold War period also led to a nuclear and missile arms race. There was suspicion and hostility in the relations between the Soviet Union and the United States. Although there was thaw in the relations between the two power blocs during the détente phase in the 1970s, the Soviet invasion of Afghanistan created tension between Moscow and Washington until the collapse of the Soviet Union and the Warsaw Pact. This resulted in the redefinition of international relations, as an unprecedented change took place in the Eurasian landmass in the sphere of its foreign policy.

#### **POST-COLD WAR ERA PERIOD**

With the end of the Cold War, many political scholars predicted the end of the Kremlin's influence in international politics, including in the 'Near Abroad'. Till the 1990s, Russia struggled with its economy and defence industrial complex. During its fledgling stage, Moscow which was once an invincible actor in the international arena, had looked up to the West to provide aid to its dismal status. Until 2000, the Kremlin struggled to find its 'place' as a player in the new world order.

However, after Vladimir Putin took over as the new leader of Russia in 2000, his reforms gradually revamped Russian influence in global affairs. The emergence of the "New Great Game" further led to growing competition for energy resources, and the demand for energy markets in Europe, in particular, reestablished Russia as a potential player in international politics. The policy-makers of Russia, thus, realised the significance of energy resources and energy markets to enhance economic relations and energy diplomacy in the post-Soviet era. Energy politics, in turn, led to alteration of Russia's foreign policy approach and the revival of its defence industrial complex.

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1. "Revelations from the Russian Archives: The Soviet Union and the United States", *Library of Congress*, at <http://www.loc.gov/exhibits/archives/sovi.html>, accessed on December 2, 2014.

In addition, the world began to view the former Soviet space as a contested zone and an object of interest, especially for its rich energy resources. However, Russia continued to wield influence on its periphery countries and, hence, the US-led North Atlantic Treaty Organisation (NATO) countries discerned the need to restructure Eurasian geo-politics. NATO's consolidation in the former Soviet space became a major concern for Russian policy-makers. For instance, the Russian reaction to the operation against Yugoslavia in 1999 can be explained only in the context of NATO enlargement. The Soviet Union's last leader Mikhail Gorbachev even raised the issue of the world heading to the brink of a "New Cold War", accusing the USA of mounting an imperialist conspiracy against Russia. This accusation was based upon Gorbachev's observations regarding NATO's enlargement plans that included the former Soviet Union countries, and Washington's proposal for a bigger defence budget and a missile shield in Central Europe.<sup>2</sup>

The enlargement and existence of NATO is the key element of the present and future of Eurasian geo-politics that has urged Russia to rebuild its power in the region. Hence, Russia's foreign policy towards Eurasia coincides with its economic policy and geo-political status, both of which it wants to reclaim. Russia has begun to revive its economic policy, banking on its rich energy resources, which has led to interdependency with other countries, and also to contain the growing influence of NATO in the former Soviet space.

*Relations between Russia and the West since the Ukraine Crisis:  
Failure of Reset*

The major challenge for Russia has been to adapt itself to the physical changes that have taken place post the Soviet disintegration. Though the new world order led Russia to frame a new foreign policy strategy, it, however, could not shift its focus away from its "Near Abroad", especially with the growing containment policy of the US-led NATO. Russia's victory over Georgia in 2008, the developments in Ukraine since 2013 and the accession of Crimea to Russia all reflect the Kremlin's interests in its former Soviet space.

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2. Emre Iseri, "Eurasian Geopolitics and Financial Crisis: Transforming Russian-Turkish Relations from Geopolitical Rivalry to Strategic Cooperation", *Journal of Balkan and Near Eastern Studies*, June 2010, p. 18.



Russia's repeated intervention is being justified as a means to weaken or subordinate its neighbouring governments like Ukraine and keep them out of the orbit of the US-led NATO. Keeping in view the argument presented by former President Gorbachev, Ukraine, one of the "privileged interests" of Russia, is seen as the new political theatre for the West and Russia, to establish supremacy over the region, as Ukraine occupies the sensitive position between Russia and the NATO member states of Poland, Slovakia, Hungary, and Romania. This adds to its geo-strategic significance, as Ukraine as a future member of NATO would be a major blow to the Russian initiated Eurasian Customs Union. Furthermore, the interest of the Kiev Administration to join NATO threatens Russia's position in Crimea: a NATO takeover would make Russia vulnerable as it could lead to the possible eviction of Russia's naval fleet and its access to its only warm water port.

Moreover, the presence of NATO and redefining of its agenda in the former Soviet space even after the dissolution of the Warsaw Pact has caused Russia's displeasure. NATO's influential role in the former Soviet space has been coupled with deployment of the US missile defence or radar systems in Poland, the Czech Republic and Turkey. In addition, the "Orange Revolution" sponsored by the West and NATO's offer to Ukraine and Georgia to join NATO in 2008 during the Bucharest Summit did not go down well with Russia. It was at the same summit that Putin had rhetorically threatened the territorial integrity of Ukraine.<sup>3</sup> Therefore, suspicion of NATO's expansionist policies in the Russian orbit states has become the central issue for Russia to reassess its foreign policy approach in its 'zones of influence'. This has derailed the relations between Russia and the US.

### **ON THE BRINK OF A NEW COLD WAR?**

Based on these arguments, can one conclude that contemporary developments between Russia and the West signal the emergence of new Cold War politics? Let us analyse a few factors which would help understand that the scenario for the emergence of a new Cold War can be falsified based on the following reasons.

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3. Hall Gardener, "NATO, the EU, Ukraine, Russia and Crimea: The 'Reset' that was Never 'Reset'", *NATO Watch*, Briefing Paper no.49, April 3, 2014, p.5.

### *Clash of Interests*

The Cold War was a period of East-West competition, tension, and conflict, characterised by mutual perceptions of hostile intentions between military-political alliances or blocs. There were real wars, sometimes called “proxy wars”, along with competition for influence in the Third World.<sup>4</sup> The world has, however, changed a great deal since then. The apprehensions between the West and Russia no longer comprise an ideological clash but a ‘clash of interests’. Moreover, despite the dissolution of the Soviet Union, hostility between the West and Russia continued even before the Ukraine imbroglio. This was evident during the Georgian War of 2008, the “Orange Revolution” and the “Arab Uprising”. None of these events led to a bloc alliance or brought the world into a global confrontation.

In addition, one has to bear in mind that the Kremlin was in full control of the Eurasian space and enjoyed complete monopoly over the region until its disintegration. Since the implosion, although Russia remains the preeminent power in Eurasia, it now shares space with the United States through the Partnership for Peace, and with China through the Shanghai Cooperation Organisation (SCO) in Central Asia. The Central Asian Republics, since independence, have pursued a multilateral foreign policy approach and have established formal relations with the Western countries through the Trans-Atlantic System Act of 1997. Moscow, nevertheless, strongly resists a greater regional role of the trans-Atlantic powers. Russia has also initiated the establishment of the Eurasian Union in order to reemerge as a prominent player in the former Soviet space.

### *Age of a Multilateral World*

After the collapse of the Soviet Union, the world witnessed the emergence of a unipolar world, with the US becoming the dominant player in international politics. However, the principal characteristic of 21st century international politics is turning out to be “non-polarity”<sup>5</sup> i.e., a world dominated not by one or two or even several states but rather by dozens of actors possessing and exercising

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4. n. 1.

5. Richard N. Haass, “The Age of Nonpolarity: What Will Follow U.S. Dominance”, *Foreign Affairs*, May/June 2008, at <http://www.foreignaffairs.com/articles/63397/richard-n-haass/the-age-of-nonpolarity>, accessed on December 3, 2014.

various kinds of power. This represents a tectonic shift from the past bipolar world which existed during the Cold War period.

The rise of a multipolar world has indeed led to the rise of influential actors in global politics. Apart from the major powers—China, the European Union (EU), India, Japan, Russia, and the United States—there is also the rise of numerous regional powers which include Brazil and, arguably, Argentina, Chile, Mexico, and Venezuela in Latin America; Nigeria and South Africa in Africa; Egypt, Iran, Israel, and Saudi Arabia in the Middle East; Pakistan in South Asia; Australia, Indonesia, and South Korea in East Asia and Oceania. In addition, a good many organisations would be on the list of power centres, including those that are global, such as the International Monetary Fund (IMF), United Nations (UN), and World Bank; those that are regional: the African Union, Arab League, Association of Southeast Asian Nations (ASEAN), the EU, Organisation of American States, South Asian Association for Regional Cooperation (SAARC); and those that are functional: the International Energy Agency (IEA), Organisation of Petroleum Exporting Countries (OPEC), SCO and World Health Organisation (WHO).<sup>6</sup>

For understanding the role of these new international actors, one example that can be cited is the role and decision of Brazil, Russia, India, China, South Africa (BRICS nations) during the UN Resolution that was initiated as a response to the outcome of the Crimean referendum. The BRICS members, excluding Russia, not only abstained from voting on the UN General Assembly (UNGA) Ukraine Resolution but also opposed the idea of banning Russia's participation in the recently concluded G-20 summit. It is important to note that the role of BRICS, though relatively new, would nevertheless be impactful for its assertion on dialogue and reconciliation. Its emphasis on the role of the United Nations and its opposition to sanctions have not only increased its visibility and role in the international arena but also elevated it to a global player. BRICS can play the role of a bridge-builder between Russia and the West as there is a need to address the conflict from a non-violent and peace perspective. BRICS can be a balancer of values between the East and West. It can also be an enforcer of dialogue

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6. Ibid.

and deliberation, while, at the same time, playing a role to offset policies that aim to destabilise the global order.<sup>7</sup>

### *Economic Interdependence*

In the contemporary global scenario, the world economy is undergoing a major structural shift, with dynamic emerging markets catching up with the advanced economies.<sup>8</sup> As the second decade of the 21st century unfolds and the world is still struggling to recover from the 2008–09 financial crisis, the growing clout of emerging markets is paving the way for a world economy with an increasingly multipolar character. The distribution of global growth is expected to become more diffused, with no single country dominating the global economic scene.<sup>9</sup>

In this context, unlike the Cold War period, when the Soviet Union was completely isolated by the West, there is huge economic dependence between Russia and the European Union, including the former Soviet space. As a response to the Ukraine crisis and the Crimean referendum, the international community imposed sanctions on Russia, and with more sanctions round the corner, Russia's vexation towards the West has aggravated as the sanctions are aimed at sectors like oil and banking, and have squeezed Russia's fragile economy. Falling oil prices have strained the budget and the ruble which has plunged in the financial markets.<sup>10</sup> Russian leaders have watched it fade since the imposition of the sanctions, as the rouble's share of global trading has dropped to 0.4 percent from 0.6 percent in 2012, falling five places, to rank 18th as the most-traded currency in the world.<sup>11</sup>

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7. Debidatta Aurobinda Mahapatra, "BRICS Play Role as Global Balancer", *Russia and India Report*, March 26, 2014, p.29, <http://in.rbth.com/world/2014/03/26/brics-play-role-as-global-balancer-34025.html>

8. Marina Primorac, "The Global Village: Connected World Drives Economic Shift", *IMF Survey Magazine*, August 30, 2012 at <http://redefininggod.com/2014/09/the-new-multipolar-world-and-the-golden-age-theyre-not-what-you-think-they-are/>, accessed on December 3, 2014.

9. "Global Development Horizons 2011- Multipolarity: The New Global Economy", The International Bank for Reconstruction and Development / The World Bank, Washington D.C, 2011. p. 1.

10. Lincoln Feast and Alexei Anishchuk, "G20 Commits to Higher Growth, Fight Climate Change; Russia Isolated Over Ukraine", *Reuters*, November 16, 2014.

11. Ye Xie and Fion Li, "Putin Reserve Rubles Vanish in Crimea Grab", *Bloomberg*, October 1, 2014, at <http://www.bloomberg.com/news/2014-09-30/putin-reserve-rubles-vanish-in-crimea-as-yuan-holds-gain.html>, accessed on November 22, 2014.

As there is economic interdependence, and with countries still coping with the global economic crisis, the European Union is no exception. Bearing in mind the current economic situation, the sanctions imposed on Russia have had a self-defeating impact on the EU as well, as it depends heavily on its business with Russia. This is one of the reasons why the EU has been reluctant to impose severe sanctions on Russia. Apart from its economic ties with Moscow and dependency on the energy markets of Russia, the Eurozone faces a third global economic crash. Economic stagnation is haunting Europe. The Managing Director of the International Monetary Fund (IMF) Christine Lagarde has expressed fears that a diet of high debt, low growth and unemployment may yet become “the new normal in Europe”. David Cameron, the prime minister of the UK, recently stated that the Eurozone is teetering on the brink of a possible third recession, with high unemployment, falling growth and the real risk of falling prices too.<sup>12</sup>

The impact of Western sanctions on Russia has had a major impact on the Central Asian Republics (CARs) too. It has reminded the republics just how dependent they are on Russia even today. Overall, the slowdown in Russia has also had long-term effects on the CARs. A sharp decline in the value of Russia’s rouble since early September is rippling across Central Asia, where economies are dependent on transfers from workers in Russia, and on imports too. The fall accelerated in September as the price of oil, Russia’s main export, dropped to four-year lows. In Kyrgyzstan, Tajikistan and Uzbekistan, remittances from the millions of workers in Russia have started to fall. In recent years, these cash transfers have contributed the equivalent of about 30 percent to Kyrgyzstan’s economy and about 50 percent of Tajikistan’s.<sup>13</sup> Russia, has also initiated the Eurasian Economic Union in line with the European Union and it is expected to come into effect on January 1, 2015. The aim of the economic union is to create a single economic market and also promote integration and cooperation with the former Soviet republics. This will enhance Moscow’s position and

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12. Patrick Vintour, “David Cameron Warns of Looming Second Global Crash”, *The Guardian*, November 17, 2014, at <http://www.theguardian.com/world/2014/nov/16/david-cameron-third-eurozone-recession-g20-warning>, accessed on December 3, 2014.

13. David Trilling and Timor Toktonaliev, “Central Asia Hurting as Russia’s Ruble Sinks”, October 21, 2014 at [www.eurasianet.org](http://www.eurasianet.org), accessed on December 3, 2014.

influence in its 'zones of influence' and lead to economic dependency of the Commonwealth of Independent States (CIS) countries towards Russia.

### **FUTURE PROSPECTS FOR RUSSIA-US RELATIONS**

The relations between Russia and the US have never really moved to the next phase for stronger ties, as further progress was waylaid by frictions over missile defence, NATO's war in Libya and the civil war in Syria.<sup>14</sup> Contemporary developments in Ukraine have further derailed relations between the trans-Atlantic countries and Russia, preventing them from finding a path towards defence and security cooperation in the post-Cold War era. While NATO and the EU see Russia's claim in Ukraine as illegal and a continuation of its Cold War policy of hegemonic control over the former Soviet space, the Kremlin, on the other hand, describes the Kiev uprising as a Western-backed coup, and accuses the West of fuelling the conflict. But, unlike the Cold War politics where the immediate rival of the West was the Soviet Union and vice-versa, the 21st century has given rise to major global security threats in the form of the rise of Islamist fundamentalism, catastrophic climatic changes and the need for protecting the world community from corruption and poverty. The US and Russia have worked together on critical global issues that have needed a collaborative effort by both the West and Russia.

#### *Critical Global Issues: A Common Ground*

The events of 9/11 in the US showed how a small investment by terrorists could cause extraordinary levels of damage in terms of lives and property. Both the United States and Russia have grappled with the rise of terrorism. The Bush Administration declared a worldwide "War on Terror," involving overt and covert military operations, new security legislations, efforts to block the financing of terrorism, and more. Washington called on other states to join in the fight against terrorism, asserting that "either you are with us, or you are with the terrorists." Many governments joined this campaign, including

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14. Robert Legvold, "Managing the New Cold War: What Moscow and Washington Can Learn From the Last One", *Foreign Affairs*, July/August 2014, at <http://www.foreignaffairs.com/articles/141537/robert-legvold/managing-the-new-cold-war>, accessed on December 4, 2014.

Russia. Russia has also struggled with persistent domestic insurgency and terrorism and has experienced numerous terrorist and militant attacks. The turn of the century was marked by a series of high-profile terrorist incidents involving a large number of civilian casualties. The December 2013 bombings in Volgograd showed Russia as a 'soft target' for terrorist attacks.

Therefore, militias such as Hamas, Hezbollah, the Mahdi Army, the Taliban<sup>15</sup> and the Islamic State of Syria (ISIS) have emerged as a major threat to global security. Both Washington and Moscow are required to jointly take further initiatives to combat terrorism and steps to reduce the impact of the attacks. The fight against international terrorism has been, and will remain, one of the areas where Russia-US cooperation is most feasible.<sup>16</sup> Washington and Moscow have also traditionally collaborated on many issues such as cooperation on supply routes for NATO's war in Afghanistan, and worked together on President Barack Obama's plan to secure nuclear materials around the world. Both countries have also signed the New Strategic Arms Reduction Treaty (New START).<sup>17</sup>

Areas for future collaboration include the impact of global warming, environmental pollution and degradation, waste accumulation and natural resources extraction which have resulted in inhospitable climatic conditions. For instance, the impact of global warming in the Arctic region has led to development of dangerous hydro-meteorological ice which has emerged as a threat to the Arctic environment. As both Russia and the US are major players in the North Pole, they should actively participate to address the environmental issues of the Arctic by curbing nuclear activities and regulating military activities in the region and also by monitoring the sustainable use of Arctic resources.

Gorbachev had claimed that American 'triumphalism' was stoking a new Cold War and had requested the US to stop dragging Europe into the conflict. It was "not too late" to ratchet down the

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15. Haass, n. 5.

16. Dimtry Suslov, "9/11 and US-Russia Relations: Missed Chances, Future Opportunities", *Working Group on the Future U.S.-Russia Relations* at [http://us-russiafuture.org/publications/publications-by-working-group-members/9-11-and-us-russia-relations-missed-chances-future-opportunities\\_en/](http://us-russiafuture.org/publications/publications-by-working-group-members/9-11-and-us-russia-relations-missed-chances-future-opportunities_en/), accessed on December 3, 2014.

17. Legvold, n.14.

confrontation, he said.<sup>18</sup> Gorbachev during his tenure had initiated *Perestroika*, and his “New Thinking” foreign policy called for “the idea of a common European home” as he had realised that if tensions between the West and Russia converted into a hot war, it would ultimately impact the European countries, including Russia. Thus, considering the escalation of tension in the present scenario, both the European countries and Russia should collaborate and take measures for the peaceful settlement of the Ukraine crisis as the ethnic mobilisation is a result of clashes between pro-European supporters and pro-Russian supporters in Ukraine.

Therefore, one can state that isolating Russia in any form will not help resolve the tensions between Moscow and the West—it would only widen the gap between them. Both Russia and the international community should work together to resolve the Ukraine crisis in a diplomatic and peaceful manner. Moreover, the Ukraine administration on its part should make efforts to create a ‘Pan-Ukrainian identity’. The peaceful outcome of the Ukraine imbroglio will lead to a ‘containment’ of the crisis within the region and, thus, spare the international community the repercussions of the escalation of tensions between the West and Russia. It would also set an example for many countries which have struggled to find solutions to long standing ethnic crises in their respective regions.

With growing global Islamist fundamentalism, corruption and life threatening diseases like Ebola on the rise, the West needs to engage Russia in confidence-building measures and explore common grounds which will help in bridging the gap between the US and Russia and also bring stability into the relations. Even if recent tensions and apprehensions between the US and Russia do not lead to the emergence of a ‘new Cold War’ as predicted by many, the growing animosity between the two countries should not be neglected. Fortunately, there is scope to accommodate both countries with their equal participation on critical global issues that need immediate attention and contribution by both global players.

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18. Tom Parfitt in Moscow and Roland Oliphant in Kiev, “Mikhail Gorbachev Accuses US of Stoking ‘New Cold War’”, *The Telegraph*, December 2, 2014, at <http://www.telegraph.co.uk/news/worldnews/europe/russia/11268298/Mikhail-Gorbachev-accuses-US-of-stoking-new-Cold-War.html>, accessed on December 4, 2014.



# OUT OF AREA CONTINGENCY (OOAC): THE INDIAN SCENARIO

VIVEK KAPUR

## INTRODUCTION

The term and acronym Out of Area Contingency Operations (OOACO) was coined by the US and North Atlantic Treaty Organisation (NATO) initially to cover situations when they were required to operate outside their originally envisaged theatre of operations which was mainly the European continent, conducting conventional war against the erstwhile Soviet Union and Warsaw Pact forces. Over time, OOAC has become an accepted term for use by a large number of non-NATO countries. In India too, the government, Ministry of External Affairs (MEA) and Ministry of Defence (MoD) have accepted the use of the acronym OOAC<sup>1</sup> and, hence, the use of this 'imported' acronym in this paper. This paper will examine the subject from primarily an Indian Air Force (IAF) point of view. The Basic Doctrine of the IAF, 2012 edition, also mentions OOAC at pages 116 and 149 but without elaboration on the term itself.

This paper intends to look at OOAC in terms of

- The theory. What does OOAC mean and what operations comprise OOACO?

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1. Discussions held at IDSA, during February-April 2012, by IDSA Research Fellows after interacting with government agencies.

- Indian OOAC activities. What has been India's involvement in OOACO till date?
- Current capabilities. What capabilities does India possess to enable OOACO?
- Projected future capabilities. What capabilities is the country likely to have in future for OOACO?

### **WHAT DOES OOAC MEAN AND WHAT OPERATIONS COMPRISE OOACO**

India is not new to OOACO and has been involved in these as an independent nation since soon after 1947. The Maritime Military Strategy dated 2007, published by the Indian Navy (IN), defines OOACO, in the section covering the Spectrum of War as "maritime operations in less than war situations, which may include operations to provide assistance and support to friendly governments."<sup>2</sup> This definition is restrictive as it limits OOACO to "maritime operations in less than war situations" and stops at "operations to provide assistance and support to friendly governments". The IAF's Basic Doctrine 2012 mentions OOACO but does not define what the term means except to mention that almost all air operation could be required to be conducted well beyond the country's borders.<sup>3</sup>

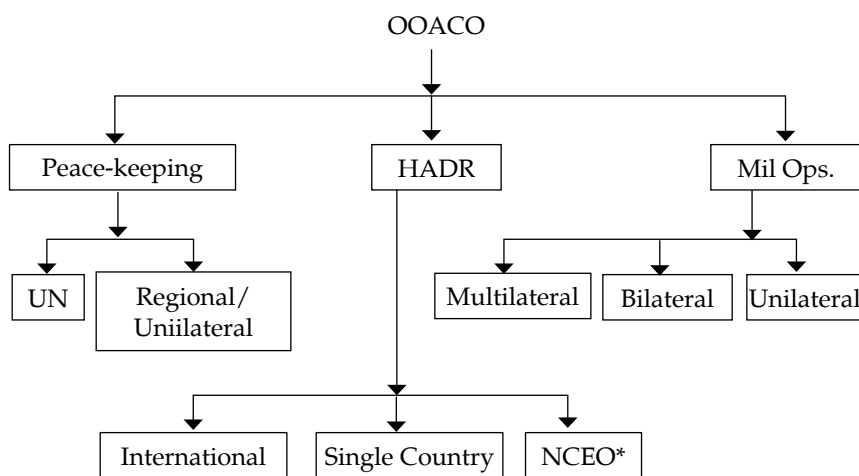
A possibly more suitable definition of OOACO in the Indian context is put forward by this author as follows:

OOACO are military missions conducted beyond India's borders and coastlines. These include, but are not restricted to, peace-keeping or peace enforcement operations in strife-torn regions, multilaterally or unilaterally; other military or non-military assistance rendered unilaterally or in coordination with other nations to friendly foreign states at their request or offered *ab-initio* by India in combating security related issues, Humanitarian Assistance and Disaster Relief (HADR). Protection of India's interests abroad including protection and necessary assistance to the Indian Diaspora also fall into the ambit of OOACO.

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2. "Freedom to Use the Seas: India's Maritime Military Strategy", 105, at [http://www.irfc-nausena.nic.in/irfc/ezine/maritime\\_strat.pdf](http://www.irfc-nausena.nic.in/irfc/ezine/maritime_strat.pdf), accessed on February 13, 2014.
  3. *Basic Doctrine of the Indian Air Force 2012* [New Delhi: Directorate of Operations (Space), 2012], p. 116.

Thus, it is seen that OOACO include a wide variety of different missions. For simplicity, these are depicted in a diagrammatic form at Fig 1. OOACO include peace-keeping operations which could be further divided into those under the aegis of the United Nations (UN) or under other regional arrangements. These operations could further cover peace-keeping as well as peace enforcement and possibly also peace-making. The second leg of OOACO covers HADR as part of an international effort, as a single contributor and also spans the evacuation of India's diaspora from combat embroiled or otherwise unsafe zones under the head "non-combatant evacuation operations". Lastly, purely military OOACO could be conducted for various reasons in different scenarios as part of a multilateral or bilateral effort or even unilaterally. There are likely to be situations in the real world where the in-theory clear and neat lines between the component parts of OOACO tend to blur at times.

**Fig 1: An OOACO Tree / Block Diagram Depiction of Types of OOACO**



\*Non-Combatant Evacuation Operations (NCEO).

Source: *Net Security Provider: India's Out of Area Contingency Operations* (New Delhi: Manas Publishers, 2012), p.15.

The classification of various OOACO covered so far is useful in the process of planning for various possible contingencies and for

theoretical discussions and understanding. At the time of actual execution, the type of missions authorised and executed would be a result of the then prevailing situation as well as the mandate given by the elected government at the time. For instance, the situation prevailing in the area considered for OOACO may require “fighting to get in” and “fighting to get out” to provide succour to an affected population, a situation not covered as a separate and distinct possibility in the theory above. That said, it is apparent that over time, in view of India’s slowly but steadily growing economy and overall power, India’s interests will also slowly evolve to include interests in areas relatively far from the geographical boundaries of the country. What is very clear is that it would be prudent for all organs of the state that have or are likely to have any role to play in OOACO to plan in advance for various contingencies that could arise so that in any eventuality unfolding, the country is able to effectively carry out the actions demanded by the situation.

### **INDIA’S INVOLVEMENT IN OOACO**

India has been involved in OOACO ever since its independence. In fact, Indian personnel could be said to have been involved in OOACO since before Indian independence. Indian personnel fought alongside other forces drawn from parts of the then British Empire in both World War I (WW I) and WW II. This included private citizens of India who flew with distinction with the Royal Flying Corps (RFC) in WW 1 and with the Royal Air Force (RAF) during WW 2. Indian troops fought on battlefields in Europe, Africa, the Middle East, and Southeast Asia. Further, Indian forces under colonial British control were instrumental in keeping the peace and in policing areas of East Asia that were under colonial Britain’s control.

**United Nations Peace-Keeping (UNPK):** Soon after India’s independence, India deployed under the UN umbrella, its 60th Parachute Field Ambulance to East Asia to tend to the war wounded in Korea as part of the UN forces during the Korean War. India’s first Prime Minister Jawaharlal Nehru said “... we adhere completely to the principles and purpose of the United Nations (UN) Charter and that we shall try to the best of our ability , to work for the realisation

of these principles and purpose".<sup>4</sup> In view of this direction given by the country's very first prime minister, it comes as no surprise that India has been heavily involved in UN operations. According to the Indian Ministry of Defence (MoD), "India has participated in 45 of the 69 UN missions across the world since 1950 and more than 1,65,000 Indian troops have participated in various UN missions."<sup>5</sup> Apart from the Indian Army, the IAF has also been an active participant in UN operations. The IAF sent Canberra light bombers to Congo in 1960 and has had deployments in Sierra Leone (2000), Democratic Republic of Congo (2003), Somalia (1993) and Sudan (2005). A list of all UN operations undertaken by India is too long for inclusion in this paper. Apart from deployment of fixed-wing combat air power in Congo (1960) the IAF's involvement in UN Peace-Keeping (UNPK) operations has involved primarily helicopters in the utility and transport roles. However, at times, armed helicopters and even attack helicopters (Congo, early 2000s) have been deployed under the UN flag by the IAF.

What has emerged from these operations is that Indian personnel deployed far from the mainland on UN tasks are well regarded for their professionalism, compassion, equanimity and tolerance. These Indian military personnel have proved very effective and so remain in heavy demand for UN operations. Involvement in these UN operations demonstrates that the country's armed forces have the skills and expertise in deploying and maintaining effective surface forces at large distances from the mainland. While UN operations have been conducted for UN objectives and are relatively very low intensity as far as firepower used is concerned; the basic capabilities developed and demonstrated could, in situations of a different nature, be utilised as a foundation for other OOACO tasks and missions.

While UNPK operations do not fall under the strict definition of OOACO in the US/NATO context from where the term has been borrowed, these operations have helped develop a wealth of experience and expertise that can be leveraged for OOACO tasks. Involvement in UNPK operations has helped the Indian armed

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4. CUNPK, "Indian Army and United Nations Peacekeeping Operations", Information Brochure; IHQ of MoD (Army).

5. Ministry of Defence, Annual Report, 2010-11 (New Delhi: Government of India, 2011), p.30.

forces to develop the capability to operate for long periods of time at locations far from the Indian mainland, often in rudimentary environments, and still be able to perform assigned tasks with distinction while staying within the stringent and restrictive Rules of Engagement (RoE) specified by the UN.

Involvement in UNPK operations by the Indian armed forces over the past six decades has brought out several lessons that have a bearing on the planning for OOAC operations other than just UNPK operations. A few of the more pertinent lessons are as follows:

- There is need for a dedicated organisation or a formalised structure within the current organisation for the planning and execution of OOAC operations. In the absence of this, a piecemeal ad hoc approach is likely to prevail, with adverse effects on efficiency of execution of laid down missions and tasks.
- Ideally, forces should be specially trained and maintained for UNPK operations and other such tasks. However, due to lack of resources this has not been done so far. The system of earmarking specially chosen units to take part in UNPK operations has worked satisfactorily. What needs to be done is to institutionalise the learning gained by such units deployed in the past and today on UNPK operations so that the knowledge gained is internalised by the entire organisation.
- The United Service Institution of India (USI), located in Development Enclave, Delhi Cantonment, New Delhi, conducts training courses in UNPK operations for Indian as well as foreign military officers at its Centre for UN Peace-Keeping (CUNPK). These courses as well as the knowledge base built up painstakingly by the CUNPK is a good step towards internalising the useful knowledge gained by the Indian armed forces during their deployments on UNPK duties over the years.

The debate over whether India can or should continue with its UNPK activities continues. However, given the country's aspirations for permanent membership of the UN Security Council and the greater interest being taken by countries from East Asia in these operations, it is likely that India's involvement in UNPK operations is likely to continue and may even intensify.

**Peace-Keeping Operations Outside UN Cover:** Apart from UNPK operations, the armed forces could be called upon to carry out unilateral or bilateral peace-keeping operations outside the UN mandate. India has been involved in at least one such operation: Operation Pawan in Sri Lanka in the late 1980s and early 1990s, when Indian forces deployed to Sri Lanka under a bilateral agreement between the two countries and tried to maintain peace, and later to disarm the rebel Liberation Tigers of Tamil Eelam (LTTE) in the civil war-torn island nation. However, given the fact that Sri Lanka is an immediate neighbour, this operation too may not fall strictly into the classification of OOACO unless one considers the fact that the “in area” region has traditionally been taken to be the land borders towards the north of the country. India has not been involved in any multilateral peace-keeping operations outside the aegis of the UN. The Indian Peace-Keeping Force (IPKF), 1987 to 1990, was a totally Indian venture in coordination, and in agreement, with the host government. No third government or such internationally recognised party was involved in those operations. The IPKF was challenged with a shifting mandate and operations, starting with peace-keeping, morphed over time to an active counter-insurgency campaign. The chain of command both in liaison with the Sri Lankans and within the Indian forces was not clearly established, leading to more confusion and loss of efficiency. Establishment of an IPKF Headquarters (HQ) in April 1988 finally helped overcome the confused command and control issues to an extent.

**Operation Cactus:** When threatened by a coup attempt led by suspected terrorists and mercenaries, the government of President Gayoom of the Maldives asked India for assistance. By the time the Indian government ordered preventive military action, alert commanders in the para commando unit based in Agra as well as in the Il-76 squadron located in Agra had already done their homework, on the basis of available news of the developing situation on the electronic media, and so were ready for an early launch when ordered. The troops were flown into Male airport which already had some hostile presence within its perimeter but the arrival of the Indian troops led to their swift defeat.

Both Operation Pawan and Operation Cactus bring out some important points relevant to OOACO. These are given briefly below:

- Effective execution of OOACO requires good planning. There should be a suitable organisation studying different parts of the world and planning for contingencies there on an ongoing basis. The continuous collection of information and generation of options and possible operational plans would assist in formulation of usable strategies able to achieve the aims of the operation.
- Involvement of the Indian Foreign Service (IFS) and of the Ministry for External Affairs (MEA) is necessary from the initial stage itself in order to marry the political and diplomatic strategies with more military ones. This would provide a comprehensive unified national response to situations with all the players on the same page.
- A clearly defined and rational command chain must be established and followed in OOACO.
- Commanders, at all levels in the three military Services should be indoctrinated to some extent towards the requirements of OOACO for them to develop the skills to be effective in such scenarios, apart from the main role of preparing for conventional war.
- Central police forces and paramilitary forces could also be included in the forces available for OOACO.
- Intelligence collection needs to be more thorough and the intelligence obtained should be available to the personnel who require it in time.

#### **HUMANITARIAN AND DISASTER RELIEF (HADR)**

HADR covers a vast variety of possible operations. It is not feasible to list and explain all of these possible operations that fall under HADR in this paper. Hence, under the three basic classifications covered in HADR in Table 1, simple representative examples will be covered to illustrate these for ease in understanding and retention.

HADR basically involves a country providing relief to another country that is beset with natural or man made-disasters in order to ameliorate the suffering of the disaster stricken country's citizens.



Disasters such as earthquakes, floods, drought, tsunamis, hurricanes, typhoons, cyclones, etc would come under the classification of natural disasters. Civil wars, terrorist attacks and wars, industrial accidents and the like would be classified under man-made disasters. In both situations, a section of the beleaguered country's population could be adversely affected in terms of basic physical safety and basic requirements for a comfortable life. All activities to provide succour to such affected populations fall under HADR. Further classification basically deals with who render assistance and how the assistance is rendered.

**Multilateral/International Effort:** After a massive earthquake with the epicentre at Bhuj in the Kutch area of Gujarat that led to widespread destruction and loss of life, assistance was rendered to the affected population by the Indian government on a war-footing. In addition, in view of the scale of the tragedy, several foreign governments also provided equipment and stores. Such assistance came from individual governments on a one-to-one basis and also from non-state or multi-state organisations such as Medecins sans Frontiers (MSF).

**Unilateral/Single Country:** In a single country HADR, while several different countries may offer assistance to the country affected by a disaster, these several countries render assistance without lateral coordination amongst them. India has also provided succour to countries in its neighbourhood and also those located further away. IAF transport aircraft flew in the necessary supplies and required stores separately to Turkey and Iran after a big earthquakes there, to Japan in the aftermath of the Fukushima nuclear accident and even to the other side of the globe, to the US, after Hurricane Katrina left a swath of destruction in the southern American states. These actions by India involved unilateral rendering of assistance under HADR. In early 2004, after the massive tsunami devastated the coastal regions of countries with coastlines touching the northeastern Indian Ocean and the Bay of Bengal, India, despite being disaster struck itself, rendered immediate assistance unilaterally to other countries in the region. In this case, the Indian Navy (IN), with its ability to carry much larger amounts of relief material as compared to even heavy lift transport aircraft, was the front runner in the HADR effort as all

the affected nations had accessible coastlines. India has so far been involved in rendering HADR to other countries on a single country basis and not as part of multilateral efforts.

### **NON-COMBATANT EVACUATION OPERATIONS (NCEO)**

Over the past several decades, a large number of Indians have moved to other countries on a temporary or permanent basis in order to make new lives for themselves. Despite moving to other countries, these Indians have not snapped their ties with the motherland. Some of these people work for India's greater interests through involvement in the political and economic processes in their adopted countries, while others remit large sums of money to India. The Indian government has a moral and legal responsibility towards this diaspora. In normal times the Indian embassies and consulates keep in touch with the diaspora for mutual benefit. However, at times, the safety of the diaspora is threatened by untoward incidents in their region. In such circumstances, India is duty bound to render assistance to the diaspora. Such assistance most often involves evacuating the diaspora from troubled areas to safer locations, most typically back to India. India has carried out several such NCEO in the past. A few more recent NCEO by India are very briefly covered below.

**Kuwait 1990:** After Saddam Hussein invaded Kuwait in 1990, it became increasingly clear that a major war was likely to commence in that area. It was important to evacuate the Indian diaspora in Kuwait, Iraq and other states in the region. A US-led naval blockade made evacuation by sea unworkable. Thus, India embarked upon a major evacuation of the diaspora by air. Air India aircraft were redirected to execute the evacuation from safe airports in the Gulf region. As a standby, the IAF's IL-76 aircraft were kept on alert to supplement / replace Air India flights if needed. Eventually, in what became the largest airlift in the world after the Berlin Airlift carried out by the allied air forces in the 1940s, India, between August 13, and October 11, 1990 evacuated 176,000 people from the Persian Gulf. Air India earned an entry in the Guinness Book of World Records for evacuating 111,711 Indian citizens from Iraq, Kuwait and Jordan in 488 flights operated over a period of 59 days. This stands as the largest

civil airlift ever and is a great tribute to Indian air power. A benign political situation, wherein India was considered a friendly country by all nations involved in the developing situation leading up to the Gulf War of 1991, made the problems of getting flights safely in and out of the region relatively mild.

**Lebanon 2006:** In 2006, Hezbollah attacks on Israel through the use of unguided rockets led to a rapid escalation of military action in the region. In view of the uncertain security situation that prevailed, India along with many other countries, decided to evacuate its diaspora from Lebanon. Four ships of India's Western Fleet that perchance happened to be in the area were diverted to transport the Indian diaspora from Lebanon to Cyprus from where they were flown out on board specially tasked Air India aircraft. In addition 514 citizens of Nepal, Sri Lanka, the USA and Bangladesh were also evacuated by India.<sup>6</sup>

**Libya 2011:** As allied action against Col Muammar Gadaffi's regime in Libya escalated, on February 24, 2011, India decided to evacuate its citizens from Libya. This evacuation was carried out primarily by sea using two IN vessels in the area along with a chartered ship. Limited air evacuation was also carried out from neighbouring Egypt. While primarily a sea evacuation, Air India provided two aircraft on standby while the IAF earmarked two Il-76 aircraft for evacuation duties. One Il-76 evacuated 186 passengers in one sortie from Egypt to India.

A few takeaways from a study of India's experiences in NCEO are as below:

- An evacuation policy should be in place for all regions of the globe with the basic groundwork done well in advance.
- Communication lines not subject to easy disruption should be maintained between Indian missions abroad and the locally present Indian diaspora.
- Staffing of Indian missions should be adequate for these additional tasks.
- Hypothetical evacuation plans should be ready and updated regularly to ensure smooth execution if and when required.

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6. Round table discussion on NCEO at IDSA on January 30, 2012, chaired by former Ambassador Smt. Sabharwal, who was India's ambassador to Lebanon in 2006 and during the evacuation process.

- Indian successes of the past in NCEO are attributable in large measure to the initiative and dedication of individual personnel concerned, as well designed plans were lacking in all cases. Last minute fire-fighting proved effective to an extent.<sup>7</sup>

### **EXISTING CAPABILITIES FOR OOACO**

The Indian armed forces have a mandate from the Indian government to equip and train to defend the territorial integrity of the country. In addition, the armed forces are required to render assistance to the civil administration when called upon to do so through laid down procedures in accordance with the law of the land. Hence, the armed forces have equipped themselves and trained so as to fulfill their mandate. OOACO have not formed a part of the capabilities in being that the armed forces are to maintain. There is no evidence to suggest that any major defence equipment induction has been carried out specifically to meet OOACO requirements. Hence, whenever India has been involved in OOACO of the types covered so far, the regular armed forces, trained and deployed for national defence have been called upon to carry out additional tasks that they are not essentially trained to carry out. This applies especially to the Indian Army which trains its troops to kill the enemy and win in all out combat. When these forces or elements of them are sent for OOAC operations of the types carried out by India till date, the troops have to be reindoctrinated to be less aggressive and to show empathy to the population being assisted; to extend a helping, not a killing, hand. The fact that these troops, drawn each time from different units, have carried out so many OOACO under UNPK and HADR heads is a tribute to their basic calibre.

In the case of the Indian Navy (IN), the fleets are composed of surface, sub-surface and aviation components, all tailored towards winning maritime battles and seizing control of the sea in the area concerned. However, by their very nature, surface combatants, especially the larger vessels of the IN have the ability to carry large amounts of stores and equipment and have multi-faceted expertise

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7. KP Fabian, "Iraqi Annexation of Kuwait –August 1990", *Indian Foreign Affairs Journal*, vol 7, no.1, January-March 2012, pp.93-107.

onboard including medical facilities, ability to prepare a large number of meals at short notice and to take onboard relatively large numbers of personnel. Thus, IN surface vessels have an innate ability to render HADR assistance when required. In fact, the larger the vessel, the more capable it is of HADR roles as its basic war-time missions. The world has seen even the US Navy super carriers steaming in close to disaster struck shores to provide the required assistance. Thus, despite not consciously equipping and training for OOACO roles and tasks, the IN has an innate ability to render at least HADR assistance at very short notice.

The IAF has also equipped and trained for conventional war as is assessed to be likely along the country's borders. Despite this, like in the army's case, the IAF was able to, as early as in 1960, re-indoctrinate its personnel and deploy Canberra light bombers for UNPK tasks in the Congo. At first glance, light bombers appear to be mismatched with a UNPK requirement. However, the IAF's Canberras won high praise for the dedication and accuracy with which they engaged in strafing attacks on rogue elements, sanctioned for engagement by the UN commanders. More commonly, the IAF has been involved in making available its helicopters in the transportation and scout roles in UNPK operations and, at times, of deploying Mi-35 attack helicopters, again with excellent reindoctrination to meet UN needs. The most recent such reorientation of high end combat firepower was seen in Congo where IAF Mi-25/35 attack helicopters came in for high praise. Chetak light utility helicopters and medium lift Mi-8/17 aircraft have seen much wider application in India's OOAC operations till date. These units have also earned praise from all other participants whether Indian or from other countries involved in such operations. More tellingly, the local people being protected have high regard for the Indian personnel of the three Services based upon their experience with them during UNPK or HADR operations.

IAF capabilities that could be used for OOACO include airlift capability as well as combat firepower. The IAF's current airlift capability is as shown at Table 2:

**Table 2: Current Lift Capability of IAF**

Aircraft	Number	Capability (per aircraft)
Il-76*	17	Maximum payload of Il-76MD (IAF variant) is 47,000 kg. Maximum speed is 750-780 kmph. Range with maximum payload is 3,800 km range with 20,000 kg payload is 7,300 km. Can carry 140 troops or 125 paratroopers as alternates to cargo. Able to carry upwards of 300 passengers with their luggage in a double deck cargo bay configuration.
An-32	100	Maximum payload is 7,500 kg (of this, fuel can be at most 5,500kg). Practically carries about 4,000 kg on routine missions. Can carry 39 paratroopers.
D0-228	25	Maximum payload is about 2,713 kg. With 19 passengers, the range is 1,167 km.
C-130J	5**	Maximum payload 18,955 kg. Can carry 92 fully equipped troops.
HS-748	40	Maximum payload is approximately, 5,350 kg, with range of 852 km. Can carry 48 paratroopers.
C-17	05	Five aircraft had been received by end 2013 by the IAF out of the initial order of 10 aircraft. These are under operational evaluation by the IAF.

Source: Data in Table 2 is from *Jane's all the World's Aircraft 2008-09*, and *Military Balance*, 2012

\*Includes Il-78 Flight Refuelling Aircraft (FRA).

\*\* One aircraft was lost in a training accident earlier in 2014.

The IAF also has six Il-78 Flight Refuelling Aircraft (FRA). These can be converted, through temporary removal of the air-to-air refuelling equipment to their parent airframe. The Il-76's primary transport task is to supplement the airlift effort available with dedicated cargo lift units.

The IAF still has a large number of short legged legacy fighters, primarily based upon the MiG-21 and MiG-23 design in service. These would be limited to the Indian mainland. Newer aircraft, especially those with In Flight Refuelling (IFR) capability such as Jaguars, upgraded Mirage 2000s, upgraded MiG-29s and Su-30MKIs, can fly out to considerable distances from India's borders with the use of IFR. However, even in the case of the longest legged aircraft, the Su-30MKI, if it is flying about 2,000 km or more from the Indian landmass, it would take several hours to reach the designated

area and have relatively limited persistence on-station in the area concerned. This brings up the requirement of securing an air base in the region where the IAF combat air power utilisation in OOACO is being considered. While transport aircraft can land, disgorge their cargo, or even paradrop personnel and equipment and return to home base, fighter aircraft would require to be in the area for effectiveness. If based too far away, the transit time lag could render them quite useless in emergent situations. The current capabilities are limited by the availability of access to air bases usable by the IAF, especially in situations where the fight-in and fight-out scenario prevails. Today, even in peace-time, the IAF's transport aircraft assets are very heavily tasked. There does not appear to be any spare capacity for OOACO today without induction of the airlift effort available with civil airlines.

Naval forces have much greater lift capability and current IN capability is listed at Table 3:

**Table 3: Current Lift Capability of IN**

Ship	Number	Capability
Landing Platform Dock (LPD)	1	Up to 6 medium support helicopters, either 9 Landing Craft Mechanised (LCM) or 4 LCM and 2 Landing Craft Air Cushion (LCAC); 4 Landing Craft Vehicle Personnel (LCVP); 930 troops.
Landing Ship Tank Large (LST (L))	5	2 Magar -15 Main Battle Tanks (MBTs) or 8 Armoured Personnel Carriers (APCs) or 10 trucks, 500 troops.
Landing Ship Tank Medium (LST(M))	5	5 MBTs or 5 APCs; 160 troops.
Landing Craft Utility (LCU)	6	2 APCs, 120 troops.

Source: *Net Security Provider: India's Out of Area Contingency Operations* (New Delhi: Manas Publishers; 2012), pp52.

Current capabilities with the IAF and IN indicate that currently India can undertake OOAC operations through deploying and supporting a brigade size force along with its supporting assets only within the Indian Ocean littoral region. This assessment takes

into consideration the presence of the INS *Viraat* with its small complement of Sea Harriers but not the INS *Vikramaditya* which is assumed to be working up towards full operational capability.

**FUTURE OOACO CAPABILITY IN THE INDIAN CONTEXT**

Future induction plans of the IAF are known to quite an extent given the time that procurement processes take in India. Some of the major projected inductions in the IAF and IN that will enhance the lift capability are covered in Table 4:

**Table 4: Projected Inductions in IN and IAF that will Enhance Lift Capability**

<b>Indian Navy</b>		
<b>Platform</b>	<b>Number</b>	<b>Remarks</b>
LCU	8	Probably to be built by GRSE, Kolkata
LPD	NK	Request for Information (RFI) was issued in 2011 but only to Indian shipyards. Further progress is not known.
<b>Indian Air Force</b>		
C-17	10+6 1 <sup>st</sup> 10 on order; order for next 6 in process after checking operational utility of the initial aircraft.	Maximum payload is 77,520 kg. Can carry 102 fully kitted combat troops for air assault; 102 seats can be fixed to sidewalls or 90 passengers or 10 casualty passenger pallets in addition to 54 sidewall seats in the casevac role. Can carry one MBT in addition to a few light vehicles or up to three AH-64 attack helicopters or three wheeled or tracked vehicles.
MTA	NK	NK collaborative venture between India and Russia. No details on capability, as at the preliminary design stage.
C-130J	12; Current 6 + 6 more ordered*	Capability of each as in Table 3.

Source: *Net Security Provider: India's Out of Area Contingency Operations* (New Delhi: Manas Publishers; 2012), pp53-54.

\* Vivek Raghuvanshi, "India Awards \$1B Contract for 6 More C-130Js", <http://www.defensenews.com/article/20131231/DEFREG03/312310009/India-Awards-1B-Contract-6-More-C-130Js>, accessed on March 4, 2014.



In addition to the inductions listed at Table 4, the IAF is expected to induct 126 Rafale Medium Multi-Role Combat Aircraft (MMRCA). These MMRCAs would improve the force projection capability of the IAF significantly and prove a potent support to the Su-30MKIs, especially when long range missions are required. However, these inductions aside, the IAF would still require air basing facilities in, or close to, the area of operations in OOAC situations to be truly effective. Development of units such as the USAF's Air Expeditionary Wings,<sup>8</sup> which are trained to make foreign airfields fit for parent service use, could be considered for this. The IN has received the INS *Vikramaditya* and should soon have INS *Vikrant* completed and operationalised. The IN, thus, could be in a better position than the IAF to provide persistent air cover to OOACO in locations relatively close to coastlines. Over the next decade or so, if equipment induction and training proceeds as planned, India should be able to deploy and maintain up to a division size force in regions that lie slightly beyond the limits of the Indian Ocean.

IAF inductions are tailored to the job on hand. This is the defence of the country's borders. With no resources to induct OOAC specific equipment or to separately maintain an OOAC force, if there is a need for OOAC operations concurrent with threats along the borders, the government would have to decide on priorities, given that both cannot be met simultaneously and instruct the armed forces accordingly. In the foreseeable future, the availability of resources to be able to conduct a major border war as well as OOAC operations simultaneously does not seem likely. Officers in the three Services HQ were reluctant to talk about India's OOAC outlook.<sup>9</sup> However, what is known and acknowledged is that planning for possible OOACO is being done on an ongoing basis by the nodal segment of HQ Integrated Defence Staff (IDS). Depending upon the type of OOAC situations envisaged, a lead Service has been designated for each such contingency and the concerned Service and the other supporting Services in each case, informed accordingly.

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8. The US transit base for supplying its forces in Afghanistan at Manas Air Base in Kyrgyzstan was established and run by the USAF's 376<sup>th</sup> Air Expeditionary Wing. This transit centre is in the process of being shut down by mid-2014.

9. This is quite understandable as no one would like the media to publish that India has contingency plans to intervene militarily in another country for fear of the adverse publicity this could bring.

## **CONCLUSION**

India has been involved in OOACO since independence and appears likely to continue to be involved in such operations. However, OOACO are not firmly in the charter of the Indian military Services. India does not raise, train and maintain forces specifically for OOACO. Currently, India can deploy and sustain about a brigade size force along the Indian Ocean littoral area. Over the next decade, this is likely to increase to deploying and sustaining a division size force up to a little beyond the Indian Ocean littoral. Whenever required, forces have been selected from the standing military and earmarked for OOACO deployments. The inherent capabilities to conduct military OOACO are expected to increase over time from deploying and maintaining a brigade size force within the limits of the Indian Ocean littoral region to a division size force a little beyond the Indian Ocean littoral.

# LEVERAGING DEFENCE RESEARCH: INNOVATING ACROSS DEFENCE TO THE CIVIL SPECTRUM

**MANOJ KUMAR**

*When hostilities do end, we will be faced with a great opportunity and a challenge how best to use that opportunity. The resources now being claimed by the war can be diverted to peaceful uses both at home and abroad, and can hasten the attainment of the great goals upon which we have set our sights.*

*If we keep our eyes firmly fixed on these goals – and if we plan wisely – we need have no fear that the bridge from war to peace will exact a wasteful toll of idle resources, human or material.*

— President Johnson in the 1967 Economic Report,  
on post-Vietnam Planning.<sup>1</sup>

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1. Steven R. Rivkin *Technology Unbound: Transferring Scientific and Engineering Resources From Defence to Civilian Purposes* (New York, USA: Pergamon Press Inc., 1968), p. xii.

## INTRODUCTION

Technology transfer across social sectors, industries, and national boundaries is a common phenomenon in contemporary times. These transfers are mostly driven by economic paradigms – the need to embrace radical innovations so as not to be left behind in the race to be at the forefront of the technological and/or commercial envelope. It is, thus, obvious that the technological generators – those who invested in Research and Development (R&D) and came up with ‘crown jewel’ innovations—hold sway in today’s markets. If one were to consider the investment in R&D as a benchmark of ‘invention (and probably innovativeness) potential’, then the defence sector would lead in most countries. As an example, in 2007, the US defence budget was \$440 billion. Out of this, the technology development component was \$73 billion. As compared to this, the largest non-military research funding went to the National Institute of Health, which got \$28 billion in the same year.<sup>2</sup>

The costs and risks in the research for military systems do not really comprise an important feature as often as in the private sector or any other state investment.<sup>3</sup> R&D for defence products is mostly sponsored by the state. This is a far cry from the conditions governing civil (private sector) R&D efforts where the costs must be subsumed by the producer in the end-cost of a product, paid for by consumers in a cost competitive market. Therefore, it makes eminent commercial sense whenever defence products (inventions) can find their way into civil markets and become truly innovative.

In the context of the aforesaid, it becomes pertinent to study the success stories – examples where defence inventions reached civil applications. Examples range from the internet (the US military) to packaged ready to eat food [developed by our own Defence Research and Development Organisation—(DRDO)]. This point would be demonstrated by two major case studies from the foreign markets that came up with radical innovative products. The forgotten story of ‘Jeep’ is a name that is synonymous with the four-wheel drive,

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2. T.W. Lee, *Military Technologies of the World – Vol II* (Westport, USA: Praeger Security International, 2009), p. 364.
  3. Dr Hatice Karacay Cakmak, Department of Economics, Beytepe, Ankara, Turkey, “A Theoretical Glance at Military Expenditures”, 2009 p.3, see, [hrcaak.srce.hr/file/74277](http://hrcaak.srce.hr/file/74277), accessed on August 6, 2014.

light and powerful vehicles that have spawned the contemporary Sports Utility Vehicles (SUVs) and Multi-Utility Vehicles (MUVs). The second example is that of Ray-Ban glasses. Both of these have become top-notch commercial products with the Jeep Cherokee and Ray-Ban aviator glasses being considered status symbols anywhere in the world.

## **JEEP**

With a brand punch line of “Go Anywhere, Do Anything”,<sup>4</sup> Jeep has been associated with adventure and machismo since World War (WW) II. The original vehicle was born out of sheer necessity for the US forces.<sup>5</sup> Since WW I, the US Army had been looking for a fast, lightweight and all-terrain vehicle that could be used in the war zones around the world. In the early 1940s, with the Nazi forces on the ascendancy, the need for such a vehicle by the US Army became acute. The army asked automobile manufacturers for a running prototype in just 49 days. The specifications were quite stringent and only two companies amongst the 130 companies that were invited to bid, responded. The Bantan Car Company worked with Detroit engineer Karl Probst, who designed the vehicle in two days flat. His design was improved by the other company Willys-Overland (Quad and powerful) and accepted by the army. The contract was awarded to Willys and Ford as the sheer size and rate of delivery during the war was beyond any one company to undertake. During WW II, Willys and Ford supplied more than 700,000 orders, with Willys supplying more than 330, 000 units.

By 1942, long before the war came to an end, in an innovative move, Willys-Overland recognised that the vehicle could serve the civilian market by virtue of the fact that it had built a brand for itself in ruggedness and durability. An advertisement campaign was undertaken for building the civilian brand value. Even as the first civilian Jeep vehicle was built in 1945, Willys obtained a US trademark registration in 1950, five years later. Since then, the trademark, now registered internationally, has passed from Willys-Overland to Kaiser

4. “History of Jeep Models”, at <http://www.jeep.com/en/history/>, accessed on July 21, 2014.

5. The evolution of the Jeep has been traced at <http://www.hrja.org/jeep.htm>, accessed on July 22, 2014.

to American Motors Corporation, and most recently, to Chrysler Corporation. From 1968 to 1978, the production of Jeep rose three times to 600 vehicles a day. With the present-day Grand Cherokee being a much-cherished 4X4, the Jeep story lives on. Over half of all Chrysler vehicles sold outside the US are Cherokees.

### **RAY-BAN**

The 1930s was an era of great strides in military aviation. Aircraft became faster, and flying envelopes expanded. Many US Air Force (USAF) pilots were reporting that the glare from the sun was hindering their flying prowess. This led to the invention of a new kind of glasses, with green colour that could cut the glare without obscuring vision. Thus, was born Ray-Ban. This anti-glare eyewear saw many models being introduced but the traditional 'aviator' model with metal frames remained the favourite for a long time to come. Cashing in on the newness factor and need, the eyewear went on sale to the public in 1937.<sup>6</sup> Within seven years, the strides were made from defence to civil usage, since the basic needs of protective eyewear were the same for both.

In the 1940s, innovations such as gradient mirror lens with coated upper part and uncoated lower part, for a clear view of aircraft instrument panels, were introduced. Such innovations, though meant primarily for defence usage, appealed to civilians also due to the styling and 'macho' pilots' looks. After WWII, Ray-Ban came to be popularised by many Hollywood stars and the rest as they say, is history.

The Luxottica group is the owner of Ray-Ban and popular eyewear brands like Oakley, besides licensed production of many other top eyewear brands. In 2011, it posted net sales of almost € 6.2 billion.<sup>7</sup>

### **SPILOVER**

The technologies and the products that moved across defence research and usage to the civil markets have been termed 'spillover' technologies. The opposite route has been recently coined: spillins. The coinage of the terms is quite logical. 'Spillover' is meant in the

6. "The History and Evolution of Ray-Ban", at [http://www.luxottica.com/sites/luxottica.com/files/ray-ban\\_history\\_en.pdf](http://www.luxottica.com/sites/luxottica.com/files/ray-ban_history_en.pdf), accessed on July 23, 2014.

7. Ibid.

sense that the technology/product was originally meant for a smaller segment – the defence sector—and it ‘spilled over’ to reach the outside world, a much wider segment of the populace.

In India, there are instances of ‘spillover’, albeit the scale has been rather timid. A list of 140 technologies developed by the DRDO, which have dual applications are listed in the form of a publication,<sup>8</sup> inviting the civil industry to participate through technology diffusion. Some of these technologies have been transferred to the civil sector like a novel pressure sintering/bonding technique for large clutch plates has been successfully transferred to Clutch Auto Limited.<sup>9</sup>

By a simple comparison of the narrative given above, it would be clear to the readers why hugely successful stories of innovations like Jeep or Ray-Ban are not scripted in India. The defence R&D model followed in India is purely government centred. The government invests in defence related research in government labs of the DRDO. Such funding or initiative does not come the way of the private sector for many reasons. The primary reason is the absence of a roadmap for harnessing the private industry’s efforts into the mainstream by ensuring that sensitivity associated with the defence sector is not compromised. In the name of national security, the private industry has been kept out of the defence sector, till recently. Now it has been realised that without the presence of competition to the government labs and Defence Public Sector Undertakings (DPSUs), their efficiency would never increase. Also, it is not possible to quickly leapfrog the technological gap that exists between India and the developed (and even not so developed) world without finding a solution to the inefficiency that has somehow become a hallmark of governmental sectors. Infusion of capital and innovativeness by, and into, the private sector is a must for the R&D efforts to realise their true potential.

The methodology of sharing Intellectual Property Rights (IPR) of products developed through funding by the government and innovations by the private sector is a stumbling factor for the process to go forward. It is obvious that defence related IPRs, even those having dual use, need to have some governmental control inbuilt.

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8. DRDO, *Advanced Technologies for Civil Application* (New Delhi: DESIDOC, 1987)

9. *Ibid.*, p. 117.

The mistrust and vested lobbying has, thus far, not allowed a solution to this process even though the US model is very much present to be emulated. The downside is that since the private sector has not invested in product development from the beginning, it does not have any stakes to carry forward the product so developed, to a wider market for maximising profits. What remains then is just an invitation from the scientific adviser to the raksha mantri, to the private sector, to participate in the R&D efforts of the DRDO labs, as mentioned earlier. In such a scenario, the defence R&D efforts would not reach their true market potential. Consider that the Jeep brand received the '2012 Silver OBIE Award' from the Outdoor Advertising Association for America for the Jeep Wrangler Call of Duty® billboard design.<sup>10</sup> Is it possible to see this kind of aggressive market pitch by a government entity? The markets would be penetrated predominantly by the desire to maximise profits and this desire would manifest with the private sectors and, thus, comes the efficiency and innovativeness.

### THE FUTURE

Innovations require the factors of newness and commercialisation to be present in a product. While defence products are always required to retain the 'cutting edge' element, the motive of commercialisation is rarely a factor. However, this thought process is fast changing and defence equipment, along with providing the balance of power, is also turning out to be big business in the global arms market. The commercialisation angle though, can be addressed if the product/technology reaches a much bigger clientele than just the security forces. Involvement of the private industrial sector in the development of such product/technology is, thus, a necessity, for them to be termed an innovation.

Products like Jeep and Ray-Ban that could be termed as innovations today, were essentially made on the demand of the defence forces but brought to the fore a latent need of the civil market. This would always be the common thread for all 'spillover' technologies. **We all know drones can deliver death on the battlefield, but might they also soon be delivering gifts and purchases to our door? Amazon.**

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10. <http://media.chrysler.com/newsrelease.do;jsessionid=5F352AF1915E13814ADD6F1A32B6E67D?&id=2210&mid=>



**com is counting on it.** UAVs pioneered by the military are finding a home down in farmers' fields. A UAV can treat an acre of steep hillsides in five minutes, which is very difficult or even impossible to do with a tractor. Such technologies are now also known as 'dual use' technologies and controlled by the innovator nations under the 'Wassenaar Arrangement'<sup>11</sup> due to their highly commercial/strategic ramifications. One such instance is the jet engine technology that is used for military as well as commercial aircraft. India and China are striving to develop a jet engine and when they do, the commercial and strategic ramifications will be obvious. Innovative defence technologies are very much the future to strive for. In the same vein, it is worth considering that civil technologies developed for high-end technical functions may be considered for defence applications because any R&D effort is time and capital intensive. Thus, a convergence of R&D efforts, for defence and civil applications is the need of the hour.

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11. Manoj Kumar, *Resources Optimisation Through Environmental Leadership* (New Delhi: Knowledge World, 2012), p. 126.

# ARTICULATION OF INTERNATIONAL LAWS GOVERNING CYBER WARFARE

ASHISH GUPTA

In spite of the severity, complexity and violence associated with war, it is still not untouched by inherent human traits like empathy and compassion. The consensus among states to adhere to the provisions of the Geneva Convention by signing on the dotted line is indicative of general acceptance of the rights of persons *hors de combat* and of the lives, morality and physical integrity of those who do not take a direct part in hostilities. Article 36 of the 1977 Protocol I, additional to the Geneva Convention, makes it obligatory for a state to make sure that any new weapon it deploys or considers deploying, complies with the rules of International Humanitarian Law (IHL). However, new weapons, means and methods of warfare, could marginalise such laws and treaties, as their intended use, effect and outcome after deployment might not have been comprehended well over the entire spectrum.

The evolution of cyber warfare comprising means and methods of warfare in cyber space has the potential to render the provisions of the Geneva Convention ineffective. The computers and networks are so intricately linked that, if attacked, infiltrated or blocked, by an

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adversary, as a strategic or tactical move to gain advantage, it may put the lives of civilians at great risk by depriving them of basic essentials like medical care, food and potable water. Critical infrastructures such as power plants, dams, railway networks and air traffic control systems may also be vulnerable during a cyber attack due to their inherent reliance on computers and networks.

Since cyber operations in any future armed conflict are a certainty, it will create a humanitarian crisis of unparalleled proportion. It is, therefore, crucial to limit or mitigate the humanitarian cost due to cyber operations, thereby reaffirming the relevance of IHL in armed conflicts. As cyber space is one entity, shared by civilian and military users, without clearly demarcated boundaries, an attack directed against military objectives will invariably disrupt or destroy civilian infrastructures.

In such a cyber environment, one of the major challenges is the applicability of various provisions of international laws governing cyber operations, whether in offence or defence. The International Court of Justice pronounces applicability of international laws to “any use of force regardless of weapons employed” in an armed conflict. In the same breath, one can interpret the laws as pronounced by the Permanent Court of International Justice, that the acts not forbidden in international law are generally permitted. The lack of definitive guidelines on ‘cyber operations’ in an armed conflict, does not relieve the states of their obligation to ensure the safety and moral and physical integrity of civilians.

A number of states are in the process of revisiting the policies regarding potential military responses to threats in the cyber domain. As a punitive or retaliatory action against an attack in the cyber domain, these states may resort to the use conventional weapons or cyber counter-attacks to destroy, deny, disrupt or degrade an adversary’s capability to use cyber space as a domain of warfare. At the same time, concerted regional, national and international efforts are underway to assess the risks associated with the military use of cyber offence, how to insulate non-combatants and innocents from cyber offence as well as the applicability of various international laws in this context. The United Nations (UN), the European Union (EU), and the North Atlantic Treaty Organisation (NATO) have initiated

formal processes for finding multilateral approaches to secure the cyber domain.

### UNITED NATIONS

The United Nations General Assembly (UNGA) has put forward a number of resolutions related to cyber security with the objective of drawing attention to cyber challenges. The General Assembly adopted two resolutions in 2003 and 2004 respectively dealing with the creation of a “Global Culture of Cyber Security and the Protection of Critical Infrastructures”. Resolution A/57/239 of 2003 calls for more awareness and responsibility by capable states to “act in a timely and cooperative manner to prevent, detect and respond to security incidents”.<sup>1</sup> Resolution A/58/199 of 2004 invites all relevant international organisations and member states “that have developed strategies to deal with cyber security and the protection of critical information infrastructures to share their best practices and measures that could assist other member states in their efforts to facilitate the achievement of cyber security”.<sup>2</sup>

In 2010, the General Assembly approved a resolution (A/RES/65/41) constituting a new Group of Governmental Experts (GGE) to study the existing and potential threats in the cyber domain and to lay down a framework for possible cooperative measures to address them. The logical extension of this will be “to develop some specifics on what the implementation of the recommendations might look like and, equally importantly, designate a forum for discussion of transparency and confidential-building measures in cyber space”.<sup>3</sup>

On September 12, 2011, the permanent representatives of China, the Russian Federation, Tajikistan, and Uzbekistan submitted a proposal for discussions on an ‘International Code of Conduct for Information Security in the Framework of the United Nations’. This draft model basically tries to address the issue of maintenance of the information and network security. The proposed code will

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1. “Creation of a Global Culture of Cybersecurity”, UN document A/RES/57/239, January 31, 2003, p. 2.
  2. “Creation of a Global Culture of Cybersecurity and the Protection of Critical Information Infrastructures, General Assembly, UN document A/RES/58/199, January 30, 2004, p. 2.
  3. R. Baseley-Walker, “Transparency and Confidence-Building Measures in Cyberspace: Towards Norms of Behavior”, *Disarmament Forum*, no. 4, 2011, p. 37.

mandate the member states to pledge “not to use information and communications technologies, including networks, to carry out hostile activities or acts of aggression, and pose threats to international peace and security or to proliferate information weapons and related technologies”.<sup>4</sup>

### **INTERNATIONAL TELECOMMUNICATION UNION (ITU)**

The ITU is the specialised United Nations agency for Information and Communication Technologies (ICTs) and allocation of the global radio spectrum and satellite orbits. The ITU is in the process of expanding its realm to encompass the issues related to cyber security. On May 17, 2007, as a framework for international cooperation to promote cyber security, ITU launched the Global Cyber Security Agenda (GCA). The GCA seeks to encourage collaboration amongst all relevant partners for confidence-building and security enhancement in the use of ICTs. The GCA is built on five pillars: legal measures, technical procedures, organisational structures, capacity-building, and international cooperation.<sup>5</sup> The GCA continues to form partnerships for different stakeholders and seeks to enable states to implement concrete measures for cyber security.

### **CONVENTION ON CYBER CRIME**

The 2004 Budapest Convention on Cyber Crime is the first international treaty seeking to address issues related to cyber crime by strengthening and harmonising national laws, making investigative techniques more effective and enhancing cooperation among nations. It provides a framework for states to conceptualise, draft and ratify national legislation on cyber crime and for enhanced international cooperation. In one of the conferences, the member states of Europe highlighted the human rights aspects of cyber security, trying to draw parallels between internet freedom and fundamental rights. This was vehemently opposed by some of the members and a general consensus could not be reached. However, it has been consciously agreed by the members to label cyber attacks as illegal, regardless of

4. General Assembly, Letter dated September 12, 2011, from Permanent Representatives of China, the Russian Federation, Tajikistan and Uzbekistan to the United Nations addressed to the Secretary-General, UN document A/66/359, September 14, 2011, p. 4.
5. [www.itu.int/osg/csd/cybersecurity/gca/new-gca-brochure.pdf](http://www.itu.int/osg/csd/cybersecurity/gca/new-gca-brochure.pdf).

their motivation. Presently, only 37 states are signatories to the treaty and out of these, only Japan and the United States have ratified it.

### **FRAMEWORK FOR “INTERNATIONAL LAW APPLICABLE TO CYBER WARFARE”**

In order to provide a framework for “International Law Applicable to Cyber Warfare”, in the year 2009, a project was undertaken by a group of experts at the initiative of the NATO Cooperative Cyber Defence Centre of Excellence based in Tallinn, Estonia.<sup>6</sup> The group was mandated to study international law and prepare a draft on the applicability of these laws to govern ‘cyber warfare’ encompassing both *jus in bello* (the law of armed conflict) and *jus ad bellum* (the set of rules to be consulted before engaging in war). The project culminated in the production of a manual articulating laws to govern various issues, known as the ‘Tallinn Manual’. The assembly of this group was a matter of great significance as Estonia was the victim of much publicised cyber attacks in 2007, which energised the ongoing legal debate on the nature of cyber warfare, especially between states.

The preparation of the Tallinn Manual is an exercise in *lex lata*, i.e. an exercise in the law in existence and not an attempt to create a whole set of new laws. The experts based their deliberations on several established treaties and regulations, including the 1949 Geneva Convention and 1907 Hague Regulations. Some of the provisions in the Tallinn Manual have been framed anew as no corresponding analogous provisions could be found in existing treaties or customary international laws. This is a deliberate attempt to fit in cyber warfare within the framework already established under the gamut of international laws:

- **Sovereignty, Jurisdiction and Control:** The Tallinn Manual begins with the statement, “A state may exercise control over cyber infrastructure and activities within its sovereign territory.” This is indicative of acceptance of the fact that the cyber infrastructure of the state may be a part of a more global network but will remain under the state’s sovereignty.<sup>7</sup> However, the intentions of

6. NATO Cooperative Cyber Defence Centre of Excellence, “Tallinn Manual on the International Law Applicable to Cyber Warfare”, at <https://ccdcoe.org/tallinn-manual.html>, accessed on October 12, 2014.

7. Ibid., Rule 1, p.26.

a state exercising its sovereign rights over cyber infrastructure for securing illegitimate objectives become contentious and malafide. At times, exercising sovereign rights and protection of human rights create a poignant situation pitting the rights of states against the rights of individuals. Denying access to the internet, as has been happening in the Syrian conflict for the last two years can be quoted as one of the examples. A state may exercise its jurisdiction:

- Over persons engaged in cyber activities in its territory.
- Over cyber infrastructure located in its territory.
- Extra-territorially, in accordance with international law.

The exercise of the territorial jurisdiction as envisaged under the provisions of the Tallinn Manual includes "Subjective" and "Objective" jurisdictions. The state exercises subjective jurisdiction when cyber operations have been initiated within a state's territory, irrespective of the place where the effects manifest. When the effects of cyber operations initiated outside a state's territory are felt within it, this falls under the purview of objective jurisdiction. The process of establishing a defined jurisdiction within cyber space may prove a daunting and ambiguous task because of the distribution of cloud or grid systems over the territories of many nations. The complex and international nature of network infrastructures distributed among many states is not in consonance with the traditional notions of territorial sovereignty. This may precipitate a situation wherein multiple states may enjoy jurisdiction over a particular cyber incident. However, a state is within its rights to exercise sovereignty, even if it does not hold exclusive jurisdiction over the organisations or infrastructures used to perpetrate an act of cyber operation.

### *State Responsibility*

As per Rule 6 of the Tallinn Manual, "a state shall bear international legal responsibility for a cyber operation attributable to it." In cyber space, the perpetrators can be state nations or non-state actors. The act would be considered a breach of international obligation by a state, even if the perpetrator (person or entity) is not an organ of the state but has been empowered by the laws of that state.

In the realm of cyber warfare, the question of determination of state responsibility is a piquant one. Let us examine a hypothetical situation, where perpetrators in State A compromise computers located in State B and make use of these compromised systems to severely damage ICT infrastructures in State C at the behest of State D. The attributability of the conduct squarely rests with State D. State A and State B can be exonerated from the responsibility of conduct as the perpetrators were merely in the territory of State A and the systems used by them for their criminal act were located on the territory of State B. In Nicaragua, although the US had financed and organised the rebels fighting the Nicaraguan government, it did not exercise 'effective control' over the rebels, who were the true perpetrators. The mere fact that cyber-operatives have used the government cyber infrastructure for launching cyber attacks cannot be construed as evidence for attributing the operation to that state.<sup>8</sup> Furthermore, the initiation and culmination of cyber operations routed via the cyber infrastructure located in another state, *prima facie* doesn't make it a culprit.<sup>9</sup>

### *The Use of Force*

The United Nations Charter and the International Court of Justice proclaim that the right of self-defence can be exercised against "any use of force, regardless of the weapons employed". In the realm of cyber operations, the operations carried out from an innocuous looking computer can be deemed as "use of force", though it is radically different from our general perception of traditional weapons or platforms. In an attempt to elucidate further, the Tallinn Manual suggests that the "use of force" in cyber space needs to be determined based on its effects rather than the physical form of weapons or platforms. Therefore, a cyber operation can be construed as an act of "use of force", when the outcomes are comparable in scale and effects to those of non-cyber operations using conventional forms of weapons or platforms.<sup>10</sup>

This approach is based on the level of damage as well as on some of the qualitative elements emanating from a particular cyber

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8. Ibid., Rule 7, p.39.

9. Ibid., Rule 8, p.40.

10. Ibid., Rule 11, p.40.



operation. The identification of cyber operations that are analogous in scale and effect to other non-kinetic or kinetic actions, akin to the "use of force" is to be done based on qualitative evaluation of certain parameters. The parameters determining the causal effects are:

- **Severity:** A cyber operation which results in damage, destruction, injury or death is likely to be put in the category of "use of force". Severity obviously tops the list of factors in the analysis. The operations resulting in mere inconvenience or irritation will not be included in this category.
- **Immediacy:** An act in cyber space is likely to be categorised as 'use of force' if the outcome of the operation produces immediate quantifiable and palpable results.
- **Directness:** Cyber operations in which there is a distinct link between cause and effects may be characterised as use of force.
- **Invasiveness:** The degree of intrusion achievable with cyber operations into the targets of interests of the state will determine its declaration as 'use of force.'
- **Measurability of Effects:** Consequent to a cyber attack, a state will characterise actions as a use of force based on its assessment of palpable and conspicuous damage. Though in cyber space, the identification and quantification of consequences may prove to be subjective, the state will assess and evaluate the situation in specific terms when determining that the cyber attack tantamounts to "use of force".
- **Military Character:** A cyber operation undertaken as a means to invade, or intrude into another state with the objective to threaten its territorial integrity, undermine its sovereignty or to severely damage its economy is similar to an operation with a military perspective. This act will be categorised as 'use of force.' As many as 15 nations have developed offensive cyber capabilities and may use these as an instrument of power projection.
- **State Involvement:** Most of the states, overtly or covertly, have recognised the potential of undertaking cyber operations to secure their national interests. Cyber space is populated with states as well as non-state actors with objectives having overtures of sovereignty, patriotism, territorial integrity, national interest or terrorism and crime. When the state or an entity empowered

by a state undertakes cyber operations against another state, it tantamounts to "use of force".

### *Self-Defence*

A state which is a target of cyber operations and as an outcome of this, has experienced effects, disruptions and destruction comparable to an armed attack, may exercise its inherent right of self-defence. In cyber warfare, the adversary may adopt one of the following approaches: the effects-based approach, the target-based approach and the instrument-based approach. In this context, the effects-based approach is very dynamic owing to its subjective interpretation due to lack of foreseeability. Essentially, the main criterion for categorising an attack as armed is that the act needs to cause unacceptable damage. It is difficult to quantify in terms of death, injury, damage, destruction, or suffering, or to set the threshold for retaliating in force against perpetrators responsible for cyber operations.

### **CONCLUSION**

An attempt to transpose pre-existing rules and principles to the domain of cyber space is not without pitfalls as it raises a number of important questions. Some of these questions can be resolved by judicious interpretation of pre-existing treaties, whereas others require a unanimous and consensus policy decision by the international community and states. Till date, while the effects of cyber warfare have not resulted in dramatic humanitarian consequences, the growing dependence on computers, networks and computer-controlled systems for our sustainability and subsistence has made cyber an indispensable and inalienable entity. State-sponsored cyber attacks are not a distant possibility and these attacks have the requisite potential to generate a humanitarian crisis of unparalleled proportions.

Concerted international, national and regional efforts are underway to generate consensus among member states to assess the risks associated with military use of cyber space, how to insulate non-combatants and innocents from the acts of offensive operations in the cyber domain as well as from cyber crime. Although, till date no formal agreement has been signed by the nation states, every

stakeholder in cyber space is conscious of the dangers associated with its misuse. This collective consciousness in the near future must necessarily precipitate adoption of certain guidelines by consensus among nation states.

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