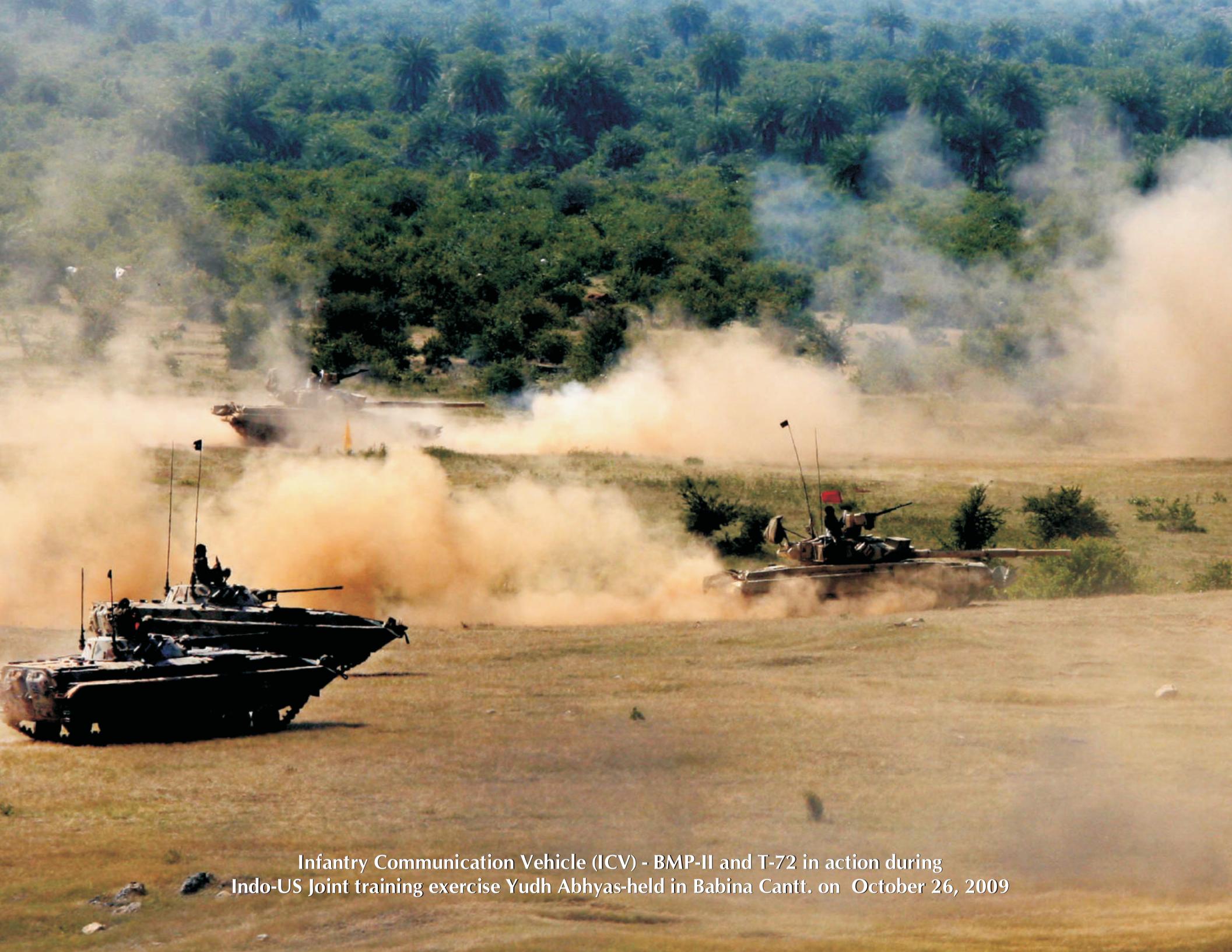
Annual Report

2009 - 2010

Ministry of Defence

Government of India



Infantry Communication Vehicle (ICV) - BMP-II and T-72 in action during
Indo-US Joint training exercise Yudh Abhyas-held in Babina Cantt. on October 26, 2009

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SECURITY ENVIRONMENT

Safeguarding the coastal frontiers- routine patrol by Coast Guard

In the post cold war international scenario, the 9/11 terrorist attack against the USA and terrorist strikes in many other parts of the world have brought about greater international convergence on security issues and challenges

GEO STRATEGIC IMPERATIVES

1.1 India is strategically located vis-à-vis both Continental Asia and the Indian Ocean Region. It has a landmass of 3.3 million square kms and is home to over a billion people with varying ethnic, linguistic, religious and cultural backgrounds.

1.2 The topography of India is diverse, ranging from the snow clad Himalayas with peaks over 28,000 feet to deserts, thick jungles and vast plains. The Siachen Glacier in the North is the world's highest battle-field, with posts located as high as 21,000 feet. India's Western border runs through deserts, fertile plains and thickly forested mountains. The North-Eastern frontier also comprises steep, high ranges and dense tropical forests. To the South, there are ranges close to the sea, inland plateaus interspersed with river valleys, coastal plains, and far-flung island territories such as the Lakshadweep to the West and the Andaman and Nicobar Islands to the East. On three sides, from Gujarat to West Bengal, the country is bordered by the Arabian Sea, Indian Ocean and the Bay of Bengal. The Andaman & Nicobar Islands located 1300 km away from the nearest point on our East coast assume strategic predominance with respect to the entrance to the Malacca Straits. In the Arabian Sea, the Lakshadweep and Minicoy islands, situated on the sea-lanes of communication running eastwards from the Persian Gulf and the Red sea are 450 km away from the nearest point on the West coast. India is, thus, a maritime as well as a continental entity.

1.3 The geographical and topographical diversity, especially on the over 15,000 km long border which we share with seven neighbouring countries (viz., Afghanistan, Pakistan, Bangladesh, Myanmar, China, Bhutan and Nepal), poses unique challenges to our Armed Forces. India's peninsular dimension places it adjacent to one of the most vital sea-lanes of the world stretching from the Suez Canal and the Persian Gulf to the Straits of Malacca through which 55,000 ships and much of the oil from the Gulf region transit each year.

1.4 India's location at the base of continental Asia and the top of the Indian Ocean gives it a vantage point in relation to both Central Asia and the Indian Ocean Region (IOR). Additionally, India's size, strategic location, trade links and exclusive economic

zone (EEZ) links its security environment directly with the extended neighbourhood, particularly neighbouring countries and the regions of Central Asia, South-East Asia, the Gulf and the Indian Ocean. In a globalised world, these strategic-economic factors impose an increasingly larger responsibility on India.

With the advent of globalisation and the information era, knowledge based strength coupled with economic wealth have become the determinants of national power.

1.5 In the post cold war international scenario, the 9/11 terrorist attack against the USA and terrorist strikes in many other parts of the world have brought about greater international convergence on security issues and challenges. The emergence of ideology linked terrorism, the spread of small arms and the proliferation of WMD (Weapons of Mass Destruction) and globalisation of its economy are some of the factors which link India's security directly with the extended neighbourhood.

1.6 South Asia hosts a diversity of political experiences and systems. The region also faces the menace of terrorism and problems by way of proliferation of arms and drugs. Against this background, India stands as a bulwark against fundamentalism and extremism. It is a centre of economic dynamism in the region and as a plural democracy, a bastion of stability and peaceful coexistence.

THE GLOBAL SECURITY ENVIRONMENT

1.7 National security paradigms are intimately influenced by the interplay of the interests and objectives of other countries linked to the region or with the overall international order. With the advent of globalisation and the information era, knowledge based strength coupled with economic wealth have become the determinants of national power.

1.8 The developments in 2009, particularly the challenges confronting the global financial system, created strains in the global security environment. The difficulties in the US financial system spread to the world economy with economic growth slowing down in several countries.

1.9 The foreign and security policies of the new US Administration attracted the attention of the international community. In March 2009, the US announced a comprehensive, new strategy for Afghanistan and Pakistan. On December 1, 2009, the US President announced the deployment of an additional 30,000 US troops in the region by May 2010 and indicated a July 2011 timeframe for possible start of return of US troops from Afghanistan. The PM's visit to Washington has ushered in a phase of consolidation in the bilateral relationship.

1.10 India has had strong diplomatic and defence ties with Russia and bilateral cooperation in strategic areas such as defence, space and nuclear energy received a further impetus in 2009. During the visit

of the Prime Minister to Russia, a bilateral inter-governmental Agreement on Military Technical Cooperation for the period 2011-20 was signed. The visit of the Russian Prime Minister to India in March 2010 served to further advance the strategic partnership between India and the Russian Federation. India and Russia both seek to foster and nurture the relationship to mutual advantage.

1.11 In Japan, the opposition Democratic Party of Japan came to power for the first time by ousting the ruling LDP Government in the elections to the Lower House of the Japanese Diet in August 2009. The bilateral initiatives for India-Japan Security Cooperation continued to gain momentum notwithstanding the change of Government. India and Japan share a convergence of interests on geopolitical, economic and technological issues. The common commitment of both countries to ensuring the safety and security of the sea lanes of communication, as well as in other security related areas was reiterated during Raksha Mantri's visit to Japan in November, 2009. The new Japanese Prime Minister visited India in December 2009 in keeping with the recent practice of annual Summits.

1.12 The European Union (EU) is India's major trading partner accounting for nearly one fourth of India's exports. The consolidation and strengthening of our trade and political relationship with the EU is an important area of focus. The involvement of EU country forces in the ISAF in Afghanistan also provided the opportunity and the imperative for a consistent dialogue with EU partner countries on the evolving regional security situation.

1.13 Iran's nuclear programme remained a cause of concern among countries although Iran has underlined the peaceful nature of its nuclear activities. India and Iran share historical and cultural ties and India continued to support a peaceful resolution of the issue which would be in the interest of peace and stability in West Asia. The civilizational links reinforced with wide ranging mutual geo-strategic and economic interests underlie India's policy towards the Central Asian region.

1.14 India's "Look East Policy" envisages a progressive and multifaceted partnership with the South East Asian Region with the long-term goal of creating harmonious and prosperous relations that would facilitate pooling of resources to tackle common challenges. India is supportive of the view that a pluralistic security order based on a co-operative approach is the answer to the polycentric security concerns in the South East Asian region. The 'Look East Policy' also envisages engagement through dialogue both at bilateral

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and multilateral platforms, to attain the full promise of our relations with the region.

1.15 The security situation in some areas of the African region continues to cause concern. The incidents of piracy off the coast of East Africa pose dangers to the safety of the sea lanes. The linkages between terrorists based in Somalia and transnational organised crime is a cause of major concern globally. The Indian Navy has been actively involved in combating maritime piracy in the region on its own and in coordination with the navies of other countries. India has also been actively involved in peacekeeping operations in Africa under the UN mandate and seeks to consolidate its relations with many countries in the region with which we have historical linkages.

THE REGIONAL SECURITY ENVIRONMENT

1.16 South Asia saw unfolding of two main trends. On the one hand, there was a resurgence of democratic processes. On the other, the security situation in several of India's neighbours in general remained fragile. A secure, stable peaceful and prosperous neighbourhood is an integral part of India's security construct. The countries of South Asia faced new opportunities and also significant challenges. India continued to pursue positive and collaborative relationships with her neighbours so as to enable her own citizens and the people of neighbouring countries to achieve growth and prosperity. Ensuring the safety and security of its citizens remained an important priority for India.

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1.17 Security related developments in Pakistan continued to impact on our regional security environment. The Pakistani Government made some progress in tackling *jihadi* insurgency in Swat and the adjacent districts and also in South Waziristan. The increasing incidence of terrorism within Pakistan targeting, inter alia, the security establishment and senior military personnel, and the rising tide of extremism underlined the serious threat to Pakistan itself and to the region. The continued infiltrations across the LOC and the existence of terrorist camps across the India-Pak border however, demonstrate the continuing ambivalence of Pakistan in its actions against terrorist organisations. India has exercised exemplary restraint in the face of gravest provocation. Pakistan needs to take effective steps to address India's concern on terrorism directed against it from the territory under Pakistan control. India has never shut the door for dialogue with Pakistan, and is of the view that meaningful dialogue with Pakistan is possible only in an environment free of terror or threat of terror. This calls for Pakistan to take effective measures to dismantle the infrastructure of terrorism on its soil which is directed against India.

1.18 In Afghanistan, the International Security Assistance Force (ISAF), led by the USA, continues to support the nascent Afghan National Security Forces (ANSF) in the provision of security throughout the country. The overall security picture has been mixed. Violence rose sharply in parts of the South, South-East and South-West, leading to a significant overall increase in casualties from 2007 onwards. With the announcement of deployment of additional US troops and the likely increase in the troop deployment of other ISAF countries, there was some stepping up of support to the Afghan Government and people in this challenging year through a better coordinated approach. The security and stability of Afghanistan is critical to India's own security concerns**.** The ultimate solution to ensuring the security of Afghanistan lies in training an Afghan force to engage the Taliban, undermining support for the Taliban and dealing with the Al Qaeda's forces along the Pakistani border and in the rest of Afghanistan. India remained committed to a pluralistic, democratic and prosperous Afghanistan and to continue its development partnership with Afghanistan which has earned it tremendous goodwill from the people of that country.

1.19 China is engaged in building its Comprehensive National Power encompassing economic and military development, which would enable her to play a dominant role in global affairs. India has a Strategic and Cooperative Partnership with China which has generally progressed well in 2009-10. There has been a convergence of views and action on various issues in international fora. A regular mechanism for

AN-32 lands at Nyoma Air Strip in Eastern Ladakh

exchanges in the military sphere has been established through the ongoing confidence building measures between the Armed Forces of both countries and other military interactions. India seeks to engage China to find commonalities which can give depth to the bilateral relationship and enable both countries to pursue the common goals of growth and development.

1.20 India also remains conscious and alert about the implications of China's military modernisation on the regional and national security situation. India continues to engage with China to develop mutual trust and understanding, including between the Armed Forces of the two sides.

1.21 India and Nepal share a unique relationship of friendship and cooperation characterised by open borders and deep-rooted people-to-people contacts of kinship and culture. As a close friend and neighbour, India stands committed to support the people and the government of Nepal in consolidating the peaceful democratic transition and in its economic developmental efforts. India supports Nepal's quest to establish a multi-party democracy. A peaceful, stable and prosperous Nepal is not only beneficial for its people, but also for India and the region.

1.22 Relations with Bangladesh have been strengthened since the restoration of multi-party democracy in that country. India is appreciative of the increasing cooperation with Bangladesh in security matters, especially vis-à-vis Indian insurgent groups operating from its territory. India looks forward to a further intensification of bilateral ties, which, in turn, should contribute to the improvement of the regional security scenario.

1.23 Myanmar, which is located at the tri-junction of South and Southeast Asia holds importance for India in security terms. India continues to engage Myanmar in a range of developmental issues as well as in enhancing connectivity, power, telecommunication, energy, trade and economic cooperation. Cooperation in security matters is also being enhanced .

1.24 With the conclusion of operations against the LTTE, Sri Lanka has a historic opportunity to find a lasting political settlement to the conflict where all citizens, including the Tamils, can live in peace. India is already working with the Sri Lankan Government in its rehabilitation and reconstruction efforts in Northern Sri Lanka and stands ready to enhance bilateral cooperation in a range of areas.

1.25 India has warm and cordial ties with Bhutan, which are founded on mutual trust and understanding, shared interest and extensive cooperation in areas such as power, transport, communications infrastructure, education, IT, Industry, medicine and agriculture. India is committed to assist the Royal Government of Bhutan in its socio-economic development.

1.26 India enjoys close relations with Maldives, located in a strategic region of the

Indian Ocean. Regular high level exchanges and dialogues have served to consolidate the strong bilateral ties between both countries in a variety of sectors, including in the area of security, especially maritime security.

1.27 The Indian Ocean Region which extends up to the Western Pacific, Eastern Mediterranean, Central and Southern Indian Ocean is crucial to India's maritime interests. India's economic development is crucially dependent on the sea because of the criticality of sea borne trade in an increasingly inter-linked world, as well as because of the potential of vast economic resources from the oceans. India sits astride major commercial routes and energy lifelines in the Indian Ocean, namely, the Malacca Strait, Six and Ten degree channel and the Persian Gulf. Annually, US $200 billion worth of oil passes through the Straits of Hormuz and US $60 billion through the Malacca Strait. By virtue of our geography, we are therefore interested in the security of shipping along the sea lanes of communications in the IOR. India's maritime interest is not restricted to guarding the coastline and island territories, but also includes safeguarding of our interests in the EEZ as well as keeping our Sea Lines of Communication (SLOCs) open in times of peace, tension or hostilities.

1.28 Maritime security concerns have assumed greater significance in the aftermath of the November 2008 terror attacks in Mumbai. The Indian Navy, which has been given the overall responsibility for maritime security is working in coordination with the Coast Guard and other Central and State agencies to deal with challenges of threats from the sea. The intelligence sharing mechanism has been streamlined through the creation of Joint Operation Centres and multi-agency coordination mechanism. The Indian Navy and Coast Guard have enhanced coastal surveillance and patrolling and joint exercises are also being regularly conducted with other agencies to improve operational coordination.

INTERNAL SECURITY CHALLENGES

1.29 India's transition from a traditional developing society to a modern State runs concurrently with the emergence of different hues of challenges to the internal security situation. India faces multifaceted internal security challenges which include left wing extremism, an ongoing proxy war in Kashmir and the insurgencies in some Northeast states; and organized crime in some of India's major cities.

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1.30 In 2009, naxalites organisations were active in 91 districts in 11 states of India. 58 Battalions of para-military forces are deployed to tackle naxalies violence under the anti-naxal plan, which also includes a Rs

Soldiers under a test of fire

7,300 Cr. package for developmental works in affected areas. The situation in some of the North-Eastern States is also under the security radar for disturbances. In two States viz., Manipur and Assam, sporadic increase in the levels of violence gives cause for concern. In addition, extortion and intimidation by militant outfits have become a menace across most of the States in the region. The arrest of the top leadership of ULFA including its Chairman Arabinda Rajkhowa has been a major breakthrough. There was no major terrorist attack in the year 2009. However, a bomb blast took place at Pune on February 13, 2010 wherein 17 persons were killed.

1.31 Drawing on the lessons of the November 2008 terrorist attacks in Mumbai, the National Investigation Agency has been established. NSG hubs have also been created in Kolkata, Mumbai, Chennai and Hyderabad to reduce the response time for any possible future attacks.

1.32 Few countries of the world face the range of security concerns that India faces today. India's security challenges are formidable and are seriously impacted by instability in our neighbourhood. In the dynamic global and regional security environment, the country and our defence forces remain prepared to tackle the full spectrum of security challenges.

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ORGANISATION AND FUNCTIONS OF THE MINISTRY OF DEFENCE

Illuminated North Block & South Block on the occasion of Beating Retreat Ceremony

The principal task of the Ministry is to frame policy directions on defence and security related matters and communicate them for implementation to the Services Headquarters, ISOs, Production Establishments and Research & Development Organisations

ORGANISATIONAL SET-UP AND FUNCTIONS

2.1 After independence, Ministry of Defence was created under the charge of a Cabinet Minister and each Service was placed under its own Commander-in-Chief. In 1955, the Commanders-in-Chief were renamed as the Chief of the Army Staff, the Chief of the Naval Staff and the Chief of the Air Staff. In November 1962, a Department of Defence Production was set up to deal with research, development and production of defence equipments. In November 1965, the Department of Defence Supplies was created for planning and execution of schemes for import substitution of defence requirements. These two Departments were later merged to form the Department of Defence Production and Supplies. In 2004, the name of Department of Defence Production and Supplies was changed to Department of Defence Production. In 1980, the Department of Defence Research and Development was created. In 2004, the Department of Ex-Servicemen Welfare was created.

2.2 The Defence Secretary functions as head of the Department of Defence and is additionally responsible for co-ordinating the activities of the four Departments in the Ministry.

DEPARTMENTS

2.3 The principal task of the Ministry is to frame policy directions on defence and security related matters and communicate them for implementation to the Services Headquarters, Inter-Service Organisations, Production Establishments and Research & Development Organisations. It is required to ensure effective implementation of the Government's policy directions and the execution of approved programmes within the allocated resources.

2.4 The principal functions of the Departments are as follows:

(i) The Department of Defence deals with the Integrated Defence Staff (IDS) and three Services and various Inter-Service Organisations. It is also responsible for the Defence Budget, establishment matters, defence policy, matters relating to Parliament, defence co-operation with foreign countries and co-ordination of all defence related activities.

(ii) The Department of Defence Production is headed by a Secretary and deals with matters pertaining to defence production, indigenisation of imported stores, equipment and spares, planning and control of departmental production units of the Ordnance Factory Board and Defence Public Sector Undertakings (DPSUs).

(iii) The Department of Defence Research and Development is headed by a Secretary, who is the Scientific Adviser to the Raksha Mantri. Its function is to advise the Government on scientific aspects of military equipment and logistics and the formulation of research, design and development plans for equipment required by the Services.

(iv) The Department of Ex-Servicemen Welfare is headed by a Secretary and deals with all resettlement, welfare and pensionary matters of Ex-Servicemen.

2.5 A list of subjects dealt with by various Departments and Finance Division of the Ministry of Defence is given in Appendix-I to this report.

HEADQUARTERS INTEGRATED DEFENCE STAFF (HQ IDS)

2.6 HQ IDS was created on October 1, 2001. Since then, HQ IDS has grown in strength and status. Under the aegis of Chairman, Chiefs of Staff Committee, the Organization has been working towards achievement of greater jointness and synergy amongst the three Services of the Indian Armed Forces. Tangible efforts have been made for integrating policy, doctrine, war fighting and procurement.

Raksha Mantri and the three Service Chiefs laying wreaths at Amar Jawan Jyoti on Vijay Divas

2.7 **Defence Planning Process:** The Defence Planning Process is being strengthened as part of the follow up of the Group of Ministers' Report on Security. Draft National Security Strategy and Defence Planning Guidelines have been prepared by HQ IDS and are being evaluated. The Defence Capability Strategy and the Defence Capability Plan are under preparation. Various efforts are in hand to widen the Defence Industrial Base and encourage/ promote greater participation of the Private Industry. A Technology Perspective and Capability Roadmap is under preparation and will be hosted on MoD website to enable industry to understand the requirements of the Armed Forces.

2.8 **Tri Services Joint Exercise:** Exercise MADAD II was the first Tri Services Joint exercise carried out under the aegis of HQ IDS in October 2009. The exercise was unique in the sense that participation was from all the services and highlight of the exercise was the coordination, execution and communication aspects of the three Services in the true spirit of jointmanship. The exercise validated the requirements of communication needs and logistics requirements of a joint exercise for future application of joint forces for any task.

Tri Services Joint Exercise

2.9 **Disaster Management:** The streamlined mechanism set up by HQ IDS contributes immensely towards providing timely and desired succor to affected population. Some of the important relief operations coordinated were:-

(a) Medical Aid to the internally displaced Tamils in Sri Lanka.

(b) Armed Forces relief operations in West Bengal affected by Cyclone AILA.

(c) Armed Forces response to the floods in West Bengal, Karnataka and Andhra Pradesh.

2.10 **Integrated Space Cell (ISC):** A single point contact for all space related activities of the tri-services was formally sanctioned by Govt. in August 2009, under DCIDS (Ops)/ HQ IDS. ISC, being a nodal point, has successfully quantified the overall satellite communication requirements of the three services till 2020, in consultation with the respective service. The same is being coordinated with ISRO to meet Services requirements.

2.11 **Satellite Based Imagery:** Under MoD, satellite imaging facilities have been set up for use by all strategic users. Efficacy of these facilities has further been enhanced with the commissioning of Central Archival Facility (CAF).

2.12 **Centre for Joint Warfare Studies (CENJOWS):** The Centre for Joint Warfare Studies despite infancy, continued to grow in stature. The Centre is guided by the Patron-in-Chief, Raksha Mantri. The Centre conducted three significant seminars on War against Global Terror, Special Operations and Intelligence Sharing and Command, Control, Communication & Computer and Intelligence & Interoperability (C^4 I^2). CENJOWS also carried out an incisive study on India's Strategic Option in Afghanistan.

2.13 **Joint Doctrine:** The joint Doctrines of Maritime Air Operations, Sub Conventional Operations and Electronic Warfare have been prepared and are being published.

SERVICES HEADQUARTERS

2.14 The three Services Headquarters, viz., the Army Headquarters, the Naval Headquarters and the Air Headquarters function under the Chief of the Army Staff (COAS), the Chief of the Naval Staff (CNS) and the Chief of the Air Staff (CAS) respectively. They are assisted by their Principal Staff Officers (PSOs). The Inter-Service Organisations, under the Department of Defence are responsible for carrying out tasks related to common needs of the three Services such as medical care, public relations and personnel management of civilian staff in the Defence Headquarters.

2.15 A number of Committees dealing with defence related activities assist Raksha Mantri. The Chiefs of Staff Committee is a forum for the Service Chiefs to discuss matters having a bearing on the activities of the Services and also to advise the Ministry. The position of Chairman of the Chiefs of Staff Committee devolves on the longest serving Chief of Staff, and consequently rotates amongst the three Services.

President, Raksha Mantri and Raksha Rajya Mantri
during Inauguration of Armed Forces Tribunal

2.16 Information regarding the Ministers in the Ministry of Defence, the Chiefs of Staff, the Secretaries in the Departments of the Ministry and the Secretary (Defence Finance) / Financial Advisor (Defence Services) who held positions from January 1, 2009 onwards is given in Appendix-II to this report.

ESTABLISHMENT OF ARMED FORCES TRIBUNAL

2.17 The Government has established an Armed Forces Tribunal (AFT) for the adjudication of complaints and disputes regarding service matters and appeals arising out of the verdicts of the Courts Martial of the members of the three Services (Army, Navy and Air Force) to provide for quicker justice to the members of the Armed Forces of the Union.

The Principal Bench of the Armed Forces Tribunal at Delhi has started functioning from August 10, 2009. Regional Benches at Chennai, Jaipur, Lucknow, Chandigarh, Kolkata and Kochi have also been made functional.

2.18 Notification for establishing the Tribunal w.e.f. August 10, 2009 has been issued. The Principal Bench at Delhi has started functioning from August 10, 2009. Regional Benches at Chennai, Jaipur, Lucknow, Chandigarh, Kolkata and Kochi have also been made functional. The Regional Benches at Guwahati and Mumbai will also start functioning shortly.

DEFENCE (FINANCE)

2.19 Finance Division in the Ministry of Defence, deals with all matters having a financial implication. This Division is headed

by Secretary (Defence Finance)/Financial Adviser (Defence Services) and is fully integrated with the Ministry of Defence and performs an advisory role.

2.20 To facilitate greater combat readiness and quicker decision making, Ministry of Defence enjoys enhanced delegated financial powers in consultation with Finance Division. With a view to ensuring transparency in exercise of these powers and compliance with laid down policy guidelines, Defence Procurement Procedure and Defence Procurement Manual were brought out in 2005. While the Defence Procurement Procedure deals with capital acquisitions, the Defence Procurement Manual deals with revenue procurements. The Defence Procurement Procedure and Defence Procurement Manual have been revised to incorporate experiences gained since 2005.

2.21 The Defence Procurement Procedure 2006 was an attempt to establish a formalized set of guidelines for capital acquisitions processes. A provision for a periodical review had been incorporated in that compendium as it was recognized that there would always be scope for further improvement. The experience of past two years and feedback received from those involved in its implementation have been incorporated into Defence Procurement Procedure 2008.

The Defence Procurement Procedure 2008, as amended vide Amendment – 2009, aims at ensuring expeditious procurement and puts emphasis on highest degree of probity and public accountability, transparency in operations, free competition and impartiality.

2.22 The Defence Procurement Procedure 2008 aims at ensuring expeditious procurement of the approved requirements of the Armed Forces in terms of capabilities sought. It puts emphasis on highest degree of probity and public accountability, transparency in operations, free competition and impartiality. In addition, the goal of achieving self-reliance in defence equipment is also kept in mind. Further, the offset policy, which requires foreign vendors involved in projects to actively invest in Indian firms and joint ventures, has been rationalized to include offset credit banking which will enable foreign participants to create offset programmes in anticipation of future obligations.

2.23 As a further step towards achieving the objective of increased self-reliance, greater private sector participation, enhanced transparency and greater clarity in Defence capital acquisition, following amendments have been issued in the form of Defence Procurement Procedure, 2008 (Amendment-2009), effective from November 1, 2009:-

(i) Introduction of a new category for acquisition – 'Buy & Make (Indian)'.

(ii) Sharing of information with Indian Industry.

(iii) Enhancing role of Independent Monitors.

(iv) Removal of ambiguity regarding Earnest Money Deposit (EMD) in signing the Integrity Pact.

(v) Formulation of Services Qualitative Requirements (SQR) including issue of Request for Information (RFI).

(vi) Offsets not be applicable in 'Option Clause' cases where the same was envisaged in the original contract and provisions for change of offset partner in exceptional cases.

2.24 Defence Procurement Manual 2006 contained the procedure to be followed for procurements out of the revenue budget. This Manual has been revised in consultation with the Services and other Departments of the Ministry of Defence, taking into account the experience gained since the promulgation of DPM 2006. The revised Defence Procurement Manual 2009 (DPM 2009), issued in March 2009 is effective from June 1, 2009.

2.25 The procedure laid down in DPM 2009 is applicable to all wings of the Ministry of Defence and Defence Services, as well as organizations such as the Coast Guard and JAKLI for which budgetary allocation is made in the Demand for Grants of the Ministry of Defence (Civil). The revised Manual is also applicable to procurement of certain capital items, medical equipment (both under revenue and capital heads) and to purchases made by the Defence Services from grants placed at their disposal by other Ministries and Departments. The Ordnance Factories and the Defence Research & Development Organization will continue to follow their own Manuals which, however, would need to be reviewed to bring them in conformity with the provisions of DPM 2009.

2.26 The main objective of the revision has been to simplify the procedure, provide enough flexibility without compromising on transparency and propriety, as also to remove the difficulties experienced while processing purchase proposals under DPM 2006. Two new chapters have been added in DPM 2009. One of these chapters deals with offloading of partial/complete refits/ repairs of ships/ submarines/ crafts/ assets to Indian PSUs/ private shipyards/ trade. The other chapter deals with design, development and fabrication contracts. This should facilitate placement of developmental orders aimed at indigenization and import substitution.

2.27 Finance Division prepares and monitors Defence Services Estimates, Civil Estimates of the Ministry of Defence and the Estimates in respect of Defence Pensions. Break-up of the actual expenditure for the years 2007-08 and 2008-09, as also the Revised Estimates for 2009-10 and Budget Estimates for 2010-11 in respect of Defence Services Estimates are given in Table No. 2.1 and chart/ graph at the end of this chapter.

2.28 Summary of latest report of the Comptroller & Auditor General of India on the working of the Ministry of Defence is given in Appendix-III to this Annual Report.

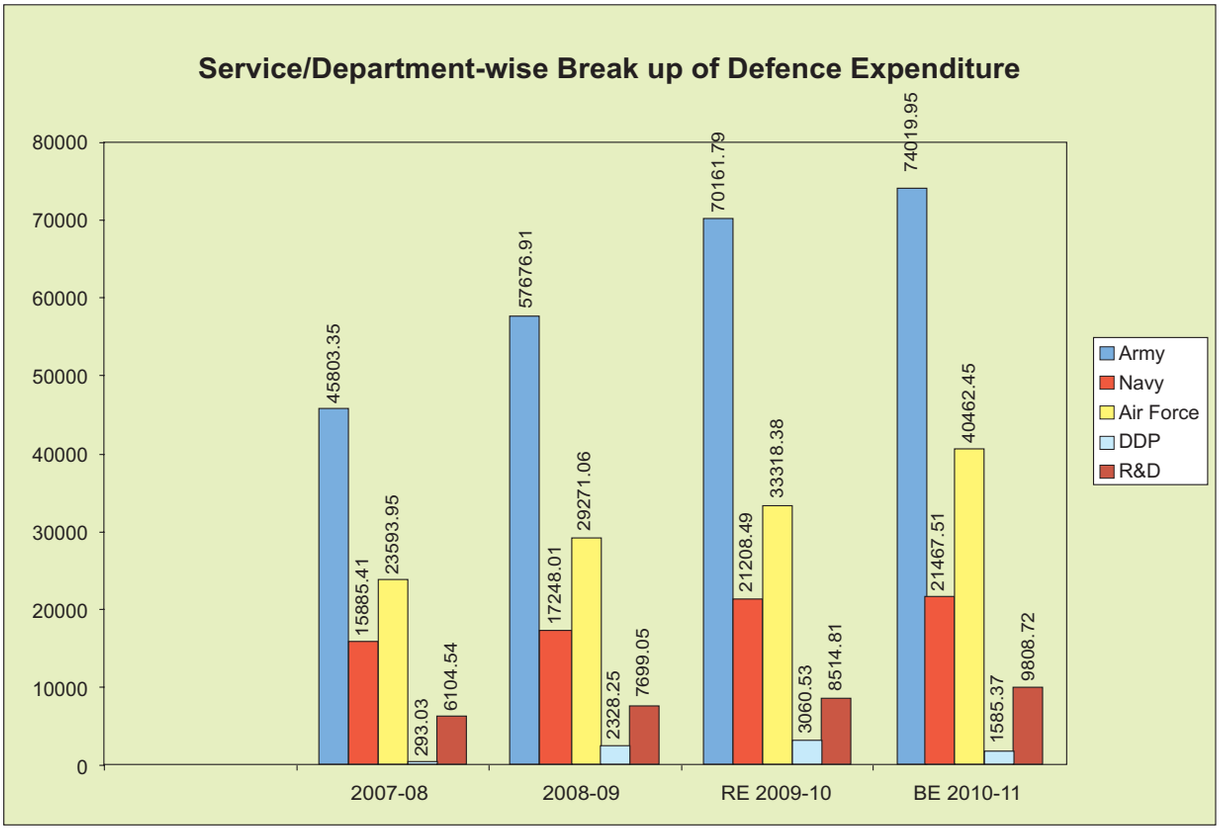
Table 2.1

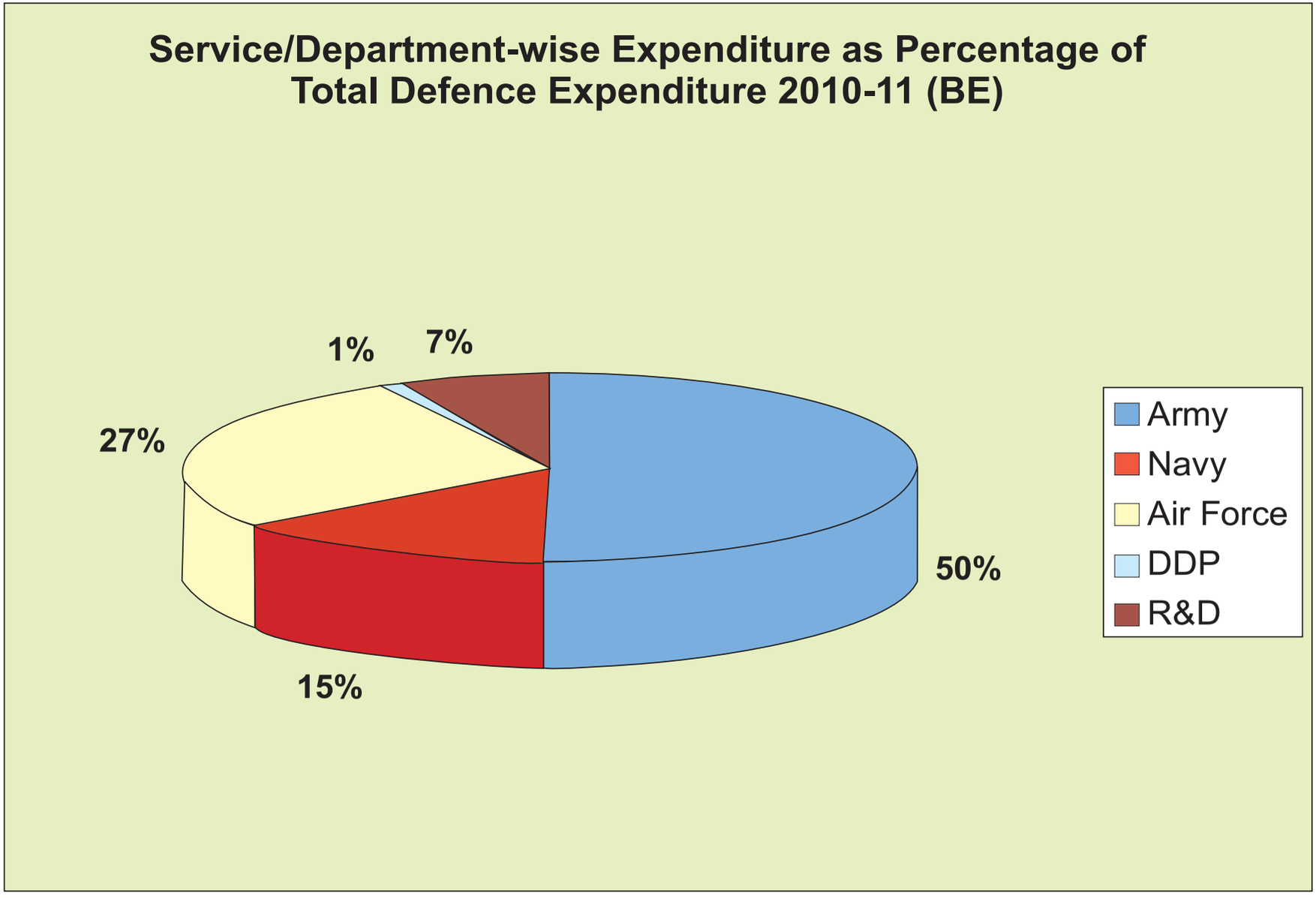
Service/ Department-wise Break-up of Defence Expenditure

(Rs. in Cr.)

Service/ Department		2007-08 Actuals (Rev + Cap)	2008-09 Actuals (Rev + Cap)	RE 2009-10 (Rev + Cap)	BE 2010-11 (Rev + Cap)
Army		45803.35	57676.91	70161.79	74019.95
Navy		15885.41	17248.01	21208.49	21467.51
Air Force		23593.95	29271.06	33318.38	40462.45
DDP	**DGOF**	(-)38.89	1834.91	2486.25	1015.53
	DGQA	331.92	493.34	574.28	569.84
	Total	293.03	2328.25	3060.53	1585.37
R&D		6104.54	7699.05	8514.81	9808.72
Total		**91680.28**	**114223.28**	**136264.00**	**147344.00**

DDP - Department of Defence Production
DGOF - Directorate General of Ordnance Factories
DGQA - Directorate General of Quality Assurance
R&D - Research & Development




Service/Department-wise Expenditure as Percentage of Total Defence Expenditure 2010-11 (BE)
1%
7%
27%
50%
15%
Army
Navy
Air Force
DDP
R&D

3

INDIAN ARMY

Raksha Mantri congratulating Shri Mohan Lal on grant of honorary rank of Lt. Col In T.A.

The Indian Army has a vision to consolidate itself into a highly motivated, optimally equipped, modernised, operationally ready force, capable of functioning in a synergised joint service environment, across the spectrum of conflict.

3.1 The Indian Army (IA) has a vision to consolidate itself into a highly motivated, optimally equipped, modernised, operationally ready force, capable of functioning in a synergised joint service environment, across the spectrum of conflict. The Indian Army's role is essentially for deployment along the borders. It has also been contributing in the spheres of internal security and disaster management as an aid to civil authority, whenever the situation has demanded.

MODERNISATION

3.2 The modernization and transformation of the Army is being actively pursued to constantly evolve and develop requisite capabilities so that there is a lethal, agile and networked force prepared to meet the complex security challenges of the 21st century. The focus of modernisation efforts is on precision fire power, air defence, aviation, infantry soldier as a system, infrastructure development, network centricity and achieving battle field transparency through improved surveillance, night vision and target acquisition. A number of measures have been initiated to ensure optimal fructification of modernization plans.

ARM/ SERVICE WISE MODERNISATION INITIATIVES

3.3 **Armoured Corps:** The Armoured Corps is in the process of rapid modernization as per the requirements of changing battle field scenario. There is a focus on upgradation of tanks and equipping them with modern fire control systems.

Leaving their foot-prints in the desert

3.4 **Mechanised Infantry:** Towards the modernization of the Mechanised Infantry, contracts for procurement of Environmental Control System and Instant Fire Detection & Suppression System for BMP-2/2K, Battle Field Surveillance Radar (Medium Range) on TATRA 8x8 and Thermal Imaging Sight to replace Milan Infra Red Attachment (MIRA) night sight have been concluded during the year.

3.5 **Artillery:** A proposal for procurement of Brahmos Supersonic Cruise Missile System for two regiments of the Indian Army has been approved. The contract has been concluded in March 2010.

3.6 **Infantry:** The plan to modernise the infantry soldier is being given the desired impetus, through acquisition of Assault Rifles and Night Binoculars for Special Forces. Bullet Proof Vehicles for use in counter-insurgency operations are under trial-evaluation. Procurement of specialist weapons for Ghatak Platoons of Infantry Battalions is in progress. Procurement of advanced simulator systems for realistic training is also underway.

3.7 **Engineers:** Contract for procurement of Gap Measuring Device has been concluded during the year. An indent for procurement of Mine Protected Vehicles has been placed on Ordnance Factory Board.

3.8 **Signals:** The Corps of Signals has evolved a state-of-the-art communication plan comprising Microwave, Ultra High Frequency, Optical Fibre, Satellite Communication and Mobile Cellular Communication systems. Induction of Transportable Satellite Terminal in Strike Corps and other state-of-the-art non-communication equipment will enhance communication capabilities and improve synergy between all fighting elements. Contract for advanced technology Combat

Infantry soldier during Exercise

Net Radio, developed by Defence Research & Development Organisation (DRDO) in Armoured Formations was concluded during the year.

3.9 **Army Aviation:** Procurement action for replacement of existing reconnaissance & surveillance helicopter by a modern helicopter with better capabilities is being pursued. Army Aviation is geared to weaponise the indigenously manufactured Advanced Light Helicopter (ALH) to provide teeth to the existing fleet.

3.10 **Army Air Defence:** The Corps of Army Air Defence is taking major strides in upgrading its gun systems. To enhance surveillance capabilities, upgraded Super Fledaur Maus and Flycatcher are planned to be replaced by 3D Tactical Control and Low Level Light Weight Radars. Self Propelled Air Defence Gun Missile System would also be upgraded. Procurement of successors to the vintage missile systems are also in the pipeline.

Reaching for the skies

SECURITY OVERVIEW

3.11 The security challenges that face the nation today are varied, sophisticated and complex. From maintaining a constant vigil on the country's unsettled borders, to combating a proxy war in Jammu & Kashmir (J&K) and terrorist strikes or insurgencies in the North East; the Indian Army is committed to the defence of the country. Additionally, the Army is also geared to provide assistance to civil authority when required.

3.12 The Army reviews operational preparedness/ postures in the context of these threats.

JAMMU AND KASHMIR

3.13 The overall security situation in J&K has undergone an appreciable change and is well under control of the Security Forces (SF). All parameters of proxy war are at an all time low and the current situation indicates a shift towards normalcy and peace. The growing stability in the State is indicative of the success of the untiring efforts of all SF which includes the Army's Counter Terrorist (CT) efforts.

3.14 **Situation Along the Borders/ Line of Control:** The cease fire on the borders is holding out with a few minor aberrations. Such violations are being taken up through the established mechanism of local level flag meetings and the Director General Military Operations hotline.

3.15 Counter infiltration measures adopted by the Army have been further strengthened.

Infiltration attempts, however, continue. During the period April 1, 2009 to February, 28, 2010, 33 infiltration bids have been eliminated with 50 terrorists killed while attempting to infiltrate.

In the Hinterland 213 terrorists were killed in 2009-10 and 68 apprehended.

3.16 **Situation in Hinterland:** During 2009-10, the Army killed 213 and apprehended 68 terrorists. The terrorist leadership is being successfully targeted, and 17 leaders have been killed during the period.

NORTH EAST

3.17 **Assam:** Relentless operations by the Army and Assam Rifles against the United Liberation Front of Assam (ULFA), the largest Under Ground (UG) group in the State, has resulted in neutralisation of bulk of its junior and middle level leaders. Severe attrition and demoralization has also triggered a spate of surrenders by ULFA cadres.

3.18 The 'Suspension of Operations' agreements with smaller UG groups in Assam viz the National Democratic Front of Bodoland (NDFB), Dimasa Halam Doagah (DHD) and United Peoples Democratic Solidarity (UPDS) has resulted in relative peace and stability in most parts of Assam.

3.19 In South Assam, the unconditional surrender by a number of cadres of DHD (Jewel Garlossa) and DHD (Jewel Garlossa) Splinter Group, has brought peace in the area. Operations are continuing to force some more armed cadres to surrender. The work on infrastructure projects has resumed.

3.20 **Nagaland:** Inter Factional Clashes between the National Socialist Council of Nagaland (Issac & Muivah) (NSCN (IM))

Maintaining vigil along LOC in J&K

and National Socialist Council of Nagaland (Khaplang) (NSCN (K)) have reduced considerably. The Army and Assam Rifles (AR) are keeping the UG groups under check and ensuring that the UG groups adhere to the Ceasefire Ground Rules. The reconciliation process has also gained momentum.

3.21 **Manipur:** Operations by the Army and Assam Rifles continued in the State during the year and a number of cadres of various outfits were eliminated and apprehended by the SF in 2009. The insurgent groups have also intensified their anti SF activities. The 'Suspension of Operation Agreement' with Kuki and Zomi UG Groups has ushered in peace in the Kuki and Zomi inhabited areas. Peace talks with Meitei UG group, Kangleipak Communist Party (KCP) are in progress. The success of these talks is likely to mount pressure on other Valley Based Insurgency Groups (VBIGs) to join the peace process. Lately, the de-notified area in Manipur has seen a surge in violence, protests, blockades of highways and economic shutdown. The protests in the state are being funded by insurgent groups, who are using front organisations to continuously fuel the agitation. The mindless violence and kidnappings by VBIGs are being increasingly resented by people, who are openly opposing their diktats.

NAXAL VIOLENCE

3.22 The Army has assisted in the task of controlling the menace of Left Wing Extremism (LWE), commonly termed as 'Naxalism' and 'Maoist insurgency' by providing advice and assistance in training the Para Military Forces/ Central Police Organisation Battalions and State Police personnel for counter insurgency operations.

SITUATION ALONG THE LINE OF ACTUAL CONTROL (LAC)

3.23 China's impetus to the modernization of her Armed Forces and force projection capability and rapid infrastructure development in the Tibet Autonomous Region (TAR) and Xinijang Province has considerably upgraded China's military force projection capability and strategic operational flexibility.

3.24 Government of India is fully seized of the security needs of the country as well as the requirement of development of infrastructure in the border areas. Necessary steps have been initiated for the upgradation of our infrastructure and force structuring to secure the desired national security objectives along the Northern borders. A holistic review of own infrastructural development and military modernisation programme has been undertaken along with the overall Border Areas Development Programme. Strategically important infrastructure requirements along the LAC have been identified and are being developed in a phased manner.

RASHTRIYA RIFLES

3.25 Rashtriya Rifles (RR) has supplemented the work of the Army and the Central Para Military forces in J&K over the years. Its

aid to civil authorities and maintenance of law and order role has also had a significant impact. The modernization of the RR through weapons and equipment for sustained CT operations was approved during the year. This will include improved mobility and protection to personnel through mine protective vehicles, light bullet proof vehicles, hardened Army buses apart from ambulances and civil vehicles.

During 2009, Rashtriya Rifles killed 98 terrorists and apprehended 4 terrorists.

3.26 **Achievements:** The achievements of RR formations and units during 2009 are as under:-

(a) Terrorists Neutralized.

(i)	Killed	98
(ii)	Surrendered	51
(iii)	Apprehended	04

(b) Recoveries.

(i)	Rifles (All Types)	160
(ii)	Pistols	72
(iii)	RL/UBGL	38
(iv)	Granades	1304
(v)	Improvised Explosive Device	146
(vi)	Radio Sets	77
(vii)	Explosives	260.70 Kgs.
(viii)	Ammunition	38,217 rds.

TERRITORIAL ARMY (TA)

3.27 The TA has 66 units classified into departmental/non departmental units. Of the 42 Non Department battalions, there are 32 infrantry and 10 Home and Hearth battalions. There are 24 Department battalions including 6 Railway, 3 Oil sector units, 7 general hospitals and 8 Eco battalions.

3.28 During 2009-2010 approx 80% of the Non Departmental TA units were in embodied state. All the ten Home and Hearth units continued to be embodied in full. These include 02 in Western Command, 03 in Eastern Command and 05 in Northern Command.

3.29 **Honorary Commission:** Shri Mohan Lal, an eminent South Indian actor was granted the Honorary rank of Lt Col on May 15, 2009 in Territorial Army.

OPERATIONAL LOGISTICS

3.30 **Equipment Management:** Some important steps have been taken towards ensuring effective equipment management. These are as under:-

(a) **Joint Five Year Unmanned Aeriel Vehicle (UAV) Annual Maintenance Contract (AMC)**. To achieve maximum serviceability and ensure operational readiness, the Army and Navy signed a joint maintenance contract for five years with M/s IAI, Israel. This will ensure minimum 90% serviceability of UAV assets, door step collection and delivery of UAV stores, refresher training for EME crew and calibration of the UAVs.

(b) **Maintenance Transfer of Technology (MToT) for Heron UAVs**. To overcome dependence on Hindustan Aeronautics Limited (HAL), enhance quality of repair and to reduce turn around time for repairs, a case for undertaking MToT and to establish UAV 'D' level facilities

A UAV in action

at 515 Army Base Workshop, Bangalore was sanctioned by Department of Defence Production (DDP) as a green field project.

3.31 **Establishment of Repair Facilities for Thermal Imaging Equipment:** Thermal Imaging (TI) equipments have been inducted into the Army in large numbers. All Crops Zone Workshops and one Advanced Base Workshop have been equipped with facilities to undertake repairs of most of the stand alone TI sights.

3.32 **Overhaul of Aviation Rotables:** Serviceability of Army Aviation helicopters is primarily dependant on the efficiency of HAL in providing rotables. The requirement of increased rotable availability has dictated the need to set up in-house facilities for rotable overhaul. 515 Army Base Workshop has been nominated for overhaul of 99 rotables of Cheetah/Chetak helicopters in a phased manner with Transfer of Technology from HAL.

3.33 **Indigenisation:** The Army Base Workshops and newly raised Department of Indigenisation have been instrumental in enhancing the overall indigenisation process. The indigenisation contribution rose from 13% to 37% during the year. A target of achieving 60% indigenisation in a year's time has been fixed.

KITTING OF TROOPS

3.34 **Special Clothing:** The constitution of Empowered Committee has enabled accelerated procurement of state-of-the-art special clothing and mountaineering equipment. All procurements for the year 2009 – 10 were completed.

3.35 **Personnel Kitting:** Concrete steps to improve quality of clothing in the Army are underway. One additional Olive Green (OG) uniform and two additional OG Trousers (for Shirt Angola) have been authorised to Personnel Below Officers Rank (PBOR). A pilot project for issuing OG clothing instead of stitched uniform is in final stages of conclusion. Popular shoe brands are being trial evaluated.

MODERNISATION

3.36 **'TAKSHAK' Striker Vehicle:** 'TAKSHAK' Striker Vehicle, conceived by the Corps

Soldiers on Siachen Glacier

of EME, has been found extremely useful in CI/CT environment. This has led to RR Battalions placing a large order for production of these vehicles. Production will be done in-house by the Army.

3.37 **Automation of Ordnance Inventory:** Based on the success of the automation of Central Ordnance Depot (COD) Delhi Cantt, Phase-II of the Project has been approved and contract is likely to be concluded early. This is expected to go a long way in increasing the visibility of available inventory in Ordnance.

3.38 **Modernisation of Ordnance Echelons:** Sanction has been accorded for modernisation of two Central Ordnance Depots and for enhanced security and fighting capability of three Central Ammunition Depots. Work has commenced on all projects.

INFORMATION TECHNOLOGY (IT) DEVELOPMENT

3.39 **IT Road Map:** IT Road Map 2009-2015 was revisited. The IT Vision of the Army, which focused on strong IT infrastructure, Operational Information System (OIS), Management of Information Technology (MIS) and trained manpower has now incorporated in its scope the need for the Army to become a Network Centric Force. The Army's **vision** has been revised as "To facilitate transformation of Indian Army into a dynamic Network Centric Force, achieving info superiority through effective management of IT". Integration of Applications, IT Human Resource Development, Information Warfare and Geographical Information System (GIS) are the new thrust areas.

3.40 **Project Shakti:** Artillery Combat Command and Control System (ACCCS) or **Project Shakti** is the first among the Tactical Combat Command Control & Intelligence (Tac C3I) systems being fielded in the Army. The project is a network of military grade tactical computers, automation and providing decision support for all operational Artillery functions from the Corps down to a Battery. The system is also designed to seamlessly integrate with overall **Command Control Communication and Intelligence (C3I)** grid. Shakti, thus will be a networked centre of all fire power resources held at Corps and lower levels.

3.41 **Automation:** In order to achieve complete automation in the Army, all units have been provided adequate hardware and unit level automation packages. The branches and directorates of IHQ of MoD (Army) are also being automated rapidly and maximum information is being made available on-line. To achieve uniformity and standardization in the use of GIS in the Army, a common GIS policy has recently been issued.

3.42 **MIS Commands:** A project for "Automation of Command and Formation HQ" is under execution. This will help integrate MIS and improve information exploitation.

3.43 **IT Standard Operating Procedure (SOP):** IT SOP for implementation of IT projects and procurement of IT stores under the delegated financial powers has been revised. The revised SOP will ensure transparency, competition, fairness and secure best prices in procurements.

3.44 **Provision of Information on (PBOR):** Data of all serving PBOR has been captured and validated by respective Record Offices. This will help efficient management of personnel and also enable PBOR to view their personal data.

Implementing the IT Vision of the Army

3.45 **Unit Level Management:** The use of IT at unit level has increased progressively. IT packages have been rolled out for management of arms, ammunition, clothing, finances etc. A project for integration of all unit level packages is also being undertaken to avoid duplication.

India has about 9000 troops deployed in five UN Missions in Congo, Sudan, Lebanon, Ivory Coast and Golan Heights.

3.46 **India's Contribution to United Nations Peacekeeping Operations:** India's contribution to Peacekeeping Operations commenced in 1952 in Korea. Over the years, India has emerged as the most sought after Troop Contributing Country because of the quality of its soldiers and its capacity to deploy them in the given time frame. India has so far participated in 43 peacekeeping operations and has contributed more than one lakh personnel. India's participation in these missions is driven by the commitment as a responsible member of the UN. Presently, India has about 9000 troops deployed in five UN Missions in Congo, Sudan, Lebanon, Ivory Coast and Golan Heights. The nation's contribution during the crisis situations in all these Missions is a reflection for a quest for international peace.

4

INDIAN NAVY

Naval Power

The Indian Navy by virtue of its capability, strategic positioning and robust presence in the areas of interest has been a catalyst for peace, tranquillity and stability in the Indian Ocean Region(IOR)

4.1 The Indian Navy is the prime manifestation of the maritime power of the country. The *raison d'etre* is to safeguard the nation's use of the seas for its legitimate sovereign purposes, whilst concurrently guarding against inimical use of the sea by others. The Indian Navy by virtue of its capability, strategic positioning and robust presence in the areas of interest has been a catalyst for peace, tranquillity and stability in the Indian Ocean Region(IOR). During the year, the Indian Navy has engaged other maritime nations, to support national initiatives of cooperation and engagement. The operational activities have been conducted to ensure a measure of stability and tranquillity in the waters around our areas of interest, so as to support the maritime trade and energy flow, on which the economy is critically dependent. Ensuring security and stability becomes important since the enhanced use of the seas, for maritime trade, shipping, fishing, natural and energy resource extraction, security of our seaborne, off-shore and coastal assets, etc is essential for economic well being.

4.2 The Indian Navy has always responded swiftly and efficiently to the various challenges, be it in safeguarding our frontiers, or sea trade. To achieve its mandated tasks, the Indian Navy is enhancing its capabilities, cooperation and inter-operability with regional and extra-regional navies. Apart from combating piracy and terrorism at sea, the Indian Navy has actively participated in survey, providing Search and Rescue facilities to those in distress, coordinating navigational warnings over vast oceanic and littoral areas. In order to fulfil its mandated task of coastal security, the Indian Navy has undertaken numerous measures for enhancement of capabilities alongwith the Indian Coast Guard for ensuring surveillance and security in this zone.

COASTAL SECURITY

4.3 India has a very long coastline of 7516 km. Coastal Security for this length has assumed significance in recent times to meet challenges of threats from the sea. The Indian Navy has been designated as the authority responsible for overall maritime security which includes coastal security and offshore security. For this purpose, the Indian Navy is assisted by Coast Guard, State Marine police and other Central and State agencies for the

High Level Coastal Security Meeting

coastal defence of the nation. To achieve the objective, an integrated approach has been adopted by Navy in coordination with other security agencies. The intelligence-sharing mechanism has been streamlined through the creation of Joint Operation Centres and multi agency coordination mechanism. The coastal surveillance and patrolling has been enhanced both by Navy and Coast Guard. Joint and operational exercises are conducted on regular basis between Navy, Coast Guard, Coastal Police, Customs and others in order to check the effectiveness of the new system. Navy along with Coast Guard has undertaken numerous awareness campaigns all along the coast to sensitise fishermen and local populace to the challenges of coastal security.

NEW PROJECTS/ INDUCTIONS

4.4 The process of modernization of the Indian Navy is progressing at the desired pace. New acquisitions programs and projects will enhance its capability and preparedness. The Indian Navy remains committed to the process of indigenisation for enhancement of capability. The national ship building industry has substantially contributed in enhancing maritime capability, in terms of force accretion. In the immediate future, the Indian Navy plans to acquire ships, submarines and aircraft in accordance with the long term Maritime Capability Plan.

OVERSEAS OPERATIONS

4.5 **Overseas Deployment:** Overseas deployments are undertaken by ships of

Indian Navy in support of foreign policy. Such missions are for Flag showing, fostering better relations with friendly countries and enhancing foreign cooperation. Important Overseas activities in 2009 included deployment to South East Asia, North West Pacific and Europe.

4.6 **Anti Piracy Operations in the Gulf of Aden:** In keeping with the aim of preventing piracy in the Gulf of Aden, the Indian Navy has deployed one warship continuously in the Gulf of Aden since October 23, 2008. This has enabled presence in the area to deter pirates and provide security to Indian flagged merchant ships. Over 602 merchant ships of varying nationalities have been escorted safely by the Indian warships. Such operations are closely coordinated with the warships of other nationalities deployed in the Gulf of Aden for patrol.

4.7 **Anti Piracy Operations off Seychelles/ Mauritius:** Additional units of the Indian Navy were deployed to conduct surveillance and anti piracy operations off Seychelles.

4.8 **Training Squadron:** First Training Squadron ships INS Tir, INS Krishna and CGS Veera proceeded for a Training Mission to the Persian Gulf as part of Spring Term 2009 from March 20 to April 10, 2009. The ships made port calls at Abu Dhabi (UAE), Muscat (Oman) and Bandar Abbas (Iran).

With the aim of preventing piracy in the Gulf of Aden, the Indian Navy has deployed one warship continuously in the Gulf of Aden with effect from October 23, 2008.

MAJOR EXERCISES

4.9 **Triveni – 09:** A Tri Services joint exercise (Triveni 09) was conducted off Lakshadweep & Minicoy islands, from January 6 to 10, 2009. The exercise included large scale amphibious forces, Special Forces, IAF elements.

4.10 **TROPEX/ AMPHEX 09:** This annual exercise was conducted off the Western Seaboard from January 27 to February 19, 2009. Various Phases of the TROPEX included the independent Workup Phase, Joint Workup Phase and Amphibious Phase. Large scale amphibious operations were conducted involving assets from the Army, Navy and the Air Force. The integration of various elements was validated during the exercise.

EXERCISES WITH FOREIGN NAVIES

4.11 **Indra 01/ 09:** The Indian Navy and Russian Federation Navy (RFN) bilateral exercise was conducted on the Western Seaboard from January 27 to 28, 2009. Delhi class and Talwar class from IN and RFN Pyotr Veliky and RFN Admiral Vinogradov participated in the exercise.

4.12 **Malabar 09:** IN-USN-JMSDF Trilateral Exercise 'Malabar - 09' was conducted at Sasebo, Japan and East of Okinawa from April 26 to May 3, 2009. A total of nine ships, 11 aircraft, one SSN and over 4,000 personnel from IN,

Amphibious Landings during AMPHEX-09

USN and JMSDF participated in the tri-lateral exercise. Four IN Ships, US Ships Blue Ridge, Fitzgerald and Chafee and Japanese Maritime Self Defence Force (JMSDF) ships Kurama and Asayuki participated in this exercise.

4.13 **Konkan 09:** The Indo-UK naval bilateral exercise KONKAN 09 was conducted for the first time in North Atlantic Ocean from June 17 to July 25, 2009. Four IN ships along with integral helicopters and RN Ships Mounts Bay, Westminster, Northumberland, Fort Rosalie, NIMROD, Hawk, Falcon participated in the exercise.

4.14 **Varuna 09:** The Indo-French naval bilateral exercise VARUNA 09 was conducted for the first time in North Atlantic Ocean from June 30 to July 4, 2009. Four IN ships and FN Ships Primauguet, LV Le Henaff, Atlantique MK2, Super Etendard, E2C Hawkeye, Falcon participated in the exercise.

4.15 **SIMBEX 09:** Annual India-Singapore bilateral naval exercise SIMBEX 09 was held from March 24 to April 2, 2009 in Andaman Sea, Malacca Strait and South China Sea. Four IN ships participated in the exercise. RSN ships Tenacious, Vigilance, Vengeance and the submarine Conqueror represented the Republic of Singapore Navy.

4.16 **Coordinated Patrol with Indonesia:** Coordinated patrol in collaboration with Indonesia (named INDINDO CORPAT) along the International Maritime Boundary Line (IMBL) between India and Indonesia has been continuing twice a year since its inception in 2002. The 13th CORPAT was conducted from March 5 to 26, 2009. Indonesian Naval Ship

KRI Pati Unus along with one Cassa aircraft participated in the CORPAT whilst *IN* Ships Cheetah, Batti Malv and Dornier aircraft represented India.

4.17 **Coordinated Patrol with Thailand:** The 8th cycle of Indo-Thai Coordinated Patrol along the IMBL was carried out from February 21 to 26, 2009. The units that participated in the INDO-THAI CORPAT included INS Trinkat, *IN* Dornier, HTMS Songkhla and RTN Dornier.

4.18 **Passage Exercises:** This year, the Indian Navy undertook passage exercises with the Royal Australian Navy, the Republic of Korea Navy, the Philippine Navy, Royal Navy, French Navy, Iranian Navy, Japanese Navy, Algerian Navy, Eritrian Navy, Saudi Arabian Navy, Israeli Navy, Turkish Navy, Russian Navy, Italian Navy, German Navy, Libyan Navy, Hellenic Navy and Portuguese Navy. In addition, ships of 14 navies visited Indian ports.

FOREIGN COOPERATION

4.19 **Refit of Seychelles Coast Guard Ship(SCGS) Topaz:** SCGS Topaz was gifted to the Seychelles Navy in 2005 by the Government of India. The refit of the ship was successfully completed by Naval Dockyard Visakhapatnam on April 30, 2009. The ship was formally handed over to the High Commissioner of Republic of Seychelles, by the Admiral Superintendent of Naval Dockyard Visakhapatnam.

4.20 **Training of Foreign Navies:** Six officers and six sailors of the Indonesian Navy underwent submarine training at Visakhapatnam from March 9 to June 5, 2009.

IN and RSN Ships in formation During SIMBEX-09

4.21 **Ship's Diver Refresher Training for Mauritius Divers:** A Diving refresher course for Mauritius Defense forces was conducted from March 30, 2009 to April 17, 2009 at Port Louis, Mauritius. Fourteen Mauritius personnel were trained in various aspects of Ship Diver training.

The air squadrons INAS 311 and INAS 350; Indian Naval Air Station Parundu; INS Airavat; INS Chetlat; INS Car Nicobar, INS Cheriyam and Cora Divh were commissioned during the year 2009.

4.22 **Survey for Republic of Mauritius:** INS Nirdeshak carried out hydrographic survey for Mauritius as part of Indian foreign co-operation initiatives in the Indian Ocean Region during March - April, 2009.

COMMISSIONING AND DECOMMISSIONING

4.23 The air squadrons INAS 311 and INAS 350 were commissioned on March 24, 2009. Indian Naval Air Station Parundu was commissioned on March 26, 2009 at Uchipulli in Ramnad District of Tamil Nadu. INS Airavat, the fifth LST(L) Class ship was commissioned on May 19, 2009 at Visakhapatnam. INS Chetlat and Car Nicobar were commissioned on February 16, 2009. INS Cheriyam and Cora Divh were commissioned on September 10, 2009. IN Seaward Defence Boats T 59 and T 60 were decommissioned on September 07, 2009. In addition, INS Bedi and Bhavnagar were decommissioned on September 22, and December 24 2009 respectively.

ADVENTURE AND SPORTS

4.24 **'Sagar Parikrama' Circumnavigation Voyage:** A solo circumnavigation expedition is in progress by Commander Dilip Donde of the Indian Navy on an Indian Naval Sailing Vessel (INSV) Mhadei. This 'Sagar Parikrama' expedition commenced from Mumbai on August 19, 2009 and is expected to be completed at Mumbai on May 25, 2010.

Commissioning of INS Chetlet and Car Nicobar by Shri Surjit Singh Barnala, Governor of Tamil Nadu

5

INDIAN AIR FORCE

SU-30 MKI

The IAF, one of the finest Air Forces in the world, is on path to develop an entirely new generation of capabilities and the challenge is to smoothly integrate new technology while fulfilling the responsibility of the guardian of our airspace

5.1 Over the years the IAF has grown in stature and capability and has evolved into one of the finest Air Forces in the world. New sets of challenges require new methods to be adopted to neutralize them. Speed of response and flexible application of Aerospace power is the key to success in such situations. Today IAF is on path to develop an entirely new generation of capabilities. The challenge is to smoothly integrate new technology while fulfilling the responsibility of the guardian of our airspace. The developments during the year are detailed in the following paragraphs.

5.2 **Integrated Air Command Control System Project (IACCS):** An IACCS was conceived for the Air Defence of Indian Borders after evaluating foreign systems and taking into consideration the emergence of Indian Software industry, it was decided to go the indigenous way. The five systems were to be installed at five IACCS nodes in western and south western fronts of the country. Successful installation of the Voice Communication & Control (VCCS) System has already started in the western sector.

5.3 **Network Centric Operations:** In today's era of information superiority there is urgent need to exploit this domain and thereby realize our operational requirement. This entails visualizing future war waging ability in the context of acquiring cutting edge technology henceforth and how it can mesh into doctrine of network centric operations for the next two decades or so. Towards this, IAF has embarked on certain major projects viz Operational Data Link (ODL), Airborne Warning and Control System (AWACS), Airborne Early Warning & Control System (AEW&C), Communication Equipment, Radars of various ranges, Modernization of Air Field Infrastructure (MAFI) etc.

AIRCRAFT ACQUISITION

5.4 **License Production Su-30MKI:** License production of Su-30 MKI aircraft under Transfer of Technology from Rosonboronexport by Hindustan Aeronautics Ltd. (HAL) is in progress. The deliveries are envisaged as per schedule.

5.5 **Procurement of Additional Su-30 MKI:** A contract for supply of additional Su-30 MKI aircraft was signed with HAL in March 2007. Deliveries are expected as per schedule.

5.6 **C-130J-30:** A Letter of Offer and Acceptance (LOA) for acquisition of C-130J aircraft was signed with the US Government on January 31, 2008.

Intermediate Jet Trainer

5.7 **Hawk Advance Jet Trainer (AJT):** Indian Air Force had initially contracted for direct supply of Jet trainer and thereafter for license manufacture in India by Hindustan Aeronautics Limited (HAL). All the direct supply aircraft have been delivered. HAL has also started delivering the AJT.

5.8 **Medium Lift Helicopters (MLH): MI-17 V5:** A contract has been signed with M/s Rosonboronexport, Russia for delivery of Mi-17V5 helicopters.

5.9 **Airborne Warning And Control System (AWACS) Induction:** The AWACS was formally inducted into IAF on May 28, 2009 by Raksha Mantri. The AWACS induction into the IAF has heralded a new age of modern warfare, boosting the IAF's campaign to acquire a network centric warfare capability and bringing in a paradigm shift in the way IAF will conduct future air operations. The IL-76 based AWACS would not only enhance the sensor coverage beyond the LOS (line of sight) of the ground based sensors but would also be the epitome of advanced sensor technology, IT and Network Centric Operations.

The AWACS induction into the IAF has heralded a new age of modern warfare, boosting the IAF's campaign to acquire a network centric warfare capability.

5.10 **Boeing Business Jet:** Boeing Business Jet (BBJ) aircraft has been inducted in the IAF on April 1, 2009 for VVIP duties. The inaugural flight was flown by the President. The aircraft is a state of the art modern platform of B-737 IGW (Increased Gross Weight). The aircraft is also equipped with Special Protection Suite (SPS) which automatically detects any external threat and takes appropriate evasive action to avoid the threat. The aircraft has a state-of-the-art communication facilities, including video tele-conferencing and fax facilities.

AWACS Induction Ceremony

AIRCRAFT UPGRADES

5.11 **Jaguar:** The upgrade of DARIN-I Jaguar aircraft to DARIN-III standard has been approved. The design & development activities will commence forthwith and the upgrade is planned to be completed by 2017-2018.

5.12 **MiG-27:** Government has approved the upgrade of MiG-27 aircraft through the indigenous route. Design & development task on two prototype aircraft was undertaken. Final Operational Clearance (FOC) was achieved in December 2008. Barring certain support requirements, all the work related to this upgrade is completed. Final operational clearance implementation is under progress at operating bases.

5.13 **MiG-29:** A contract was signed with RAC MiG on March 07, 2008 for the upgrade of MiG-29 aircraft. Some of the aircraft are in Russia for Design & Development Phase, which is scheduled to be completed by June 2010. The remaining aircraft will be upgraded in India by 2014.

5.14 **ANTONOV-32 Fleet:** Present Total Technical Life (TTL) of 25 years of AN-32 aircraft was expiring from the year 2009 onwards. In order to exploit the aircraft further, a contract has been concluded with M/s STE, Ukraine on June 15, 2009 for TTL extension up to 40 years and re-equipment with latest version of systems to meet the present ICAO standards for entire AN-32 fleet.

5.15 **Light Combat Aircraft:** Light Combat Aircraft has completed 1000 sorties. Engine upgrade has been accepted by Government and the Technical Evaluation Committee (TEC) is examining the proposals in this regard. LCA Twin seater Prototype Vehicle has completed first flight in November 2009.

STORES

5.16 **Procurement of PBOR Clothing:** The system for centralized procurement and issue of 33% of cloth for summer uniform for PBORs and further stitching under Command/ Unit arrangements has been initiated for improving the dress/ deportment of our Air Warriors.

5.17 **Flame Retardant Overall (FR):** Quantity 9200 Flame Retardant Overalls have been procured and distributed for the aircrew. The introduction of FR Overall is likely to enhance the safety of aircrew.

5.18 **Hydrant Refuelling System (HRS):** Hydrant Refuelling System at Agra and Gwalior is in place. MoU has been signed for Chandigarh, Pune, Jamnagar and Kalaikunda.

5.19 **Induction of CAR (Rohini) Radar:** Thirty Seven Central Acquisition Radars (CAR), also known as Rohini in IAF, developed by Electronic & Radar Development Equipment (LRDE) and produced by Bharat Electronics Ltd (BEL) Programme Air Defence (PGAD) have been contracted by the IAF. These are transportable radars used in the Air Defence Network.

MODERNISATION OF SECURITY EQUIPMENT

5.20 **Access Control System:** Installation of 100 access control systems at various station/ units, contracted from M/s ECIL Rapiscan, has been successfully completed. The systems are operational at allocated stations/ units.

5.21 **Smart Power Fence:** Installation of smart fence at four bases of J&K sector has been completed.

METEOROLOGY

5.22 Meteorology plays a great role in aviation for execution of safe flying in the air and safety of aviation assets on ground. Meteorology Branch in IAF, works with the standard procedure framed internationally by World Meteorological Organization (WMO). With a view to increase the availability of the modern Met equipment to the field forecasters, the Directorate of Meteorology has completed a number of projects during 2009-10.

(i) **Automatic Weather Station:** Automatic Weather Station has been installed and is functional at all the 67 sites. This has improved the availability of the Met related information to the aviators.

(ii) **Digital Distant Recording Wind Equipment (DDRWE):** The existing wind speed and direction equipment has been replaced by a modern ultrasonic digital sensor that measures the speed with high degree of accuracy. 30 sets have been installed at different locations in May 2009.

(iii) **Digital self Recording Rain Gauge (DSSRG):** The existing self recording rain gauge, an old analogue instrument, has been replaced by Digital SRRG which records all the information through a data logger and the same can be archived in PC for retrieval at a future date. Digital System has been inducted in IAF during August 2009.

(iv) **High Performance Computing System:** A High Performance Computing System (HPCS) with associated systems, capable of running atmospheric Numerical Weather Prediction models on 365 x 24 basis, has been installed in 2009 at Air Force Center for Numerical Weather Prediction (AFCNWP) Subroto Park. With the availability of this 144 processor computing system, the mesoscale model like Weather Research Forecast model (WRF) can be run at high resolution like 18 km and 6 km. The system has increased the availability of the real time inputs to field forecasters.

(v) **Laser Ceilometers:** Laser Ceilometer is a general purpose cloud height sensor employing diode laser LIDAR (Light Detection and Ranging) technology for detection of clouds and other obstruction to vision. The laser ceilometer has been installed at most places.

6

COAST GUARD

Indian Coast Guard Ship 'Veera' in joint exercise with US Coast Guard Ships

The Indian Coast Guard has a force level of 43 ships, 45 aircraft and helicopter, 24 boats/ craft and 23 non-commissioned boats/ craft in its fleet

6.1 The Indian Coast Guard came into being on February 1, 1977 on the `approval of Cabinet Committee on Parliamentary Affairs to set up an interim Coast Guard Organisation under Naval Headquarters with an Officer on Special Duty of the rank of Vice Admiral as the head, pending the approval of the Plan for Coast Guard Organisation. The Indian Coast Guard was commissioned as an independent service on August 19, 1978 under the Coast Guard Act, 1978.

6.2 Since its inception, the Coast Guard has acquired a wide range of capabilities both surface and airborne to undertake the assigned tasks during peace time and to supplement the efforts of Indian Navy during war.

6.3 **Organisation:** The command and control of the Coast Guard lies with the Director General of Indian Coast Guard, at New Delhi. The Organisation has four Regional Headquarters at Mumbai, Chennai, Gandhinagar and Port Blair. These Regional Headquarters exercise command and control in the waters adjoining the entire coastline of India, through 11 Coast Guard District Headquarters located along the coastal states of India. In addition, there are 14 co-located and 12 independent stations at strategic locations. Two Air stations, one Air enclave and five independent squadrons have been set up for deployment of aircraft for Search & Rescue and maritime surveillance.

6.4 **Duties and Functions:** The duties of Coast Guard are as follows:-

(a) Ensuring the safety and protection of artificial islands, offshore terminals, installations and other structures and devices in Maritime Zones.

(b) Providing protection to fishermen including assistance to them at sea while in distress.

(c) Taking such measures as are necessary to preserve and protect the maritime environment and to prevent and control marine pollution.

(d) Assisting the customs and other authorities in anti-smuggling operations.

(e) Enforcing the provisions of such enactments as are for the time being in force in the maritime zones.

(f) Such other matters, including measures for the safety of life and property at sea and collection of scientific data, as may be prescribed.

6.5 **Existing Force Level:** The Indian Coast Guard has a force level of 43 ships, 45 aircraft and helicopter, 24 boats/ craft and 23 non-commissioned boats/ craft in its fleet to carry out regular surveillance of the Maritime Zones of India and the areas of interest. The second and third replacement Offshore Patrol Vessels (OPV) Vijit and Vaibhav were launched on November 4 and December 5, 2009. These ships are built by M/s Goa Shipyard Ltd and are likely to be commissioned in 2010. The first and second HSL built IPV was launched on May 28, 2009 and November 4, 2009. The other new additions to Coast Guard force level include three Interceptor Boats. In addition, in the XI Plan, construction of 98 ships/ boats and 55 aircraft (including 16 Dorniers, 6 Multi Mission Maritime aircrafts, 3 Chetak helicopters, 14 twin engine helicopters and 16 light helicopters) are at various stages of procurement process.

COASTAL SECURITY

6.6 The Director General Coast Guard has been designated as Commander Coastal Command and is responsible for overall coordination between Central and State agencies in all matters relating to coastal security.

6.7 Coast Guard in coordination with Navy has increased patrolling and surveillance of the entire coastline. The coastal security exercises conducted during the year for ensuring effectiveness of the coordinated patrolling are given in Table 6.1.

6.8 The deployment of Coast Guard Ships and aircrafts has been increased for

Table 6.1

Code Name	Period	Place
JWALAMUKHI	1 - 5 June	A&N islands
RASTA ROKO	8 - 10 June	West coast
BARRICADE	7 - 8 July	Tamil Nadu
BARRIER	13 - 15 July	Andhra Pradesh
GAUNTLET	29 - 30 July	Orissa
CITADEL	17 - 18 August	West Bengal
TRITON	13 -14 October	Kerala coast
SURAKSHA	13-16 October	Gulf of Mannar & Orissa coast
SAGAR KAVACH (KAR)	21-22 October	Karnataka coast
SAGAR KAVACH (GUJ)	30-31 October	Gujarat coast
SAGAR KAVACH (GOA)	6 -7 November	Goa coast
DWEEP SURAKSHA	22 - 27 November	A & N Islands
PAKSHAK (TN & P'CHERRY	20 - 21 December 2009	States of Tamil Nadu & Puducherry

Coastal Security in addition to the normal EEZ patrolling. In addition to coastal security exercises, several coastal security operations have been conducted by Coast Guard in coordination with Navy, which are given in Table 6.2.

6.9 In order to increase the presence of Coast Guard all around the coast, setting up of 9 additional coast Guard Stations (Karwar, Ratnagiri, Vadinar, Gopalpur, Minicoy, Androth, Karaikal, Hutbay and Nizampatnam) have been sanctioned to integrate into the 'hub and spoke concept' with coastal police stations.

SIGNIFICANT MILESTONES AND ACHIEVEMENTS

6.10 **Commissioning of Interceptor Boats:** Three Interceptor Boats, namely C-143, C-144 and C-145 have been commissioned on June 3, October 9 and December 17, 2009 respectively.

6.11 **Commissioning of ICGS Karwar:** The Indian Coast Guard Station at Karwar was commissioned on November 4, 2009.

6.12 **Establishing of Regional Headquarters (North-West) and Commissioning of Indian**

Table 6.2

Coastal Security Operations		
Code Name	**Period**	**Place**
SURAKSHA	26 December – 3 January	Off Goa
NAKA BANDI	26-27 March	Kerala Coasts
RAAH BANDH	21 – 23 April	Maharashtra & Gujarat
GIRAFTAAR	12– 14 May	Tellichery Coast
TASKAR	26 – 29 May	Off Mumbai
CHOKAS	2– 5 July	Maharashtra & Gujarat
NIYANTRAN	28– 31 July, 2009	Maharashtra & Goa
CHOKAS II	13 – 17 August	West Coast
RAKSHA- 01	18 September – 5 October 2009	West Coast
KHOJ - 01	23 – 26 September 2009	Gujarat Coast
RAKSHA - 02	1 – 19 October 2009	West Coast
RAKSHA -03	18 – 30 November 2009	West Coast (Gujarat, Maharashtra, Goa)
ENHANCED SURVEILLANCE	22 – 27 November 2009	East Coast
RAKSHAK	16 – 19 December 2009	A & N Region (Off Outrum Island)
SATARK	26 December 2009 – 5 January 2010	NW Coast (Gujarat Coast)
SURAKSHA 17/09	27– 28 December 2009	West Coast (off Mumbai)
SURAKSHA 18/09	29 December 2009 – 2 January 2010	West Coast

Coast Guard Station Gandhinagar: Coast Guard Regional Headquarters (North-West) was inaugurated and co-located station ICGS Gandhinagar was commissioned on December 16, 2009.

6.13 **Launching of OPVs:** ICGS Vijit and ICGS Vaibhav, were launched on November 4 and December 5, 2009 respectively. The vessels are being constructed by M/s GSL Goa.

6.14 **Activation of Advance Light Helicoper Squadron (ALH):** 850 Sqn ALH was activated at Porbandar on June 10, 2009.

6.15 **Activation of Veraval:** Indian Coast Guard Station at Veraval has been activated on December 17, 2009.

INTERNATIONAL COOPERATION

6.16. **Cooperation between ICG & USCG:** Delegation led by Admiral Thad W Allen, Commandant of the United States Coast Guard visited India between April 26-27, 2009 for a high level meeting with the key leadership of the Indian Coast Guard.

6.17 **Cooperation between ICG & KCG:** The 4th High Level Meeting between the Indian Coast Guard and the Korea Coast Guard was held from September 21-24, 2009 in Seoul. This meeting was part of bilateral cooperation arrangements in the MoU on anti-piracy and search and rescue at sea operations between the ICG and Korea Coast Guard (KCG).

6.18 **Cooperation between ICG & JCG:** The high level meeting between the heads of Indian and Japan Coast Guards was held on the sidelines of the 5th Heads of Asian Coast Guard Agencies Meeting (HACGAM) at Bali, Indonesia on July 27, 2009.

6.19 **Cooperation with Maldives:** The biennial training exercise code name 'DOSTI-X' between the Indian Coast Guard and the Maldives National Defence Force (Coast Guard) was conducted from November 30 to December 4, 2009 at/ off Male. ICGS Sangram with one integral Helicopter, ICGS Kasturba Gandhi and one Dornier ex 747 Sqn (CG) participated in the exercise.

6.20 **International Maritime Defence Exhibition (IMDEX) – Singapore:** The IMDEX Asia is a forum to showcase the defence production capabilities. An indigenously built Indian Coast Guard AOPV, ICGS Sankalp with integral helicopter participated in the IMDEX Asia 2009 at Singapore.

6.21 **Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP):** The Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP) Information Sharing Centre (ISC) is established at Singapore w.e.f. December 9, 2006 and is responsible to carry out information exchange between Focal Points of fourteen countries and ReCAAP. The 3rd Annual Meeting of the ReCAAP ISC Governing Council was held at Singapore from July 8 to 9, 2009 which was attended the by the Director General Indian Coast Guard.

3rd Governing Council Meeting at ReCAAP ISC, Singapore

6.22 **National SAR Board Meeting:** The Eighth National Search and Rescue Board meeting was held at Chennai on April 22, 2009. MV CSK Fortune was presented with 'SAR Award' and 'ESSAR SAR Award' for 2008 was presented to Coast Guard ship Varad.

Coast Guard Ships and Aircraft undertake various Search and Rescue Operations and during the year saved 325 lives at sea.

6.23 **Operations:** Indian Coast Guard ships and aircraft are always ready for providing assistance to the crew/ vessels when in distress at sea and assist the customs and other authorities in anti-smuggling operations. The vast sea area of 2.01 million sq. kms in our Exclusive Economic Zones is regularly kept under vigil to keep the poachers at bay. The details of major operations of ICG are shown in table 6.3.

Table 6.3

Sl. No.		Since Inception	From January 1 –December 21, 2009
1.	Contraband seized	508.609	--
2.	Poaching trawler apprehension	1151 boats 10550 crew	142 boats 777 crew
3.	Smuggling vessels apprehension	120 boats 736 crew	----
4.	Search and Rescue (SAR) Mission	1294	96
5.	Search and Rescue (SAR) Sorties	2467	150
6.	Live saved	4781	325
7.	Oil spill incident responded	70	03
8.	Oil spill incident out of country	01	--

7

DEFENCE PRODUCTION

Frigate

The Department of Defence Production deals with the indigenization, development and production of defence equipment both in the public and private sectors

7.1 The Department of Defence Production deals with the indigenization, development and production of defence equipment both in the public and private sectors. The Department has Defence Public Sector Undertakings and ordnance factories with a wide-ranging production infrastructure. The products include aircraft and helicopters, warships, submarines, heavy vehicles and earthmovers, guns, missiles, ammunition, a variety of communication and electronic devices and components for the defence sector, and alloys and special purpose steel.

7.2 Since Independence, the defence production sector has been developing steadily, with the objective of achieving self-reliance. Industries in this sector have been continually striving to update and improve their manufacturing capacity by developing and accessing new technology and through joint ventures with leading companies in different fields. They have also been focusing on indigenization of Defence products and platforms.

7.3 Defence equipment today is very technology intensive and demands high levels of precision and quality control during manufacture. The Directorate Generals of Quality Assurance and Aeronautical Quality Assurance and the Directorate of Standardization have been set up to ensure quality levels. Quality assurance is a high priority area and continual improvements in the standards and testing facilities is a requirement. The need to develop specifications jointly agreed to by the armed forces is addressed by the Directorate of Standardization.

7.4 The following are the major organizations with the Department of Defence Production:

- Ordnance Factory Board
- Hindustan Aeronautics Limited
- Bharat Electronics Limited
- BEML Limited
- Mazagon Dock Limited
- Goa Shipyard Limited
- Garden Reach Shipbuilders & Engineers Ltd
- Hindustan Shipyard Limited (HSL)
- Bharat Dynamics Limited
- Mishra Dhatu Nigam Limited
- Directorate General of Quality Assurance

- Directorate General of Aeronautical Quality Assurance
- Directorate of Standardisation
- Defence Exhibition Organisation

7.5 The Government has transferred Hindustan Shipyard Limited(HSL) from the Ministry of Shipping to the Department of Defence Production by way of amendment of the Allocation of Business Rules on February 23, 2010. The transfer of HSL to the Department will strengthen the naval line of defence by utilizing the capacity and capability of the yard for building warships and submarines for the Indian Navy.

SALES

7.6 The total value of sales issues by Ordnance Factories and Defence Public Sector Undertakings during the last three years, is as follows:-

Year	Ordnance Factories Total Sales	Public Sector Undertakings Total Sales	(Rupees in Cr.) Grand Total
2007-08	6937.81	16740.25	23678.06
2008-09	7229.31	20,007.83	27237.14
2009-2010 upto November, 2009	5758.00	8700.06	14458.06

Defence Public Sector Undertakings and Ordnance Factories have exported items worth Rs. 332 Cr. during the year 2009-10 (upto December, 2009)

PRIVATE SECTOR PARTICIPATION

7.7 To achieve self-reliance in the Defence sector, continuous efforts are being made to indigenize Defence equipment wherever technologically feasible and economically viable.

7.8 In May, 2001, the Defence Industry sector, which was hitherto reserved for the public sector, was opened upto 100% for Indian private sector participation, with Foreign Direct Investment (FDI) permitted upto 26%, both subject to licensing. Department of Industrial Policy and Promotion (DIPP) has notified detailed guidelines for licensing production of arms and ammunition.

7.9 A Standing Committee has been constituted in the Department of Defence Production under the chairmanship of Joint Secretary (ES) to consider all applications, for grant of Industrial License for the manufacture of arms and armaments, received from DIPP and to communicate the recommendation of the Ministry of Defence to that Department.

7.10 The Committee also considers all matters relating to Production of Defence equipment by licensed companies viz. applications for self-certification, permission for export of products manufactured under license, as well as cases for cancellation of license due to breach of licensing conditions or security provisions etc. DIPP has, so far, issued 127 Letters of Intents (LOIs)/Industrial Licenses (ILs) to companies for manufacture

of a wide range of Defence equipment on the recommendation of the Ministry.

7.11 Seven joint ventures have been formed so far between Indian and foreign companies and Industrial Licenses (ILs) have been issued for manufacture of various Defence equipment. The policy of offsets and offsets banking will also provide opportunities for private sector participation in the defence sector.

ORDNANCE FACTORIES

7.12 Ordnance Factories are an integrated organisation for indigenous production of defence hardware and equipment. Indian Ordnance Factories Organization has several old as well as state-of-the-art Factories. The first Ordnance Factory was established in 1801 at Cossipore, near Kolkata, and the 40th Factory is being set up with modern technology at Nalanda, Bihar for production of Bi-modular Charges. The 41st Factory is being set up at Korwa in U.P. for production of Carbines. The Ordnance Factories are geographically distributed all over the country at different locations with 1,01,445 employees.

7.13 The factories have continuously upgraded products and manufacturing technologies to meet the Defence Forces requirements. The Ordnance Factories produce a wide range of products including the following:

(A) Armoured vehicles

i) Arjun Tanks, T-90 Tanks, Ajeya Tanks

ii) Command Version and Variants

iii) Sarath Infantry Combat Vehicles (ICV)

iv) Command Version & Variants

v) Army Transport Vehicles

(B) Weapons; including

i) Tank Guns & Anti Tank Guns

ii) Field & Artillery Guns

iii) Mortars, Anti Aircraft & Air Rocket Launchers

iv) Naval Gun Systems

v) Rifles, Machine guns, Pistols

(C) Ammunition; including

i) Tank and Anti Tank ammunition

ii) Rocket & Missile Warheads

iii) Mortar Bombs

iv) Grenades

v) Bullets for rifles/Machine guns etc.

(D) Troop Comfort Items

i) Uniforms & Clothing (Winter & Summer)

ii) High Altitude & Combat Clothing

iii) Tents of various types

(E) Miscellaneous

i) Design & Manufacture of Special Purpose Machines for Ammunition & Weapon Stores, Optical Instruments, Opto-Electronic Devices

ii) Fire Control Instruments for Armoured Vehicles

iii) Infantry & Artillery Systems

(F) Spares

i) A large number of spares for Equipment, Weapons, Tanks, Infantry Combat Vehicles, etc. are manufactured and supplied.

7.14 All Ordnance Factories are ISO 9001: 2000 certified, 10 factories have 2004 Certification, and 58 laboratories in 33 Factories are National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited.

7.15 A roadmap for total quality management (TQM) has been designed after rigours brainstorming. This quality document encompasses all activities like design to purchase, storage, process, quality control, material handling, dispatch and customer satisfaction.

7.16 Upgraded Quality Management system is in implementation in various Ordnance Factories and accordingly Quality Management Committees (QMC) and Quality Assurance Sub committees (QASE) have been formed in all Factories. All Factories have also identified products for quality Upgradation.

7.17 Some of the achievements are as follows: (i) Chaff Launcher "Kavach (Mod II)" was developed by in-house R&D.

(ii) Anti Air Craft Sight (PZU-7) at Opto Electronics Factory, Dehradun has been fully indigenized upto the component level. The Sight was successfully trial-evaluated by the user.

(iii) Day-cum-Thermal Imager Sight for Commander of Tank T-72 has been developed by Opto Electronics Factory, Dehradun. After successful Trial the Sight has been accepted by the User

(iv) High Explosive Factory, Khadki, Pune has been awarded "Maharashtra Safety Award, 2007" by National Safety Council, Maharashtra Chapter, for the second consecutive year.

(v) DRDO projects being developed at different Ordnance Factories are- Bridge Layer Tank (BLT) on T 72, Modernisation of NBC system of BMP 2 & 2K, Nuclear, Biological & Chemical (NBC) Recce vehicle etc.

(vi) Major products developed through in-house R&D are 155 mm/45 Calibre Bofors Up-gradation, 40 mm Multi Grenade Launcher (MGL) Weapon and Ammunition, 30 mm HE Rudra Grenade for AGS- 17, Aim Point, Red Dot Sight for small arms etc.

(vii) As per projection of the XIth plan, total anticipated for investment on modernization of Plant & Machinery was Rs. 132.32 Cr. which was subsequently revised to Rs. 223.94 Cr.

(viii) During the year 2008-09, OFB achieved sales of Rs. 7229.31 Cr.

(ix) OFB has achieved export of Rs. 38 Cr. for the year 2008-09 and has bagged orders worth Rs. 122 Cr. up to November 2009.

HINDUSTAN AERONAUTICS LIMITED (HAL)

7.18 Hindustan Aeronautics Limited (HAL), a "Navratna" Defence Public Sector Undertaking, has 20 Production Divisions and 10 R&D Centres spread across the country. The Company is committed to achieve strategic self reliance in the Aerospace Sector and provide full support to the Defence Services. HAL has witnessed a steady growth over the years and has grown from a turnover of Rs 5342 Cr. in 2005-06 to a turnover of Rs. 10373.38 Cr. in 2008-09. HAL is poised to achieve a turnover of Rs. 10500 Cr. during the year 2009-10.

7.19 HAL's core business activities comprise of design, development and production of fixed wing aircraft (Fighters, Trainers & Transport) and Helicopters, their avionics & accessories, life cycle customer support through Maintenance, Repair & Overhaul (MRO) of aerospace products. The Company also manufactures Structures and Integrated systems for space launch vehicles and satellites.

7.20 Around 1,500 design engineers are working in its 10 R&D Centres on new aircraft/helicopter design, aircraft upgrades, small engine design and on development of various accessories and avionics systems. The Company has developed 11 types of fixed wing aircraft and one helicopter with variants.

7.21 The Company has 34,100 employees working in 20 manufacturing divisions spread all over India.

7.22 HAL is currently producing SU-30MKI, HAWK, Light Combat Aircraft, Intermediate Jet Trainer, Advance Light Helicopter (ALH), Dornier-228S transport aircraft and Cheetal Helicopters.

7.23 HAL in the recent years has consolidated & scaled up the production of Su-30 MKI, Hawk, Dhruv (ALH), Tejas (LCA) & the Intermediate Jet Trainer (IJT) and has undertaken upgrade programs on Mirage 2000, Su-30 MKI, Mi-17 and DARIN III upgrade on Jaguar aircraft.

7.24 Limited series production for the Light Combat Aircraft (LCA) and the Intermediate Jet Trainer (IJT) has been launched. Design work on the Light Combat Helicopter (LCH) is progressing and the first prototype has been produced.

SU-30MKI

Light Combat Aircraft

Jaguar Upgrade (DARIN-III)

ALH – WSI

AJT-HAWK

7.25 The new design & development projects being launched are Multi-role Transport Aircraft, Turboprop Trainer, Fifth Generation Fighter Aircraft, Light Utility Helicopter, Medium Lift Helicopter and Unmanned Ariel Vehicles (UAVs). These projects have been identified to meet the future requirements of our defence services.

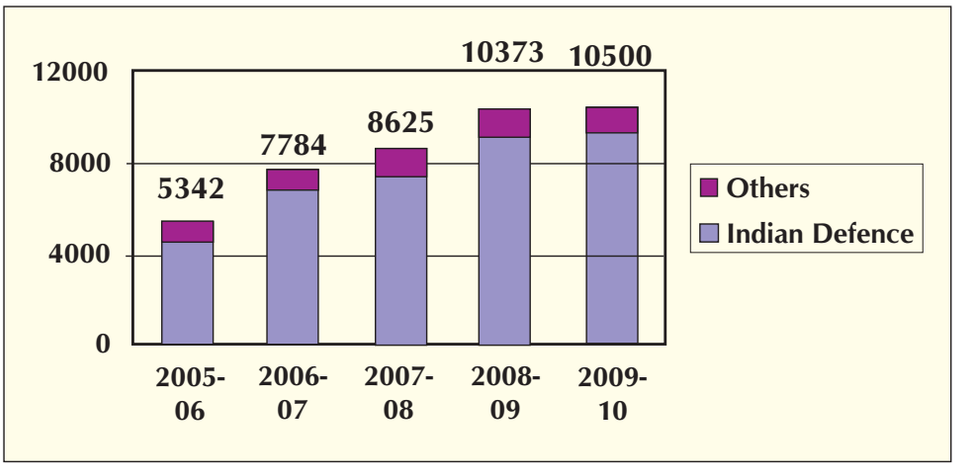
7.26 A dedicated Aerospace Division has been created for the launch vehicle structures of our space programs. Structures and heat shields for the GSLV, PSLV, INSAT are manufactured in this plant located in Bangalore. Special high-tech facilities have been established to take up production of thin-walled huge aluminium alloy structures.

7.27 The Company is consistently paying dividend. The highest Dividend of Rs. 407.12 Cr. was paid for the year 2008-09.

7.28 The Divisions of HAL have implemented quality assurance systems of ISO 9001–2000 standard. Seven Divisions have also implemented the Aerospace Quality Management System requirements as per AS:9100 standard. Four Divisions have obtained NADCAP certification (National Aerospace Defence Contractors Accreditation Programme – USA) for special processes such as Non Destructive Testing (NDT), heat treatment, welding, etc. Sixteen Divisions have implemented requirements of ISO 14001 – 2004 EMS standard and obtained certification.

7.29 Some of HAL's achievements are as follows:

(i) HAL's primary customers are the Indian Defence Forces with 90 % of its Sales to them. During 2008-09, the Company achieved highest Sales of Rs.10,373 Cr..



(ii) The first Hawk Advanced Jet Trainer produced from raw material category was test flown in the current year.

(iii) First flight of Trainer Prototype of LCA was successfully carried out on November 26, 2009.

(iv) The first Technology Demonstrator of the Light Combat Helicopter (LCH) was rolled out in February 2010.

(v) The new military variant of ALH (Mk. III) with Shakti engine, systems like electronic warfare sensors, counter measure systems was produced for IAF and Army.

(vi) Intermediate Jet Trainer (IJT) designed to replace the long serving Kiran trainer aircraft with the IAF successfully completed its flight trials.

(vii) Order from Mauritius for supply of one ALH has been completed.

(viii) HAL has achieved export of Rs. 437 Cr. for the financial year 2008-09. Export supplies of Rs 155.95 Cr. were made by the end of February 2010. This includes helicopters/engines, aero structures, forgings, castings & rolled rings, design services and spares & services.

Export supplies of Rs 155.95 Cr. were made by HAL by the end of February 2010.

BHARAT ELECTRONICS LIMITED (BEL)

7.30 Bharat Electronics Limited (BEL) was established at Bangalore by the Government in the year 1954 to meet the emerging needs of the Indian Defence Services. The company has developed core competencies in areas of i) Radars, ii) Sonars iii) Communication iv) Electronic Warfare System iv) Electro Optics, and iv) Tank Electronics.

7.31 About 85% turnover of the company comes from these business segments. Apart from these areas, BEL manufactures large variety of components like electron tubes, semiconductor devices, solar cells etc. The company has one subsidiary (BEL Optronic Devices Limited) and two joint venture companies (GE BE Limited

and BEL-Multitone Limited). BEL has nine operating units spread all over the country.

7.32 Some of the major supplies made during 2009-10 for defence services are- Frequency Hopping Radio, VPS MK-III- communication set, Radio Relay "F"- Low Band, Integrated observation Equipment, Kite – ESM System, Radar Warning Receiver- Tarang, Digital Mobile Radio Relay, Indra Radar, Central Acquisition Radar (CAR), Surveillance Radar Element (SRE), Radar- Rawl 02 MKIII.

The turnover for BEL has steadily grown over for last 3 years from Rs 3953 Cr in the year 2006 to Rs 4624 Cr in 2008-09.

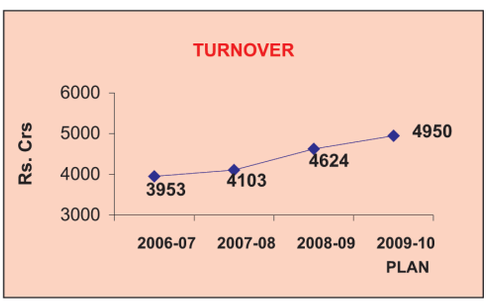
7.33 BEL is spending about 4 to 5% of its annual turnover, every year, on R&D. R&D expenditure of BEL has grown from Rs 140.00 Cr. in 2006-07 to Rs. 243.00 Cr. in 2008-10. Some of the major R&D programmes are Weapon Locating Radar, Battle Field Surveillance System, 3D TCR, HHTI with Laser Range Finder, Gap Measuring Device and Ground Based Elint.

7.34 A Corporate Quality Group – named Total Organizational Quality Enhancement (TORQUE) - has been set up to oversee all activities relating to enhancement of quality in the company. In order to disseminate the Quality concepts & practices acquired over the years, BEL has established a dedicated Bharat Electronics Quality Institute (BEQI) during the year 1999-2000. The company has adopted Six Sigma methodology which is being followed through out the company and 224 projects were completed during 2008-09, in the areas of Process Improvement, Cycle time reduction, yield improvements, etc. All the Divisions/SBUs/Units of the company are certified for ISO 9001:2000 (Quality Management Systems) & ISO 14001:2004 (Environment Systems). All the Units / SBUs are certified to ISO 14001:2004 and comply with all safety, health and regulatory requirements envisaged by the standard.

7.35 Some of BEL's achievements are as follows:

i) The turnover for BEL has steadily grown over for last 3 years from Rs 3953 Cr in the year 2006 to Rs 4624 Cr in 2008-09.

ii) By way of innovations BEL has achieved an annual cost reduction of around 4 - 5% of its sales.



INDRA-RADAR

CENTRAL ACQUISITION RADAR (CAR)

SURVEILLANCE RADAR ELEMENT (SRE)

RADAR-RAWL 02 MkIII

iii) BEL received the order for supply of two squadrons of Akash Missiles (Rs. 1222 Cr.) to Indian Air force. This is the first ever contract from Defence services for an indigenous tactical weapon system of this complexity and class.

iv) SHAKTI, the Artillery Combat Command & Control System (ACCCS) was dedicated to the Indian Army on June 12, 2009.

v) Smt. Jothi Lakshmi, of Bangalore complex working in Naval Strategic Business Unit has been awarded "Shram Bhushan" for the year 2007. The award carries a cash prize of Rs.1 Lakh and a 'Sanad'.

vi) BEL achieved an export of US $ 17.77 Million in the year 2008-09 and has achieved an export turnover of 16.55 US $ Million upto III Qtr of 2009-10. Some of the products exported during 2009-10 are Radar Warning Receiver, Hand held thermal imager Enhanced tactical Computer, Data Display Unit, Vacuum Interrupter etc.

BEML LIMITED

7.36 BEML, established in 1964, has its Corporate HQ and Central Marketing Division at Bangalore and 3 manufacturing complexes with 8 production units. The Company also owns a subsidiary – Vignyan Industries which manufactures steel castings. The company's International Business covers over 55 countries in Asia, Africa, Europe and Latin America and recently opened its overseas offices in Malaysia, Brazil, China and Indonesia.

7.37 BEML Ltd is a Mini-Ratna (Category – I) Company, engaged in the design, manufacturing, marketing and after sales support of a wide range of Mining & construction equipment such as Bulldozers, Excavators, Dump Trucks, Loaders, Walking Draglines, Mining Shovels, Motor Graders, Cranes etc.,

7.38 BEML manufactures and supplies a whole gamut of defence and railway products such as High Mobility Trucks (of various combinations like 12X12, 10X10, 8x8, 6x6, 4x4 etc) Tank Transportation Trailers, Heavy Recovery Vehicles (HRV), Armoured Recovery Vehicles (ARV), Mechanical and Pontoon Bridge Systems for quick deployment in forward areas, Mine Ploughs, Military Rail Coaches and Military wagons, Crash Fire Tender, Aircraft Weapon Loading Trolley, Aircraft Towing Tractor etc., BEML is a regular supplier of Rail Coaches to Indian Railways and is now supplying Metro Rail Coaches also.

7.39 For the current financial year, 4% of sales turnover has been earmarked for Research and Development project management. New defence products developed during 2009-10 are Snow Cutter, Air Craft Towing Tractor- 18T and Air Craft Towing Tractor – 28T.

7.40 The Company also supports India's missile programme by supplying equipment

Short Span Bridge System

Multibarrel Rocket Launcher (Pinaka)

such as Missile Carrier, Missile Launcher, Oxydiser Carrier, Warhead Carrier and Mast Systems for carrying Surveillance Radars. BEML actively promotes small group activities to encourage 'Quality Culture' at all levels and to bring in continual improvements in product and process quality. November 2009 was celebrated as "Quality Month" in all divisions. Various activities like talks, seminars, competitions etc. on Quality related subjects were organized during the celebrations. As part of quality improvement initiative "Six Sigma" drive has been initiated in all Divisions. 75 'Six Sigma' projects have been successfully completed.

7.41 Some of BEML's achievements are as follows:

i) During 2008-09 the Company achieved highest Sales of Rs 3013.47 Cr. as compared to Rs 2205.84 Cr. in the year 2005-06.

ii) In Rail & Metro Business, order for supply of 150. Metro Coaches for Bangalore Metro Rail Corporation valued at Rs.1670 Cr. was bagged, beating stiff global competition.

iii) In Mining & Construction Business, the company booked orders for supply of the biggest mining equipment, to be manufactured for the first time in the country, the Walking Dragline of 33 cum capacity valued at more than Rs 180 Cr..

iv) Raksha Mantri's Award for Excellence-'Institutional Award for Best Performance in Exports for the year 2007-08' was received on November 6, 2009.

v) SCOPE Award was received from Prime Minister for Excellence and Outstanding Contribution to the Public Sector Management – Medium PSE Category for the year 2006-07 on October 15, 2009.

During 2008-09 BEML achieved highest Sales of Rs 3013.47 Cr. as compared to Rs 2205.84 Cr. in the year 2005-06.

vi) During the year 2008-09, the company posted record export turnover of Rs 304.78 Cr., an increase of over 52 % over the last year. The company is trying

to extend its global reach by forays into Indonesia, Thailand, Malawi, Honduras, Angola, Saudi Arabia, Oman, Zimbabwe, West Africa and Yemen during the last two years.

MAZAGON DOCK LIMITED (MDL)

7.42 Mazagon Dock Limited (MDL) was set up as a Public Sector Undertaking in 1960. MDL underwent phased expansion/ development programmes to emerge today as a Premier Ship Builder to the Nation capable of building warships, merchant ships and submarines.

7.43 At present, MDL is building six frontline warships under two major shipbuilding projects and six submarines under a separate project. Stealth Frigates and Missile Destroyers and Submarines of Scorpene class are being built. Also, contract has been signed for Midlife Update of two SSK Class submarines that were built by MDL in the nineties.

7.44 In the civil sector one dredger is being built for the Dredging Corporation of India Limited (DCIL). The order for dredger was obtained against global tender. MDL is also building two Multi-purpose Support Vessels for export to a Singapore based company.

7.45 Mazagon Dock Limited is engaged in creating additional facilities through the "Mazdock Modernisation Project (MMP)". This includes creation of facilities like Wet Basin, Modular Workshop, Heavy Duty Goliath crane, Cradle Shop and Stores.

At present, MDL is building six frontline warships under two major shipbuilding projects and six submarines under a separate project.

7.46 22 Quality Circle Teams of MDL participated in Chapter Convention on Quality Circle, 2009 held on September 23, 2009 at Mumbai and won many awards. SMS Quality Circle Team of Sheet Metal Shop (SB Division) participated in international Convention on Quality Circle (ICQCC-09) at CEBU, Philippines on October 24, 2009 and won the Gold Award.

GOA SHIPYARD LIMITED(GSL)

7.47 Goa Shipyard Ltd (GSL), a Mini Ratna Category – I Company is one of the leading shipyards, building medium- sized sophisticated vessels for Indian Navy, Indian Coat Guard and others. The Company has diversified into construction of Damage Control Simulator (DCS), Survival at Sea Training Facility (SSTF), marketing of Stern Gear system and building Glass Reinforced Plastic (GRP) boats and constructing Shore Based Test Facility (SBTF). Further diversification to Fire Fighting Training Unit (FFTU) and Water Survival Training Facility (WSTF) is in progress.

7.48 The product range of the shipyard comprises 105m Advanced Offshore Patrol Vessels (AOPV), 105m Naval Offshore Patrol Vessels (NOPV), 90m Offshore Patrol Vessels (90m OPV),

50m Fast Patrol Vessels (FPV), Missile Boats (MB), Hydrographic Survey Vessels (HSV), Extra Fast Attack Crafts (XFAC), Sail Training Ship (STS), Landing Craft Utility (LCU), Seaward Defence Boats (SDB), Torpedo Recovery Vessels (TRV), Passenger Vessels (PV), Tugs etc.

7.49 Goa Shipyard has commenced the implementation of planned modernisation programme. After full implementation of the modernisation plan the capacity of the yard is expected to enhance by nearly three fold. The modernisation plan includes a modern steel fabrication facility, ship lift and transfer system, dry land berths for ship construction and repairs, modern outfit shops, GRP facility and two additional jetties. In addition, yard will have improved material storage & handling facility, revamped mechanical & electrical services and utilities. The Modernisation Plan at a total estimated outlay of Rs. 792 Cr. is planned to be executed in four phases.

7.50 Some of GSL's achievements are as follows:

GSL's ship building time for Advanced Offshore Petrol Vessels (AOPV) brought down from 66.6 months in nineties to 41 months now, reduction of 37%.

i) GSL's ship building time for Advanced Offshore Petrol Vessels (AOPV) brought down from 66.6 months in nineties to 41 months now, reduction of 37%. Ships delivered on fixed price with no time & cost overruns.

ii) Second 105m AOPV, the largest in-house designed delivered to Indian Coast Guard and commissioned by Raksha Mantri.

iii) Till end November 2009, 30 GRP boats (15 - 12T & 15 - 5T) have been delivered to various state marine police for MHA.

iv) Second 90m OPV, Yard 1204, "VIJIT" was launched at NSRY, Karwar on November 04, 2009.

v) Second 105m Naval OPV, Yard 1195 "SUNAYNA" was launched at GSL on November 14, 2009.

vi) Third 90m OPV, Yard 1205, "VAIBHAV" was launched at Bharuch, Gujarat on December 05, 2009.

vii) Goa Shipyard Limited bagged the "Performance Excellence Award" by Indian Institute of Industrial Engineers for the year 2008.

(viii) GSL bagged order for design, manufacture and supply of 03 Harbour tug boats from Royal Navy of Oman. The vessels have been completed and the Interim Acceptance of all the three tugs took place on October 10, 2009.

GARDEN REACH SHIPBUILDERS & ENGINEERS LTD. (GRSE), KOLKATA

7.51 Garden Reach Shipbuilders & Engineers Ltd. (GRSE), having Mini Ratna Category I Status, is recognized as a leading

Shipbuilding Yard and manufacturer of high value, high technology, complex engineering items. The Company is a leading International shipbuilder, ship repairer and manufacturer of ship borne machinery and systems. Overall shipbuilding constitutes 85% of Value of Production while the Engineering & Engine Divisions contribute the balance 15%.

7.52 GRSE has gained expertise in construction of Warships for the Indian Navy, Ships and Hovercrafts for the Coast Guard, Fast Interceptor Boats (FIB) for Ministry of Home Affairs and Passenger-cum-Ferry Vehicles for Andaman & Nicobar Administration. Apart from shipbuilding and ship repair, GRSE is one of the very few versatile shipyards having its own Engineering and Engine Divisions.

7.53 The Engineering Division undertakes manufacture of Bailey Bridges (Single/ Double Lane, Suspension type etc), deck machinery items for fitment on board ships (i.e Windlass, Capstan, Winches, Boat Davits, Telescopic Hangers for Helicopter, Helicopter Traversing System). The Engine Division undertakes assembly testing and overhaul of a range of Diesel Engines required in Marine Propulsion and Power Generation.

Corvette

7.54 GRSE has embarked upon a modernisation plan towards upgradation of its infrastructure and technology in phases. Presently, modernisation at an estimated cost of Rs 529.81 Cr. is aimed at creating suitable infrastructure that would enable implementation of Integrated Modular Construction techniques for construction of ships.

7.55 GRSE is in the process of implementing SAP ERP ECC 6 and Mail Messaging, Work Flow and DMS solution across all Divisions and Units of GRSE. Previously, GRSE had implemented SAP ERP R/3 4.6 in Ship Division covering Modules like SD, PS, PP and MM and that is being upgraded now to ECC 6.0.

7.56 To ensure a pollution free environment within and outside the company premises, an effluent treatment plant of 2.0 Cu Mtrs per day is in operation round the clock to treat the automobile waste. Battery operated trucks have been introduced to reduce noise and air pollution.

7.57 Some of the achievements of GRSE are as follows:

i) The 3rd ship of the LST(L) Class of ship, was commissioned as INS Airavat on May 19, 2009.

ii) Two Water Jet Fast attack Craft vessel (INS Kora Divh & INS Cheriyam)

were delivered to the Indian Navy. In addition Keel of three water jet fast attack crafts were simultaneously laid on June 30, 2009 at Raja Bagan Dockyard. The simultaneous keel laying of two or more ships, is part of the build strategies adopted by GRSE to ensure faster delivery of ships and effective utilisation of capacity.

iii) On November 06, 2009, GRSE received RM's Award of Excellence in Group/ Individual Award Category for the year 2007-08 towards Indigenization of 12 types of Centrifugal Pumps of Russian Origin for Warships/ Submarines of Indian Navy.

iv) Orders for 8 IPVs (Inshore Patrol Vessels) were received from Coast Guard early April 2009.

v) The Contract for 305 Ton and 4812 Ton Interceptor Boats was signed with the Ministry of Home Affairs. Delivery of 22 Boats (5Ton) and 12 Boats (12Ton) have been made between April 10, 2009 to February 28, 2010. A contract for 10 Fast Interceptor Boats (12Ton) was signed with Andaman & Nicober Island Administration on July 29, 2009.

HINDUSTAN SHIPYARD LIMITED

7.58 Hindustan Shipyard Limited was set up in 1942 by the Scindia Steam Navigation Company. It was nationalised in 1961. The shipyard has built 162 ships of various types in its seven decades of existence. Size and capacity wise it is the largest shipyard with the department. It has one covered building dock and three slipways for construction of large vessels up to 80,000 DWT.

7.59 The Shipyard originally with the Ministry of Shipping has been transferred to the Department of Defence Production on February 22, 2010. The shipyard has designed 40 vessels in house and has a collaboration with a Russian Yard for submarine repairs. The Shipyard has independent repair-facility for repair of ships, dredgers & oil rigs.

7.60 There are 3400 employees and its turnover was Rs. 498 Cr. in the year 2008-09 and its turnover is expected to increase to Rs. 530 Cr. in 2009-10

7.61 The shipyard is building six vessels of 53,000 DWT for an Indian owner Good Earth Maritime Ltd and is also building five in shore patrol vessels for the Coast Guard.

7.62 The financial restructuring proposal of Rs. 1192 Cr. is under consideration of the Government to revitalise the Shipyard which at present has a negative net worth of Rs. 685.44 Cr.

BHARAT DYNAMICS LIMITED (BDL)

7.63 Bharat Dynamics Limited was established in 1970 for manufacture of Guided Missiles. It possesses the capability to produce state-of-the-art missiles. The Company has three units, in Andhra

Pradesh which are located at Kanchanbagh (Hyderabad), Bhanur (Medak) and Visakhapatnam (under construction).

7.64 Besides producing indigenously developed Prithvi (tactical battlefield surface to surface) & Akash (Long range surface to Air) missile systems under the IGMDP, BDL is engaged in the production of Konkurs – M and Invar (3UBK-20) Anti Tank Guided Missiles (ATGMs) in collaboration with Russia and Milan 2-T ATGM in collaboration with MBDA, France. In house developed CMDS(Counter Measure Dispensing System) has been accepted by the Indian Air Force. BDL is presently working for adaptation of the system to a variety of Aircraft Platforms and also developing RF controlled Anti Tank Guided Missile (ATGM)

BDL achieved sales of Rs 465 Cr. during 2008-09 and the target is to achieve Rs. 665 Cr. during 2009-10.

7.65 The Company has ventured into productionising underwater weapon systems such as Advanced Light Weight Torpedo (TAL), Heavy Weight Torpedo (Varunastra) and Light Weight Mines in Concurrent Engineering mode in association with NSTL, Visakhapatnam.

7.66 The Company has instituted quality systems to International Standards i.e. ISO 9001:2008 in all it's manufacturing divisions. The Company has also implemented Quality System Certification to International Standards in critical areas like Information Technology and Design & Engineering.

7.67 As part of its effort for cleaner industrial practices, employees have been trained on lead-free soldering as part of Restriction of Hazardous Substances (ROHS).

7.68 Some of the achievements of BDL are as follows:

i) The Company achieved sales of Rs 465 Cr. during 2008-09 and the target is to achieve Rs. 665 Cr. during 2009-10.

ii) The Company implemented various economy measures for efficient performance and to reduce the cost of production without sacrificing the quality. Inventory of raw materials, work-in-progress and spare parts are maintained at optimum levels. Energy

Prithvi

Akash

consumption, fixed and variable overheads and contingency expenditure is being continuously reviewed and pruned to the barest minimum.

iii) Cost reduction has been identified as a major thrust area. Accordingly, an Apex Committee and Divisional Committees have been formed to monitor the cost reduction measures in BDL. These Committees meet periodically to review the progress of the cost reduction activities. e-Procurement, e-auction and energy saving measures have resulted in huge savings.

MISHRA DHATU NIGAM LIMITED(MIDHANI)

7.69 Mishra Dhatu Nigam Limited (MIDHANI) was incorporated as a Public Sector Undertaking under the Administrative Control of the Government in 1973 to achieve self-reliance in the manufacture of Superalloys, Titanium alloys and Special Purpose Steels required for strategic sectors such as Aeronautics, Space, Armaments, Atomic Energy, Navy. Special products such as Molybdenum wires & plates, Titanium and Stainless Steel tubes, alloys for electrical and electronic application such as Soft Magnetic alloys, Controlled expansion alloys and Resistance alloys also form part of the production.

7.70 Significant contributions were made during the last three decades in developing, productionising and supplying high performance metals and alloys to programmes of national importance in Defence, Space, Atomic Energy. High-technology materials needed in Light Combat Aircraft and MIG Aircraft engines; Rocket motor casings for Space , Missile programmes and special steels for Nuclear reactors were manufactured and supplied.

7.71 Midhani manufactured more than 100 grades through its in-house R&D efforts that constitute major part of the current turnover. Through generation of an in-depth understanding of "Processing - Structure - Performance" interrelationships, MIDHANI has contributed to solving several daunting technological problems including manufacture of Maraging Steel, surpassing International standards.

7.72 Emerging towards being a state of the art facility the up gradation and modernization program is in progress with new facilities (6.5 T vacuum induction melting furnace, 10 T vacuum arc melting furnace, 6000T forge press, 10 T electro slag remelting furnace, band saw cutting machine 800 dia, thread rolling machine, universal testing machine, NH22-2000 lathe machine) being commissioned and installed.

7.73 Significant R&D achievements during 2009-10 include - development of Nickel base superalloy SNi 738 for land Gas turbine application, development of Superni 706 M for liquid hydrogen Turbine application, development of low activation Ferritic Martensitic Steel for Nuclear application, development of Borated Stainless Steel for nuclear application and development of

Maraging Steel 400 for nuclear application.

7.74 MIDHANI's Quality Control & Assurance processes & procedures are time tested and has won the confidence of its Customers. The following activities were undertaken during the year to uphold and maintain the Quality standards in MIDHANI:

MIDHANI has achieved highest Sales Turnover of Rs 309 Cr. during the year 2008-09 registering a growth of about 21 % compared to the previous year.

i) Conducting of ISO 9001: 2000 Surveillance Audit by Bureau of Indian Standards (BIS), Hyderabad, during December 2009.

ii) Procuring a state of the art Phased Array System that will enhance the ultrasonic defect evaluation and inspection capabilities.

iii) Conducting fluorescent magnetic particle inspection of MDN250 strips meant for critical applications to ensure freedom from injurious surface and sub surface defects.

7.75 Some of the achievements of MIDHANI are as follows:

i) MIDHANI has achieved highest Sales Turnover of Rs 309 Cr. during the year 2008-09 registering a growth of about 21 % compared to the previous year.

ii) For the first time, welding electrodes billets have been rolled outside Midhani from ingot to 125 mm square diameter, which has increased the yield by 5%.

iii) Midhani successfully developed and supplied 15-5T cold-rolled strips to Bharat Dynamic Limited.

iv) MIDHANI has developed and supplied rings of precipitation hardening steel 11-10 ph for Brahmos missile programme.

v) Softiron1 and Softmag78 cast ingots were directly hot rolled to 6.5 mm coil strips. Processing steps like forging and subsequent hot rolling at Midhani are avoided. This new process route is expected to reduce cost of production of these strips by 10-15%.

vi) A slab of 1300 mm width was forged at Midhani forge shop. Earlier it was limited to 1000 mm.

vii) Midhani had taken up the order of Special Stainless Plates of 4 to 18 mm thick, 1250 mm wide and 6000 mm long from Bhavini, Kalpakkam of the DAE sector. The normal manufacturing cycle was in itself almost 12 months. Midhani took up the challenge order on March 31, 2009 and completed sending the last consignment on August 11, 2009.

DIRECTORATE GENERAL OF QUALITY ASSURANCE

7.76 Directorate General of Quality Assurance (DGQA) is an Inter-Service Organisation responsible for Quality Assurance of all imported as well as indigenous defence stores and equipment for the Army, Navy (excluding Naval Armaments)

and common User items for the Air Force procured from Private Sector, Public Sector Undertakings and Ordnance Factories. It has, therefore, a vital role to play in defence preparedness of the country.

7.77 The DGQA Organisation is structured into ten Technical Directorates, each of which is responsible for a distinct range of equipment. The Technical Directorates are structured in three tiers for functional purposes, comprising their respective Headquarters, Controllerates and Field Quality Assurance Establishments. In addition, there are Proof Establishments in case of Armament Discipline for carrying out proof of weapons and ammunition. The tasks performed by the three tiers are complementary and integrated to achieve maximum efficiency. The essential functions performed by the Organisation are as follows :

a) Quality Assurance of Defence Stores & Equipment procured indigenously or ex-import.

b) Render technical advice to Service Headquarters and promote Standardization.

c) Investigation of defects and rendering advice on remedial measures to eliminate/ minimize defects.

d) Laying down procedures and guidelines for registration of defence vendors for army procurement agencies and vendor registration/management.

7.78 The value of stores Quality Assured during 2007-08, 2008-09 and 2009-10 (upto November, 2009) is given below :

Rs. in Cr.

YEAR	VALUE OF STORES
2007-2008	13,298.78
2008-2009	17,410.44
2009 -2010 (till November 30, 2009)	10,038.62

7.79 Regular interaction with Users at Command level and visit to Field Units is undertaken to obtain first-hand feedback and rendering technical advice.

7.80 DGQA organisation awards Self Certification status to Quality Conscious Firms / Manufacturers who have well established Quality Management Systems and have demonstrated consistent product quality during the execution of successive Defence Supply Orders. 59 Manufacturers have been awarded Self-Certification till date.

7.81 With the intention to move towards self-certification by the manufacturer, the responsibility for input material and stage/ inter stage inspection, vendor registration in respect of air armament stores manufactured at Ordnance Factories at Khamaria, Chanda, Ambajhari,Bhandara & Ammunition Factory, Kirkee has been transferred to respective Ordnance Factories. With the change of procedure for the armament stores, various establishments of DGQA will be carrying out inspection only at critical stages followed by proof, Quality audits, engineering observations, spot checks etc.

DIRECTORATE GENERAL OF AERONAUTICAL QUALITY ASSURANCE

7.82 The Directorate General of Aeronautical Quality Assurance is the Regulatory authority for Quality Assurance and final acceptance of military aircraft, its accessories and other aeronautical stores. DGAQA also has an important role in providing technical consultation to Ministry of Defence, Service HQrs, Defence PSUs and Trade sources during various stages of procurement and manufacture of Defence Aero stores.

The Directorate General of Aeronautical Quality Assurance is the Regulatory authority for Quality Assurance and final acceptance of military aircraft, its accessories and other aeronautical stores.

7.83 The organization is headed by a Director General based at New Delhi. One Additional Director General and two Deputy Director General are placed at New Delhi, Bangalore and Lucknow respectively with other technical officers from diverse discipline committed to meet the objectives, mission and responsibilities of the organization.

7.84 A Strategic Systems Quality Assurance Group (SSQAG) for providing QA coverage in respect of Strategic Missiles has been formed.

7.85 During the year 2009-10 (upto 07.12.09), QA Coverage has been provided for stores valuing Rs. 4750.50 Cr.

7.86 DGAQA has provided active technical contribution for the QA of HAWK aircraft inducted into IAF.

DIRECTORATE OF STANDARDISATION

7.87 Directorate of Standardization was constituted in 1962 with the objective to control proliferation of items within Defence services. To give greater thrust to the Standardization activity, nine Standardization Cells and four Detachments were located at Nodal Stations in the country under the Directorate. To give impetus to training there are two Training Institutes located at Pune & Delhi.

7.88 The primary objective of the Directorate of Standardization is to establish commonality in equipment and components among the three Services, Preparation of Standardization documents, Codification of Defence Inventory and Entry Control.

7.89 During the year 2009-10, a total of 793 standard documents were prepared against the target of 790. A total of 79,987 items were codified against the codification target of 79,886. Updation of 4574 items was done against the annual target of 4119.

DEFENCE EXHIBITION ORGANISATION

7.90 The Defence Exhibition Organisation (DEO), an Inter Service Organisation, was raised in 1981. The main charter of DEO is to organise and co-ordinate Defence exhibitions in India and abroad, primarily with a view to promote export potential of defence oriented products and services,

developed and manufactured by the Indian Defence Industry.

7.91 DEO maintains throughout the year, permanent Defence Exhibition at Defence Pavilion, Pragati Maidan, New Delhi, which gives distinguished visitors, foreign dignitaries, delegates and purchase missions, a glimpse of the range of products and services being offered by the Indian Defence Industries and their capabilities. Defence Public Sector Undertakings (DPSUs), the Ordnance Factory Board (OFB), Defence Research and Development Organisation (DRDO), Directorate General of Quality Assurance (DGQA) and Directorate General of Aeronautical Quality Assurance (DGAQA) have permanently displayed their products, innovations and services.

7.92 The Defence Pavilion participates in IITF held every year in Pragati Maidan, New Delhi during November 14 - 27. Products manufactured/developed by the DPSUs, the OFB and the DRDO are displayed at the pavilion during IITF. Integration of Defence Pavilion with IITF not only generates trade enquiries for the DPSUs, the OFB and the DRDO but also aids in spreading of defence consciousness amongst the populace. The Defence Pavilion has been awarded 08 Gold, 04 Silver, 03 Bronze and one special appreciation during the last 26 years.

7.93 To provide a platform for the Indian Defence industry to showcase its capabilities, DEO organises two biennial international exhibitions in India, namely, the Aero India and Defexpo India. While Aero India is dedicated to aerospace and aviation industry, focus of Defexpo India is on land and naval systems.

DEO organises and co-ordinates Defence exhibitions in India and abroad, primarily with a view to promote export potential of defence oriented products and services, developed and manufactured by the Indian Defence Industry.

7.94 **AERO INDIA :** The eigth edition of the biennial Aero India will be organised from February 09 to 13, 2011 at Air Force Station Yelahanka (AFSY), Bangalore.

7.95 **DEFEXPO INDIA :** Conceived as a complementary exposition to Aero India, Defexpo India was launched in 1999. The sixth edition of the biennial Defexpo India was held from February 15-18, 2010 at Pragati Maidan, New Delhi. In the exhibition 650 exhibitors from 31 countries displayed their products. There were 10 country pavilions and the exhibition spread over 40,000 Sq. Meters was visited by about 50,000 business visitors and 55,000 general visitors.

7.96 With a view to provide a impetus to export potential to Indian Defence Industry, DEO organizes "India Pavilion" for major defence products manufactured by them in the international exhibitions abroad. During the financial year 2009-10, India Pavilions were set up at the Latin America Aero & Defence (LAAD) 2009 (April 14-17, 2009)at Rio Centro, Rio de Janeiro, Brazil and HAL

participated in Paris Air Show 2009 exhibition independently. Indian Pavilion was adjudged as over all best pavilion in BRIDEX-2009 (Brunei Darussalam International Defence Exhibition & Conference) (12-15, Auguest 2009) at Brunei, Darussalam.

INVESTMENT

(Rs. in Cr.)

Name of PSUs	2007-08		2008-09	
	Equity	Govt. loans	Equity	Govt. loans
HAL	120.50	-	120.50	-
BEL	80.00	-	80.00	-
BEML	41.77	-	41.77	-
MDL	199.20	-	199.20	-
GRSE	123.84	-	123.84	-
GSL	29.10	-	29.10	-
BDL	115.00	-	115.00	-
MIDHANI	137.34	-	146.34	-
TOTAL	846.75	-	855.75	-

WORKING RESULTS
VALUE OF PRODUCTION AND SALES

(Rs in Cr.)

Name of the PSUs	2007-2008		2008-2009		2009-10 (up to November 30, 2009	
	Value of Production	Value of Sales	Value of Production	Value of Sales	Value of Production	Value of Sales
HAL	8791.52	8625.33	11810.85	10373.38	5032.79	3275.92
BEL	4111.37	4102.54	5273.68	4624.09	2843.17	2820.89
BEML	2826.95	2713.34	3294.19	3013.47	2023.25	1760.48
MDL	2321.69	6.06	2568.93	5.49	1063.60	3.99
GRSE	573.47	556.65	672.69	740.62	487.68	207.89
GSL	317.21	26.94	508.01	476.85	500.86	113.77
BDL	505.85	454.38	523.06	464.82	367.50	321.54
MIDHANI	296.40	255.01	364.03	309.11	204.55	195.58
TOTAL	19744.46	16740.25	25015.44	20,007.83	12523.40	8700.06

WORKING RESULTS OF OFB
VALUE OF PRODUCTION AND SALES

(Rs in Cr.)

2007-2008		2008-2009		2009-2010(upto Nov, 09)	
Value of Production	**Value of Sales**	**Value of Production**	**Value of Sales**	**Value of Production**	**Value of Sales**
9312.62	6937.81	10610.40	7229.31	5758.00	3808.62

Profit After Tax

(Rs. in Cr.)

Name of the PSUs	2007-08	2008-09
HAL	1631.88	1739.86
BEL	826.74	745.76
BEML	225.65	268.84
MDL	240.86	270.73
GRSE	74.47	51.65
GSL	69.97	81.96
BDL	47.65	47.67
MIDHANI	35.54	41.06
TOTAL	3152.76	**3247.53**

P63

8

DEFENCE RESEARCH AND DEVELOPMENT

AGNI-1

DRDO is dedicated towards progressive enhancement of self-reliance in complex and strategic defence systems, R&D infrastructure and capability of the country

8.1 Defence Research and Development Organisation (DRDO) was set up on 1st January 1958 by merging the units of Defence Science Organisation (DSO) with the then existing Technical Development Establishments (TDEs) of the three Services. It was then a small organization with only 10 laboratories. It has now grown into a network of more than 50 laboratories and establishments located all over the country. Currently, DRDO is executing a number of major projects for the development of critical defence systems such as missiles, armaments, light combat aircraft, tanks, radars, sonars, unmanned aerial vehicles, electronic warfare systems, etc., wherein significant milestones have already been achieved. The DRDO has fostered capability at the level, working with more than 800 private industries, ordnance factories and public sector undertakings in the manufacturing of products and development of prototypes, components and sub-systems. The Organisation also collaborates with the Indian Institutes of Technology, National Institutes of Technology, Universities and other Academic and Research Institutions of national repute, funds various projects and extends help to several of them in setting up of Centres of Excellence in different disciplines of science and technology.

8.2 DRDO is dedicated towards progressive enhancement of self-reliance in complex and strategic defence systems and also to enhancement of R&D infrastructure and capability of the country. It has a vision to promote the corporate strength and to make the country self-dependent in critical sphere and to act as a reservoir of expertise in the most sensitive scientific and technological domains. DRDO plays many roles, like providing scientific and technological advice to the MoD in support of defence policy; as evaluator of defence equipment for the military operational requirements; and generating new technological knowledge to be transferred to the defence industries for development of state-of-the-art weapon systems.

ORGANISATIONAL STRUCTURE

8.3 DRDO has a mission mode structure, headed by the Scientific Adviser to Raksha Mantri (SA to RM) who is also Secretary to the Government of India. The Secretary is assisted by the Chief Controllers of Armaments, Combat Vehicles and Engineering (ACE), Naval Systems & Human Resources (NS & HR); Missile Systems & Low Intensity Conflicts (MS & LIC), Strategic Systems (SS); Aeronautics & Materials Science

(AMS); Services Interactions (SI); Life Sciences (LS); Electronics & Computer Sciences (ECS); Resources & Management (R&M); and Micro-Electronic Devices & Management of Information System and Technology (MED & MIST).

8.4 **DRDO Headquarters:** DRDO is organized in two different types of HQrs Directorates, namely Technical Directorates and Corporate Directorates. Technical Directorates include Directorates of Aeronautics; Armaments; Combat Vehicles and Engineering; Electronics and Computer Sciences; Micro-Electronic Devices & Management of Information System and Technology; Materials; Interaction with Services for Business; International Cooperation; Industry Interface and Technology Management; Missiles; Naval Research and Development; Life Sciences; Civil Works and Estates; and Technical Examination Cell. Besides these, Scientific Advisers to Chief of the Army Staff (COAS), Chief of the Air Staff (CAS), Chief of the Naval Staff (CNS) and Deputy Chief of Integrated Defence Staff (DCIDS) also act as Technical Directors.

8.5 Corporate Directorates, include Directorates of Personnel; Human Resource Development; Materials Management; Planning & Coordination; Management Services; Rajbhasha and Organisation & Methods; Budget, Finance & Accounts; Security & Vigilance; Extramural Research & Intellectual Property Rights; and Public Interface.These Directorates assist laboratories in improvement of their infrastructure, creation of new facilities, induction of manpower, co-ordinating with other Ministries/Departments, etc. and also in getting Government approvals for taking up projects in their respective areas.

8.6 **DRDO Laboratories/Establishments:** A number of projects are being undertaken/ executed through a network of various laboratories/ establishments, Field Stations, Regional Centres of Military Airworthiness (RCsMA), etc located at different stations all over the country. These are engaged in R&D activities in the field of aeronautics, armaments, missiles, combat vehicles, advanced computing and networking, electronics, engineering systems, life sciences, advanced materials and composites; underwater sensors/weapons, warship technology, low intensity conflict technology, etc. There are 5 Missile Systems Laboratories, 12 Electronic Systems Laboratories, 3 Materials Science Laboratories, 5 Armament System Laboratories, 6 Aeronautical Systems Laboratories, 4 Combat Vehicles and Engineering Laboratories, 10 Life Sciences Laboratories and 3 Naval Systems Laboratories, which aim at achieving their set missions.

8.7 Aeronautical Development Agency (ADA) and Society for Integrated Technology Applications & Research (SITAR), both are the societies functioning under DRDO. ADA has mission to undertake design & development of advanced technology aircraft. SITAR designs digital components

and devices required for various projects including high performance computing. Gallium Arsenide Enabling Technology Centre (GAETEC) is a foundry set up at Hyderabad for design, development and fabrication of critical microwave components for various programmes undertaken by DRDO and Department of Space. Defence Institute of Advanced Technology (DIAT), which attained status of Deemed University in 2005, organizes courses on vide spectrum of technologies including regular long and short term courses for newly recruited scientists and Post Graduate Programmes to meet defence requirements in general and weapon systems in particular.

HUMAN RESOURCE DEVELOPMENT (HRD)

8.8 DRDO, with a vast network of more than 50 laboratories and establishments spread across the country, comprises 30,000 knowledge workers including about 7,000 scientists; 12,000 technical personnel; and 11,000 support staff - a strong scientific force to reckon with. DRDO follows dynamic system of human resource management. Its authorized Regular Establishment (RE) is reviewed after every two years to meet the contingent requirements on account of workload and new projects/ programmes undertaken. A Human Resource Consultative Body has been constituted in DRDO to look into an integrated approach for development of HRD related policies and strategies for implementation in organisational system. A Manpower Planning Board manages the Scientific, Technical, Administrative and Allied Cadres. Manpower requirement of all categories for various projects/programmes is reviewed periodically. Scientists and engineers are recruited yearly through competitive examination at national level called Scientist Entry Test (SET). The main aim is to select best technical human resource available in the country by a competitive and transparent manner. In addition to this, talents are also searched through campus interview, scholarship schemes through Aeronautical Research and Development Board (ARDB) and Ph D scholars under Registration of Student with Scholastic Aptitude (ROSSA).

8.9 During 2009, 481 number of scientists were recruited through SET; 145 through Campus Recruitment; and 74 through ROSSA, Lateral Entry and NRI Scheme. Total 1,272 scientists and 659 Defence Research and Technical Cadre (DRTC) personnel were promoted to the next higher grade during 2009.

8.10 More than 175 Continuing Education Programmes and specialized training courses were organized by various laboratories/ establishments throughout the year to cater to the present and futuristic requirements of DRDO. Under Research & Training (R&T) scheme, 115 personnel were sponsored to undergo Master Degree courses in Technology and Engineering at IIT's, IISc and other engineering institutions of repute. Provisions have also been made for scientists to pursue Ph D and 14 scientists were sponsored for doctorate degree during the year. Specialised training were provided to

25 working personnel at IITs, IIMs, IISc, ASCI, ESCI, NITIE, NIFM, etc to upgrade their skills. DRDO has three training institutes namely, Defence Institute of Advanced Technology (DIAT), at Pune; Institute of Technology Management (ITM) at Mussoorie and DRDO Training Institute at Defence Laboratory, Jodhpur.

PROJECTS MONITORING AND REVIEW MECHANISM

8.11 The organization has institutionalized mechanisms to identify the futuristic technology requirements and assess the futuristic trends in science and technology. DRDO involves users and production agencies from the very beginning to cut short the delays and to bring synergy among developing agencies, R&D laboratories, users and production agencies.

8.12 DRDO has instituted several review mechanisms to monitor programmes and projects regularly, right from their inception, with active participation of the Services, production agencies, academic/research institutions, etc. There is an in-house apex level body called "DRDO Research Council" (DRC), chaired by the Scientific Adviser to Raksha Mantri, to review the progress of major ongoing projects in all the labs/estts. In addition, Corporate Reviews covering techno-managerial aspects are also carried out by a high level committee for the improvement of the infrastructure of labs/estts. The Vice Chief of Army Staff reviews Staff Projects for Army, twice a year. For all major programmes/ projects, there are multi-tier "Programme Management Boards", who periodically monitor and review the programmes and help in early detection of bottlenecks and suggest their mid-course corrective actions, as deemed fit.

DRDO has empowered the country with cutting-edge technologies and enabled our Armed Forces to progressively enhance their combat effectiveness through development of state-of-the-art weapon systems and technologies.

PROGRAMMES AND PROJECTS

8.13 DRDO has empowered the country with cutting-edge technologies and equipped our Services with internationally competitive systems. Over the past five decades, it has enabled our Armed Forces to progressively enhance their combat effectiveness through development of state-of-the-art weapon systems and technologies. A number of systems, technologies and equipment have been developed, productionised and inducted into Services during the past. Progress of some of the leading programmes and projects during the current financial year is given in succeeding paragraphs.

8.14 **Missile Systems:**

Prithvi Missile : Surface-to-surface tactical battlefield missile, Prithvi, has three versions of ranges 150 km, 250 km and 350 km with about 1 tonne and 500 kg payloads. All versions have been inducted into Armed

Brah Mos Block II (Land attack version) Launch

Forces. Prithvi Salvo Launch operation has been carried out successfully as a part of User exercise.

Agni-I Missile : With a range of 700 km, surface-to-surface Agni-I missile has single stage solid rocket motor and can carry 1 tonne warhead. It can be configured to fire from road/mobile launcher. Agni-I has been inducted into Services and Army is conducting User exercise in collaboration with DRDO.

Agni-II Missile : The range for Agni-II is more than 2,000 km. The salient features of the test firings are mobile launch capability, multi-staging, state-of-the-art control and guidance, re-entry technology and sophisticated on-board packages including advanced communication. Agni-II has also been inducted into Services and Army is conducting User exercise in collaboration with DRDO.

Agni-III Missile : Agni-III is a long-range missile with a capability to launch from rail mobile launcher. It has a capacity to carry 1,500 kg warhead. Fourth flight test of Agni-III is planned shortly.

Dhanush Missile : It is a Naval version of Prithvi missile with a range of 250 km and a payload of about 500 kg. Dhanush was flight tested on December 13, 2009 and achieved range of 350 km from INS Subhadra.

Akash Missile System : It is a medium range surface-to-air missile. It has multiple target handling capacity with digitally coded command guidance system. User trials of its Air Force version have been completed. Air Force has placed order for two Squadron of Akash Missile System. Procurement for another 6 Squadrons is in progress.

Nag Missile System : Nag is a third generation anti-tank missile with "top-attack" and "fire and forget" capabilities. User trials have been completed against moving/static targets under various operating conditions. Army is processing the case for induction of Nag Missile System.

Astra Missile : Astra is an air-to-air missile being indigenously designed and developed to engage and destroy highly maneuvering supersonic aerial targets. Four successful

Akash Self Propelled Launcher

ballistic flight trials have been undertaken. Phase-I of Captive flight trial from Su-30 Mk-I was completed in Nov 2009.

Long Range Surface-to-Air Missile (LR-SAM): It is a joint development programme of DRDO, Indian Navy and IAI, Israel. It has a range of 70 km using dual pulse rocket motor and active radar seeker in terminal phase and inertial/mid-course update for guidance. LR-SAM Dual Pulse motor fired successfully after thermal cycling. LR-SAM Rocket Motor environmental & Non Destructive Testing have been completed. Six component tests have also been conducted successfully.

BrahMos Supersonic Cruise Missile : The Block-II version of the missile for Army was demonstrated which enables target discrimination and can hit a less significant target amongst other targets of relatively higher radar cross section. The weapon system with vertical launchers for Indian Navy was commissioned on INS Ranvir and is being progressively installed on INS Ranvijay, P1135.6 ships in Russia and on P15A ships. The development of air-version missile has been completed and integration on Su-30 Mk-I is being progressed with the Russian aircraft designers and manufacturers for the Indian Air Force.

Technologies developed :

Composite Motor : Designed & developed 2 m diameter composite rocket motor casing which is the largest Composite Motor Casing developed in the country.

Ring Laser Gyro (RLG) : A state-of-the-art 0.01^0/hr class RLG comprising very high precision components, fabricated using optical contracting technology is being successfully produced and qualified for Missile applications.

Ring Laser Gyro based Inertial Navigation System (RINS) - GPS : A RINS - GPS system was designed and developed for Su-30, and Jaguar. RINS was also developed for LCA applications and successfully tested in the Avionics Test Rig at HAL, Bangalore and HAL, Korwa.

Fiber Optic Gyro (FOG) : An indigenous Fiber Gyro based 3 axis Sensor Package Unit (FSPU) has been developed and successfully flight tested in Nag control flight. A FOG based 2 axis Sensor Package Unit has also been indigenously developed and fitted in Main Battle Tank, Arjun and passed field trials.

Millimeter Wave Seeker : Millimeter Wave Seeker with Seeker Servo systems have been developed for Anti-Tank applications and successfully field tested.

Target Motion Analysis (TMA) : Developed and delivered a software for Target Motion Analysis (TMA) for Indian Navy. TMA software houses the algorithm to estimate the target motion parameters (TMPs) i.e. range, speed and course from the time stamped noisy bearings of the emitter obtained through the Electronic Support Measure (ESM) system. The software was released by SA to RM in September 2009.

Data Analysis & Pattern Recognition (DAPR): A software for DAPR has been designed and developed for Indian Navy which provides solution of problem of identifying radar and platforms. It classifies the emitters based on the data provided by Sangraha EW systems. The software also automates the existing manual analysis process of radar identification. This software also was released by SA to RM in September 2009.

8.15 **Aeronautical Systems:**

Light Combat Aircraft (LCA), Tejas : India's indigenous multi-role fighter aircraft, Tejas, designed and developed by Aeronautical Development Agency, Bangalore, is in advanced stage towards Initial Operation Clearance (IOC). It has completed more than 1,270 flights. Phase-II of Weapon Trials & Hot Weather Trials have been completed. All trials are progressing well towards Initial Operational Clearance of LCA Tejas by December 2010 and Full Operational Clearance (FOC) by 2012.

Light Combat Aircraft (LCA) for Navy : Spin off of LCA Tejas, this Naval-version aircraft would be adaptable to aircraft carries and will accordingly have modified landing gears and 4 degree drop-down nose. Equipping of LCA

LCA-3

Navy trainer and LCA Navy is under progress. It is expected to be ready by October 2012. First flight of the trainer is expected to take place by mid 2010.

Light Combat Aircraft (LCA) Trainer : It is a two-seat aircraft intended to provide training for LCA pilots. It features aerodynamic commonality with the Naval variant of the same aircraft ordered by the Indian Navy. It had its maiden successful flight in November 2009 and achieved all the objectives set out for the flight.

Kaveri Engine for LCA : Gas Turbine Research Establishment (GTRE), Bangalore is developing Kaveri Aero engine to meet the requirements of the indigenous LCA. The engine has completed 1,850 hours of engine run. Official Altitude Test (OAT) Phase-I is in progress at CIAM, Russia. These trials and Flying Test Bed (FTB) Evaluation Trials are expected to be completed by mid 2010.

Kaveri Engine for Naval Ship : Kaveri Marine Gas Turbine (KMGT) is a spin-off of the Kaveri aero-engine project. This engine has been successfully tested at Naval facilities at Vizag.

Airborne Early Warning and Control System (AEW&C) : DRDO's indigenous AEW&C system is based on Embraer – 145 aircraft platform. The Project Design Review of all sub-systems and Critical Design Review of major sub-systems have been completed. The sub-systems are under various stages of development trials. By mid 2010, all sub-systems would be available for ground integration and testing. The first modified aircraft is expected in mid 2011.

Radar Warner Jammer (RWJ) for MiG-27: The Jammer for MiG-27 aircraft has been developed which consists of a Radar Warning Receiver (RWR) and Self Protection Jammer (SPJ). System design and integration have been completed. DRDO has delivered 40 kits to HAL for integration with aircraft.

Medium Altitude Long Endurance (MALE) Unmanned Aerial Vehicle (UAV) – Rustom: DRDO is undertaking design, development and production of MALE UAV Rustom which is required by Services to carry multiple payloads operating for long duration at medium altitudes and long ranges. It will also act as a force multiplier when used in conjunction with other manned and unmanned systems.

Unmanned Aerial Vehicle (UAV) Nishant : ADE, Bangalore has successfully developed Nishant Tactical UAV. It flew its 130th Test Flight at Kolar near Bangalore in Dec 2009. This UAV can be used for day/ night battlefield re-connaissance, surveillance, target tracking correction of artillary fire, etc. Phase – I of the production order for 4 Nishant UAV with associated ground stations have been completed.

Aerostat 2000 Cum : DRDO has developed the platform system for Aerostat of 2000 cum. The System has already been tested up to an altitude 350 m. The system would be tested up to an altitude of 1 km during early 2010 and integration of available payloads would be carried out subsequently.

Certification : DRDO, through CEMILAC, ensured certification of various systems such as LCA, HJT-36, up-gradation of Advanced Lightweight Helicopter, Missiles, Integration of Cheetah helicopter with ALH engine and other sub-systems.

8.16 **Electronic Systems:**

Three Dimensional Medium Range Surveillance Radar – (3D CAR) : It has been built as Central Acquisition Radar for Akash surface-to-air missile weapon system. It covers elevation up to 18 km in height and can detect and track multiple targets up to 180 km in range. Two variants, namely, ***Rohini*** for Medium Range Air Defence application for the Air Force and ***Revathi*** for Medium Range Sea Surveillance for ASW Corvette class of ships for the Navy have been developed in partnership with BEL. An order of 37 Rohini radars has been placed. The Navy has placed orders for 2 Revathi radars on BEL. Another variant ***3D Tactical Control Radar (3D TCR)*** based on a GSQR from the Army is realized by BEL with design support of DRDO after successful User trials. Twenty nine 3D TCR are being inducted into Army.

Weapon Locating Radar (WLR) : This Radar automatically locates hostile artillery, mortars and rocket launchers and tracks friendly fire to locate the impact point of friendly artillery fire to issue necessary corrections. Four phases of User trials have been completed successfully. Procurement action by Army for 28 Radars (Plains Version) has been initiated.

Super Vision 2000 Radar : It is multi-mode surveillance radar system that can search and detect sea surface and air-borne targets. The Radar has additional weather and beacon modes. Imaging modes, like Range Signature

(RS) and Inverse Synthetic Aperture Radar (ISAR) has been incorporated. The multi-platform radar has the potential for use by all the three Services. The radar has been tested on Advanced Light Helicopter, Kamov-25 and Dornier platforms.

Low Level Light Weight 2D Radar – Bharani: It is a battery powered and compact sensor mounted on quadripod. It is mule transportable in the difficult mountainous terrain. It provides 2D surveillance solution to alert Army Air Defence Weapon Systems mainly in mountainous terrain against hostile aerial targets, like UAVs, RPVs, helicopters and fixed wing aircraft flying at low and medium altitudes. Three phases of user trials and confirmatory trials have been completed successfully and acquisition for 16 systems is cleared by MoD.

Three Dimensional Low Level Light Weight Radar – Aslesha : This 3D radar has been developed to meet air space surveillance in mountainous area including intruding objects, like aircraft, helicopters and UAVs for the Air Force. The light weight radar typically meets the operational requirements, like transportation, quick deployment and decamp, low energy consumption and performs in tough weather conditions including high speed winds. User trials are undergoing and radar will be inducted shortly.

Medium Power Radar (MPR) & Low Level Transportable Radars (LLTR) : DRDO has started design & development of these 4D (range; direction; height & doppler velocity) Radars required by the IAF for Air Surveillance. These Radars will use many state of the art technologies including

3 D Medium Range Surveillance Radar

Weapon Locating Rader

advanced Active Array technology & Digital Beam Forming. Initially 8 indigenous MPRs and 18 numbers of LLTRs will be inducted by the Indian Air Force.

Active Electronically Scanned Array (AESA) Radar : For Tejas and other fighter Aircraft, DRDO has started development of Airborne Active Array Radar in X Band. This high end technology based Radar will be of unprecedented reliability and superior performance compared to mechanically rotating Weapon Control Radar.

Briefcase S-Band SATCOM Terminals : These terminals have been developed to provide secure voice and data services at S-Band frequency from remote areas. It is a compact communication equipment to provide wide coverage in a radius of around 3,000 km from the center of the country using indigenous GSAT-2 Satellite. A large number of these terminals are used by Armed forces as well as homeland security agencies. Technology has been transferred to DPSU and private industry.

Electronic Warfare (EW) Programme : After successfully handing over Integrated Electronic Warfare systems *Samyukta* to Indian Army and *Sangraha* to Indian Navy, DRDO has initiated a large number of advanced technologies development programmes for EW systems as well as realization of new requirements of Army (Mountainous EW System ; Track & Wheel based Systems) and Navy (Varuna; Samudrika). A large number of indigenous technologies, modular software packages, devices & sub-systems have been designed and developed for these Security

sensitive EW systems and technologies have been transferred to DPSUs/PSUs and private industry.

Network Centric Warfare (NCW) & Network Centric Operation (NCO): A large number of Command & Control systems (ACCCS-Shakti & CIDSS-Samvahak) have been developed by DRDO and being exploited by Army. Based on this expertise, DRDO has started a large number of technology development projects for realization of NCW & NCO for Indian Armed Forces.

Software Defined Radios (SDR) : To meet the requirement of interoperable communication systems, DRDO has initiated programme for development of SDR based on NSQR involving other R&D agencies, BEL and private industry.

Electro-Optical (EO) based Systems : A large number of EO based systems including holographic sights & LLTD are inducted/being inducted by Army. Indian Navy has placed order for six systems of EON-51 systems on BEL after successful trials of system on INS KIRCH.

Information Security & Assurance : DRDO has developed a large number of systems & technologies to meet this critical requirement of the Services as well as homeland security agencies.

8.17 **Combat Vehicles and Engineering:**

Main Battle Tank (MBT), Arjun : Army has placed an indent for 124 MBT Arjun on Heavy Vehicles Factory, Avadi. Sixty one tanks have been handed over to Army. Balance tanks are under various stages of production and JRI. All the 124 tanks against the present indent are expected to be issued to Army by Mid 2010.

Carrier Command Post Tracked Vehicle (CCPT) : The objective of CCPT is for accomplishing all tactical/technical fire control functions to achieve effective deployment of Self-Propelled (SP) Artillery guns. It is the first of its kind with tracked chassis housing Artillery Combat Command and Control Systems (ACCCS) for accomplishing fire control functions of all the versions of Artillery guns, of the Indian Army. During User & DGQA trials, the physical characteristics, mobility & voice/ data communication capabilities of CCPT were evaluated under summer desert terrain conditions. The satisfactory performance of CCPT during trials has culminated with recommendations by Users for induction into Service.

Armoured Ambulance : Army placed indents on Ordnance Factory, Medak for production of 50 numbers of Armoured Ambulance vehicles during August 2004, for 225 vehicles during November 2007 and for 13 vehicles during March 2009. The first 10 Ambulance vehicles were rolled out from Ordnance Factory, Medak on August 21, 2009.

Combat Improved Ajeya Tanks : Qty. 690 Nos. of CI Ajeya tanks (both original equipment (OE) & over halt (OH)) have been rolled out so far at HVF, Avadi. AHSP role transfer has been done successfully and ToT has also been effectively transferred to DGOF (HVF, Avadi).

MBT Arjun

MBT Arjun Simulator : CVRDE, Chennai was sanctioned the project of developing the MBT Arjun Simulator comprising of Driving Simulator and Turret Simulator. Three MBT Arjun simulators are being developed and integrated for troop level training.

Mobile Camouflage System (MCS) : As part of the project 'Development of Defensive Aids System', the MCS has been developed, integrated in MBT Arjun and conducted the performance Evaluation Trial.

Advanced Laser Warning Countermeasure System (ALWCS) : First prototype of the Interface box for Fire Control System with Advanced LWCS has been developed and demonstrated. Verification Test on interfacing of ALWCS with Integrated Fire Control System has been carried out. ALWCS has been integrated on MBT Arjun and Limited Performance Evaluation and integrity trials Phase-I were conducted during April/May 2009 and Phase-II trails were conducted in August 2009. Development of Mobile Test and Instrumentation System and Mobile Power Distribution and Generation has also been completed.

Robotics Vehicle : On the Robotics technology, DRDO successfully demonstrated the first prototype of unmanned tele-operated ground vehicle on a BMP-II platform with Drive-by-Wire (DBW) system and also demonstrated the tele-operation of an all terrain vehicle. Vehicle Actuation Module for a high speed Unmanned Ground Vehicle has also been developed.

Power Take Off (PTO) Shaft : A lightweight, high speed flexible PTO Shaft has been designed and developed which is capable of transmitting 250 hp at 16,810 rpm for LCA, Tejas. Manufacturing and Testing two numbers of deliverables PTO Shaft has been completed.

Aircraft Mounted Accessory Gearbox (AMAGB) : CVRDE has developed and tested 12 prototypes of AMAGBs. Out of which 7 airworthy AMAGBs have been delivered to Aeronautical Development Agency. Also, Transfer of Technology to HAL has been completed.

Naval AMAGB : The Naval AMAGB has been designed and developed in accordance with the severe saline operating conditions. Salt Fog Test on Naval AMAGB Qualification Test Unit (with improved protective coating) was successfully completed. AMAGB Naval Deliverable (ND-1) has been Acceptance Tested and ready for handing over to LCA (Navy).

Short Span Bridging System : User trials and maintenance evaluation trials of 5m system have been successfully completed. User trails of 10m system have been completed which included the familiarization training, study of vehicle/bridge characteristics, trials on plane and desert terrain, maintenance aspects and final evaluation. Product improvements suggested by the user, during user trials are being carried out.

Counter Mine Flail (CMF) on T-72 : User trials has been carried out on CMF prototype. Most of the functional parameters of the equipment have been proven successfully, barring specified flailing depth, which can be attributed to low rated auxiliary engine and high tank speed during flailing operation.

Modular Bridge : Development of 46 m MLC 70 Modular Bridging system is underway since September 2009 with L&T as Industry partner. First prototype of the system is expected to be ready for user evaluation by October 2010.

Re-inforced Hardened Shelter : This project envisages to design and develop a 60 men underground NBC collective protection shelter complete with all essential life support systems using SIFCON/ SFRC as basic structural material. The project is progressing as per schedule. Casting of test modules, blast and radiation trials have been completed.

Remotely Operated Vehicle (ROV) – 'Daksh': A state-of-the-art ROV - Daksh, capable of being remotely controlled over a range of 500 m line-of-sight or up to three walls within buildings, is an invaluable asset in the hands of Bomb Disposal Units of the Army, Police and other Paramilitary Forces. After extensive user trials, the equipment has been recommended for induction into the Army. Production of 20 Nos of 'Daksh' under LSP is in progress.

Programme PJ-10 : R&DE (Engrs) has developed static tower launcher, inclined ship launcher, mobile autonomous launcher, universal vertical launch module-8 for BrahMos cruise missile which have been deployed during various flight trials.

Futuristic Infantry Combat Vehicle (FICV): DRDO is working on development of enabling technologies for FICV, which are in advance stages of progress. Collaboration with competent global industry partner is also being concurrently explored by DRDO for joint development of FICV -2017.

Armoured Engineering Reconnaissance Vehicle (AERV) : The AERV is designed to carry out terrestrial and riverbed survey to facilitate construction of assault bridges across water obstacles. The equipment is based on tracked BMP-II amphibious Infantry Combat Vehicle, which allows it to operate on land and on water bodies. Indian Army had placed an order for LSP of 16 nos. of AERVs on VRDE. The LSP order has been successfully completed by VRDE through OFP, Medak and BEL the production agencies. The ToT and transfer of production documents to DGQA are also in final stage of completion.

Armoured Amphibious Dozer (AAD) : AAD is tracked vehicle based equipment, designed to carry out earth moving tasks in support of bridging operations by mechanized forces, under combat environment. The first off production vehicle was realized in 2008 and subjected to confirmatory trials by Army. Design modifications as suggested by Army were incorporated in modified AAD and designer's trials are in progress at VRDE.

EMC Tech Centre : One of the biggest in the world, state-of-the-art Automotive Electromagnetic Compatibility (EMC) test facility known as EMC Tech Centre has been established at VRDE, Ahmednagar. The facility will cater for platform level testing of wheeled/tracked vehicles as per Stringent Military Standards.

Wankel Type Rotary Engine : The Wankel type rotary engine has been designed and developed in the country indigenously for the first time. First ever-successful test-flight of an indigenous 'Rotary Engine' - powering Unmanned Aerial Vehicle (UAV), Nishant was carried out at ADE, Bangalore.

Light Armoured Troops Carrier : This vehicle has been designed and developed for employment in law enforcement and counter terrorism operations. The basic vehicle chassis is Tata 713 vehicle bullet proofed with 6 mm jackal armour and 45 mm thick bullet proof windshield glasses and has all round protection against small arms. The vehicle floor is splinter proofed against grenade attacks. The ToT documents have been formally handed over to M/s Tata Motors for bulk production requirements of Services.

Mini Vajra : MoU was concluded with M/s Tata Motors for ToT of riot control vehicle 'Mini Vajra' for volume production and marketing. The vehicle is based on Tata 207 DI chassis, modified and developed for riot control role.

Airborne Ground Penetration Radar (GPR) for Crevasse Mapping : Experimental trials have been conducted with Airborne GPR over Manali-Patseo, Hamta glacier and Samudratapu glacier to establish the

technology for the interpretation of signatures for Crevasse Mapping. Depth estimation of the discontinuity profile using the Airborne GPR has been carried out for the first time with Airborne GPR.

Mountain Weather and Avalanche Forecast: A network of surface observatories, 3 upper air stations and 42 state-of-the-art automatic weather stations were maintained over the Western Himalaya and regular met observations are taken over these areas. Fine resolution mesoscale models (WRF and MM5) in three nested grid approach are being run to derive quantitative weather forecast 3 days in advance at 9 km x 9 km resolution (inner domain) over Northwest Himalaya. The data collected through various observatories, upper air stations and AWS are digested into these weather prediction models for the more accurate weather and avalanche prediction. Statistical models have been developed for the improvement in weather and avalanche forecast. Meteograms have been developed for three hour precipitation forecast over various station locations over Himachal Pradesh and Jammu & Kashmir.

Nearest Neighbours Method based Avalanche Forecasting System : Nearest Neighbours (NN) method has been successfully deployed to assess avalanche occurrence probability in most parts of western Himalayan region. The base k-NN method has been enhanced by way of incorporating Principal Component Analysis for removing data redundancy and applying Neural Networks for final decision making. The decision takes into account both probability of avalanching as well non-avalanching. The forecast may be generated for up to next 3 days with the help of quantitative weather forecast data available through Mountain Met Division of SASE. A web-enabled application 'eN10' has been developed for operational implementation of above with user-friendly menu to provide flexibility and ease-of-use for data exploration and analysis in the hands of users.

8.18 **Armaments:**

Multi Barrel Rocket System – Pinaka : Full-fledged production of rockets is in full-swing and being monitored at highest and appropriate levels. Manufacture of entire quantity of Loader cum Replenishment (LCR) Vehicles (40 nos) and Replenishment Vehicles (20 nos) have been completed. Joint Receipt Inspection (JRI) of first lot of four Launchers and two BCPs manufactured by Tata and L&T completed. Maintainability Evaluation Trials of Pinaka Ground Systems {Launcher, Battery Command Post (BCP), LCR and RV} have been completed. Acceptance Test Procedure and Track Trials of second lot of 12 Launchers and 4 BCPs have been completed.

Pinaka Submunition Warhead : Strength of design of warhead and case cutting by Flexible linear Shaped Change has been established. Ejection mechanism for all three types of warheads has been established and tested dynamically. Safety Arming and Self Destruction for the warhead has been designed and validated. Lethality of all three types sub-munition is tested and established.

Bomblet fuze design for impact and SD mode is validated. In Acceptance Test Procedure warhead, Parachute release mechanism, Arming of Safety Arming Mechanism, functioning of minelet fuze is established. Soft Target Minelet configuration is finalised and it's functional aspects are validated in dynamic trials.

Influence Munition MK-II (Adrushya): In Mk-II version of Influence Munition integration of fresh hardware and active sensor fuze has been successfully completed. Effectiveness of the fuze against tank T-55 & T-72 and CLMCV has been evaluated with fresh hardware. An indent for qty 20,000 mines at a cost of Rs. 124 Cr have been placed by Army on OFB. ARDE is in ToT stage with private firms helping OFB for supply of critical items.

Ammunition for MBT Arjun : In ARDE, Pune, twenty nos of 120 mm Ordnances and 32 nos of 120 mm recoil system sets have been manufactured, proved successfully and issued to HVF Chennai for mounting on production Tanks. The order for 124 Sets of Recoil System has been completed.

Modern Sub Machine Carbine (MSMC) : The store has undergone successful troop trials at various locations. ARDE is incorporating modifications suggested by Infantry. Joint development mechanism by DRDO & OFB has been evolved for DRDO designed MSMC.

Close Quarter Battle (CQB) Ammunition: User trials Phase-I was completed successfully in June 2009 at IFS Mhow. Lethality Assessment Plan (Phase-II) approved by User.

Multi-mode Hand Grenade : TBRL has developed a hand grenade which uses preformed cylindrical mild steel fragments to achieve uniform distribution. Army has approved for induction of this store into Service. Bulk production order of quantity 10 lakhs has been placed by Army on Ordnance Factory Board.

81 mm AT-AL Smoke Grenade : A total of 165 grenades processed and assembled with improved accuracy. User Assisted Trial was completed. Grenade performance was found satisfactory. Acceptance of grenade by Army is being accorded.

Flares and Smoke Generator for PTA Lakshya-II : Dynamic performance was evaluated in March and October 2009 at ITR Chandipur. Flares functioned and tracked by Pilot successfully. Smoke generator developed for PTA-I was offered for dynamic evaluation. It's visibility assessed from a distance of 10 km and found satisfactory.

8.19 Naval Systems:

Submarine Sonar, USHUS **:** It is an integrated submarine sonar system designed and developed for the EKM Class Submarines.

USHUS

The project was completed in March 2009. Of the four systems that Navy has ordered from BE, three are fitted onboard the submarines.

Torpedo Defence System (ATDS), Maareech: It aimed at development of an ATDS for surfaced ships. The system will be capable of detecting, confusing, seducing and decoying incoming torpedoes. The decoy helps in exhausting the energy of the torpedo by running the later through long and ineffective course.

Hull Mounted Sonar (New Generation) – HUMSA (NG) : It is an advanced Active–cum-Passive Integrated Ship Sonar system with intercept capabilities to be fitted on a variety of surface ships. Design, development and prototyping of the system carried out with concurrent Transfer of Technology (ToT) to Bharat Electronics (BE), Bangalore. Project was successfully completed in September 2009. Production and installation carried out by BE. Two HUMSA-NG Sonar systems rolled out of BE in 2009 and two more are in the pipe line. One system has been installed and touched water during December 2009.

Low Frequency Dunking Sonar (LFDS) : This is an air-borne acoustic system consisting of a Low Frequency Dunking Sonar and Sonics processing system using Sonobuoys. System already installed onboard Advanced Light Weight Helicopter and it is under functional evaluation at HAL; Initial flight trials are expected in 2010 followed by sea trials.

Seabed Arrays : These are off-board sonars, deployed on the seabed, meant for continuous monitoring of strategic locations. Sea trials were carried out during March - April 2009. All the objectives of the project have been achieved. The system was proved against submarine target. The project was completed in 2009.

Torpedo Advanced Light (TAL) Mk-I : It was designed, developed and technology transferred to Bharat Dynamics Limited (BDL), Hyderabad. BDL has received production order for production of 25 Nos of TAL Mk-I along with accessories and support test equipment.

Varunastra **:** It is a ship launched heavy weight torpedo with enhanced endurance and ranges. BDL has been identified as the production agency and is involved in concurrent engineering mode from design stage. Active homing development is completed and partially proven in field Trials.

Air Independent Propulsion (AIP) System **:** Under the AIP programme for using this mode for submarine propulsion, demonstration of relevant enabling technologies of sub-systems pertaining to SIP technology are being demonstrated. 2.5 kW and 15 kW improved versions have been developed with on-line hydrogen generator (methanol reformer), heat integrator and quick start.

8.20 **Advanced Materials:**

Vacuum Investment Castings for Aero-engines : High pressure turbine blades for

MK-811 Adour engine have been developed using vacuum investment casting and the production technology has been transferred to Hindustan Aeronautics Limited, Koraput. Production trials have also commenced at HAL. As part of the on-going technology transfer programme, production trials for Directional Solidification and fine grained castings for integral rotors and stators of Jet Fuel Starter of LCA has also commenced.

Speciality Naval Steels for Indigenous Aircraft Carrier : Based on the technology developed at DMRL, commercial production of DMR-249B steel commenced at Steel Authority of India Limited (SAIL). During the year 2009, nearly 5000 tonnes of DMR-249A and DMR-249B steel plates valued at Rs 76 Cr have been supplied to Cochin Shipyard Limited.

Composite Armour for MI-17-1V Helicopter: Light-weight composite armour for MI-17-1V Helicopter of the Indian Air Force has been developed. One set of prototype armour panels has been fabricated and delivered to 3BRD, Air Force Station, Chandigarh, for flight trials.

Indigenous Production of Ni base Super-alloy for Aero-engines **:** Technology has been established for production of Ni base super-alloy – *Supercast 247A*, used for producing turbine blades & vanes, in collaboration with MIDHANI. Spectroscopic standards for quick chemical analysis of the complex Supercast 247A have also been developed as part of this technology.

Aluminium Foam as Shock Absorber for Infantry Combat Vehicle (ICV) Applications: Technology for making aluminium foams of different shapes has been established. The test results indicate that the foam is capable of reducing overall weight of the present shock absorbers by 60% and thickness by 20%, which is considered advantageous for ICV applications.

Life Extension Studies of AN-32 Aircraft Engine Components : Life extension of components for Al-20D Engine of AN-32 Aircraft was undertaken in collaboration with CEMILAC and 3 BRD Air Force Station, Chandigarh. Extension of life of the engine for additional 250 hours has been recommended.

Dynamic (Hydraulic) Seals for Nozzle Actuator Assembly of Kaveri Engine : Eight types of dynamic and four types of static seals were integrated in the actuator assembly and subjected to endurance test for 20,000 cycles in GTRE test facility. After successful evaluation, RCMA, Bangalore accepted for their introduction in Actuator assembly.

Indigenisation of Materials for use in BrahMos Missile : Thirty five chemicals and polymeric materials, viz., glues, adhesives, sealants, rubber compounds, resins, lubricants/quant materials and foam plastics used as components are being developed for use in BrahMos missile systems. Twenty three types of the materials have been analysed and the firms identified for manufacture of these chemicals. Twelve types of structural adhesives and sealants have been developed

for use in assembly line to manufacture sections and units of CK310 airframe. Six types of high performance lubricants/greases have been developed for use in subsystems of the missile. Glass cloth equivalent to T-10-80 have been developed. Four types of polymer matrices have been developed to manufacture polymer composites for use in F1 and F2 sections of airframe.

High Temperature Sealing System for Ejector Shutoff Valve Assembly : Ten sets of piston and flap rings based on carbographite materials have been evaluated. Piston and flap rings and high performance gaskets for solenoid and adopter met performance requirements set by ADA.

LSP and Indents from Services : Based on technology developed at DMSRDE, Kanpur and productionised through OPF, production of NBC Suit Mk-IV against LSP order costing 40.63 Cr from the Army for a quantity of 39,868 suits have been supervised. Productions of 1,000 Synthetic Camouflage Nets for Visual and Infrared (SCN-Vis&IR) for green belt terrain with total production value of 3.54 Cr, and 1,000 Synthetic Camouflage Nets for Snow Bound Areas (SCN-SBA) with total production value of 3.12 cr were completed. Full quantities of these nets issued to COD. Army indent of 492 Shelters for Mortar Position Control (Shelter-MPC) with total production value 1.06 Cr completed.

Infrared Imaging Target : The Indian Army, in their recently concluded Field Exercise has found the imaging thermal target developed by DRDO as a very useful tool for the training of the troops for target detection and identification under different field and operational conditions.

Multi-spectral Camouflage Coatings for Visible - Near Infrared and Thermal Infrared Regions : The coatings of multi-spectral camouflage paints have been found to provide highly effective camouflaging both in visible-near infrared and thermal infrared regions when tested on BMP-2 by using thermal systems as well as Long Range Infrared Surveillance system from the Army.

Inflatable Mock-up of PMS Bridge System : User trial of PMS Inflatable Bridge Mock-up has been carried out at Combat Engineering Training Centre, Doraha as per the trial directive issued by the Services. Mock-up has been found to meet most of the GSQR Parameters.

NBC Recce Vehicle : The first NBC Recce Vehicle was flagged off on June 27, 2009 at Defence Laboratory, Jodhpur and handed over to E-in-C. The NBC Recce Vehicles No. 02 and 03 have been rolled out for integration and fitment of sub-systems.

Mobile Nuclear Contamination Analysis Station (NUCAS) : A container based laboratory has been designed and developed for analysis of contaminated samples in field conditions. The container can be transported by road, air and sea to a desired location. This station has four compartments viz. laboratory area, sample preparation, decontamination and Generator set, AC & NBC Filtration Unit area.

Phase Change Material (PCM) Cool Vest: The PCM based cool vest, maintains temperature below 300 degree Celsius for the time period of 2-2.5 hours and provides comfort in extreme summer conditions. Cool vests are under advanced stage of development with some modifications for physiological evaluation

8.21 **Life Sciences Systems/ Products:**

Swine Flu H1N1 Kit : DRDO has developed simple cost-effective and quick detection kit for swine flu. It has been trial evaluated and found to be highly effective. The same can also be used for field evaluations. The kit is being considered for introduction for use by Indian population.

Bio-waste Digester : An eco-friendly technology system for disposal of human waste at glacier, other low temperature areas and soil bound cold regions has been developed. During waste treatment, inflammable bio-gas is generated as a by-product which can be used for various energy intensive activities, like cooking and room heating.

Helicopter Oxygen System : Trial evaluations of helicopter oxygen system by Air Force, developed for on-board generation of oxygen to meet air crew oxygen requirement up to 33,000 ft, has shown satisfactory results.

Cold Weather Clothing : Special clothing intended to provide protection to aircrew positioned at high altitudes comprising of upgraded NATO suit, electrically heated gloves and shoe insoles, thermal vest and thermal drawers have been developed and accepted by the Services.

Drug Formulations : Atropine based nerve gas antidote formulations, cyanide antidotes and formulations for radioactivity decorporation have been developed and cleared by Director General, Armed Forces. Apart from these, clinical trials of other products are under progress with the Army including cold injury ointments, high altitude formulation for treating acute mountain sickness and pulmonary hypertension and gastric prokinetic agent for high altitude related gastroparesis.

Fresh Food Requirement of Armed Forces : Specific technologies have been developed for growing cold tolerant vegetables at high altitudes through genetic engineering to augment the fresh supply of vegetables to troops stationed in Himalayan regions.

Meals-Ready–to-Eat (MRE) : MRE rations have been specially developed to meet the operational needs of the Army and Navy. The ration does not require any cooking since the contents are thermally processed and can be consumed readily after little warming, if required.

The value of systems/ products/technologies developed by DRDO and inducted into the Services or in the process of induction stands at over Rs. 60,000 Cr.

SELF-RELIANCE

8.22 DRDO has developed a number of systems/products/ technologies, of which a

large number have been productionised and inducted into Services and many are in the process of manufacturing and production stage. The value of systems/products/ technologies developed by DRDO and inducted into the Services or in the process of induction stands at over Rs. 60,000 Cr.

TECHNOLOGY TRANSFER AND CONSULTANCY

8.23 DRDO, in partnership with FICCI, has initiated "Accelerated Technology Assessment & Commercialization" programme which aims at commercialization of DRDO developed, non-security sensitive technologies in India and foreign countries.

8.24 DRDO has successfully undertaken LSP of several sophisticated systems developed by it, such as Bridge Layer Tanks, Wheeled vehicle based bridging equipment Sarvatra, Tracked Vehicles modified for specialist roles, such as AERV, AAD, NBC Recce Vehicle, Wheeled Vehicle based systems such as Mine Field Marking Equipment, NBC Water Purification System etc. It has also got personal protective equipment against productionised and supplied to the Services in sizeable quantities. In the process, the synergy between R&D institutions of DRDO and industry has been exploited.

PARTICIPATION IN NATIONAL AND INTERNATIONAL EXHIBITIONS

8.25 DRDO has been showcasing its products and technologies at various important international as well as domestic exhibitions and expositions. During the year 2009, DRDO participated in BRIDEX-2009 an international exposition held at Brunei. It also participated in 'Indian Science Congress' held at Thiruvanantpuram, 'International Trade Fair' held at Pragati Maidan, New Delhi, 'Aero India 2009' at Bangalore and 'Vigyanen Tu Samridhhih' at Pauri Garwal (Uttarakhand).

INTERNATIONAL COOPERATION

8.26 The Directorate of International Cooperation coordinates all foreign collaboration projects of DRDO. The Directorate represents DRDO on various Intra-Ministerial Forums for Defence Cooperation with foreign countries. The major foreign partners of DRDO are Russia, USA, France, Israel, Hungary, Czech Republic, Singapore, Belarus and Kyrgyzstan. The India – Russia Defence Cooperation will now be extended for the next ten years through a new agreement. DRDO has identified 31 new topics for cooperation and work has begun on formulating joint projects. DRDO has 'Joint Working Groups' for collaboration with its major foreign partners, viz., USA, Russia, Singapore etc. Annual meeting of these working groups were conducted during the year to review the ongoing projects and to identify new areas of cooperation.

INTERACTION WITH SERVICES FOR BUSINESS

8.27 Directorate of Interaction with Services for Business (DISB) has effectively provided a single window interface to the Services

for processing of their Capital Acquisition Proposals for Categorisation, Vetting and Finalisation of SQRs and Synchronisation of DRDO Plan with LTIPP. The "Single Window Services" has helped in speeding up of defence acquisition process. This Dte has continuously monitored the progress on all decisions taken during various Reviews and high level meetings between Services and DRDO. This way DRDO's efforts in development of systems and technologies are getting fully aligned with the needs of three Services and will result in enhancing acceptability and induction of indigenous systems by the Services.

BASIC RESEARCH

8.28 Four Research Boards are functioning in DRDO to provide thrust to basic research in areas of strategic importance. These are: Aeronautical Research & Development Board (AR&DB); Armament Research Board (ARMREB); Naval Research Board (NRB); and Life Sciences Research Board (LSRB). The objective of these Boards is to promote research in collaborative mode with academic institutions and other national R&D laboratories, through approval, funding and monitoring of grants-in-aid projects.

Basic Research Boards are functioning in DRDO to promote research in collaborative mode with academic institutions and other national R&D laboratories, through approval, funding and monitoring of grants-in-aid projects.

8.29 **Aeronautical Research & Development Board (AR&DB):** The Board was established in February 1971. The Board is currently funding 151 projects with a ceiling of Rs 7.5 Cr in the upstream area of aeronautics research and development at 25 academic and research institutions in the country.

8.30 **Armament Research Board (ARMREB):** Under ARMREB, a total number of 117 projects have been sanctioned at a total cost of Rs 15 Cr in the fields of High Energy Materials, Armament Sensor & Electronics, Ballistics, Aerodynamics, Detonics, technology for detection of explosives, Smart and Nano Materials as well as Modeling and Simulation. Out of the sanctioned projects, 81 projects have been completed and 36 projects are ongoing. A total number of 35 workshop/ conference/symposium at national/ international levels were sponsored.

8.31 **Naval Research Board (NRB):** The NRB continued to support the basic research applicable to naval/marine technologies. Since its inception in August 1996, 198 projects at a total cost of Rs 56.38 Cr have been accorded to the academic/research institutions and academics of repute. During this year 19 projects have been sanctioned at a cost of Rs 5.51 Cr.

8.32 **Life Sciences Research Board (LSRB):** The LSRB has been sponsoring research and development projects to various research institutes in the country for expanding and deepening the knowledge base of life

sciences. So far, a total of 32 projects have been recommended for funding during the current year. Three patents have been filed. Some of the projects supported by LSRB pertain to evaluation of natural products for improving human performance, bio-defence, bio-fuel, life support system, nutrition, food processing hill agro-technology, etc.

8.33 **Centres of Excellence:** DRDO has established five Centres of Excellence at various academic institutions/universities for creating a strong DRDO – academia links, which is considered crucial for driving innovative technological solutions for defence applications. These Centers assist DRDO in the highly specialized areas of science. The genesis of establishing Centre of Excellence is to get benefited by the vast resources of an academic institute in terms of knowledge base of faculty, research infrastructure, and young and enthusiastic scientific manpower.

8.34 **Contracts for Acquisition of Research Services (CARS):** CARS has been introduced to acquire contracted research services from the academic institutions towards leveraging the ongoing and futuristic projects with appropriate research outcome. In this scheme, a laboratory of DRDO can seek the expertise and access the facilities of academic institutions. A sum of Rs 8.9 Cr has been utilized in this year under the CARS scheme.

EXTRAMURAL RESEARCH

8.35 Dte of ER&IPR, through Extramural grants (Grant-in-Aid), at various academic institutions and R&D centres, strive to harness available research expertise in ongoing and futuristic DRDO projects. In the current year 2009, about 71 projects worth Rs 15.97 Cr have been sanctioned. There are 248 ongoing projects involving Rs 135 Cr. To facilitate knowledge and expertise sharing financial assistance is provided to academia and R&D laboratories for organizing conferences, symposium and workshops. In the current year, 240 events worth Rs 2.1 Cr have been funded.

INTELLECTUAL PROPERTY RIGHT (IPR)

8.36 In an effort to accord selective protective legal cover to intellectual property generated through R&D activities of DRDO, 103 IPR applications (including 18 in foreign countries) were filed on products/ processes in the field of materials, electronics, bio-medical sciences, food technology etc. During the current year, 59 patents (including 1 in foreign country) were granted and in addition 1 copyright and 1 design were registered in India. To promote IPR awareness, 8 awareness programmes/ workshops/patent-clinics were held during the period in different laboratories.

RIGHT TO INFORMATION ACT

8.37 The RTI Act – 2005 was introduced to promote transparency and accountability in the working of public authorities. This enabled the citizen of India to access information under control of the authorities. Though DRDO has been placed in the second schedule of the RTI Act – 2005 exempting it from the application of the

general provisions of the Act except for the issues of human right violation and corruption, the organization has appointed Public Information Officers (PIOs) in each of its laboratories/ establishments to deal with the cases of the RTI. DRDO HQr also has a PIO and a Chief Public Information Officer (CPIO). Guidelines on the RTI Act, as applicable to DRDO, have been evolved by the Organization which act as reference document for all the PIOs of the organization. The Organization has also launched a RTI specific website namely ***www.drdo-rti.com***.

9

INTER-SERVICE ORGANISATIONS

National Defence College

The Inter-Service Organisations are responsible for developing and maintaining resources and services which are common to the three Services in order to economise on costs and cater for better services

9.1 The following Inter-Service Organisations function directly under Ministry of Defence:-

(i) Military Engineer Services

(ii) Armed Forces Medical Services

(iii) Directorate General Defence Estates

(iv) Office of the Chief Administrative Officer

(v) Directorate of Public Relations

(vi) Army Purchase Organisation

(vii) Services Sports Control Board

(viii) Armed Forces Films and Photo Division

(ix) National Defence College

(x) School of Foreign Languages

(xi) History Division

(xii) College of Defence Management

(xiii) Defence Services Staff College

(xiv) Ministry of Defence Library

MILITARY ENGINEER SERVICES

9.2 Military Engineer Services (MES) provides support to the three Services at Strategic and Operational level. The organisation has expertise in a wide range of civil works ranging from conventional buildings and factories to specialised projects such as airports, runways, marine works and utility services.

Military Engineer Services has expertise in a wide range of civil works ranging from conventional buildings and factories to specialised projects such as airports, runways, marine works and utility services.

9.3 The MES functions under the overall control of Engineer-in-Chief at the Army Headquarters, who is also the advisor to the Ministry of Defence and the three services on infrastructure development projects and related policy issues. MES has an annual budgetary workload exceeding Rs. 10,000 Cr.. MES is responsible for providing dedicated support to the Armed Forces during war, peace and in counter-insurgency operations in all types of terrain and climatic conditions, to improve the combat effectiveness of our Armed Forces. MES is also supporting military diplomatic initiative of Government of India by creating infrastructure abroad for friendly foreign countries.

9.4 Major projects taken up by the MES during the year are :-

(a) **Children School, Jaipur :** Children School costing Rs 573.70 Lakh was sanctioned for strength of 2650 students. The work got completed on April 30, 2009. It is one of the landmark buildings constructed by MES with Rajasthani Architectural features.

(b) **Army Dental Centre (R&R), Delhi Cantonment:** The ultra modern and state of art hospital, the first of its kind in the country has been completed in May 2009 for Rs 1348.19 Lakh.

(c) **Naval Academy Project Ezhimala:** The first 'B' Tech Course has commenced in June 2009. Balance facilities at Naval Academy are likely to be completed by December 2010.

(d) **Provision of Civil Work for Coast Guard (CG) Aviation Air Enclave, Porbandar:** The main hanger building was completed in June 2008. The balance work got completed in September 2009. The completion cost of project is Rs. 1569.00 Lakh.

(e) **Infrastructure for Dornier Squadron at INS DEGA:** Provision of infrastructure requirement for establishment of Dornier Squadron at INS DEGA was completed in February 2009 at a cost of Rs 830.40 Lakh.

(f) **Runway Works:** These works constitute one of the most important infrastructure projects executed by the MES owing to the operational significance, complexities and large scope. The works for resurfacing of the main runway at Air Force station Tezpur and Adampur were completed on May 30, 2009 and September 17, 2009 respectively. Both the works were physically completed within a record time of 15 months.

(g) **New and Renewable Energy Sources:** An inter Ministerial group has been constituted for development plan of Ladakh wherein Non Conventional Energy (NCE) products/ sources shall be supplied/ installed in Ladakh region. Defence has already submitted its demand of power and NCE products to Ministry of New and Renewable Energy (MNRE).

9.5 **Married Accommodation Project (MAP):** The Married Accommodation Project (MAP) has been undertaken by Ministry of Defence for providing adequate married accommodation for Defence Services' personnel. Under the project, a total of 1,98,881 Dwelling Units (DUs) are proposed to be constructed.

9.6 Presently Phase-I of the project involving construction of 57,875 Dwelling Units is under execution at a cost of about Rs. 5500 Cr.. So far 41,088 Dwelling Units have been completed. Approval has also been accorded for construction of 66,727 Dwelling Units in Phase-II of the project at an estimated cost of about Rs. 10,000 Cr.. Its probable date of completion is March 31, 2012.

ARMED FORCES MEDICAL SERVICES

9.7 The Armed Forces Medical Services (AFMS) consist of the Medical Services of the Army, Navy and Air Force and a Director General, Armed Forces Medical Services. Each Medical Service is under Director General Medical Service (DGMS) in the rank of Lt General or equivalent. The Director General, Armed Forces Medical Services is the medical advisor to the Ministry of Defence and is also the Chairman of the Medical Services Advisory Committee. The personnel of the Armed Forces Medical Services (AFMS) include officers of the Army Medical Corps, Army Medical Corps (Non-tech), the Army Dental Corps and the Military Nursing Services.

9.8 The Armed Forces Medical Services of our country have distinguished record of providing dedicated and dependable health care to Armed Forces personnel and their families including personnel of para military organizations, while posted in the field and other Central Police/ Intelligence forces operating in the disturbed areas of the country. Besides, providing medical care to the ex-servicemen and their dependents and needy civilians within the country and abroad to the extent possible.

The Armed Forces Medical Services have distinguished record of providing dedicated and dependable health care to Armed Forces personnel and their families, and to the ex-servicemen and their dependents.

9.9 **Important Policy decisions/activities during the year:**

(a) **Award of Raksha Mantri's Running Trophies to best and second best Command Hospitals:** The RM's running Trophy was instituted in the Year 1989 to select the best run hospital amongst the command hospitals of three Services. From the year 2009 award of running trophy for second best command hospital has also been started. For the year 2009 Raksha Mantri awarded Command Hospital (Air Force) Bangalore and Command Hospital (Eastern Command) the best and second best service command hospitals trophies.

(b) **Enhancement of age of superannuation: Brig (Record) AMC (NT):** To overcome administrative and managerial difficulties, the Government has enhanced the age of superannuation in respect of Brig records in Army Medical Corps (NT) to 58 yrs wef March 2009.

(c) **Extension of provision of Persons with Disabilities (Equal opportunities, Protection of Rights and Full Participation) Act 1995:** The provision of act has been extended to Defence Personnel including ex-servicemen and dependents. The defence persons were not able to utilize the provisions of PWD Act-1995 due to difficulty in obtaining the requisite certificate from civil authorities. The procedure has been streamlined and Government of India notification now allows board for same to be conducted at a service hospital.

(d) **Revision of limit of monthly income for treatment of dependent parents:** The monthly income of dependent parents to qualify for treatment from AFMS has now been enhanced from Rs 1500/- pm to Rs 3500/- pm plus amount of DA as on date of consideration.

(e) **Increase in duration of study leave to AMC officers:** Study Leave period has been increased from 2 to 3 years for officers of Army Medical Corps.

(f) **Admission to Diploma & DNB courses in AFMS institutions:** Medical Officers in the service bracket of 7 to 10 years, who were till now eligible for a limited number of seats for MD in Hospital Administration, have now been made eligible for Diploma seats in various teaching institutions of AFMS. It has also been decided to offer Diplomate National Board (DNB) seats to Short Service Commission officers in 4 to 7 years service bracket, provided they undertake to serve for total of 14 years engagement.

(g) **AFMC Admission 2009:** The prestigious Armed Forces medical college at Pune was adjudged the second best medical college in the country. 130 (105 boys and 25 girls) were admitted for the MBBS course 2009. In addition 06 sponsored candidates two each from Nepal and Afghanistan and one each from Bhutan & Lesotho were also admitted.

(h) **Revision of HIV Policy for Armed Forces:** The HIV policy for the Armed Forces has been comprehensively revised. The major changes relate to programme delivery testing and surveillance and guidelines for anti-Retroviral Therapy, Prophylaxis (PEP), Prevention of Parent to Child Transmission (PPTCT) and paediatric HIV.

(i) **Award of required diploma to paramedical staff in AFMS:** Nearly all paramedical staff of the AFMS will get recognised diploma in their respective trade, either from UP State Medical Faculty or from Symbiosis Institute of Health Sciences, Pune. In addition the case for award of Bachelor of Paramedical Technology (BPMT) Degree for various paramedical courses at AFMC, Pune has also been finalized.

(j) **Medical Relief Team to Sri Lanka:** A 52 member medical team comprising an emergency medical unit with hospital had been initially deployed in Sri Lanka with effect from March 9, 2009 for a period of one month. An augmentation team comprising of a Surgeon, an Anaesthetist and 8 PBOR was inducted on March 31, 2009. A total of 3,466 patients were treated. The team was relocated to Manik Farm with effect from 7th September, 2009 for treatment of Internally Displaced Persons (IDPs) in Vavuniya region where 41,729 patients were treated including 456 major

surgical operations. The team returned back on September 10, 2009.

DIRECTORATE GENERAL DEFENCE ESTATES

9.10 The Directorate General Defence Estates, New Delhi, has advisory and executive functions in matters relating to management of Defence Lands and Civic Administration in 62 Cantonments. The Directorate General presently functions through six Principal Directorates at Jammu, Chandigarh, Kolkata, Lucknow, Pune and Jaipur. The Principal Directorates in turn supervise a number of field offices, such as offices of the Defence Estates Officers, Asstt. Defence Estates Officers and Cantonment Boards. These field offices are entrusted with the day to day management of Defence Lands and Cantonment Boards across the length and breadth of the country.

9.11 The Ministry of Defence owns approximately 17 lakh acres of land throughout the country which is managed by the three Services and other Organizations like Ordnance Factories Board, DRDO, DGQA, CGDA etc. The Army has the maximum of the land holdings under its control and management i.e. 13.79 lakh acres followed by Air Force 1.51 lakh acres and Navy 0.37 lakh acres. The defence land inside the notified Cantonments is approximately 2 lakh acres and the remaining around 15 lakh acres lie outside the Cantonments.

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9.12 The Directorate General is in the process of modernizing the land holding data. For this purpose, software has been designed in association with National Informatics Centre (NIC).

9.13 The Defence Estates Department also undertakes hiring of residential accommodation and hiring/ requisitioning of land for the Armed Forces.

9.14 Directorate General Defence Estates is also responsible on behalf of the Ministry of Defence to control, monitor and supervise the Civic Administration in Cantonments. There are 62 Cantonments in India. These are located in 19 States including National Capital Territory of Delhi. The Station Commander is the President of the Cantonment Board. Supervision and control over the working of these bodies is exercised through the General Officers Commanding-in-Chief and Principal Directors, Defence Estates at the intermediate level and by the Central Government through Director General Defence Estates at the apex level. Presently elected Boards are in place in 61 Cantonments. In one Cantonment Board at Meerut election could not be held due to Stay Order from High Court. The stay order has now been vacated by the Allahabad High Court, and it is expected that an elected Board would be in place by June 30, 2010.

9.15 The resources of the Cantonment Boards

are limited as the bulk of the property in the Cantonment is owned by the Government on which no tax can be levied. Boards however, receive payment of service charges in respect of Central Government properties. The Central Government provides financial assistance to certain extent by way of grant-in-aid to balance the budgets of some of the Cantonment Boards which are financially deficit. During the financial year 2009-2010, Rs. 51 Cr. was paid to the deficit Cantonment Boards, upto December 31, 2009.

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

9.16 The office of the Chief Administrative Officer (CAO) provides civilian manpower and infrastructural support to the Services Headquarters and the Headquarter Offices of Inter-Service Organisations (ISOs) under the Ministry of Defence. Joint Secretary (Training) also discharges the functions of the Chief Administrative Officer (CAO) and Director (Security).

9.17 The functions of the CAO's Office are carried out by the following six Divisions:-

(a) **Administration Division:** The Division provides administrative cover to about 12,000 civilian personnel employed in the Services Headquarters and Inter-Service Organisations.

(b) **Personnel Division:** The Personnel Division provides civilian manpower to the Services Headquarters and Inter-Service Organisations and deals with their personnel management functions.

(c) **Manpower Planning and Recruitment Division:** The Division is responsible for recruitment to various categories of the AFHQ Cadre/ Ex-Cadre posts, compassionate employment, framing/ amendment of recruitment rules for various grades, re-verification of character and antecedents of employees working in sensitive organisations, Cadre Review/ Restructuring of AFHQ civilian cadres and work related to pay Commissions etc.

(d) **Finance and Material Division:** This Division provides material support to the ISOs which includes procuring and provisioning of office equipment, stores, furniture, stationery and IT equipment.

(e) **Estates and Works Division:** This Division performs the Estate functions for residential accommodation of Service Officers posted at the Armed Forces HQ and coordinates the Major Works Programmes at the Defence Headquarters.

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(f) **Training, Coordination and Welfare Division:** The training requirements of civilian personnel posted in the Services Headquarters and in the ISOs are looked

after by the Defence HQ Training Institute (DHTI), functioning under the aegis of the CAO. During the year, DHTI has conducted 75 courses, imparting training to approximately 1903 Civilians and Service Personnel.

9.18 **Chief Security Office:** The Chief Security Officer, Ministry of Defence also functioning under the aegis of JS (Trg) & CAO, is primarily responsible for physical security, access control and prevention of breaches of security and fire within the Defence Headquarters Security Zone.

DIRECTORATE OF PUBLIC RELATIONS

9.19 The Directorate of Public Relations (DPR) is the nodal agency for the dissemination of information to the media and the public about the important events, programmes, achievements and major policy decisions of the Ministry, Armed Forces and Inter-Services Organisations under the Ministry of Defence. The Directorate with its headquarters in New Delhi and 25 regional offices across the country is responsible for providing media support to ensure wide publicity in the print and the electronic media.

9.20 As in previous years, the Directorate conducted Defence Correspondents' Course for mediapersons to enhance their knowledge about defence matters. Thirty-four journalists including four women from print and electronic media from all over the country attended the course.

9.21 The Directorate also brings out a fortnightly journal, Sainik Samachar for the Armed Forces in 13 languages (Assamese, Bengali, English, Gorkhali, Hindi, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu and Urdu).

9.22 The Broadcasting Section of the Directorate coordinates and produces a 40 minutes programme 'Sainikon Ke Liye' which is broadcast daily on All India Radio for the Armed Forces personnel. The Photo Section of the Directorate provides photo coverage to important events related to defence.

9.23 The major events for which media publicity was arranged during the period were the launching of the first indigenously built nuclear propelled strategic submarine 'Arihant'; induction of the AWACS into the IAF and MBT Arjun and T-90 Bhishma tanks into the Army; Rescue and Relief after cyclone in West Bengal; floods in parts of Andhra Pradesh and northern Karnataka; humanitarian aid to war-ravaged Sri Lanka; commissioning of Landing Ship Tank 'INS Airavat'; Navy's anti-piracy operations in Gulf of Aden; operationalization of Advanced Landing Ground (ALG) at Nyoma in eastern Ladakh; induction of Su-30 aircraft in Tezpur and various joint exercises.

ARMY PURCHASE ORGANISATION

9.24 Army Purchase Organisation (APO) is entrusted with the responsibility of the procurement and timely supply of dry food rations for the consumption of Defence Forces. APO procures rice and wheat

through the Food Corporation of India and sugar is allotted by the Directorate of Sugar out of levy quota allocated to various sugar mills. Other items like pulses, animal ration, edible oils & vanaspati and milk products are procured from the Central and State Public Sector Undertakings and National/ State level Cooperative Consumer/ Marketing Federations. Whole milk powder, butter and ghee are procured from the members of the National Cooperative Dairy Federation of India. Tea and tinned items like vegetables, fruits, jams, milk, meat and fish, coffee, egg powder etc. are procured from registered suppliers including private parties. APO is also procuring vegetables and chicken curry in retort pouches for the Armed Forces from registered suppliers having the technology. During the year 2008-09, Rs. 1160 Cr. was provided to the Army Headquarters for procurement of above items.

SERVICE SPORTS CONTROL BOARD

9.25 **Services Championships:** Services Sports Control Board (SSCB) conducts and co-ordinates various sports activities in the three Services. Inter-Services Championships comprising of four teams(Army Red, Army Green, Indian Navy and Air Force), were conducted under the aegis of SSCB in 19 Sports and trials were conducted in 10 disciplines, to select the Services team for participation in the National Championship/ Games.

9.26 **Best Services Sportsman and Team:** On the basis of performance in the Services, National and International Championships of the preceding years, one sportsman is selected from the three Services. AL Lakra, CPO PT having won bronze medal at Boxing World Cup held at Moscow, Russia in 2008 was adjudged "Best Services Sportsman" for the year 2008-09. Army Red having scored the maximum points in the Inter-Services Championships was awarded the 'Defence Services Overall Championship Trophy' 2008-09.

9.27 **Arjuna Awards:** Two of the Services sportsmen won the prestigious Arjuna Award namely MCPO GL Yadav for Yachting and NB Sub Satish Joshi for Rowing.

9.28 **National Championships:** During the year, the Services fielded senior men teams in 26 National Championships and junior teams in four such disciplines. Services Teams won eight National Championships i.e. Archery, Teakwondo, Rowing, Triathlon, Weight lifting, Fencing, Kayaking & Canoeing and Aerobics and were runners up in Athletics, Boxing, Wrestling, Handball and Gymnastics. The Services team also won Junior National Championship in two disciplines i.e. Boxing and Weight Lifting.

International Championships

9.29 **Asian Boxing Championship:** Two Boxers, CPO Surnjoy Singh and Sports Cadet Nanao Singh won a Gold and Silver medal respectively at the Asian Boxing Championship held at Zhu Hai, China. Cadet Nanao Singh had earlier won the World Junior Boxing Championship at Mexico.

9.30 **Other International Championships:** A total of 45 sportsmen/ officials were selected from the Services by various Sports Federations for representing the country in International Championships/ Tournaments. They won one Gold, four Silver and six Bronze medals in these championships.

9.31 The Services sportsmen also participated in various Championships organized under the aegis of the International Council for Military Sports (CISM) and won medals in the boxing championships.

ARMED FORCES FILMS & PHOTO DIVISION

9.32 The Armed Forces Films & Photo Division (AFFPD) is primarily responsible to meet the requirements of Service Headquarters and other Defence Organisations with regard to production, procurement and distribution of training films, production of photographs, art work etc. It works to meet the needs of training, Weapon Trials, Security, Defence Research, Intelligence, Records and Photo & Video Coverage of ceremonial functions of the Ministry of Defence.

9.33 The Central Defence Film Library (CDFL) of this Division is responsible for distribution of training films to various units/ formations/ training establishments/ commands, to meet their specific training requirements. The Library holds 587 titles in 35 mm sizes, 1165 titles in 16 mm sizes, 241 titles in VHS format, 34 titles in VCD format and 36 titles in DVD format.

9.34 At present, AFFPD have a total of 95 films on its production schedule, out of which 44 films have been completed.

9.35 The Mobile Cinema Unit (MCU) of this Division also procured/ distributed Documentary films/ News Magazines of information, cultural and family welfare values to the troops in the forward areas.

NATIONAL DEFENCE COLLEGE

9.36 The National Defence College is a premier defence institution of the country which has established a name for itself as a centre of excellence on matters pertaining to National Security and Strategic Studies.
Selected Armed forces officers of the rank of Brigadier/ equivalent and Civil Services officers of equivalent status of Director and above are nominated for training at the college. The officers undergo an eleven months programme with focus on National Security, covering all dimensions of domestic, regional and international issues to equip future policy makers with background necessary to get a broad understanding of the multifarious economic, political, military, scientific and organizational aspects that are essential for planning of National Strategy.

9.37 The 49th NDC Course consisted of 100 officers comprising Army (40), Navy (06), Air force (12), Civil Services (19) and Friendly Foreign Countries (23). The Course concluded on November 27, 2009.

9.38 Each Course member wrote a thesis to make original contribution to the available

knowledge bank on subjects of national and international interest that have a bearing on national security. These were evaluated and book prizes were awarded for the best six thesis. A medal titled 'Col Pyare Lal Medal' was awarded for the best thesis of the course

SCHOOL OF FOREIGN LANGUAGES (SFL)

9.39 The School of Foreign Languages (SFL) has been the pioneer in foreign language teaching in India, since 1948. The School is engaged in imparting training in 18 Foreign languages to personnel of the three Services of the Indian Armed Forces. It also caters to the needs of the other ministries and departments of the Government of India, such as the Ministry of External Affairs, the Cabinet Secretariat, Central Police Organisation viz, BSF, CRPF, ITBP, etc. Besides, civilian students are also admitted for Certificate of Proficiency, Advanced Diploma and Interpretership Courses.

9.40 The courses offered by the SFL are Certificate of Proficiency Course, Advanced Diploma (Intensive) Course, Interpretership Course and Short-term Course/ Capsule Course.

9.41 The SFL is the controlling organization for other Defence institutions where foreign languages are taught, viz National Defence Academy, Pune and Army Education Corps

School of Foreign Languages

Training Centre and College Pachmarhi. It conducts examinations and issues diploma to the successful candidates. For the IFS probationers, it is obligatory to qualify the Advanced Diploma (IFS) examination conducted by this Institute. The SFL conducts examination in Regimental Languages, viz, Nepali at various Service units all over the country.

HISTORY DIVISION

9.42 The Historical Section (India) (now re-designated as History Division) was established to write the histories of military operations conducted by the Indian Armed Forces after independence. Till now, it has compiled and published 19 volumes including the History of Operations in Jammu & Kashmir 1947-48, Operation Polo, Operation Vijay (Goa), Military Costume of India, Stories of Heroism, etc. The operations conducted by the Indian Peace Keeping Force in various countries have been compiled in the volumes, History of Indian Armed Forces in UN Operations in Congo, CFI or The Indian Troops in Korea 1953-54, Operation Shanti and Terrific Responsibility (The Battle for Peace in Indo-China).

9.43 Presently, the Division is compiling the third volume of the Stories of Heroism and a book on the War Memorials of the Indian Army. The History Division also functions as the record and reference office of the Ministry of Defence and the Indian Armed Forces. It receives operational records and miscellaneous records pertaining to military matters from the Ministry of Defence, Service HQs and various Units on a regular basis for preservations and use. During the year, about 3600 operational records, mostly of classified nature, were received.

9.44 The Division also provides two research fellowships under the Research Fellowship Scheme of the Ministry of Defence to encourage research in military history. So far seventeen research fellows have benefited under the scheme. The Heraldic Cell of the Division assists the three Service Headquarters and the Ministry of Defence in all ceremonial related matters by way of suggesting names for new establishments and acquisitions, designing their crests and badges and coining suitable mottoes.

COLLEGE OF DEFENCE MANAGEMENT (CDM)

9.45 The College of Defence Management(CDM) is a Tri-Service category "A" training establishment in existence for over three decades now. It is entrusted with the responsibility of instilling contemporary management thoughts, concepts and practices in the senior leadership of the Armed Forces. It is possibly the only institution, which imparts exclusive and quality training in defence management in the developing nations.

9.46 Osmania University recognizes the core course of CDM, namely the Higher Defence Management Course for the award of the Master of Management Studies (MMS) degree.

Valedictory function at College of Defence Management

9.47 During the year, the College of Defence Management conducted Higher Defence Management Course (HDMC), Management Development Programme (MDP), Senior Defence Management Course (SDMC), and First Joint Logistic Capsule Course.

DEFENCE SERVICES STAFF COLLEGE

9.48 The Defence Services Staff College (DSSC) is one of the oldest military institutions in India and is located at Wellington. DSSC is an inter services institution which imparts training every year to approximately 440 selected officers of the Defence Forces including more than 34 officers from friendly foreign countries and few selected officers from the Central Civil Services.

9.49 It is conducting the 65th Staff Course from June 15, 2009 to April 24, 2010. The Course Commenced with 441 Student Officers with Army-249, Navy -72, Air Force – 80, MoD – 04, Foreign – 34 and Coast Guard – 02.

MINISTRY OF DEFENCE LIBRARY

9.50 The Ministry of Defence library provides literature on subjects relevant to planning and policy formulation in the Ministry of Defence, three Service Headquarters, Inter-Service Organisations and other allied Defence Establishments located in Delhi. It specializes in Defence and related subjects, besides catering to the needs of general readers. During the year the library added 2300 books, subscribed to 141 Journals/ Periodicals and 24 Newspapers.

राष्ट्रीय रक्षा महाविद्यालय
NATIONAL DEFENCE COLLEGE

10

RECRUITMENT AND TRAINING

Missile Firing

Recruitment to the Armed Forces is voluntary and open to all citizens of India irrespective of caste, class, religion and community and a large number of training institutions in Defence Sector work in coordination with one another to train the recruited force

RECRUITMENT IN THE ARMED FORCES

10.1 The Armed Forces epitomize the ideals of service, sacrifice, patriotism and composite culture of the country. Recruitment to the Armed Forces is voluntary and open to all citizens of India irrespective of caste, class, religion and community, provided the laid down physical, medical and educational criteria are met.

RECRUITMENT OF OFFICERS

10.2 **Recruitment of Commissioned Officers in the Armed Forces through UPSC:** Commissioned Officers in the Armed Forces are recruited mainly through the UPSC which conducts the following two All India Competitive Examinations:

(a) National Defence Academy (NDA) and Naval Academy (NA): The UPSC holds entrance examination twice a year for entry into the NDA and Naval Academy. Candidates on completion of 10+2 examination or while in the 12th standard are eligible to compete. Having cleared UPSC written examination, the eligible candidates undergo Service Selection Board (SSB) interview. On being selected, successful candidates join the NDA or Naval Academy as per their option of service exercised at the time of applying. On completion of the course, they are sent to the respective Service Academies for their pre-commission training.

(b) **Combined Defence Service Examination (CDSE):** CDSE is conducted by the UPSC twice a year. University graduates or those in final year of graduation are eligible to appear in the examination. Successful candidates join the Indian Military Academy/ Air Force Academy and Naval Academy for Permanent Commission and Officers Training Academy (OTA) for Short Service Commission.

ARMY

10.3 **Recruitment of Commissioned Officers through Non-UPSC Entries:** Apart from the UPSC entries, the commissioned officers are also recruited in the Army through the following Non-UPSC entries:

(a) **University Entry Scheme (UES):** Final/ Pre-Final year engineering degree course students in the notified engineering disciplines are eligible to apply for Permanent Commission

in the Technical Arms of the Army as Commissioned Officers under the UES. Eligible candidates are selected through a campus interview by the Screening Teams deputed by the Army Headquarters. These candidates are required to appear before SSB and Medical Board. Successful candidates undergo one year pre-commission training at the Indian Military Academy (IMA), Dehradun. Cadets through this entry are also entitled to one year ante-date seniority on commissioning.

(b) **Technical Graduates Course (TGC):** Engineering graduates from notified disciplines of engineering/ post graduates with minimum second division aggregate marks for Army Education Corps and M Sc in Agricultural/ Dairy for Military Farms are eligible to apply for Permanent Commission through this entry. After the SSB and the Medical Board, the selected candidates are required to undergo one year pre-commission training at the IMA, Dehradun, before being commissioned. Engineering Graduates through this entry are also entitled to one year ante-date seniority on commissioning.

(c) **Short Service Commission (Technical) Entry:** The Short Service Commission (Technical) Entry Scheme provides avenues to eligible technical graduates/ post graduates for recruitment in Technical Arms. After SSB and Medical Board, the selected candidates are required to undergo approximately 49 weeks pre-commission training at OTA, Chennai. On completion of training, they are inducted as Short Service Commissioned Officers. Cadets through this entry are also entitled to one year ante-date seniority on commissioning. Terms and conditions of other short service commissioned officers are applicable.

(d) **10 + 2 Technical Entry Scheme (TES):** Candidates who have qualified 10 + 2 CBSE/ ICSE/ State Board Examination with minimum of 70% aggregate marks in Physics, Chemistry and Mathematics are eligible to apply for commission under the 10 + 2 (TES). On being successful in the SSB and being declared medically fit by the Medical Board, they undergo one year basic military training at IMA, Dehradun and thereafter undergo three years engineering degree course in respective streams before getting Permanent Commission. On being commissioned, they are further put through one year of post commissioning training for the Arm/ Service into which they are commissioned.

(e) **Short Service Commission (Women):** Women are offered Short Service Commission in three streams, viz. Non-Technical Graduate, Technical, Post Graduate/ Specialist, for a period of ten years, extendable by additional four years purely on voluntary basis. The duration of training is 49 weeks at Officers Training Academy, Chennai.

For Short Service Commission (Women) (Technical) Entry, candidates who have passed or are appearing in final year/ semester of B.E/ B.Tech in notified streams are eligible to apply. Candidates have to appear for SSB interview followed by Medical Test. The applicants for non-technical streams are required to apply through UPSC. Candidates who qualify the written examination conducted by UPSC have to appear for SSB interview as applicable to male Short Service Commission officers. 20% allotted seats from Non-Technical stream have been reserved for NCC 'C' Certificate holder women candidates with minimum 'B' grade and 50% aggregate marks in graduation examination. For Judge Advocate General Branch, applications are invited from Law Graduates with minimum 55% marks for direct SSB interview. Widows of Defence Personnel who meet the laid down eligibility criteria are granted four years age relaxation and 5% seats in each course (2.5% each in Tech and Non-Tech course) are reserved for them. They are exempted from written examination and would need to apply directly to Additional Directorate General of Recruiting, Integrated Headquarters of Ministry of Defence (Army). Recently, Government of India has granted option for Permanent Commission for officers in Army Education Corps and Judge Advocate General Branch after completion of 10 years of service.

University graduates possessing NCC 'C' Certificate with minimum 'B' grade and 50% aggregate marks in graduation examination are eligible to apply for Short Service Commission through NCC (Special Entry Scheme).

(f) **NCC (Special Entry Scheme):** University graduates possessing NCC 'C' Certificate with minimum 'B' grade and 50% aggregate marks in graduation examination are eligible to apply for Short Service Commission through this entry. Such cadets are exempted from written examination conducted by the UPSC and are directly put through the SSB interview followed by a Medical Board. Candidates meeting the qualitative requirements have to apply through NCC Group Headquarters at the State level. After screening by respective Group Headquarters, Directorate General of NCC forwards the applications of eligible cadets to the Recruiting Directorate of Integrated Headquarters of Ministry of Defence (Army).

(g) **Judge Advocate General Entry:** Law graduates with minimum 55% aggregate marks in LLB, who are within the age bracket 21 to 27 years, can apply for Judge Advocate General Branch. Eligible candidates are called for direct SSB interview followed by medical test.

It is a Short Service Commission Entry wherein suitable candidates can opt for Permanent Commission later.

(h) **Service Entries:** Recruitment of Personnel Below Officers Rank (PBOR) into officers cadre is done through Service Selection Boards in the following manner:

(i) **Army Cadet College (ACC) Entry:** The eligible Other Ranks (OR) in age group of 20-27 years and minimum two years of service, having 10+2 pass qualification, can apply for Regular Commission. After qualifying the written examination conducted by the Additional Directorate General of Recruiting, Integrated Headquarters of Ministry of Defence (Army), the aspirants are screened by SSB and the Medical Board. Successful candidates are trained at Army Cadet College Wing, Dehradun, for three years at the end of which they get a graduation degree. This is followed by one year pre-commission training at IMA, Dehradun.

(ii) **Special Commissioned Officers (SCO) Scheme:** Under this entry, JCOs/ NCOs/ ORs in the age group of 28-35 years, with a Senior School Certificate Pass (Class 10+2 Pattern) qualification, are eligible for Permanent commission after screening by SSB and Medical Board. They have to undergo pre-commission training of one year duration at IMA, Dehradun. These officers are employed as sub unit commanders/ Quarter Masters and on various Extra Regimental Employment appointments up to the rank of Major.

(iii) **Permanent Commission (Special List) [PC (SL)]:** Under this entry, JCOs/ NCOs/ ORs up to 42 years of age and minimum 10 years of service, with a Senior School Certificate Pass (Class 10+2 Pattern) qualification are eligible for commission after screening by SSB and Medical Board. They are granted PC (SL) after successful completion of four weeks orientation training at the IMA, Dehradun.

10.4 **Intake:** Intake of candidates for pre commission training as officers during the year (till December 31, 2009) is given in Table 10.1.

Table 10.1

Sl. No	Academy	Entry	Inducted
(1)	**NDA**	Army	355
		Navy	86
		Air Force	143
		Total	**584**
(2)	**IMA**	IMA (Direct Entry)	267
		ACC	139
		SCO	29

		PC (SL)	21
		Total	456
(3)	OTA	SSC(NT)	140
		SSCW	100
		NCC	62
		JAG	-
		Total	302
(4)	**Tech Entries**	UES	76
		SSC (Tech)	67
		10+2 TES	123
		TGC	79
		Total	**345**
Grand Total			**1687**

10.5 **Recruitment of Personnel Below Officers Rank (PBORs):** In the Army, there are eleven Zonal Recruiting Offices, two Gorkha Recruiting Depots, one Independent Recruiting Office and 59 Army Recruiting Offices in addition to 47 Regimental Centres which carryout recruitment through rallies in their respective areas of jurisdiction.

10.6 Recruitment of Personnel Below Officer Rank (PBOR) is carried out through open rally system. The recruitment of PBOR commences with the preliminary screening of aspiring candidates at rally site followed by document checking, physical fitness tests, physical measurement, and medical examination. This is followed by a written examination for the candidates found eligible in all respects. Finally selected candidates are dispatched to respective Training Centres for training. During the recruiting year 2009-10, the recruiting organization has enrolled 40554 recruits into the Army.

In the Army, there are eleven Zonal Recruiting Offices, two Gorkha Recruiting Depots, one Independent Recruiting Office and 59 Army Recruiting Offices in addition to 47 Regimental Centres which carryout recruitment of PBOR through rallies.

NAVY

10.7 **Method of Recruitment:** The recruitment system of the Navy is streamlined, transparent, expeditious and candidate friendly. There are two modes of induction in the Indian Navy viz. UPSC Entry and Non UPSC Entry.

Recruitment of Officers

10.8 **UPSC Entry:** The UPSC holds an examination, twice a year, for entry into the National Defence Academy (NDA) and Indian Naval Academy as Permanent Commission (PC) entries. Candidates are eligible to compete on completion of the 10+2 (PCM) Examination or while in the 12th standard. Candidates passing written examinations are sent to Services Selection Boards. Qualified candidates, who are medically fit, are selected for NDA/ Indian Naval Academy based on merit. On completion of training at NDA/ Indian Naval Academy, they are sent to the training ships at Kochi for sea training. For Graduate Special Entry scheme, UPSC holds Combined Defence Services Examination (CDSE), twice a year. University graduates

are eligible to appear in the examination. Successful candidates join the Indian Naval Academy for the Naval Orientation Course (NOC).

10.9 **Recruitment of Officers through Non-UPSC Entries:** Apart from UPSC entries, Commissioned Officers are recruited through Non-UPSC entries for Permanent Commission (PC) and Short Service Commission (SSC) cadres. For such entries, applications are invited and short listed at Integrated Headquarters of Ministry of Defence (Navy) [IHQ of MoD (Navy)]. The short listed candidates are then sent for SSB interviews. Thereafter, a merit list, comprising qualified candidates, is prepared as per the availability of vacancies for the following Branches/ Cadres of the Navy:

(a) **Executive:** Short Service Commission for Air Traffic Control/ Law/ Logistic/ Naval Armament Inspectorate (NAI)/ Hydro cadres/ Pilot/ Observer and Permanent Commission in Logistic/ Law/ NAI Cadres.

(b) **Engineering (Including Naval Architects):** Short Service Commission through University Entry Scheme (UES), Special Naval Architects Entry Scheme (SNAES) and SSC (E) Schemes. Permanent Commission through 10+2 (Tech) Scheme.

Apart from UPSC entries, Commissioned Officers are recruited through Non-UPSC entries for Permanent Commission and Short Service Commission cadres in Navy. Recruitment for such entries is made through Service Selection Board interviews.

(c) **Electrical Engineering:** SSC entry through UES and SSC(L) Schemes. Permanent Commission is through 10+2 (Tech) Scheme.

(d) **Education Branch:** Permanent Commission and Short Service Commission schemes exist for this branch.

(e) **10+2 Scheme:** The Scheme is a Permanent Commission entry for commission in the Executive, Engineering and Electrical branches of the Indian Navy. Under the scheme, candidates with 10 + 2 (PCM) qualifications, after selection through the Services Selection Board, are sent to the Indian Naval Academy for a B Tech Course. On successful completion of the course, they are granted Permanent Commission in the Executive, Electrical or Engineering branches of the Navy.

(f) **University Entry Scheme (UES):** Under UES Final and Pre-Final year Engineering students are eligible for induction into the technical Branches/ Cadres of the Navy. Naval selection teams from the IHQ of MoD (Navy) and Command Headquarters visit AICTE approved engineering colleges, across the country, to shortlist the candidates. The short listed candidates, based on All India Merit, are called for interview at the Services Selection Board. Successful candidates, thereafter, are put through

the medical tests. Final selection is based on all India merit on the basis of marks obtained in the SSB interviews.

(g) **Women Officers:** Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive (Observer, ATC, Law and Logistic Cadres), Education Branch and the Naval Architecture Cadre of the Engineering Branch.

(h) **Recruitment through NCC:** University graduates possessing NCC '**C**' certificate, with minimum '**B'** grading and 50% marks in the graduation degree examination, are inducted in the Navy as regular commissioned officers. These graduates are exempted from appearing in the CDSE conducted by the UPSC and are selected through the SSB interview only. They join the Indian Naval Academy for Naval Orientation Course (NOC) along with the CDSE cadets.

(i) **Special Naval Architecture Entry Scheme:** The Government has recently approved induction of 45 Naval Architect officers into the Naval Architecture Cadre of the Engineering Branch in the Navy, as Short Service Commissioned Officers, under a Special scheme of 'Special Naval Architects Entry Scheme' (SNAES). An empowered Naval team visits IIT *Kharagpur*, IIT *Chennai*, *Cochin* University of Science and Technology (CUSAT) and *Andhra* University, where B Tech (Naval Architecture) course is conducted, to select the candidates through campus interviews. The selected candidates undergo medical examination at the nearest Military Hospital and, if found fit, are selected for training.

Recruitment of Sailors

10.10 **Method of Recruitment:** Recruitment of sailors in the Navy is carried after the process of a written examination, physical fitness test and medical examination.

10.11 **Types of Entries:** The various entries, for recruitment of sailors, are as follows:-

(a) Artificer Apprentices (AAs) – 10 + 2 (PCM).

(b) Direct Entry (Diploma Holders) [DE (DH)] – Diploma in Mechanical/ Electrical/ Electronics/ Production/ Aeronautical/ Metallurgy/ Shipbuilding.

(c) Senior Secondary Recruits (SSR) – 10 + 2 (Sc.).

(d) Matric Entry Recruits (MR), for recruitment of Cooks, Stewards and Musicians – Matriculation.

(e) Non Matric Recruit (NMR), for recruitment of Topass Sailors (Safaiwala) – Class VI.

(f) Direct Entry Petty Officer (Outstanding Sportsmen).

10.12 **Indian Naval Academy at Ezhimala:** The Indian Naval Academy has been

commissioned at Ezhimala by the Prime Minister on January 8, 2009. The Academy would be supported by Base Depot Ship - INS Zamorin, Base Hospital – INHS Navjeevani and a Station Health Organisation. The first batch of integrated B Tech course has commenced training on June 22, 2009. Five Naval Academy Courses ex-Mandovi have shifted to the Academy to continue their training. All officer cadets would undergo a four year B Tech programme. On completion, they would be awarded a B Tech degree from Jawahar Lal Nehru University. The two streams to be followed are as follows: -

(a) Electronics and Communication Engineering for 'X' and 'L' officers.

(b) Mechanical Engineering for 'E' and 'NA' officers.

AIR FORCE

10.13 The policy for selection of officers in Indian Air Force is strictly on the basis of merit and is open to all citizens of the country. Indian Air Force being a technologically intensive service, continues to maintain its high standard for induction of personnel.

10.14 **Induction of officers through Non-UPSC entries:** Induction to National Defence Academy (NDA) and Combined Defence Service Examination (CDSE) entries are through UPSC. The non-UPSC entries for induction into the officer's cadre are: SSC (Men & Women) Flying, NCC entry (PC for men), ASC (PC for Men), GDOC (Non Tech) (PC for Men), Airmen Entry (PC for Air Warriors), SSS (Technical) (Men & Women) and SSC (Non Tech) (Men & Women).

(a) **Recruitment through Service Selection Boards:** Recruitment through Service Selection Boards/ Air Force Selection Boards is made for the Flying (Pilot), Aeronautical Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology branches of the Air Force .

(b) **University Entry Scheme:** Final/ Pre-Final year students in engineering disciplines are eligible for induction into the technical branches of Air Force as Permanent Commissioned Officers under the University Entry Scheme.

(c) **Service Entry Scheme:** Under this entry, serving personnel with minimum 10 years of service (of technical and non-technical trades) of the rank of Sergeant and above between the age of 36 and 42 years and minimum educational qualification as 10+2, are eligible for Commission after screening at unit level followed by Air Force Selection Board selection tests and medical examination. Service personnel of technical trades are inducted in the Technical Branch and personnel from Non-technical trades are inducted in the Ground Duty Branches.

(d) **Recruitment of Women Officers:** Eligible women are recruited as Short Service Commissioned Officers in the Flying, Aeronautical Engineering

(Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology branches of the IAF. However, women having joined the training courses commencing in January, 2009 in education, Accounts and Admin (Legal) branches in the IAF would be eligible for grant of Permanent Commission subject to vacancies available, demonstrated performance and service requirements.

(e) **Recruitment through National Cadet Corps (NCC):** University graduates possessing NCC 'C' Certificate with minimum 'B' grading and 60% marks in graduation are inducted in the IAF as Regular Commissioned Officers by way of selection through the Service Selection Boards.

10.15 **Officers Selection:** Intake of cadets for officers from January 1, 2009 to December 31, 2009 is 236 in Flying Branches, 226 in Technical Branches and 134 in Ground Duty Branches.

10.16 **Recruitment of Personnel Below Officer Ranks (PBORs):** The selection of candidates for PBORs is carried out through a centralized selection system on All India basis in which Central Airmen Selection Board (CASB) assisted by 14 Airmen Selection Centres (ASCs) located at different parts of the country, carries out the recruitment. The selection of candidates is carried out through centralized Scheduled Tests (STs). In addition, Recruitment Rallies are conducted in order to give opportunities to the youth hailing from remote/ low response/ border/ insurgency affected or hilly districts and island territories of the country. During the year 2009, a total of 7290 Personnel Below Officer Rank (PBORs) and 248 Non Combatant Enrolled {NCs (E)} were enrolled.

The selection of candidates for PBORs is carried out through a centralized selection system on All India basis in which Central Airmen Selection Board (CASB) is assisted by 14 Airmen Selection Centres (ASCs) located at different parts of the country.

COAST GUARD

10.17 **Recruitment of Officers:** The officers are recruited into Coast Guard bi-annually. The vacancies for Assistant Commandant in Coast Guard are advertised in Employment News and all leading newspapers in the month of November/ December and May/ June. Five years relaxation of age for SC/ ST and 3 years for OBC is admissible for recruitment. The officers are recruited in the following main streams:

(a) **General Duty:** Male/ female candidates having bachelor's degree with mathematics and physics as subject upto 12th standard of 10+2+3 scheme of education and between the age group of 21-25 years are eligible to apply for officers in General duty stream.

(b) **General Duty (Short**

Service Appointment Scheme) for Women: Women candidates having bachelor's degree with mathematics and physics as subject upto 12th standard of 10+2+3 scheme of education and between the age group of 21-25 years are eligible to apply for officers in General duty stream.

(c) **General Duty (Pilot/ Navigation):** Male/ female candidates having bachelor's degree in mathematics and physics as subject during graduation and between age group of 19-27 years are eligible to apply for officers in General Duty (Pilot/ Navigation) stream.

(d) **General Duty (CPL Short Service Entry):** Male/ female candidates having passed 12th class in the 10+2+3 scheme or equivalent and possessing current commercial pilot license (CPL) on the date of submission of application and between age group of 19-27 years are eligible to apply for officers in CPL Short Service Entry.

(e) **Technical Branch:** Male candidates with degree in engineering (naval architecture/ marine/ mechanical/ electrical/ tele-communication & electronic/ design/ production/ aeronautical/ control engineering) or equivalent qualification and between age group of 21-30 years are eligible to apply for officers in Technical stream.

10.18 **Selection of Officers:**The selection of officers (General Duty/ General Duty [(Pilot/ Navigator/ CPL Holders (Short Service Appointment)], Women SSA and Technical Branch is made through Coast Guard Selection Boards.

10.19 **Induction of Sub-ordinate Officers as officer:** The outstanding subordinate officers upto the age of 48 years are inducted as Assistant Commandant in General Duty and Technical branch as per the selection procedure.

10.20 **Recruitment of Personnel below Officers Ranks (PBORs):** The PBORs are recruited into Coast Guard bi-annually. The vacancies for PBORs in Coast Guard are advertised in Employment News and all leading newspapers in the month of November/ December and May/ June. The PBORs are recruited in the following main streams:

(a) **Yantrik:** Male candidates having passed matriculation with three years diploma in Mechanical/ Electrical/ Electronic Engineering and between the age group of 18-22 years are eligible to apply as Yantrik.

(b) **Navik(General Duty):** Male candidates having passed intermediate/ 10+2 with mathematics and physics and between age group of 18-22 years are eligible to apply as Navik(General Duty).

(c) **Navik (Domestic Branch):** Male candidates having passed Matric and between age group of 18-22 years are eligible to apply as Navik (Domestic Branch).

10.21 **Training in Indian Coast Guard:**

(a) **Training of Officers:** The basic training of General Duty and Technical officers

is conducted at Indian Naval Academy Ezhimala along with Naval cadets. On completion of basic training, the under trainee officers are attached to various Naval/ Air Force/ Coast Guard Establishments/ Coast Guard ships for professional training. Meritorious and outstanding officers are deputed for specialized courses in India and abroad for specialisation and higher courses as per schedule.

There are 24 Sainik Schools located in various parts of the country. Sainik School at Rewari (Haryana) is the latest one started in March, 2009.

(b) **Training of Enrolled Personnel:** The basic training for all Enrolled Personnel is conducted at INS Chilka. On completion of basic training, the under trainee enrolled personnel are attached to Naval/ Coast Guard establishment and ships for professional training.

(c) **Specialised Coast Guard Training:** Various specialized trainings are also imparted to both officers and enrolled personnel. Coast Guard specific training is being conducted at Coast Guard Training Centre, Kochi on Maritime Law Enforcement, Maritime Safety and Marine Protection oriented courses.

TRAINING FOR DEFENCE SERVICES

10.22 A large number of training institutions in the Defence Sector work in coordination with one another. The important ones are described in the following paragraphs.

SAINIK SCHOOLS

10.23 The Sainik Schools were established as a joint venture of the Central and State Governments. These are under the overall governance of Sainik Schools Society. At present there are 24 Sainik Schools located in various parts of the country. Sainik School at Rewari (Haryana) is the latest one started in March, 2009.

10.24 The objectives of Sainik Schools include bringing quality public school education within the reach of the common man, all round development of a child's personality and to remove regional imbalance in the officers' cadre of the Armed Forces. The Sainik Schools have shown an upward trend in the number of cadets joining the National Defence Academy in keeping with the primary aim of establishing of Sainik Schools to prepare boys academically, physically and mentally for entry into the National Defence Academy.

10.25 Sainik Schools admit boys in classes VI and IX. Their age should be 10-11 years for classes VI and 13-14 years for class IX as on July 1 of the year in which admission is sought. Admissions are made strictly in the order of merit on the basis of an All India Entrance Examination held in January each year. All the Sainik Schools are affiliated to the Central Board of Secondary Education, New Delhi.

Sainik School, Kapurthala

10.26 The annual fee and associated charges per student is approximately Rs. 70,000/- per annum including dietary charges. The State Governments award scholarships on merit-cum-means basis. Ministry of Defence similarly awards scholarships to wards of Defence Personnel including ex-servicemen. In addition, Ministry of Defence provides a part of scholarships as Central assistance to those students who are awarded State Government scholarships. The sharing of expenditure on fees/scholarships amongst Central Government, State Government and the parents is decided by the Board of Governors from time to time. Ministry of Defence also subsidises fee and dietary charges to the extent of about Rs. 10,000/- per annum to every cadet studying in Sainik Schools and also awards financial incentives to boys joining the NDA and Tech Entry Schemes of the Armed Forces.

10.27 The Sainik Schools Society has taken a number of measures to achieve academic excellence which have also resulted in achieving record higher board and NDA results. As on date, more than 8000 officers of the Defence forces are alumni of Sainik Schools. Every year at least two Sainik School Teachers are selected for the National Award conferred by the President on Teachers' Day.

RASHTRIYA MILITARY SCHOOLS

10.28 The Five Rashtriya Military Schools (earlier known as Military Schools) affiliated to CBSE are functioning at Ajmer, Bangalore, Belgaum, Dholpur and Chail. The Military Schools admit boys in class VI, based on the results of an all India Entrance Examination. While 67% seats are reserved for the wards of JCOs/ORs called 'entitled category', out of 33% non-entitled category seats, 20% are reserved for wards of service officers.

NATIONAL DEFENCE ACADEMY

10.29 The National Defence Academy (NDA) is the country's premier inter-service training institution. It has the unique distinction of being one of the first institutions in the world to impart combined training to officer cadets of the Armed Forces.

10.30 The three years course at the NDA is covered in six semesters during which a bond of friendship and respect for each other's service develops. On conclusion of this training, the cadets proceed to their respective Service Academies for further training before being commissioned as officers in the Armed Forces.

RASHTRIYA INDIAN MILITARY COLLEGE (RIMC)

10.31 The Rashtriya Indian Military College (RIMC) was founded on March 13, 1922, with the objective of providing the necessary preliminary training for boys of Indian birth or domicile, wishing to become officers in the Armed Forces of India. The institution now serves as a feeder institute to the National Defence Academy.

10.32 Selection for RIMC is through a written examination cum viva voce conducted through the State Governments. Seats for respective States are reserved based on population. The intake into the RIMC is biannual, in January and July. The maximum strength of RIMC is 250. The intake is at Class VIII for boys in the age groups 11 to 13 years. The college runs classes in science stream on 10+2 CBSE pattern.

INDIAN MILITARY ACADEMY, DEHRADUN

10.33 Founded in 1932, Indian Military Academy, Dehradun aims at the fullest development of intellectual, moral and physical qualities of persons joining the Army as officers.

10.34 The various modes of entry into IMA are :-

(a) On graduation from NDA.

(b) On graduation from Army Cadet College, which is a Wing of the IMA itself.

(c) Direct Entry graduate cadets, who qualify the Union Public Service Commission Exam and get through the Service Selection Board.

(d) For Technical Graduate's Course (TGC)

(e) Under University Entry Scheme (UES) for engineering college students in Final/ Pre-Final year of studies.

(f) Through 10+2 Technical Entry Scheme (TES)

10.35 The IMA also imparts training to Gentlemen Cadets from friendly countries.

OFFICERS TRAINING ACADEMY (OTA), CHENNAI

10.36 Established in 1963, the officers Training School (OTS) was re-designated as Officers Training Academy (OTA) from January 1, 1988 on completion of 25 years of its existence. Its main task, before 1965 was to train Gentlemen Cadets for grant

of Emergency Commission. From 1965 onwards, the Academy has started training cadets for Short Service Commission.

10.37 With the entry of women officers in the Army since September 21, 1992, around 100 lady officers now get commissioned from OTA every year in Army Service Corps, Army Education Corps, Judge Advocate General's Department, Corps of Engineers, Signals and Electrical and Mechanical Engineers.

Around 100 lady officers now get commissioned from OTA, Chennai every year in Army Service Corps, Army Education Corps, Judge Advocate General's Department, Corps of Engineers, Signals and Electrical and Mechanical Engineers.

10.38 OTA imparts pre-commission training for the following :-

(a) Short Service Commission (Non Technical) for Graduates.

(b) Short Service Commission (Technical) for Graduates.

(c) Short Service Commission (Women) for Graduate/Post Graduate Lady Cadets.

OFFICERS TRAINING ACADEMY (OTA), GAYA

10.39 The Cabinet Committee on Security (CCS), on December 3, 2009 has approved setting up of second Officers Training Academy (OTA) at Gaya, Bihar. The Academy has proposed capacity to train 750 Gentlemen cadets per year. The estimated financial implications involved are Rs.364 Cr. approximately which includes an non-recurring expenditure of Rs. 319.25 Cr. and an annual recurring expenditure of Rs. 44.75 Cr.

ARMY WAR COLLEGE, MHOW

10.40 Army War College, Mhow trains officers of the Army in tactical, operational and strategic aspects to meet future challenges in war. Inter-arms and inter-service aspects are included in the training, which is aimed at enabling officers to handle mixed groups of various arms and services at appropriate levels. The main courses conducted by the College are:-

(a) **Higher Command Course:** The aim of this course is to train selected future commanders of the Army in the art of warfare in contemporary and futuristic battlefield environment, at the operational and strategic levels, across the entire spectrum of conflict, with special emphasis on jointmanship.

(b) **Senior Command Course:** To train selected officers at middle level (Lieutenant Colonels) from all arms and services in tactical employment of a Battalion or Combat Group as part of a Brigade or Combat Command in cooperation with air and other arms and services, as also, in the training and administration of a unit in peace and war.

(c) **Junior Command Course:** The aim of this course is to train officers of all arms and services at junior command level,

(with more than four years of service) in the tactical employment of a Rifle Company or Combat Team as part of a Battalion Group or Combat Group in cooperation with air and other arms and services, as also in training and administration of a sub unit in peace and war.

(d) **Information Warfare (IW) Course:** The aim of this course is to train officers in various facets and nuances of IW to enable them to serve in selected appointments in Formation Headquarters.

10.41 Delegations from friendly foreign countries regularly visit the College to witness and understand the training philosophy and methodology being adopted by the College as also the training infrastructure being developed.

INFANTRY SCHOOL

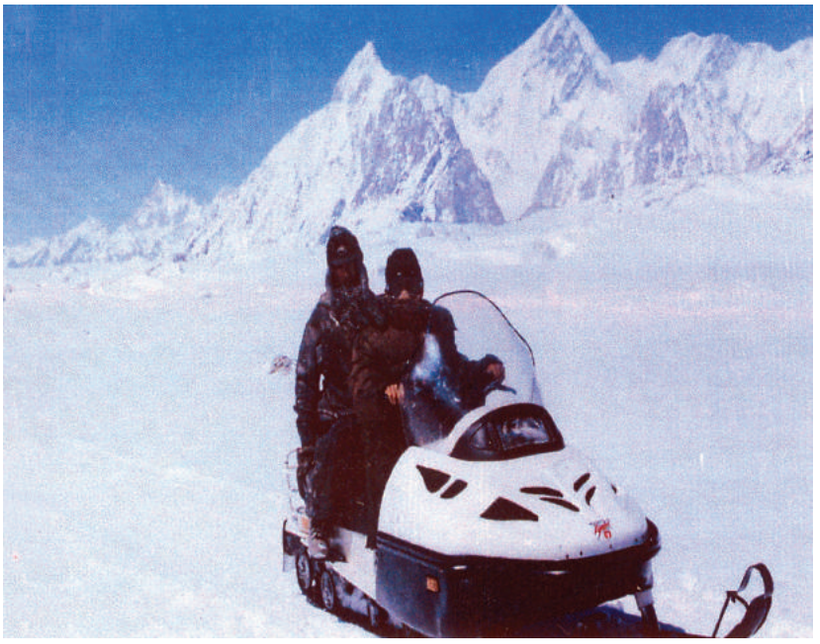
10.42 Infantry School, Mhow is a premier training institution for the Army particularly Infantry. It conducts 53 courses for officers, Junior Commissioned Officers (JCOs) and Other Ranks (ORs) of the Infantry and trains a total of 10,132 students in weapon handling and tactics each year. It is the Alma Mater of all Infantry men and imparts training in keeping with its motto of Infantry School **"Learning with Honour and Courage".**

JUNIOR LEADERS WING, BELGAUM

10.43 Junior Leaders (JL) Wing, Belgaum is also known as **'The Cradle of Infantry'**. This establishment forms part of Infantry School, Mhow and comprises of Platoon Commanders (PC) Wing and Commando Wing. The PC Wing conducts courses for JCOs and Non Commissioned Officers (NCOs) and has trained over 1640 students during the year. The Commando Wing conducts the Ghatak (Officers) course and the Ghatak NCO course. It has trained 561 Young Officers and 568 men of the Army, Navy and Air Force during the year. Selected personnel of Central Police Organizations, Para Military Forces (PMF) and friendly foreign countries also attended courses at the establishments during the period.

HIGH ALTITUDE WARFARE SCHOOL (HAWS), GULMARG

10.44 Established in 1962 to train selected personnel in all aspects of high altitude mountain warfare and develop techniques for fighting in such a terrain, HAWS conducts two series of courses, viz, Mountain Warfare (MW) and Winter Warfare (WW) at Sonamarg and Gulmarg respectively for officers and PBORs. Personnel from the School have scaled important peaks in the world including Mt. Everest, Mt Kanchenjunga and Mt. Ma ckinley in the USA. The establishment has an operational role in high altitude and glaciated terrain. It also trains students from friendly foreign countries and is a nodal centre for training in skiing and rock climbing.



Training for Glaciated Operation

JUNIOR LEADERS ACADEMY (JLA), BAREILLY

10.45 In view of the changing nature of modern warfare, a need to train the JCOs and NCOs of the Army on activity level leadership and related issues, to bring about a conceptual and attitudinal change in them, was felt. To meet this need the JLA was raised in June, 1998. The institution has developed by leaps and bounds to a status, where it is now being recognized by our neighbouring as well. Sir Lanka, Seychelles and Maldives have started subscribing to the Junior Leaders Courses being conducted by the institution.

COUNTER INSURGENCY JUNGLE WARFARE (CIJW) SCHOOL

10.46 CIJW School, Veirangte conducts courses for Officers, JCOs and NCOs in CI techniques, language courses and also imparts pre-induction training for all units prior to induction into insurgency areas. A pioneer in the field, training conducted here is appreciated by the best armies of the world.

MILITARY INTELLIGENCE TRAINING SCHOOL AND DEPOT (MINTSD)

10.47 The Intelligence School was first established in Karachi on January 20, 1941 to impart intelligence and security training to officers, Junior Commissioned Officers and Non Commisioned Officers. After partition, the Intelligence School was established at Pune on September 1, 1952. MINTSD is responsible for imparting training on Intelligence Acquisition, Counter Intelligence and Security aspects to all ranks of the Army, Navy, Air Force, PMF and certain civilian officers. The School also imparts training to personnel of friendly foreign armies.

ELECTRONIC AND MECHANICAL ENGINEERING SCHOOL (EME), VADODARA

10.48 The EME School conducts postgraduate level courses for officers and diploma/ certificate level courses for PBORs. A number of officers and PBORs from friendly foreign countries have been attending various courses conducted at this School.

ARMY EDUCATIONAL CORPS TRAINING COLLEGE AND CENTRE, PACHMARHI

10.49 In addition to the primary task of imparting educational training to troops and officers of Indian Armed Forces, the Army Educational Corps Training College & Centre, Pachmarhi also trains officers and men from various friendly foreign countries in different disciplines, like foreign languages, Martial Music etc.

MILITARY MUSIC WING, PACHMARHI

10.50 The Military Music Wing (MMW) raised in October, 1950 under the patronage of the then C-in-C Gen (later Field Marshal) KM Cariappa, OBE as a part of the AEC Training College & Centre, Pachmarhi has a rich treasure of more than 200 musical compositions to its credit and has also excelled in maintaining the standard of military music in India through a diverse range of courses designed to train the recruit bandsmen, pipers and drummers

ARMY INSTITUTE OF PHYSICAL TRAINING

10.51 The Army Institute of Physical Training (erstwhile Army School of Physical Training) was established at Ambala in 1923 and later moved to Pune in 1947. The Institute is responsible for imparting physical training to all ranks of the Army, Navy, Air Force and PMF. The Institution also conducts sports coaching courses in certain disciplines for JCOs and NCOs of the Army and equivalent ranks of other services. Personnel of friendly foreign armies are also trained at this establishment. The establishment of the Institute is designed to impart training to 55 officers, 300 Junior/ Non Commissioned Officers at any one time. The Institute trains approximately 100 officers and 1600 PBORs every year.

JUNIOR LEADERS ACADEMY (JLA), RAMGARH

10.52 Considering the need for more training facilities, it was decided to raise another JLA at Ramgarh in Bihar in 2001. The JLA Ramgarh has been organized on the same lines as JLA Bareilly. The institution has been imparting training from February 2003 to 648 candidates every year.

COUNTER INSURGENCY PRE INDUCTION TRAINING BATTLE SCHOOLS

10.53 Since the capacity of CIJW School was limited and on account of peculiar operational situation and administrative problems of movement of Units, it was considered necessary to impart training to units at places closer to their areas of operation, more Corps Battle Schools from within the resources of the Army have been established at Kheru, Sarol and Bhalra for

units moving into Northern Command and at Thakurbari for units moving into Assam and Meghalaya. Besides training for counter insurgency, these schools especially in the Northern Command are training units for their role along the line of control and high altitude.

COLLEGE OF MATERIALS MANAGEMENT

10.54 The College owes its lineage to Indian Army Ordnance Corps (IAOC) School of Instruction established at Kirkee in October, 1925. The School was later re-designated as IAOC Training Centre in February, 1939 and shifted to its present location at Jabalpur. In January, 1950, the IAOC School became the Army Ordnance Corps (AOC) School. The AOC School was renamed as College of Materials Management (CMM) and affiliated to the University of Jabalpur (Rani Durgavati Vishwa Vidhyalaya) in 1987. The CMM attained an autonomous status in 1990. The College is also registered as a 'Government College' with the University Grants Commission.

10.55 The National Assessment and Accreditation Council (NAAC), an autonomous body constituted under the UGC Act has awarded Five Star (Highest) Accreditation to the College. The college imparts necessary institutional training to all ranks of AOC and civilians entrusted with management of Ordnance support in the Indian Army. It also imparts training in handling unit administration and material management to selected Officers, JCOs and Other Ranks of all arms and services.

SCHOOL OF ARTILLERY, DEOLALI

10.56 The School of Artillery, Deolali, the academic centre for various sub-disciplines of the science and methodology of artillery warfare imparts technical training to Officers, JCOs and NCOs on artillery weapons and systems including training of pilots for Air Observation Post duties. Besides, the review of doctrines, study and trials of artillery equipment, both Indian and foreign, is also carried out.

10.57 Apart from a large number of Officers, JCOs and NCOs of the Indian Army, the school has also trained several officers and personnel from friendly foreign countries during the year.

ARMY AIR DEFENCE COLLEGE, GOPALPUR

10.58 The Army Air Defence College (AADC) earlier functioned as a wing of School of Artillery, Deolali till October, 1989, when it was moved to Gopalpur before separation of Air Defence Artillery from the main branch of Artillery. The college trains personnel of Air Defence Artillery, others arms and armed forces personnel of friendly foreign countries in Air Defence related subjects.

10.59 The AADC conducts a number of courses. Some of the courses are Long Gunnery Staff Course (Officers), Young Officers Course, Electronic Warfare Course, Senior Command Air Defence Course, Long Gunnery Staff Course, Junior Commissioned Officer/Non Commissioned Officer, Technical Instructors Fire Control Course,

Aircraft Recognition Course, Unit Instructors and Crew Based Training and Automated Data Processing Course.

ARMY SERVICE CORPS (ASC) CENTRE AND COLLEGE, BANGALORE

10.60 Army Service Corps Centre (South) and Army School of Mechanical Transport were merged with ASC Centre at Bangalore to establish Army Service Corps Centre and College at Bangalore on May 1, 1999. It is a premier training institute imparting basic and advanced training in multifarious disciplines viz logistics management, transport management, catering, automated data processing etc to Officers, Junior Commissioned Officers, Other Ranks and recruits of Army Service Corps as well as other arms and services.

10.61 Since 1992, the ASC College has been affiliated to Rohilkhand University, Bareilly for award of diplomas/ degrees in Logistics and Resource Management.

REMOUNT AND VETERINARY CORPS CENTRE AND SCHOOL, MEERUT

10.62 The Remount and Veterinary Corps (RVC) Centre and School, located in Meerut, aims at training officers and PBORs of all Arms and Services on animal management and veterinary aspects. Eleven courses for officers and six for PBORs are conducted. The total strength of students being trained is 250.

ARMY SPORTS INSTITUTE (ASI), PUNE

10.63 With a view to producing prospective medal winners at international sporting events, the Army Sports Institute at Pune has been set up alongwith Army Sports Nodes in selected disciplines at various placed in the country. Appropriate funds have been earmarked for state-of-the-art infrastructure and equipment coupled with food, habitat, foreign exposure and training under foreign coaches.

COMBAT ARMY AVIATOR TRAINING SCHOOL (CAATS), NASIK ROAD

10.64 Combat Army Aviator Training School (CAATS) raised at Nasik Road in May 2003 aims to train aviators in aviation skills and handling of aviation units in various operations of war, to train aviation instructors to develop Standard Operating Procedures (SOPs) and also to assist Army Training Command in development of Aviation Tactical Doctrine in Synergy with ground troops. The courses identified to be run in the School are Pre-Basic Pilot Course, Basic Army Aviation Course, pre-Qualified Flying Instructor Course, Aviation Instructor Helicopter Course, Helicopter Conversion on type, Flight Commanders Course and New Equipment Course.

COLLEGE OF MILITARY ENGINEERING (CME), PUNE

10.65 The College of Military Engineering at Pune is a premier technical institution conducting training for personnel of the Corps of Engineers, other Arms and Services, Navy, Air Force, Para Military Forces, Police and Civilians. Besides, personnel from friendly foreign countries are also trained.

CME is affiliated to Jawaharlal Nehru University (JNU) for the award of B.Tech and M. Tech degrees. All India Council for Technical Education (AICTE) also recognizes the graduate and postgraduate courses run by the CME. The College trains on average 1500 officers and 800 PBORs every year.

MILITARY COLLEGE OF ELECTRONICS AND MECHANICAL ENGINEERING (MCEME), SECUNDERABAD

10.66 The role of MCEME is to provide technical education to all ranks of EME, including civilians, in various disciplines of engineering, weapon systems and equipment with special reference to their maintenance, repairs and inspection and to provide training in management and tactics at senior, middle and supervisory levels. The MCEME is designed to train 1760 personnel (all ranks). It conducts 13 courses for officers and 61 different courses for PBORs.

10.67 As part of the continuous up-gradation of the existing training infrastructure training bays have been renovated and tubular models of Sub-Systems/ Sub Assemblies of equipment have been placed. Certain integrated bays for equipment with all training aids have also been established.

10.68 Computer Based Training Packages and digitized charts have been developed which contain exhaustive technical information on the functioning, repair, maintenance, servicing aspects and the correct usage of the electrical and electronics portion of equipment being taught at MCEME.

CORPS OF MILITARY POLICE CENTRE AND SCHOOL, BANGALORE

10.69 The role of the School is to train officers and PBORs on military and police duties in law, investigation, traffic control etc. Four courses for officers and fourteen courses for PBORs are being conducted. The total strength of students being trained is 910.

ARMY AIRBORNE TRAINING SCHOOL (AATS), AGRA

10.70 The Army Airborne Training School (AATS) was previously designated as Army Air Transport Support School (AATSS). In response to the need to concentrate all Airborne Training under one single agency, the Army Air Transport Support School was redesignated as Army Airborne School with effect from January 15, 1992.

MILITARY COLLEGE OF TELECOMMUNICATION ENGINEERING (MCTE), MHOW

10.71 MCTE, Mhow trains signal Officers in Combat Communication, Electronic Warfare, Communication Engineering, Computer Technology, Regimental Signal Communications and Cryptology. Besides, the five Training Faculties and Wings, the College has a Department of Administration to provide administrative and logistic support to the staff and the students, a Conceptual Studies Cell to evolve communication doctrines and produce training material, a modern and well-stocked library, and an in house printing press. Trainees are provided

with an opportunity to study and train in a formal setting to equip them with the requisite skills, knowledge and abilities for current as well as future tasks.

INSTITUTE OF MILITARY LAW, KAMPTEE

10.72 The Institute of Military Law was established at Shimla. In 1989, the institute was shifted to Kamptee. The charter of duties of the School includes a comprehensive system of legal education for officers of all arms and services of the Army. The School undertakes wide-ranging research, development and dissemination work in the field of Military and allied laws.

ARMOURED CORPS CENTRE AND SCHOOL, AHMEDNAGAR

10.73 In 1948, the Training Wings, the Recruits Training Centre and Armoured Corps Depot and Records were shifted to Ahmadnagar where the fighting Vehicles School was already functioning and they were all amalgamated to form the Armoured Corps Centre and School and Armoured Corps Records. It has six wings namely School of Armoured Warfare, School of Technical Training, Basic Training Regiment, Driving and Maintenance Regiment, Automotive Regiment and Armament and Electronics Regiment for Specialised training in these disciplines.

FOREIGN TRAINING

10.74 With the interest of foreign armies for training in Indian Army establishments increasing considerably, the Army personnel from neighbouring countries, South East Asia, Central Asian Republics (CAR), African continent and a few developed countries are being trained in India.

10.75 Under the Indian Technical and Economic Cooperation (ITEC) programme of Ministry of External Affairs, the Government of India provides assistance to the developing and under developed nations. Courses are also availed by Nepal and Bhutan under Special Aid Programme of the Ministry of Defence. Under this programme, personnel from developing countries get training in service institutions either free of cost or at subsidized rates. Developed western countries also send their officers for training in these institutions on reciprocal and self -financing basis by paying cost of training and other related charges.

11

RESETTLEMENT AND WELFARE OF EX-SERVICEMEN

Raksha Mantri Contributing towards AFFD Fund

The Department of Ex-servicemen Welfare (ESW) formulates various policies and programmes for the welfare and resettlement of Ex-servicemen (ESM) in the country

11.1 The Department of Ex-servicemen Welfare (ESW) formulates various policies and programmes for the welfare and resettlement of Ex-servicemen (ESM) in the country. The Department has two Divisions viz., the Resettlement Division and the Pension Division and has 3 attached offices namely Secretariat of Kendriya Sainik Board (KSB), Directorate General (Resettlement) (DGR) and Ex-servicemen Contributory Health Scheme (ECHS) Organisation as notified in January 2009. While the KSB is responsible for the welfare of Ex-servicemen and their dependents and also for administration of welfare funds, the office of Directorate General of Resettlement implements various policies/ schemes/ programmes of the Department for ESM like pre and post retirement training, re-employment, self employment etc. The Directorate General of Resettlement also has five Director Resettlement Zones (DRZs), one in each of the five Army Commands. Ex-servicemen Contributory Health Scheme (ECHS) takes care of the health and medical care of ESM and their dependents.

11.2 The KSB is assisted in its task by 32 Rajya Sainik Boards and 355 Zila Sainik Boards, which are under the administrative control of respective State Governments/ Union Territory Administrations. The Government of India bears 50% of the expenditure incurred on the organisation of RSBs while the remaining 50% is borne by the respective State Governments, welfare and resettlement of ESM being a joint responsibility of the Central Government and the State Government.

RESETTLEMENT

11.3 The main thrust of the Department of Ex-servicemen Welfare (DESW) is on resettlement/ re-habilitation of ESM and their dependents. Nearly 60,000 armed forces personnel retire or are released from active service every year, most of them being in the comparatively younger age bracket of 35 to 45 years. These personnel constitute a very valuable, disciplined, well- trained and dedicated talent pool which has to be utilized for nation building. This is sought to be achieved through the following modalities:-

Nearly 60,000 armed forces personnel retire or are released from active service every year

(a) Seeking suitable employment for the ex-

servicemen as also imparting necessary training, to prepare them to take on the new assignments/ jobs.

(b) Constant endeavour to provide employment opportunities in government/ quasi government/ public sector organizations.

(c) Pro-active action, to facilitate re-employment of the ESM in the Corporate Sector.

(d) Providing jobs through schemes for self-employment.

(e) Assist in entrepreneurial ventures.

TRAINING PROGRAMMES

11.4 Directorate General Resettlement (DGR) is entrusted with the responsibility of preparing retiring service personnel for a second career. Since the focus of training is on resettlement of ESM and retiring service personnel, in civil life, the course modules have been revised to cater for the requirements of the public/ private and the corporate sector.

11.5 **Officers' Training:** DGR organizes the bulk of Resettlement Training Programmes based on short courses of one to three months duration and a few courses up to six months duration. The courses are conducted in various fields. Management courses of six months duration, conducted in Indian Institutes of Management, Ahmedabad, Bangalore, Calcutta, Indore, Lucknow and other 'A' grade Business Schools.

11.6 Apart from the regular Industrial Security & Fire Safety and IT skill development courses, especially designed programmes in Retail Management, Disaster Management and Entrepreneurship/ Small Business Management courses have also been introduced for officers. 903 Officers have qualified for various courses up to December 31, 2009.

11.7 **Junior Commissioned Officers/ Other Ranks equivalent Training:** Resettlement Training Programmes for PBOR are conducted in diversified fields for a duration of up to six to nine months in government, semi-government and private institutes, spread all over the country. 24 weeks duration Management courses in renowned management institutes have also been started for PBORs, to improve their employment prospects. Modular management courses on Retail, Business Project in IT Company, Entrepreneurship, Insurance, Travel and Tourism and the like, have been included with a focus on placements, thus providing wider choice to them. 31151 PBORs (including 15595 trained in Career Transition Capsule Courses at Regimental Centers) have completed various courses upto December 31, 2009.

11.8 **Ex-Servicemen (ESM) Training:** This training is primarily meant for those ESM who could not avail the facility of resettlement training while in service. It is also extended to the widow/ one dependent of ESM. 892 ESM have undergone training upto December 31, 2009.

RE-EMPLOYMENT

55,220 ESM have gained employment during 2009.

11.9 The Central and State Governments provide a number of concessions to ex-servicemen for their re-employment in Central/ State Government Departments. These include reservation of posts/ relaxation in age and educational qualifications, exemption from payment of application/ examination fees and priority in employment to the disabled ESM and dependents of deceased service personnel on compassionate grounds.

11.10 **Reservation in Government Jobs**: The Central Government has provided for the following reservation in services for ESM:-

(a) 10% in Group 'C' posts, 20% in Group 'D' posts

(b) 14.5% in Group 'C' and 24.5% in Group 'D' posts in PSUs and Nationalized Banks.

(c 10% posts of Assistant Commandants in paramilitary forces.

(d) 100% in Defence Security Corps.

Most of the State Governments also provide reservations to ESM in State Government jobs.

11.11 **Placement:** Persistent efforts of the Department with the dual aim of increasing awareness amongst the Corporate Sector on the availability of valuable human resources in Ex-Servicemen and enhancing job opportunities for ESM in Corporate/ Private Sector have borne fruits with major demands now coming up from the Corporate Sector/ PSUs/ PMF. 55,220 ESM have gained employment as on December 31, 2009. The details of some of the major placements done are as under: -

(a) **Security Agencies:** The DGR empanels/ sponsors ESM run private security agencies, companies and corporations for providing security guards to various Central Public Sector Undertakings (PSUs) and industries in the private sector. The scheme offers good self-employment opportunities to retired officers and adequate employment opportunity to retired PBOR, in a field, where they have sufficient expertise. The number of ESM employed during 2009 is 37689.

(b) CISF in coordination with DGR carried out recruitment drive for ESM, as a result of which 895 ESMs (PBOR) were selected in the rank of Sub Inspector, Head Constable and Constable. Similarly, Delhi Police has also selected 45 ESM (PBOR).

(c) **Government Schools:** Department of Education, Government of National Capital Territory has awarded the contract for providing security to Government schools in Delhi to DGR empanelled Private Security Companies. A total of 1500 ESM guards have been employed under this scheme.

During 2009, 676 officers have been sponsored for various employment opportunities.

(d) **Officers' Employment:** During 2009, 676 officers have been placed.

SCHEMES FOR SELF-EMPLOYMENT

11.12. The government has formulated several Self-employment ventures for rehabilitation and resettlement of Ex-servicemen and their families. The details of Self-employment schemes and the achievements are given in succeeding paras.

11.13 **Allotment of Army Surplus Vehicles**: Ex-Servicemen and widows of defence personnel, who died while in service, are eligible to apply for allotment of Army Surplus Class V-B Vehicles. The figures for registration and allotment of Army Surplus vehicles for 2009 (upto December) are 1968 and 1526 respectively.

11.14 **Coal Tipper Scheme:** This welfare scheme for widows/ disabled soldiers is linked with the Coal Transportation Scheme. Up to December 2009, 78 widows/ disabled soldiers benefited through this Scheme.

11.15 **Allotment of Oil Product Agency:** Ministry of Petroleum and Natural Gas has reserved 8% of Oil Product Agencies i.e LPG Distributorship, Petrol Pumps and Superior Kerosene Oil Distributorship etc. for the defence category applicants who comprise of wartime/ peace time widows and disabled soldiers. Eligible applicants are sponsored by DGR for the purpose. In 2009, 448 Eligibility Certificates were issued.

11.16 **Mother Dairy Milk Booths and Fruit & Vegetable (Safal) shops:** This is an important self-employment scheme for ESM PBOR. The details of ESM sponsored and qualified for selection during the year 2009 are given in Table 11.1:-

11.17 **Management of CNG Station by ESM (Officers) in NCR:** During the year 2009, names of 37 ESM (Officers) were forwarded, out of which 20 ESM (officers) have been selected. The pay package has been raised

Table 11.1

Mother Dairy Milk Booths		Mother Dairy Fruit & Veg Shops	
ESM Sponsored	ESM Selected	ESM/ Dependents Sponsored	ESM/ Dependents Selected
538	315	273	107

from Rs. 25000/- to Rs. 45000/- with effect from 01 March, 2009.

11.18 **Management of Toll Plaza under NHAI:** Presently 88 Toll Plazas are being managed by the ESM officers. Approximately 7000 ESM have also benefited from the scheme.

PUBLICITY

11.19 Wide publicity of policies and various schemes for welfare of ESMs is of paramount importance so as to reach each unit and Ex-Servicemen/ Widows across the length and breadth of the country. This is done by means of publications of periodical magazine like **Sainik Punarvas News Fliers**, **Brochures, Leaflets**, **articles** in **Sainik Samachar and Baatcheet,** exhibitions/ seminars and ex-servicemen rallies.

11.20 A stall has been put up at DEFEXPO-2010 at Pragati Maidan, New Delhi from February 15 to 18, 2010 on the theme **'Access to Excellence in Human Resource'** to create

awareness in the corporate sector regarding availability of trained and disciplined human resource in the form of ex-servicemen.

11.21 Various other forums provided by Command HQs, Sainik Welfare Departments (States) and Sainik Sammelans are also being utilised for publicity purpose. The Department has arranged with Doordarshan to telecast 30 minutes programmes on ESM Welfare, Resettlement Programmes and episodes that would highlight success stories of ESM who have benefited from various schemes of Government. These programmes would also disseminate information regarding various schemes of Govt. available to them.

WELFARE

11.22 **Kendriya Sainik Board:** The Kendriya Sainik Board(KSB) is the nodal agency to look after the welfare of ex-servicemen and their families in liaison with Rajya Sainik Boards/ Zila Sainik Boards. The KSB administers welfare schemes through the "Armed Forces Flag Day Fund"(AFFDF). Financial assistance is provided to institutions such as Paraplegic Homes, Cheshire Homes, Military Hospitals, St. Dustan's After Care Organisation (for blind Soldiers) and Homes for taking care of old and physically handicapped ex-servicemen and their dependents. Financial assistance is also provided to individual ex-servicemen and their families who are in a state of penury to meet their specific needs. Funds for the running of War Widows Hostels and scholarships to ex-servicemen's orphans are also provided. During 2009-10 an amount of Rs.95.5 lakhs has been sanctioned for computerization of various RSBs/ ZSBs from AFFDF.

11.23 **Raksha Mantri's Discretionary Fund (RMDF):** A portion of the earnings of Armed Forces Flag Day Fund is set apart as RMDF, which is used to provide financial assistance

28th Meeting of Kendriya Sainik Board at Vigyan Bhawan

to needy Ex-Servicemen, widows and their wards for various purposes viz marriage of daughters, assistance for ESM/ Widows in Penury, House Repair Grant, Children Education Grant, Funeral Allowance for Widows, Assistance to orphan daughters, medical treatment and one time Penury Grant subject to maximum of Rs. 48,000/-. An amount of Rs. 5,23,76,397/- has been disbursed among 2661 beneficiaries during the Financial year 2009-10 (upto November 30, 2009).

11.24 **Prime Minister's Scholarship Scheme:** This scheme was announced on August 15, 2006 and a total of 4000 scholarships are available annually. The aim of the scholarships is to encourage the wards of ESM/ Widows to go for higher technical/ professional education. Once selected, the scholarships are provided for the entire duration of the course. During the financial year 2007-08 and 2008-09, the scholarships (4000) have been fully utilised. Under the Scheme the amount of scholarships are as follows:

(a) Rs. 1250/- per month for boys (Paid Annually)

(b) Rs. 1500/- per month for girls (Paid Annually)

Funds for renewal of scholarships for the years 2006-07 and 2007-08 as well as fresh scholarships for the year 2008-09 have been received from PMO and KSB is in the process of disbursing the same to the eligible candidates. Recently, the wards of the retired Coast Guard Personnel have also been included in the Scheme.

11.25 **Seats in Medical/ Dental Colleges:** Reserved seats in Medical/ Dental colleges for wards of deceased/ disabled personnel and gallantry award winners of the armed forces are allotted by KSB on approval from Ministry of Health and Family welfare. The scheme is in practice since 1996. During academic year 2009-10, 31 eligible students availed the facility.

11.26 **Education grants:** Educational grants are given to the wards of dead/ disabled soldiers, living in 35 war memorial hostels to pursue their studies. Details are given below:

(a) **Cases Attributable to Military Service:** Educational Grant of Rs. 990/- per month per child is provided to the wards of war widows/ war disabled and personnel whose death/ disability is attributable to military service (upto class XII). An amount of Rs. 8,55,353/- has been disbursed by December 10, 2009

(b) **Cases Non Attributable to Military Service:** Rs 450/- per month per child is provided to the wards of personnel whose death/ disability is non attributable to service, peace time casualties (died in harness)(up to class XII), housed in 35 War Memorial Hostels to enable them to pursue their studies. An amount of Rs. 1,20,750/- covering 22 cases has been disbursed by December 2009.

11.27 **Sainik Rest Houses:** To cater for welfare and accommodation need of ESM,

over 252 Sainik Rest Houses have been built in the country, which provide transit facilities to Ex-Servicemen and their dependents at nominal rates. An amount of Rs. 30 lac has been provided for construction of Sainik Rest Houses for Financial Year 2008-09.

EX-SERVICEMEN CONTRIBUTORY HEALTH SCHEME ORGANISATION

11.28 Ex-servicemen Contributory Health Scheme came into effect on April 1, 2003. It aims to provide quality medicare to its beneficiaries including Pensioners and their dependents. All the 227 Polyclinics across the country have been operationalised. The total number of beneficiaries at present under the scheme is 32.36 Lakh including 10.20 Ex-servicemen and 22.15 Lakh dependents. Concerted efforts are being made to increase the number of empanelled hospital/ diagnostic centres. At present 1233 hospitals/ diagnostic centres have been empanelled all over the country at 167 locations in addition to Military/ Government hospitals/ medical colleges to which the ECHS patients can be referred.

COMMONWEALTH WAR GRAVES COMMISSION

11.29 The Commonwealth War Graves Commission (CWGC) was established by a Royal Charter of May 21, 1917 and extended by a supplemental charter of June 8, 1964. Its purpose is to look after the memorial, grounds and graves of the soldiers of the Armed Forces of the Commonwealth who died in the First and Second World Wars. The War Graves are maintained by CWGC and are spread over 145 countries around the World. At present, United Kingdom, Canada, Australia, New Zealand, South Africa and India are members of the Commission.

11.30 In India, there are 27 cemeteries and memorials in 12 cities. The Department of ESW is responsible for liaisoning with the CWGC and releasing our annual contribution to the CWGC for maintenance of these memorials and graves

PENSION TO ARMED FORCES PERSONNEL

11.31 Pension to an estimated number of 22.18 lakh Defence pensioners is disbursed through all branches of the 27 Public Sector Banks, 4 Private Sector Banks viz. HDFC Bank, ICICI Bank, AXIS Bank and IDBI Bank, 640 Treasuries, 61 Defence Pension Disbursing Offices (DPDOs), 2 Post Offices, 5 Pay and Accounts Offices (PAOs) scattered all over India. For the Armed Forces pensioners residing in Nepal, disbursement of pension is done through 3 Pension Payment Offices(PPOs)

11.32 **Retiring/ Service Pensions:**

(i) Linking of full pension with 33 years of Qualifying Service is dispensed wef 01.01.2006. The retiring pension of Commissioned Officer retiring/ invaliding out of service wef 01.01.2006 will now be calculated at 50% of

emoluments last drawn or reckonable emoluments drawn during last 10 months.

(ii) The benefits of adding years to Qualifying Service is withdrawn for the purpose of computing pension as well as other related benefits such as gratuity wef 01.01.2006.

11.33 **Constant Attendance Allowance:** With effect from 01.01.2006, Constant Attendance Allowance, in all eligible battle/ non battle casualty case shall be paid at the revised rate of Rs 3000/- p.m. irrespective of the rank. Further this rate will be increased by 25% every time the dearness allowance payable on revised pay band goes up by 50%.

11.34 **Recent Improvements:**

(i) Lt Col and equivalent officers in Navy and Air Force have been placed in PB-4 (i.e. Rs 37400-Rs. 67000) with Grade Pay Rs. 8000/- pm and MSP Rs. 6000/- pm. Accordingly, the rates of minimum guaranteed pension/ family pension for the rank of Lt. Colonel (substantive)/ Lt. Col (TS)} and equivalent ranks in Navy and Air Force have been notified.

(ii) Hony rank of Nb/ Sub granted to the rank of Hav will be notionally considered as promotion to the higher grade of Nb/ Sub and benefit of fitment in the pay band and higher grade pay will be allowed notionally for the purpose of pensions only.

(iii) In case the Special Family Pension of a widow of Pre-1996 PBOR, was discontinued due to her remarriage; it will be restored wef 20.01.2009.

(iv) To reckon enhanced rates of classification allowance wef 01.01.2006 on notional basis for calculation of pension (in case of MSP) in r/o PBOR who retired between 01.01.2006 and 31.08.2008.

(v) A Committee was set up under the Chairmanship of Cabinet Secretary to look unto the issue of One Rank One Pension and other related matters. It made the following recommendations which have been accepted by the Government and are at various stages of implementation:-

(a) Inclusion of Classification Allowance for PBOR from 01.01.2006.

(b) Removal of linkage of full pension with 33 years from 1.01.2006.

(c) Revision of Lt Gen pension after carving out a separate pay scale for them.

(d) Bringing parity between pension of pre and post 10.10.97 PBOR pensioners.

(e) Further improving PBOR pensions based on award of GOM 2006.

(f) Board banding percentage of disability/ war injury pensions for

pre 1.1.2006 disability/ war injury pensioners.

(g) Removal of cap on war injury element of pension in the case of disabled pensioners belonging to Category E.

11.35 **Defence Pension Adalats:** Six Adalats were held during the period January to December 2009 one each at Jamnagar (Gujrat), Guntur (A.P.), Nasik (Maharashtra), Yol Cantt (H.P.) Tiruchirappalli (T.N.) and Patiala.

12

COOPERATION BETWEEN THE ARMED FORCES AND CIVIL AUTHORITIES

Andhra Floods - Ferrying Stranded Flood Victims at Mehbubnagar

Apart from the main responsibility of defending the borders of the country, the Armed Forces render timely assistance to civil authorities for the maintenance of law and order, essential services and in rescue and relief operations during natural calamities

12.1 Apart from the main responsibility of defending the borders of the country, the Armed Forces render timely assistance to civil authorities for the maintenance of law and order and/ or essential services as also in rescue and relief operations during natural calamities. The details of assistance provided by the Armed Forces during the period are given in the succeeding paragraphs.

ARMY

12.2 The Army has undertaken a large number of Military Civic Action programmes aimed at **"Winning the Hearts and Minds"** of the people in Jammu & Kashmir and North Eastern States, as part of a strategy for conflict resolution. These programmes are focused at fulfilling the needs of the people, alleviating their problems, development of remote and inaccessible areas, assuaging the feeling of alienation and moulding public opinion towards peace and development. These civic actions include a wide range of activities across the entire spectrum of development and demonstrate the **'humane face'** of the soldier. In Jammu & Kashmir and the North East, the projects are being implemented under Operation SADBHAVNA. Similar activities are also being undertaken as part of Operation SAMARITAN in the North East.

12.3 **Projects Undertaken:** The project summary for the Financial Year 2009-10 is as follows:-

Ser No	Projects	J&K	NE States	Total	Details
(a)	Infrastructure	59	109	168	Includes construction of tracks, bridges, culverts, electrification projects, water supply schemes, toilet block etc.
(b)	Health Care	188	55	243	Includes conduct of medical camps, vet camps, provision of artificial limbs and assistance to various health centres.
(c)	Education (Including IT assistance)	387	87	474	Includes construction, renovation, repair and maintenance of school buildings, hostels, establishment of IT Centres, construction of playing fields etc.

(d)	Human Resource Development	440	42	482	Includes construction, renovation repair and maintenance of Vocational Training Centres, Community Development Centres, Women Empowerment Centres and Co-operative Societies.
(e)	National Integration Tours	96	22	118	Includes educational excursions for children, senior citizens and women.
(f)	Medical Camps				Medical camps were organised at numerous locations. Approx 29,000 patients were treated for various ailments in these medical camps during the period under review.
(g)	Veterinary Camps				Large number of Veterinary camps were also organised. Approximately 9,000 animals were given treatment during the period under review.

Medical Camp

Vet Camp

Weaving Centre

Motivational Tour

PMO Projects

12.4 **Micro Hydel Projects (MHPs):** Under the Prime Minister's Reconstruction Plan for J & K, the Army has undertaken the task of construction of 1000 Micro Hydel Projects (MHPs) in J & K. Of these, a total of 300 Micro Hydel Projects (MHPs) are under Op SADBHAVNA, 265 MHPs have been financed by Border Area Development Programme (BADP) and 435 MHPs are being funded by the Ministry of New & Renewable Energy (MNRE).

12.5 The details of the projects completed and handed over to civil administration as on September 30, 2009 are given in Table 12.1.

12.6 **Parliamentary Elections 2009:** Parliamentary elections 2009 were conducted in April and May 2009. The successful and incident free polling process was an outcome of the cooperation between the Armed Forces and Civil Authorities. It was a major setback to the terrorists and their mentors. This gave courage to the populace to stand up for their rights and condemn the activities of anti-national elements who are perpetrating violence for their own vested interests.

Assistance during Natural Calamities

12.7 **Cyclone 'AILA':** Two Engineer Task Forces and 16 Medical Teams were deployed in North and South Parganas on May 25, 2009, to provide assistances in relief operations. The help provided was timely and meaningful. A total of 13561 patients were treated besides the relief and recovery operations.

12.8 **Flood Relief:** Large areas of Andhra Pradesh and Karnataka were severely affected by floods due to heavy rains in September and October 2009. The Army deployed 12 Columns with Engineer Task Forces and

Table 12.1

Sl No.	Region	Allotted	Completed	Handed Over	Not Handed Over	Details
(a)	Ladakh Region	100	93	93	07	
(b)	Kashmir Region	550	550	550	-	Includes 13 Solar Diode Electrification Projects.
(c)	Jammu Region	350	350	350	-	Includes 90 Solar Diode Electrification Projects.
	Total	1000	993	993	07	

Flood Relief

three Medical Teams to provide invaluable assistance.

12.9 **Restoration of Foot Bridge on River Alaknanda:** The foot bridge on River Alaknanda near Govindghat, enroute to Hemkund Saheb was damaged on June 21, 2009 leaving a large number of pilgrims stranded on either side. A make shift bridge was established on June 22, 2009 by the Army. In addition, blankets and food packets were also provided to the stranded pilgrims.

The Army deployed 12 Columns with Engineer Task Forces and three Medical Teams to provide invaluable assistance in Andhra Pradesh and Karnataka floods.

Aid to Civil Authorities

12.10 **Search and Rescue Operation:** Consequent to disappearance of the helicopter carrying Andhra Pradesh Chief Minister on September 2, 2009, four columns, one Engineer Task Force and one team of Special Forces were deployed for the rescue operation.

12.11 **Mathura Train Accident :** A major train accident occurred at Mathura Railway Station on October 21, 2009. The Army rendered valuable service in terms of gas cutters, recovery and ambulance vehicles, and assistance to the civil administration in relief operations. 15 bodies and 35 injured were recovered from the accident by the Army.

12.12 **Oil Sector Strike:** All Territorial Army units of the Oil Sector i.e, ONGC, Refinery and Pipeline and Marketing Battalions were embodied to handle the strike. They performed creditably at the plants, refineries, depots and the airports where civil aircraft were refueled during the strike.

INDIAN NAVY

12.13 Defence – Civil cooperation is an integral part of the duties of the uniformed personnel and the Indian Navy lays great importance to this role. Important initiatives undertaken by the Indian Navy towards promoting Defence-Civil

Cooperation during Oil Sector Strike

Cooperation are enumerated in succeeding paragraphs.

12.14 **Tropical Cyclone 'AILA':** A Clearance Diving Team was deployed for Humanitarian Assistance/Disaster Relief work with state agencies during tropical cyclone named "Aila", which crossed the West Bengal coast on May 25, 2009.

12.15 **Mumbai Flood Relief:** Flood Relief Teams were deployed at Ghatkopar, Malad, Mankhurd, Worli, Colaba during monsoon at Mumbai from June 5 to September 15, 2009.

12.16 **Karwar Flood Relief:** Based upon the requirements of flood relief, a diving team was deployed at Hirehal in Gadag district from October 3 to 5, 2009.

12.17 **Flood Relief Operation in Andhra Pradesh:** Naval divers, rescue boats and

HA/DR mission post "AILA"

helicopters were deployed for flood relief operations in three districts of Andhra Pradesh from October 4 to 7, 2009. Over 1700 persons were evacuated to safety and the relief material was distributed to affected people.

12.18 **Rescue Operation in Thekkady:** Consequent to the boat accident off Thekkady, three diving teams were deployed on September 30 to October 1, 2009 for conduct of rescue operations.

12.19 **Relief at Mangamaripeta Village:** Consequent to the destruction of some houses by wildfire, relief operations to support the people of village Mangamaripeta were undertaken by Naval team on August 24, 2009.

12.20 **Multi Specialty Medical Camp:** Medical camps were conducted at Wandoor, Kamorta, Katchall, Neil Island in Andaman and Nicobar Islands, Okha, Nerella Valsa village and Muttukudu village during the year (March to November 2009).

12.21 **Deployment of Diving Teams at Ganeshotsav-09:** Diving teams were deployed to render life saving assistance to Civil Administration during the Ganesh immersion in Maharashtra.

AIR FORCE

12.22 Assistance to civil agencies during natural calamities and disasters is a vital function of the transport and helicopter fleet of Indian Air Force and this role has been performed commendably over the years. There were numerous occasions during the year when the transport fleet of IAF was called upon to undertake missions to provide assistance to civil agencies which were accomplished within given time frame and with exemplary efficiency. Some of the achievements are highlighted in the following paragraphs.

12.23 **Lok Sabha Elections 2009:** During General Elections 2009, IAF was tasked to airlift Para Military Forces from Imphal to Kalaikunda, West Bengal. IAF airlifted 3234 personnel and 102 Tons of load from April 24 to 28, 2009. The task was accomplished using two IL-76 and two AN-32 aircraft. A total of 125 hrs were flown round the clock towards the airlift utilising 28 sorties. In addition, IAF helicopters were also deployed in various states from April 13 to May 15, 2009. IAF helicopters flew 560 sorties and airlifted 31 tons of load, 2129 election/ security personnel and 436 Electronic Voting Machines. The role of IAF was applauded and appreciated by respective State Governments and Chief Election Commissioner.

12.24 **Flood Relief Operations:**

(a) Year 2009 saw the states of West Bengal, Karnataka and Andhra Pradesh getting ravaged by floods rendering millions of people homeless. IAF transport and helicopter fleets were utilised towards flood relief operations which was crucial not only in saving

lives but also in preventing an escalation of the crisis.

(b) IL-76, AN-32, Avro, DO-228, Mi-8, Mi-17 and ALH aircraft/ helicopters were deployed to provide relief material, medicines, casualty evacuation etc. A total of 237 hrs were flown by IAF helicopters towards flood relief operations.

In flood relief operations, IL-76, AN-32, Avro, DO-228, Mi-8, Mi-17 and ALH aircraft/ helicopters were deployed by Indian Air Force to provide relief material, medicines, casualty evacuation etc.

(c) The timely deployment of air effort was instrumental in providing succour to the beleaguered citizens of Karnataka & Andhra Pradesh. Approximately 214 civilians were rescued by IAF helicopters. A total of 1100 persons were provided assistance and 300 tons of relief material airlifted to mitigate the effect. The effort was appreciated by the Chief Ministers of both States and Raksha Mantri.

12.25 IAF transport aircraft has airlifted 14000 tonnes of load for Ladakh sector and 1095 tonnes for the North Eastern sector since April 2009 besides providing assistance in the form of casualty evacuation for patients in need of critical medical care. In addition, routine flights are operated from Kargil to Jammu & Srinagar during the winter months due to the closure of roads. Sustained operations in these locations have enabled the Air Force to provide succour besides generating goodwill among the people of these regions. After the record breaking landing of AN-32 aircraft at Daulat Beg Oldie (DBO) of 16300 ft elevation, the highest airstrip in the world, air maintenance operations by AN-32 aircraft were commenced from this airfield. AN-32 aircraft also commenced operations at Fukche airfield at elevation of 13700 ft. Subsequently a trial landing at Nyoma ALG at 13500 feet was achieved on September 18, 2009. These air operations will help in movement of civilian personnel and troops in Eastern Ladakh region.

IAF Helicopters in Flood Relief operations

12.26 Air Maintenance task in inaccessible areas in Northern and Eastern sectors is undertaken by IAF for Indian Army, BRO, ITBP, Governments of J &K and Arunachal Pradesh. On an average 8 to 10 helicopters are tasked for Air Maintenance task every day. During the current financial year approximately 3605 MT load in Northern sector and 2180 MT load in the Eastern sector has been airlifted.

12.27 **Overseas Relief Missions:** The deployment of one IL-76 for emergency evacuation and medical relief to bomb blast victims in Afghanistan has generated considerable goodwill at the international level. IAF also provided airlift to the medical relief team that proceeded to Sri Lanka. 91 tonnes of medicines, related medical equipment and 118 member medical team were airlifted on May 22, 2009 and September 9, 2009.

12.28 **SAR of AP Government Helicopter:** On September 2, 2009, IAF was requested to locate missing Bell 430 of Govt of Andhra Pradesh with Chief Minister on board. On receipt of the request, IAF helicopters were pressed into service. Despite hostile terrain and inclement weather, IAF helicopters located the wreckage of the helicopter in the early hours on September 4, 2009. The role of IAF in providing helicopter support was well appreciated by the State Government of Andhra Pradesh. A total of 28 Sorties and 47 hours were flown towards this operation.

12. 29 **Landslide relief in Kerala:** On projection of requirement by Disaster Management Authority (NDMA) a prompt and professional action by IAF aircraft rescued the beleaguered citizens during landslide in Kerala. A total of 128 personnel and 6.3 tons of loads were airlifted during these operations.

12.30 **CRPF Deployment for Anti Naxal Movement:** On July 17, 2009 two AN-32 aircraft were deployed to airlift 127 CRPF personnel and 5 tons of load towards West Bengal Government for anti

IAF Helicopters: Winching operations at crash site

naxal movement. Need for augmentation of troops to control the law and order situation led to two IL-76 aircraft being deployed to airlift approximately 464 CRPF personnel and 19 tons of load in a short period to maintain normalcy in the state. On October 10, 2009, CRPF was deployed to control the law and order situation in Chattisgarh region. Overnight a total of approx 1500 personnel along with 93T of load were air- transported to Nagpur.

13

NATIONAL CADET CORPS

NCC Cadets at Rajpath on 26 January 2010

The NCC strives to provide the youth of the country opportunities for all round development with a sense of commitment, dedication, self-discipline and moral values, so that they become useful citizens

13.1 The National Cadet Corps (NCC) was established under the NCC Act, 1948. It has completed 61 years of existence. The NCC strives to provide the youth of the country opportunities for all round development with a sense of commitment, dedication, self-discipline and moral values, so that they become useful citizens. The motto of NCC is "Unity and Discipline".

13.2 The NCC's presence extends to 610 districts of the country covering 8770 schools and 5521 colleges. The sanctioned strength of NCC cadets is 13 Lakh. The wing-wise distribution of the cadet strength is as under: -

(a)	Army Wing	-	8,25,435
(b)	Air Wing	-	55,012
(c)	Naval Wing	-	58,545
(d)	Girls Wing	-	2,97,800
	Total	-	12,36,792

ACHIEVEMENTS

13.3 **Increase in Girl Cadets:** The current representation of girl cadets is 24.08 % of the total enrolled strength of NCC cadets. Induction of girl cadets has grown up by 12081 vis-à-vis the previous year. This is an encouraging trend considering the fact that the girl cadets strength is expected to reach 33% in the next few years.

13.4 **Increased Representation in J&K and North Eastern Region:** The special status given to the two regions by the Govt of India have been duly accorded priority by this organization in terms of planning and execution of programmes. A 5.32% growth in induction of cadets translated into enrollment of 4628 cadets during the preceding year in the two regions put together.

13.5 **Joint State Representatives and Dy Directors General Conference (JSR&D):** 18th JSR&D Conference under the chairmanship of Honourable RRM was held on November 26, 2009. The meeting was attended by the officials from the Ministry of Defence, Representatives of the State Governments, Representatives from the Services, Deputy Directors General (DDsG) of NCC State Directorates and officials from Directorate General of NCC (DGNCC). The following major issues were deliberated during the conference:-

(a) Revision of Various allowances authorized to Associate NCC Officers (ANOs)

(b) Employing Girl Cadet Administrators on contractual basis.

(c) Exemption of Hangarage Charges

(d) Provision of imported weapons and ammunitions by the State Governments.

TRAINING OF NCC CADETS

13.6 Training in NCC comprises the following important facets:-

(a) Institutional Training.

(b) Camp Training.

(c) Adventure Training.

(d) Social Service and Community Development Activities.

13.7 **Institutional Training:** Institutional training covers basic military training in Army, Navy and Air Wing subjects including exposure to camp life. The aim of this training is to expose the youth to a regimental way of life and inculcate in them the values of discipline, personality development and orderliness.

13.8 **Camp Training:** Camp Training is an important part of NCC curriculum. The camps help in developing Camaraderie, Team Spirit, Dignity of Labour, Self-Confidence and the most important aspects of Unity and Discipline. NCC has also introduced classes on Human Values as part of Personality Development Programme for its cadets. Various types of camps conducted in NCC are as listed below: -

(a) **Annual Training Camps (ATC):** Annual Training Camps are conducted at State Directorate level so as to ensure that a minimum of 50% of Junior Division/Wing (JD/JW) cadets and 100 % of Senior Division/Wing (SD/SW) cadets numbering approximately 8.5 lakh attend at least one camp per year. Approximately 900 such camps were conducted in Training Year 2009-10.

The camps help in developing camaraderie, team spirit, dignity of labour, self confidence and the most important aspects of Unity and Discipline.

(b) **National Integration Camps (NICs):** A total of 37 NICs were conducted in the training year 2009-10. A total of 24,408 cadets from all States and Union Territories participated in these NICs in the current training year. In addition, Special NICs have been conducted at Leh, Kakinada, Jaisalmer, Kohima and Port Blair till March 2010 in which 1450 cadets from all over India participated. One more Special NIC is scheduled for April, 2010, at Lakshadweep, in which 170 cadets from all over India will participate.

(c) **Vayu Sainik Camp (VSC):** Every year an All India Vayu Sainik Camp for Air Wing SD/SW cadets is organised at Jakkur Airfield (Bangalore) for a period of 12 days. This year the camp was conducted from October 26 to November 6, 2009. Total 600 SD/ SW cadets from all 17 State NCC Directorates participated in this camp.

(d) **Nau Sainik Camp (NSC):** This camp is also organized once a year for 12 days. This year the camp

was conducted at Visakhapatnam from November 1 –10, 2009. Total 590 SD /SW cadets took part in this camp from all 17 State NCC Directorates participated in this camp.

(e) **Thal Sainik Camps (TSCs) :** Two concurrent TSCs are conducted at Republic Day Parade ground, Delhi Cantt every year, one for SD/JD boys and one for SW/JW girls. This year the camps were conducted from September 18 – 29, 2009. Total 1360 cadets from all 17 State NCC Directorates participated in these camps.

(f) **Leadership Camps:** These camps are conducted on an All India basis. Four Advance Leadership Camps (ALCs) one each for Senior Division Junior Division, Senior Wing, Senior Division(Navy) and three Basic Leadership Camps, one each for Senior Division, Senior Wing and Junior Wing are organised every year. This year 3373 cadets attended these camps from May 2009 to January 2010.

(g) **Rock Climbing Camps:** Eight Rock Climbing camps are held every year to expose the cadets to the basics of rock climbing and to inculcate the spirit of adventure. Four of these camps are held at Gwalior in MP and another four camps at Neyyar Dam near Thiruvananthapuram in Kerala. This year 1080 cadets attended these camps from May to November 2009.

440 officers and 20,000 cadets attended the attachment training with regular army units including the women officers and 560 SW cadets.

(h) **Republic Day Camp – 2010:** Republic Day Camp-2010 was conducted from January 1 – 29, 2010 at Delhi. The Camp was attended by 1950 cadets from all over India, besides cadets of friendly foreign countries with whom NCC has an ongoing Youth Exchange Programme. Inter Directorate competitions concerning institutional training; cultural competitions and National Integration awareness programmes were conducted during the month long camp.

(i) **Republic Day Parade :** Two NCC marching contingents and two NCC bands participated in the Republic Day Parade on Rajpath on January 26, 2010.

13.9 **Attachment Training:** The NCC cadets derive first hand experience of immense value by attachment to the Armed Forces units. During the year, attachments scheduled/ conducted were as under: -

(a) 440 officers and 20,000 cadets attended the attachment training with regular army units including the women officers and 560 SW cadets.

(b) 121 Senior Division cadets underwent attachment training at Indian Military Academy, Dehradun and 48 SW cadets were attached to Officers Training Academy,

Raksha Mantri, Defence Secretary & DGNCC witnessing the Band Display by NCC Cadets

Chennai. Both attachments were for duration of two weeks each.

(c) 1000 SW cadets were attached with various Military Hospitals.

(d) 38 SD and 12 SW cadets of Air Wing underwent attachment training with Air Force Academy, Dundigal. This training is conducted twice in a year for 13 days each in June and Oct respectively.

13.10 **Gliding and Microlite Flying:**

(a) Microlite/ Gliding facilities are provided at 47 NCC Air squadrons. Despite the gradual phasing out of Gliders, NCC Air squadrons have carried out 1500 launches during the past year. Microlite flying is being conducted in NCC with a view to give air experience to the Air Wing NCC cadets (SD). A total of 2634 hours of microlite flying was undertaken during the year 2009.

(b) **Glider Training for Singapore NCC:** Glider training for a delegation of two officers and three cadets from Singapore was conducted at 6 Rajasthan Air NCC Squadron, Udaipur from December 1-23, 2009.

13.11 **Naval Ship Attachment:** 300 Cadets of naval wing embarked on naval ships at Mumbai, Kochi and Visakhapatnam for sea training and attachment for a period of 12 days. Cadets were imparted intensive naval training in various naval subjects and got opportunity to see naval exercises at sea.

13.12 **Foreign Cruises:**

(a) **Naval Cruise:**

(i) 8 Cadets **visited Colombo, Mauritius and Seychelles** from October 4 to November 3, 2009 on board Indian Naval Cadet training ships.

(ii) 7 Cadets **visited Chittagong, Yangoon and Phuket** from January 31 - March 3, 2010 onboard naval ships INS Tir and INS Krishna

(b) **Coast Guard:** 6 Cadets embarked Coast Guard Ship Sangram from November 28 to December 6, 2009 to Maldives.

13.13 **All India Sailing Regatta at Chilka:** 51 SD and 51 SW Cadets from all NCC Dtes participated in All India NCC Sailing Regatta conducted at INS Chilka from November 20-27, 2009.

13.14 **Sailing Expedition:** Sailing Expedition is an interesting feature of the Naval Training. Each NCC Dte is to plan and execute at least one sailing expedition for a period of 12 days covering a total distance of 400 to 500 Kms. 40 to 60 cadets from each NCC Directorate participate in the event. 19 expeditions were conducted by the NCC Directorates in year 2009-10.

ADVENTURE TRAINING

13.15 NCC is in the process of implementing a two fold increase in the number of cadets participating in adventure activities. Important adventure activities being undertaken in the NCC are as given in the succeeding paras.

13.16 **Mountaineering Courses:** NCC nominates 300 SD / SW cadets from all NCC Directorates to attend various courses at Nehru Institute of Mountaineering, Uttarkashi, Himalayan Mountaineering Institute, Darjeeling and Directorate of Mountaineering and Allied Sports, Manali every year. 300 nominated cadets attended various courses during the year 2009 – 10.

13.17 **Mountaineering Expeditions :** NCC has been conducting two mountaineering expeditions every year; one for the Senior Division(boys) cadets and the other for Senior Wing(girls) cadets. Since 1970, the NCC has conducted 64 mountaineering expeditions, of which 34 were for boys and 30 for girls. This year the boy's team undertook an expedition to Jogin - III Peak (6116 M) in May/ July 2009 and the girl's team successfully scaled the Lamkhaga Peak (5764 M) in September/ October 2009.

13.18 **Cycle and Motor Cycle Expeditions:** These expeditions are organised both at the national and state levels. During the current year, numerous motorcycle expeditions were organised by various Directorates to give the cadets the spirit of adventure. These expeditions also carried social messages to integrate the country and create awareness on various challenges faced by the country.

13.19 **Trekking Expeditions:** A total of 10 trekking expeditions with participation of 10,500 cadets, were conducted during the year 2009-2010

13.20 **Para Sailing:** Para sailing is conducted at each Group level as a part of adventure

activity for SD / SW cadets of NCC. During the past year, 6935 cadets were exposed to this activity. Five para sailing nodes have been established at Delhi, Kolkata, Bangalore, Sholapur and Kamptee to train the trainers.

13.21 **Para Basic Courses:** 40 SD and 40 SW cadets underwent the Para basic course for 24 days at the Army Aviation Training School, Agra.

13.22 **Slithering Demonstration:** 10 SD and 10 SW cadets took part in the slithering demonstration during PM's Rally in January 2010.

13.23 **Desert Camel Safari:** This event is conducted every year near Jaisalmer(Rajasthan) wherein own NCC cadets and those from Singapore NCC participate. This year two officers and 14 cadets from Singapore along with 20 Indian Cadets participated in Desert Safari held at Jaisalmer from November 21 to December 3, 2009.

13.24 **White Water Rafting:** White Water Rafting (WWR) node has been established at Raiwala (Haridwar). Equipments for white water rafting nodes in Punjab and West Bengal have been procured.

13.25 **Hot Air Ballooning:** Hot Air ballooning node is being established in Bhopal. Hot Air ballooning was also conducted by Delhi Directorate on November 4, 2009 in which 194 cadets participated.

YOUTH EXCHANGE PROGRAMME (YEP)

13.26 NCC has a vibrant YEP with nine countries. As part of this programme, NCC delegations comprising of cadets and officers visit foreign countries and increase their awareness and mutual understanding after interacting with their counterparts in these countries.

13.27 **Out - Going YEP Visits:** 07 outgoing YEP visits were undertaken during the year 2009-10 as per the following details: -

S.No	Country	Officers	Cadets
(a)	Nepal	1	4
(b)	Kazakestan	2	12
(c)	Russia	2	10
(d)	Sri Lanka	1	10
(e)	Maldives	1	4
(f)	Vietnam	2	13
(g)	Bangladesh	1	12
Total		10	65

13.28 **Incoming YEP visits:** The following incoming YEP visits by foreign delegations were undertaken during the year (2009- 10):

S. No.	Country	Officers	Cadets
(a)	Singapore NCC (Desert Safari)	2	14
(b)	Singapore NCC (Glider Training)	1	5
(c)	Delegations from Russia, Kazakestan, Turkmenistan, Bangladesh, Nepal, Srilanka, Maldives, Sigapore and Vietnam attended RDC 2010.	15 Officers including 3 HODs	76

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

NCC has adopted community development activities with the aim of rendering selfless service to the community, dignity of labour, importance of self help, need to protect the environment and to assist weaker sections of the society in their upliftment.

13.29 NCC has adopted community development activities with the aim of rendering selfless service to the community, dignity of labour, importance of self help, need to protect the environment and to assist weaker sections of the society in their upliftment. This is envisaged through programmes involving adult education, tree plantation, blood donation, visit to Old Age Homes/ Blind Children Schools/ Orphanages, slum clearance, village upliftment and various other social schemes. NCC cadets participated in the following community development activities: -

(a) **Tree Plantation:** NCC cadets plant saplings and maintain them in conjunction with the concerned State Department/ Colleges/ Schools and Villages. This year as part of environment protection and preservation drive, NCC cadets planted around 2.5 lakh saplings all over the country

(b) **Blood Donation:** This year as part of NCC Day Celebrations "Blood Donation Drive" was conducted by all NCC State Directorates in various towns and villages from November 19 – 22, 2009 where NCC cadets voluntarily donated blood.

(c) **Old Age Homes:** Old Age Homes were

Blood Donation Camp by NCC DTE Gujarat

patronized and regularly visited by NCC cadets to provide a helping hand.

(d) **Disaster Relief :** NCC has always extended its helping hand during natural and other calamities. Over the years, NCC cadets have rendered outstanding service during floods, earthquakes, cyclones, and train accidents and provided the healing touch in riot-affected areas.

(e) **AIDS Awareness Programme:** NCC cadets actively participate in the AIDS/ HIV awareness programme and are carrying out AIDS awareness programmes throughout the country. Lectures and interactive sessions on HIV/ AIDS are also being conducted during various camps.

(f) **Cancer Awareness Programme:** NCC Cadets actively participated in Cancer awareness programmes organised in various cities. A cancer awareness competition was conducted in conjunction with Cancer Care India during the Republic Day Camp held at New Delhi in January 2010.

(g) **Anti Dowry and Anti Female Foeticide Pledge :** This year, NCC cadets all over the country took a pledge on Anti Dowry and Anti Female Foeticide.

(h) **Ganga Cleaning Drive :** NCC cadets from Utter Pradesh, Uttarakhand and Bihar took part in Ganga Cleaning Drive from September 11 – 27, 2009.

(i) **Anti Drug Rally:** Anti drug rallies were organized in major cities and towns of all states between November 16 – 18, 2009.

(j) **Iodine Deficiency Disorder:** As a special drive, all the Directorates conducted rallies to generate awareness

Anti Drug Rally by NCC Cadets

about Iodine Deficiency Disorder amongst masses.

(k) **Pulse Polio Immunisation :** NCC cadets have also participated in numerous Polio eradication programmes launched by the Government all over the country.

(l) **Save the Earth Run:** A 'Save the Earth Run', was flagged off by Chief Minister of Delhi on November 21, 2009 as part of the 61st NCC Day celebrations at Delhi. 2000 cadets participated in this event.

SPORTS ACTIVITIES AT NATIONAL LEVEL

13.30 The NCC cadets also participated in the following activities conducted at the national level: -

(a) **Jawahar Lal Nehru Hockey Cup Tournament:** NCC teams in sub junior boys and junior girls categories participated in the prestigious Jawaharlal Nehru Hockey Tournament October-November 2009, where they played against some of the best teams in the country and some foreign teams

(b) **Subroto Cup Football Tournament:** Every year, NCC fields two teams in the prestigious Subroto Cup football tournament. This year NCC Directorate North Eastern Region (NER) and NCC Directorate West Bengal and Sikkim (WB & Sikkim Dte) qualified for the quarter final league in Junior Boys Category and Sub Junior Category respectively.

(c) **All India GV Mavlankar Shooting Championship(AIGVMSC):** Firing being one of the core training activities of NCC, shooting discipline enjoys special place in NCC sporting activities. NCC conducts inter NCC State Directorate competition to select the NCC team which participates in the National Rifle Association of India (NRAI) events like All India GV Mavalankar Shooting Competition (AIGVMSC) and the prestigious National Shooting Championship Competition (NSCC), every year. This year NCC shooting team won 4 Gold, 6 Silver and 8 Bronze medals.

(d) **NSCC:** 53rd National Shooting Championship was conducted at Chandigarh from November 9-19, 2009. NCC team comprising of 47 cadets took part in the Championship. The team participated in ten matches. The team won 7 Gold, 10 Silver and 9 Bronze medals.

13.31 **Equestrian Championships – 2009:** NCC Cadets in the year 2009 participated in various National Equestrian Championships (Kolkata Horse Show, Delhi Horse Show, Pune Horse Show and Indian Oil Horse Show) and won 16 Gold, 11 Silver and 13 Bronze medals during 2009 -10.

14

DEFENCE COOPERATON WITH FOREIGN COUNTRIES

Annual Defence Dialogue with China in progress in Beijing in January 2010

Defence cooperation encompasses all contacts and exchanges undertaken by the Ministry of Defence, including the Armed Forces, to avoid hostilities and to build and maintain trust in the interests of mutual security

14.1 Strengthening of defence cooperation with friendly foreign countries has been an important objective and component of our national security and defence strategy. It encompasses all contacts and exchanges undertaken by the Ministry of Defence, including the Armed Forces, to avoid hostilities and to build and maintain trust in the interests of mutual security.

14.2 India has been developing and expanding defence relations with a number of countries. Defence diplomacy initiatives have been pursued, in the form of high level defence related visits, dialogues, training exchanges, joint exercises, Service- to-Service talks, supply or acquisition of defence equipment and other forms of cooperation.

14.3 Defence cooperation interactions with our largest neighbour, **China** have been marked by high level exchange visits, exchange of defence training courses and visits to training institutions. The third Annual Defence Dialogue with China was held on January 6, 2010 in Beijing. The Indian side was led by Defence Secretary Shri Pradeep Kumar and the Chinese side was led by Lt Gen Ma Xiaotian, Deputy Chief of General Staff, PLA. The high level exchange of visits included visits to China by Admiral Sureesh Mehta, Chief of Naval Staff (CNS) during April 18-25, 2009 and Lt Gen V.K. Singh, GoC-in-C Eastern Command from August 31 to September 3, 2009. A delegation from PLA Air Force Command College led by Maj Gen Wang Yisheng Deputy Chief of Staff, PLA Air Force visited India from August 10-16, 2009, Gen Ge Zhenfeng, Deputy Chief of General Staff visited from December 1-6, 2009, and Lt. Gen Shu Yutai, Commander of Lhasa Military Area Command visited from December 7-12, 2009.

Defence cooperation interactions with our largest neighbour, China have been marked by high level exchange visits, exchange of defence training courses and visits to training institutions.

14.4 We endeavour to support **Afghanistan** in its efforts to stabilize its political and security situation. During March 2009, 3 Army Education Corps officers were deputed to Afghanistan as English language teachers. General Bismillah Khan Mohammadi, Chief of General Staff, Afghan National Army visited India from July 6-9, 2009.

14.5 Our defence relations with **Bangladesh** have been strengthened by bilateral visits and exchange of defence related training courses. Air Marshal SM Ziaur Rahman, Chief of Bangladesh Air Staff visited India from April 23-29, 2009. Rear Admiral Zahir Uddin Ahmed, Chief of Naval Staff visited India from July 22-28, 2009. From the Indian side Air Chief Marshal P.V. Naik, Chief of Air Staff (CAS) visited Bangladesh from January 17-20, 2010. The inaugural Army to Army Staff Talks between both countries took place in New Delhi from October 20-24, 2009.

14.6 Our defence cooperation with **Maldives** gained momentum during the year. Mr Ameen Faisal, the Minister of Defence and National Security, Maldives, visited India from February 1-5, 2009 and from October 26-31, 2009. Major General Moosa Ali Jaleel, Chief of Defence Force, Maldives visited India from August 4-7, 2009. A high level delegation led by Raksha Mantri visited Maldives from August 20-22, 2009. The second Indo-Maldives Joint Training/ Exercise 'EKUVERIN-09' was held from October 19 to November 1, 2009 at Belgaum, Karnataka. The Naval exercise 'Dosti-X' was held at Maldives from November 30 to December 3, 2009.

14.7 Our bilateral relations with **Mongolia** have been friendly and cordial. Our defence exchanges include high level visits, training cooperation and joint exercises. The 2nd meeting of the India-Mongolia Joint Working Group (JWG) on Defence Cooperation was held on February 5, 2009 in New Delhi. Mr L Bold, the Defence Minister of Mongolia paid an official visit to India on February 12, 2009. Lt Gen N Thamburaj, Vice Chief of Army Staff (VCOAS) paid an official visit to Mongolia from March 17-20, 2009. A delegation led by Mr. Ts Enkhtuvshin, Secretary, National Security Council of Mongolia visited India on September 1, 2009. The 5th Joint Military Exercise namely, 'Nomadic Elephant' was conducted from September 11-27, 2009.

14.8 Defence relations between India and **Singapore** have been growing steadily during the recent years. The 4th meeting of the India-Singapore Defence Working Group was held in Singapore during 6-8 April, 2009. Both sides conducted armoured and artillery joint exercises named "Ex- Bold Kurukshetra" during February 11 - March 29, 2009 and "Ex-Agni Warrior-09" during October 9-30, 2009, respectively. A high level delegation led by Defence Secretary attended the 8th Shangri-La Dialogue in Singapore during May 29-31, 2009. The 6th Indian navy- Singapore navy Staff Talks were held at New Delhi on August 25-26, 2009. The 4th round of the Air Staff Talks (AST) was held from November 12-13, 2009. The 6th India-Singapore Defence Policy Dialogue was held in India on November 24, 2009. Mr Chiang Chie Foo, the Permanent Secretary of Defence, Singapore and Shri Pradeep Kumar, Defence Secretary co-chaired the meeting.

Mutual learning in joint exercise with Singapore Armed Forces

14.9 Defence relations with **Malaysia** have been cordial. A delegation led by Shri Vijay Singh, the then Defence Secretary visited Malaysia for the 7th Malaysia-India Defence Cooperation Committee (MIDCOM) meeting from January 14-16, 2009. Gen Tan Sri Dato' Sri Azizan bin Ariffin, Chief of Royal Malaysian Air Force paid an official visit to India from July 27-29, 2009. The 4th Indian Navy Royal Malaysian Navy Staff Talks were held at Kuala Lumpur from August 4-7, 2009. The 2nd Air Force to Air Force Staff Talks (AAST) were held from October 13-15, 2009.

14.10 Relations between India and **Vietnam** have always been exceptionally friendly and cordial. Gen. Phung Quang Thanh, Minister of National Defence of the Socialist Republic of Vietnam visited India from November 4-8, 2009. A Memorandum of Understanding (MoU) on defence cooperation was signed by the two Defence Ministers on November 5, 2009.

14.11 India's relations with **Indonesia** have remained cordial. General Deepak Kapoor, Chief of Army Staff (COAS) paid an official visit to Indonesia from February 25-28, 2009. The Indian Navy and the Indonesian Navy held a bilateral exercise namely, India-Indonesia Coordinated Patrol (Ind-Indo CORPAT) from October 18 to November 5, 2009.

14.12 India's ties with **Japan** in the field of defence have been evolving over the recent years. Exchange of high level visits and training courses have been the highlights of India-Japan defence cooperation. The 6th Comprehensive Security Dialogue and the 5th Meeting of the India-Japan Military- to-Military Talks were held in New Delhi on February 9, 2009. The Trilateral exercise named 'Malabar CY 09' involving Indian Navy, US Navy and Japan Maritime Self Defence Force was held off Okinawa from April 26 to May 3, 2009. The 2nd round of

the Indian Navy-Japan Maritime Self Defence Force Staff Talks were held from October 25-27, 2009 in Tokyo.

14.13 Shri A.K. Antony, Raksha Mantri led a high level delegation to Japan during November 8-10, 2009. He held extensive discussions with Mr Toshime Kitagawa, Japanese Defence Minister on defence and security related issues.

14.14 India and **Australia** enjoy good relations as members of the Commonwealth and as countries sharing a democratic political set up. The 2nd Air Force-to-Air Force Staff Talks (AAST) with Australia was held from May 25-26, 2009. The Australian Army Chief Lt Gen Ken Gillespie visited India during October 5-9, 2009.

14.15 India maintains cordial defence relations with **Oman.** Mr Sayyed Badar Saud Harib Ali Busaidi, Minister of Defence, Oman attended the Aero India-2009 held in Bangalore from February 11-15, 2009. The 3rd meeting of the India-Oman Joint Military Cooperation Committee (JMCC) was held in New Delhi during March 23-24, 2009. The Indian delegation was led by the Defence Secretary while Mr. Mohamed Bin Nasser Al Rasly, Under Secretary, Ministry of Defence, Sultanate of Oman led the Omani side. Lt Gen Ahmed Bin Harith Bin Nasser Al Nabhani, Chief of Staff of the Oman Sultanate Armed Forces (COSSAF), visited India from April 26-30, 2009. The 3rd Air Force-to-Air Force Staff Talks (AAST) were held during May 10-12, 2009. The 1st IAF-Royal Oman Air Force Joint Air Exercise 'Eastern Bridge' was held in Oman from October 22-28, 2009.

14.16 India's relations with the **United Arab Emirates** have been cordial and friendly. The 3rd meeting of the India-UAE Joint Defence Cooperation Committee was held in India from August 12-13, 2009.

14.17 Defence relations with **Israel** have been cordial and friendly. Brig Gen (Retd) Pinchas Buchris, Director General, Israeli Ministry of Defence attended the Aero India-2009 held in Bangalore from February 11-15, 2009. The Chief of Army Staff (COAS) visited Israel from November 8-10, 2009. The 4th Air Force-to-Air Force Staff Talks (AAST) were held on November 17, 2009. The 4th India-Israel Sub Working Group on Defence Procurement, production and Development (SWG DPPD) was held in New Delhi on December 21, 2009. The meeting was co-chaired by Shri S.K. Sharma, Director General (Acquisition) from Indian side while Mr Ehud Lhani, Head of SIBAT, Ministry of Defence, Israel co-chaired from the Israeli side. This was followed by the 8th meeting of the India-Israel Joint Working Group (JWG) on defence cooperation on 22 December, 2009. The Indian delegation was led by Defence Secretary, Mr. Pradeep Kumar, while the Israeli side was led by Brig Gen (Retd) Pinchas Buchris, the Director General of the Israeli Ministry of Defence.

14.18 India has traditionally very warm ties with **Egypt.** Defence cooperation with Egypt in 2009 consisted of various exchange visits

to each other's training institutes, participation as observers in military exercises etc.

India's long standing defence relationship with Russia is based on mutual trust and understanding which remains an important supplier of defence equipment to India.

14.19 Our relations with **South Africa** have been steadily progressing. The exchanges include attending Seminars/ Training Courses, visit of Maj Gen M.K. Mokoena, Chief Director, Human Resource Development from May 18-21, 2009 and visit of Maj Gen Dlulane, Chief of South African Army Force Structure from March 25-28, 2009.

14.20 A Memorandum of Understanding (MOU) on defence cooperation was signed with **Namibia** on August 31, 2009.

14.21 India's long standing defence relationship with **Russia** is based on mutual trust and understanding. Russia remains an important supplier of defence equipment to India. It is the only country with which India has an institutionalized annual defence cooperation mechanism at the level of Defence Ministers of the two countries.

Raksha Mantri with his Russian counterpart Anatoly Serdyukov during IRIGC-MTC meeting in Moscow in October 2009

14.22 A high level delegation led by Defence Secretary visited **Moscow** during June 1-2, 2009 to participate in the 2nd India-Russia High Level Monitoring Committee meeting. Meetings of the two Working Groups under the India-Russia Inter-Governmental Commission on Military Technical Cooperation (IRIGC-MTC) were held in Moscow during September 14-15, 2009. Shri S.K. Sharma Director General (Acquisition) and Shri R.K. Singh Secretary, Defence Production respectively co-chaired the working groups on Military Technical Cooperation (MTC) and Shipbuilding Aviation & Land Systems (SALS).

14.23 The 9th meeting of the India-Russia Inter Governmental Commission on Military Technical Cooperation (IRIGC-MTC) was held in Moscow from October 14-15, 2009. The meeting was co-chaired by Raksha Mantri and Mr A.E Serdyukov, the Defence Minister of Russia. The Defence Ministers of both countries signed a Protocol at the conclusion of the meeting.

14.24 In December 2009, during the Prime Minister's visit to Russia for the India-Russia Annual Summit meeting, two Agreements on cooperation in the defence field were signed.

These are (i) Agreement on After Sales Support for the Russian Arms and Military Equipment supplied to the Republic of India and (ii) Agreement on the Programme for Military and Technical Cooperation (MTC) 2011-2020.

14.25 India and **Belarus** share a very friendly relationship. The second meeting of the India-Belarus Joint Commission was held in New Delhi during May 27-29, 2009. The forum was co-chaired by Shri R.K Mathur, Additional Secretary, Ministry of Defence and Major General P.I. Rogozhevsky, First Deputy Chairman of the State Military Industrial Committee of the Republic of Belarus. Shri M.M Pallam Raju, Raksha Rajya Mantri visited Belarus on an official goodwill visit from October 25-27, 2009.

14.26 India's relations with the **Czech Republic** have been friendly. A delegation led by Shri S.K Sharma, Director General (Acquisition) participated in the 3rd meeting of the India-Czech Defence Committee (JDC) held in Prague during April 1-2, 2009.

14.27 A delegation led by Shri R.K. Mathur, Additional Secretary, Ministry of Defence visited **Bulgaria** during May 7-8, 2009 to participate in the 14th meeting of India-Bulgaria Joint Committee on Defence Cooperation.

14.28 India's defence relations with **USA** are an important element of the broader strategic partnership between the two countries. There is increased bilateral defence cooperation as evidenced by regular conduct of military cooperation activities, frequent expert

RRM meets Col-Gen Leonid Semenovich Maltsev, Defence Minister of Belarus at Minsk in October 2009

exchanges, exchanges of high level visits and growing cooperation in defence research, procurement and production.

There is increased bilateral defence cooperation with USA as evidenced by regular conduct of military cooperation activities, frequent expert exchanges, exchanges of high level visits and growing cooperation in defence research, procurement and production.

14.29 The 5th meeting of India-USA Senior Technology Security Group (STSG) was held in Washington during May 11-12, 2009. Shri R.K. Mathur, Additional Secretary, Ministry of Defence co-chaired the meeting from Indian side and Mr. James Hursch, Deputy Under Secretary of Defence, Technology Security Policy and National Disclosure Policy & Director Defence Technology Security Administration (DTSA), USA co chaired from the US side.

14.30 The 10th India-US Defence Policy Group (DPG) meeting was held in new Delhi on November 5-6, 2009. The meeting was co-chaired by Defence Secretary from the Indian side and Mr. William Lynn, Deputy Secretary of Defence, from the US side. The 7th India-US Defence Procurement and Production Group (DPPG) meeting was held in New Delhi on November 3-4, 2009. The meeting was co-chaired by Shri S.K. Sharma, Director General (Acquisition) from the Indian side and Admiral Jeffrey Wieringa from the US side.

14.31 General James Jones, US National Security Advisor visited India on June 26, 2009. Mr Ray E Mabus, US Secretary of navy visited India from November 27 to December 1, 2009. Admiral Robert F

US Secretary of Defence Mr Robert Gates calling on Raksha Mantri during his visit to India in January 2010

Williard, US Pacific Command visited India from December 2-5, 2009.

14.32 The 1st meeting of the India-**Colombia** Joint Defence Committee was held in Colombia from September 7-9, 2009. Shri R.K. Mathur, Additional Secretary, co-chaired from the Indian side.

14.33 Maj Gen Mathew Mac Donald, Chief of Defence Intelligence, **Canada** visited India from September 23 to 29, 2009.

14.34 Defence relations between India and **UK** have been growing steadily. There are regular exchanges of high level visits, training and experts' exchanges and joint projects for defence production between the two countries.

14.35 The 12th India-UK Defence Consultative Group Meeting was held in New Delhi on May 8, 2009. The meeting was co-chaired by Shri Vijay Singh, the then Defence Secretary from the Indian side and Sir Bill Jeffrey, Permanent Under Secretary of State for Defence from the UK side. Mr Quentin Davies, Minister for Defence Equipment and Support, UK visited India from November 26-27, 2009.

14.36 India and **France** continue to share cordial and mutually beneficial defence relations. Prime Minister participated as Guest of Honour in the French National Day celebrations (Bastille Day Parade) held in Paris on July 14, 2009. A 400 strong tri-Service contingent of the Indian Armed Forces participated in the Bastille Day Parade.

14.37 The 12th India-France High Committee on Defence Cooperation (HCDC) meeting was held in New Delhi from November 30 to December 1, 2009. The meeting was co-chaired by Defence Secretary from the Indian side and Mr. Laurent Billi, Ministerial Representative of the French Defence Minister from French side. The meetings of the Military Sub-Committee and the Sub-Committee on Defence Supplies, Production and Research & Training were held from November 30 to December 1, 2009. The Services Staff Talks (Army, Navy and Air Force) were held on November 27, 2009. Mr Herve Morin, French Defence Minister visited India from December 3-4, 2009.

14.38 Defence relations with **Italy** have been warm and cordial. General Vincenzo Camporini, the Italian Chief of Defence Staff visited India during September 23-26, 2009.

14.39 The defence relationship with **Germany** has been steadily growing. The 3rd India-Germany High Defence Committee Meeting was held in New Delhi on March 9-10, 2009. Mr. Vijay Singh, the then Defence Secretary was the co-chair from Indian side and Mr. Rudiger Wolf, Secretary of State for Defence, Germany was the co-chair from German side.

14.40 India and **Sweden** signed a Memorandum of Understanding (MoU) on defence co-operation on November 5, 2009.

14.41 Through various defence cooperation activities with friendly foreign countries, India aims to create an environment of peace and stability in the region, with the objective of contributing to global harmony.

15

CEREMONIAL AND OTHER ACTIVITIES

Prime Minister Unfurling National Flag at Red Fort on 15th August 2009

The Ministry of Defence encourages and promotes both academic and adventure activities through autonomous institutions

15.1 The Ministry of Defence encourages and promotes both academic and adventure activities through autonomous institutions which are provided regular financial assistance. These institutions are:-

(i) The Institute for Defence Studies and Analyses, New Delhi;

(ii) Mountaineering Institutes at Darjeeling and Uttarkashi; and

(iii) The Jawahar Institute of Mountaineering and Winter Sports (JIM) at Pahalgam.

15.2 The important activities of these institutions during the period under review are enumerated in the succeeding paragraphs.

INSTITUTE FOR DEFENCE STUDIES AND ANALYSES (IDSA)

15.3 The Institute for Defence Studies and Analyses (IDSA) is an autonomous institution established in 1965. It undertakes research on policy issues, primarily in areas related to defence, foreign policy and security.

15.4 A number of important conferences, seminars, round tables, lectures and dialogues with other think tanks on issues of national and international significance were held throughout the year by the Institute.

15.5 The Institute conducted two major conferences in November, 2009. The 3rd International Conference on *"South Asia 202: Moving Towards Cooperation or Conflict?"* was held on November 4-5, 2009. IDSA also co-hosted the 5th Plenary Meeting of Regional Network of Strategic Studies Centres, conducted by NESA (Near East South Asia Centre for Strategic Studies), National Defence University, USA on November 18-21, 2009.

15.6 Besides, several series of lectures, round table discussions and interactive sessions with delegations from foreign countries were also organised. The 5th Bilateral Dialogue between IDSA and

South Asia Conference, November 4-5, 2009

Institute for Political and International Studies (IPIS), Tehran was held on April 24-25, 2009. A Bilateral Dialogue on 'Indo-US Strategic Partnership' was held on September 15-16, 2009 in which papers were presented by IDSA scholars.

15.7 As part of the IDSA's lecture series, Dr Bill Durodie, Senior Fellow & Coordinator, Homeland Defence Research Programme, S. Rajaratnam School of International Studies, Singapore delivered a lecture on 'Global Terror or Home-Grown Nihilism'. Dr. Dietrich Reetz, Senior Fellow, Centre for Modern Oriental Studies, Berlin gave a lecture on "Mobilisation of Islamic groups in South Asia: Consequences for Regional Security." As part of the IDSA-PRIO Cooperation, Halvard Buhaug, Senior Researcher, PRIO spoke on subject of Climate Change during his visit to IDSA on November 30, 2009. Round table discussions were held on various topics, e.g. "India-Russia Dialogue: Strategic Opportunities and Challenges"; "U.S.-India relations under the Obama Watch". "Media and Counter Terrorism"; "Nuclear India–A decade Later". "Modernising Armed Forces in Lean Times". "Modern Dynamic India and Regional Issues"; "Recent developments and Role of India in Afghanistan"; "Engaging Iran: Opportunities and Challenges for India"; China as a Neighbour: Central Asian Perspectives" and "Civil Society responses to political stalemate in Nepal." The IDSA-DCDC, UK (Developments, Concepts and Doctrine Centre of the UK MoD) workshop was held on December 3-4, 2009 to acquaint IDSA scholars with techniques of scenario building.

15.8 Multi-disciplinary task forces are also being set up to harness expertise both within and outside IDSA. Two task force reports, one on 'Space Security' and another on 'Security implications of Climate Change' have already been published during the year.

15.9 IDSA also published several papers and books. Some noteworthy publications brought out by IDSA in the year 2009 were: Africa and Energy Secuirty: Global Issues by Ruchita Beri & Uttam Kumar Sinha, Global Power shifts and Stragtegic Transition in Asia, by N. S. Sisodia & V. Krishnappa, saving Afghanistan by V. Krishnappa, Shanthie D'Souza & Priyanka Singh, Proliferation and Emerging Nuclear Order by N.S. Sisodia, V. Krishnappa & Priyanka Singh and Contemporary Issues in South Asia: Documents by Medha Bisht (ed.) and Books such as "Balochistan in Turmoil : Pakistan at Crossroads," 'Space Security: Need for a Proactive Approach, "Environmental Security: New Challenges and Role of Military" by P.K. Gautam, "Strategic Technologies for the Military: Breaking New Frontiers" by Ajey Lele and an e-book on 'Caretaking Democracy: Political Process in Bangladesh 2006-08' etc.

15.10 A Geographical Information System (GIS) Laboratory has been set up at IDSA to aid researchers in using maps, special images and data-bases in an integrated fashion to produce analytical and graphic details.

44th IDSA Foundation Day, November 27, 2009

MOUNTAINEERING INSTITUTES

15.11 The Ministry of Defence administers, jointly with the concerned State Governments, three Mountaineering Institutes, namely, Himalayan Mountaineering Institute (HMI), Darjeeling in West Bengal, Nehru Institute of Mountaineering (NIM), Uttarkashi in Uttarakhand and Jawahar Institute of Mountaineering & Winter Sports (JIM), Pahalgam in J&K. These Institutes are run as private Registered Societies and have been conferred the status of autonomous bodies. Raksha Mantri is the President of these Institutes. The Chief Minister of the respective State is the Vice-President of the Institute. These Institutes are governed by separate Executive Councils consisting of members elected by General Bodies of each Institute, nominees from amongst donors and/ or persons who are likely to promote the cause of mountaineering, and representatives of Central and State Governments.

15.12 The HMI, Darjeeling was founded in November 1954 by the then Prime Minister Pandit Jawaharlal Nehru to commemorate the historical ascent of Mount Everest by Late Tenzing Norgay and Late Sir Edmund Hillary on May 29, 1953. The Institute provides an impetus to mountaineering as a sport in India. To give further boost to mountaineering and to inculcate the spirit of adventure in youth, the NIM, Uttarkashi was set up in October 1965 and the JIM, Pahalgam (J&K) in October 1983.

15.13 The broad objectives of the Mountaineering Institutes are:-

(a) to impart theoretical knowledge and practical training in mountaineering and rock climbing techniques;

(b) to awaken interest in and love for mountains and exploration; and

(c) to encourage and provide training in Winter Sports.

15.14 The Institutes conduct courses in the Basic and Advanced Mountaineering, Method

of Instruction (MOI), Search & Rescue (S&R) and Adventure. The syllabi, duration, age limit of participants and grading system for various types of courses are almost uniform at all the Institutes.

15.15 Trainees to these courses come from all parts of the country and include Army, Air Force, Navy, ITBP and BSF personnel, NCC Cadets and private paticipants. Foreigners are also permitted to join these courses.

15.16 The regular courses conducted by these Institutes from April to December 2009 are given in Table 15.1.

Table 15.1

Institute	Basic Course	Ad-vanced Course	Adven-ture Course	MOI Course	S&R Course
HMI	5	3	-	-	-
NIM	5	3	5	1	1
JIM	8	1	6	-	2

15.17 The number of men and women trained in these courses are given in Table 15.2.

Table 15.2

Institute	Basic Mountaineering Course	Advanced Mountaineering Course	Adventure Course	MOI Course	S&R Course
HMI	222	109	-	-	-
NIM	348	79	116	14	20
JIM	265	39	220	-	80

15.18 HMI also conducted five special Adventure and two Rock-Climbing Courses, and two special Basic Courses in which 275 men and women were trained during the period.

15.19 NIM conducted 19 Special Adventure Courses and one Special Rock-Climbing Course for various organizations in which 735 men and women were trained.

15.20 JIM conducted 12 Special Adventure Courses in which 727 men and women were trained.

15.21 Participants from NIM successfully climbed Mt. Everest during the period of the report. This is the first time a NIM expedition scaled the Everest as an independent expedition.

15.22 A team from HIM also conducted jointly with Bangladesh an expedition to Mt. Makalu (8963 Mt.). This is the first ever successful attempt by Indians on this fifth highest peak in the world.

CEREMONIALS, HONOURS AND AWARDS

15.23 The responsibility for organising National functions like the Republic Day Parade, Beating Retreat Ceremony, Martyr's Day and Independence Day rests with Ministry of Defence. The Ministry also organises the Defence Investiture Ceremonies for presentation of Gallantry and Distinguished Service Awards at Rashtrapati

Bhawan in association with the President's Secretariat. The Ceremonial functions organised during 2009-2010 are detailed in the following paragraphs.

MoD organises National functions like the Republic Day Parade, Beating Retreat Ceremony, Martyr's Day and Independence Day.

15.24 **Independence Day Ceremony, 2009:** The celebration of Independence Day began with singing of patriotic songs in different Indian languages by the School children's choir at Red Fort. The three Services and Delhi Police presented the Guard of Honour to the Prime Minister. Thereafter, the Prime Minister unfurled the National Flag on the Ramparts of the Red Fort to the accompaniment of the National Anthem played by the Services Band. A 21 Gun Salute was presented on the occasion. After the Prime Minister's Address to the Nation, the ceremony concluded with the singing of National Anthem by school children and the NCC cadets and release of balloons. Later, during the day, the President laid wreath at the Amar Jawan Jyoti at India Gate to pay homage to those who sacrificed their lives for the freedom of the motherland.

15.25 The Gallantry awards announced on the Independence Day 2009 are given in Table 15.3.

15.26 **Vijay Divas:** Vijay Diwas was celebrated on December 16, 2009. On this occasion, the Raksha Mantri laid wreath at the Amar Jawan Jyoti at India Gate.

15.27 **Amar Jawan Jyoti Ceremony, 2010:** The Prime Minister laid a wreath at the Amar Jawan Jyoti of India Gate in the morning of January 26, 2010. Two minutes silence was observed for paying homage to those who laid down their lives in safeguarding the integrity of our nation.

Table 15.3

Award	Total	Posthumous
Ashok Chakra	2	1
Kirti Chakra	4	1
Shaurya Chakra	26	12
Bar to Sena Medal (G)	2	-
Sena Medal (G)	100	8
Nao Sena Medal (G)	4	-
Vayu Sena Medal (G)	5	-

15.28 **Republic Day Celebrations, 2010:** The unfurling of the National Flag at the Rajpath marked the beginning of the Republic Day Parade. The President's Body Guards presented the National Salute followed by the National Anthem played by the Service Bands and a 21 gun salute. The President of Republic of Korea His Excellency, Mr. Lee Myung-bak was the Chief Guest on the occasion. In an Investiture Ceremony, the President of India presented three Ashok Chakra awards (two awards announced on August 15, 2009 and one award announced on January 26, 2010). Two of the awards were presented

Defence Personnel displaying their biking skills at Republic Day Parade

posthumously to the next-of-kins of the awardees who made the supreme sacrifice in the service of the nation.

15.29 Out of the 21 children conferred with National Bravery Awards, two were posthumous. Nineteen National Bravery Award winning children seated in decorated Army Jeeps participated in the Parade. Tableaux of States/ Central Ministries and Departments and cultural items by school children were the other attractions of the parade. 21 tableaux and 5 children items reflected the cultural diversity of the nation. The parade concluded with a motorcycle display by the Jawans of Border Security Force followed by a Fly Past by Indian Air Force Aircraft.

15.30 The gallantry and distinguished service awards announced on the Republic Day are given in Table 15.4.

15.31 **Beating Retreat Ceremony, 2010:** Beating Retreat is a centuries old military tradition practised by troops at the time of disengaging from battle at sunset. The Beating Retreat Ceremony denotes departure of the troops assembled at Delhi for participating in the Republic Day Celebrations. The ceremony was organised at Vijay Chowk on January 29, 2010, which brought the curtain down on the Republic Day festivities. Bands of the three Services participated in this Ceremony. The conclusion of the ceremony coincided with illumination of the Rashtrapati Bhawan, North Block, South Block, Parliament House and India Gate.

15.32 **Martyrs' Day Ceremony, 2010:** On January 30, 2010, the President laid wreath at Mahatma Gandhi's Samadhi at Rajghat. The Vice President, the Prime Minister, the Raksha Mantri, Raksha Rajya Mantri and

Beating Retreat Ceremony in January, 2010

Table 15.4

Award	Total	Posthumous
Ashok Chakra	1	1
Kirti Chakra	6	3
Shaurya Chakra	26	8
Bar to Sena Medal/Nao Sena Medal/Vayu Sena Medal (Gallantry)	3	-
Sena Medal/Nao Sena Medal/ Vayu Sena Medal (Gallantry)	124	9
Param Vishisht Seva Medal	28	-
Bar to Ati Vishisht Seva Medal	1	-
Ati Vishisht Seva Medal	50	-
Uttam Yudh Seva Medal	4	-
Yudh Seva Medal	16	-
Bar to Vishisht Seva Medal	2	-
Vishisht Seva Medal	119	-
Bar to Sena Medal (Devotion to duty)	2	-
Sena Medal/ Nao Sena Medal/ Vayu Sena Medal(Devotion to duty)	60	2

other dignitaries also paid floral tributes. This was followed by observance of two minutes' silence at 1100 hours to pay homage to those who sacrificed their lives in India's struggle for freedom.

OFFICIAL LANGUAGE DIVISION

15.33 The Official Language Division has been entrusted with the responsibility to implement the official language policy of the Government and to ensure compliance of those orders and directions, which are received from Department of Official Language, Ministry of Home Affairs from time to time in the Ministry of Defence(Sectt.), three Services HQrs., Inter Service Organisations and Defence Undertakings. The Division conducts Hindi workshops for facilitating progressive use of Hindi in the official work of the Ministry and imparts training in Hindi, Hindi stenography and Hindi typing to the officers and employees under the Hindi Teaching Scheme of the Government. The position regarding use of official language in the defence organisations is monitored through the periodical meetings of two Hindi Salahkar Samitis and two Official Language Implementation Committees constituted in the Ministry. Besides, this Division translates various types of communications, documents and reports, etc. emanating from different offices and sections of the Ministry throughout the year and thus complies with the bilingual policy of the Government. The major performances of the Division during the year under report are given below.

15.34 **Translation Work:** During the year under report, the staff of the Division remained engaged in translating VIP references, Cabinet notes, Audit Paras, answers of Parliament Questions and Assurances, material relating to Standing Committee on Defence and Consultative Committee on Defence, Annual Report of the Ministry and miscellaneous material received from various offices/ sections in the Ministry.

15.35 **Action regarding re-constitution of Hindi Salahakar Samitis and organising meetings of Official Language Implementation Committees:** Action to re-constitute both the Hindi Salahakar Samitis which function under the chairmanship of Honourable Raksha Mantri, is in progress. Four meetings each of the OLICs of Department of Defence, Department of Defence R&D, Department of Ex-Servicemen Welfare and Department of Defence Production were held and the position regarding the work relating to official language implementation vis-a-vis the targets laid down in the Annual Programme was reviewed.

15.36 **Incentive schemes for writing books in Hindi originally on subjects relating to defence and in-house journals/ magazines published by the subordinate offices of the Ministry of Defence:** The award scheme for books written originally in Hindi on subjects relating to defence was implemented for the years 2005-07 and the books received thereunder were selected for awarding prizes as per the rules. The action has already been taken to implement the scheme for the next

period (2007-09) and entries on all India basis have been invited. Awards for the year 2006-07 under the scheme for promoting in-house journals/ magazines published by various subordinate offices and defence undertaking under the Ministry were finalized.

15.37**Hindi Pakhwara: W**ith a view to encourage all officers/ employees of the Ministry to do more and more official work in Hindi and to create congenial atmosphere for Hindi, Hindi Pakhwara was organised from September 1 to 15, 2009. A total of 11 competitions were held during the Pakhwara and 110 competitors were selected for cash prize and gifts.

15.38 **Inspection of defence offices by the Committee of Parliament on Official Language:** The First Sub-Committee of the Committee of Parliament on Official Language carried out official language inspections of eight defence offices located at various stations throughout the country. This Division also carried out official language inspection of 20 sections in the Ministry and 38 subordinate offices for taking stock of the situation regarding implementation of the rules pertaining to the Official Language Act.

WELFARE OF PERSONS WITH DISABILITIES

15.39 The representation of persons with disabilities in Group 'A', 'B', 'C' and 'D' posts in Ministry of Defence (excluding Department of Defence Production) and in Subordinate Offices under Department of Defence Production is presented in Table No. 15.5 and Table No. 15.6 respectively.

All combatant posts are exempted from Section 33 and 47 of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.

15.40 **Armed Forces:** Provisions enshrined under Sections 33 and 47 of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995, lay down safeguards for persons with disabilities in the matter of recruitment and retention in the Service. However, keeping in view the

Table No. 15.5

Annual Statement showing the representation of the persons with disabilities in services (As on January 1, 2009)

Group	No. of employees				
	Total	In identified posts	Visually handicapped	Hearing handicapped	Orthopaedically handicapped
Group A	12200	3254	2	1	40
Group B	14717	1875	7	5	105
Group C	141581	6520	115	230	993
Group D	119201	3795	237	273	474
Total	**287699**	**15444**	**361**	**509**	**1612**

Table No. 15.6

Annual Statement showing the representation of the persons with disabilities in services in Subordinate Offices under Department of Defence Production (As on January 1, 2009)

Group	No. of employees				
	Total	In identified posts	Visually handicapped	Hearing handicapped	Orthopaedically handicapped
Group A	2157	15	0	0	3
Group B	14393	201	2	2	60
Group C	73391	1622	87	96	537
Group D	24877	692	87	111	339
Total	**114818**	**2530**	**176**	**209**	**939**

nature of duties performed by the Armed Forces personnel, all combatant posts have been exempted from the applicability of the Sections ibid by virtue of special Notifications issued by the Ministry of Social Justice and Empowerment.

15.41 **Department of Defence Production:** All Public Sector Undertakings under the Ministry of Defence have been following the provisions of the Persons with Disabilities (Equal opportunities, Protection of Rights and Full participation) Act 1995 in order to enable persons with disabilities to avail the benefits of reservation. Several concessions and relaxations in addition to those prescribed by the Government, are also extended to the Persons with Disabilities.

15.42 **Defence Research and Development Organisation(DRDO):** DRDO is committed to implement the Government policies and instructions relating to Welfare of the persons with disabilities. The 3% reservation in the recruitment and promotion is being provided to the persons with disabilities as per the Government instructions.

Disabled Ex-Servicemen are provided special medical care and training to become self- reliant.

15.43 **Department of Ex-Servicemen Welfare:** A number of soldiers become disabled during action or due to accidents and other causes and are invalided out from service. These Ex-Servicemen are provided special medical care and training to become self- reliant. The care and rehabilitation is undertaken in specialized institutions which are supported financially by Kendriya Sainik Board (KSB).

(a) **Supply of Motorised Tricycles to ESM Paraplegics:** KSB provides motorized tricycle to the disabled ESM, subject to disability of more than 50% or recommendation of medical authorities.

(b) **Tool Kit for ex-servicemen Technicians:** Out of Armed Forces Flag Day Fund, tool kits are provided to ESM technicians.

(c) **Grant to War Memorial Hostels:** Each regimental centre was provided non-recurring

grant by KSB for construction and functioning of War Memorial Hostels to provide shelter to the children of war widows, war disabled, attributable and non-attributable cases. Recurring grants are also provided to the War Memorial Hostels for wards of Defence personnel @ Rs. 900/- p.m. and Rs. 450/- p.m. for attributable and non-attributable cases respectively.

(d) **Grant to Paraplegic Rehabilitation Centre:** The Paraplegic Rehabilitation Centres at Krikee and Mohali look after paraplegic and tetraplegic ESM inmates, who lost their limbs while in active service. Annual Grants are being provided by KSB to these PRCs @ 14,600/- per annum per inmate.

(e) **Grant to Queen Marry Technical Institute (QMTI):** KSB provides grant to Queen Mary's Technical Institute for Disabled, a non-Government Organisation registered as an educational trust with the Dy Commissioner, Pune, which imparts educational training to paraplegic soldiers.

(f) **Grant to Cheshire homes:** Cheshire homes look after leprosy, mentally handicapped, chronic spastic/paraplegic and TB patients @ 9,000 per annum per inmate.

(g) **Grant to St. Dunstan after care Organisation, Dehradun:** St. Dunstan's Organisation for blinded soldiers, Sailors and Airman provides psychological support to overcome the shock of blindness as well as impart vocational training to enable the blinded ESM to find a place in society and also provides after care service.

(h) An additional 149 centres across the country under ECHS have been empanelled to supply artificial limbs to disabled veterans.

15.44 **Pensions/ Gratuity to Disabled Armed Forces Personnel:** The Armed Forces personnel who become disabled or are injured during service including those cadets who are released on medical grounds are entitled to different pensionary and other benefits at enhanced rates as under :-

(a) **Disability Pension:** A person who is released/discharged from service with a disease or injury, which is attributable to or aggravated by military service, is entitled to disability pension if the disability assessed by the Medical Board is 20% or more. Disability pension consists of two elements viz., service element and disability element. The rate of disability element for 100% disability is Rs.2600/- p.m. for Commissioned Officers (COs), Rs.1900/- p.m. for Junior Commissioned Officers (JCOs) and Rs.1550/- p.m. for Other Ranks (ORs) for 100% proportionately reduced for lower percentage. Where an individual with 20% or more desability is retained in service despite disability, he is paid a lump-sum compensation in lieu of disability element equal

to the capitalized value of disability element on the basis of disability actually assessed (and not the disability computable on invalidment).

(b) **War Injury Pension:** War injury pension is granted to the personnel who sustain injury or disability during war or war like situation or action against extremists, anti-social elements etc. It consists of service element and war injury element. War injury element is payable equal to reckonable emoluments last drawn for 100% disablement. However, the aggregate of service element and war injury element is not to exceed the last pay drawn. In case of retention despite war injury, the individual has an option either to draw lump-sum compensation in lieu of war injury element foregoing war injury element or to draw war injury element at the time of retirement/ discharge.

(c) **Invalid Pension:** Invalid Pension is admissible where an individual is invalided out of Military service with a disability neither attributable to nor aggravated by military service, in case the service actually rendered is 10 years or more. Invalid gratuity is paid when the service rendered is less than 10 years. Invalid Pension is equal to the service element of disability pension that would have been admissible in case the causes were attributable to or aggravated by military service and invalid gratuity is equal to half a month's reckonable emoluments for each six monthly period of qualifying service.

(d) **Ex-gratia Award in case of Death of Cadets(Direct):** Ex-gratia awards are payable in the event of invalidment of cadet (Direct) on medical grounds due to causes attributable to or aggravated by military training at the following rates:

(i) Monthly ex-gratia of Rs.1275/- per month

(ii) Ex-gratia disability award @ Rs.2100/- per month for 100% disability. The amount is reduced proportionately from the ex-gratia disability award in case the degree of disablement is less than 100%.

16

ACTIVITIES OF VIGILANCE UNITS

The Vigilance Division conducts regular and surprise inspection of sensitive spots for review and streamlining of procedures and initiating other measures for combating corruption

16.1 The Vigilance Division in the Ministry of Defence has been entrusted with the task of dealing with complaints regarding corrupt practices, misconduct, irregularities, etc. in respect of employees of Ministry of Defence and various units under it. It serves as a nodal point for interaction on behalf of the Ministry of Defence with the Central Bureau of Investigation (CBI), Central Vigilance Commission (CVC) etc. on vigilance related issues and complaints. The Vigilance Division conducts regular and surprise inspection of sensitive spots for review and streamlining of procedures and initiating other measures for combating corruption.

16.2 For administrative convenience, the vigilance work in respect of the Department of Defence (including Department of Defence Research and Development and Department of Ex-servicemen Welfare) and Department of Defence Production is being looked after by their respective Chief Vigilance Officers.

16.3 In accordance with the directives of the Central Vigilance Commission, all Departments/ Organizations/ Units under Ministry of Defence observed Vigilance Awareness Week in the month of November 2008 with the intention of emphasizing the importance of enhanced security and spreading awareness against corruption.

DEPARTMENT OF DEFENCE

16.4 In keeping with the highest traditions of the Services, sensitization against corrupt practices is carried out right from the training stage and also on a regular basis across the entire stratum of the armed forces.

16.5 During the year, five officers/ officials were given major penalty, one officer was given minor penalty. Twelve complaints received from CVC were investigated and brought to a logical conclusion.

The vigilance work in respect of the Department of Defence (including Department of Defence Research and Development and Department of Ex-servicemen Welfare) and Department of Defence Production is being looked after by their respective Chief Vigilance Officers.

DEPARTMENT OF DEFENCE PRODUCTION

16.6 **Ordnance Factory Board (OFB)**: The Vigilance

set up is headed by Chief Vigilance Officer (CVO) who is assisted by two Directors, two Group Vigilance Officers (GVO) and one Chief Technical Examiner (CTE). Special emphasis is given to complaints received through CVC, CBI etc. They are investigated by CVO or General Manager of the Factory and based on the findings of these investigations, necessary vigilance action including disciplinary proceedings, preventive administrative measures, instructions for system improvement are initiated. Preventive Vigilance Inspections of Factories are conducted by the Group Vigilance Officers with special focus on sensitive areas such as procurement of materials, Plant & Machinery, Civil Works etc.

16.7 Parallel to the preventive vigilance action and disciplinary measures, certain system improvement initiatives have been undertaken, so as to reduce the scope for irregularities and malpractices. In compliance with CVC directives, officers and staff looking after sensitive areas in Factories are being rotated in non-sensitive areas as well as from one station to another on a regular basis. Appropriate exposure is being given to the Officers and Staff on a regular basis to acquire and hone the skills of Preventive and Punitive Vigilance.

DEFENCE PUBLIC SECTOR UNDERTAKINGS

16.8 **Hindustan Aeronautics Limited (HAL)**: With a view to improve Vigilance administration, the Company has ensured that tenders/ contracts/ purchase orders and details of payments made to various suppliers/ contractors are published periodically on the website of the Company. Integrity Pact has also been implemented wherein the Company has appointed Independent External Monitors. Vigilance is regularly monitoring the process/ progress of implementation of Integrity Pact. A New Vigilance Manual has been published and circulated for providing meaningful anti-corruption services. E-payments aimed at cutting delays and to remove the disadvantages/ difficulties experienced in manual/ cheque payments has been implemented. Vigilance Department has taken up the amendment to Disciplinary & Appeal Rules with specific references to imposition of penalty post retirement, in accordance with the directives. During the reporting period, 27 complaints were investigated and 482 Surprise Checks and 220 Routine Inspections were carried out. Final orders have been issued in 21 cases, wherein Major Penalty was imposed in 7 cases and Minor Penalty in 4 cases. Warning and Advisory Letters were issued in the remaining cases.

16.9 **Bharat Electronics Limited (BEL):** The Vigilance set up is headed by CVO who is assisted by 20 Vigilance Committees. Each Unit has a vigilance Committee responsible for implementing the various CVC guidelines and supervising vigilance activities. Surprise

Regular Checks are conducted. Intensive Examination of Civil, Electrical, Mechanical, Horticulture, Sub-Contract, high value item Purchases, Service orders, and Consultancy Service as per the guidelines of CVC is also done regularly. Job rotation is done for the staff working in sensitive areas.

16.10 **BEML Ltd**.: CTE type in-house Inspection teams carried out Intensive Examination of 6 Civil Works Contract and 4 High Value Purchase Contracts. The concerned departments have been advised for system improvement/ corrective action in respect of procedural deviations noted. High Value Purchase Contracts valuing Rs.1 Cr. and above have been scrutinized and 93 Surprise Checks were conducted in sensitive areas. Periodical Inspections at Regional Offices, District Offices and Shipping Department in BEML units are carried out in a regular manner. 11 System Improvement Studies were taken up during the period and system improvement measures were advised to the Management for implementation. A total of 10 Trainings/ Workshops on Vigilance Awareness were conducted for 297 officials. Integrity pact has been adopted by BEML for procurements/ constructions contracts over the value of Rs. 20 Cr.

16.11 **Mazagon Dock Limited (MDL):** Intensive examination of Purchase/ Subcontract/ Service Orders is carried out to verify compliance of prescribed procedures and statutory norms/ regulation in the entire procedure. During the report period, 12 such CTE type examinations have been carried out by Vigilance Department and reports submitted for system improvement. In two specific cases departmental inquiry has been initiated with concurrence from CVC. Surprise Spot Checks are also conducted by Vigilance Department. 5 spot checks/ inspections have been conducted. In one of the cases, disciplinary action has been initiated. The complaints received at Public Grievance Committee have also been examined by the Department, to find out the possibility of vigilance angle in the case. Out of 12 complaints received from Public Grievance Committee, 3 cases have been taken up for further investigation.

16.12 **Goa Shipyard Limited (GSL)** : The Vigilance set up in Goa Shipyard Ltd. is headed by Chief Vigilance Officer MDL who holds additional charge of GSL. It carries out regular and surprise inspections in sensitive areas and suggests improvements in systems and procedures with a view to prevent malpractices. In order to encourage employees and other persons having business and other relations with the Company, to come forward with information and grievances with a vigilance angle, six Vigilance Complaint Boxes have been installed at various places in the premises of the Company. These boxes are opened every week. In compliance of the guidelines of the CVC, GSL has begun

making extensive use of its website for procurement of goods and services in order to bring in transparency and has adopted the Electronic Clearing System (ECS) for payments.

16.13 **Garden Reach Shipbuilders & Engineers Ltd. (GRSE)**: The main thrust of Vigilance activities has been on transparency and fairness in all spheres particularly in Public Procurement. To speed up initiative on e-procurement, e-tendering, e-auctioning etc. a workshop on 'Preventive Vigilance in Public Procurement' was organized on November 7, 2009 for officials posted in sensitive posts. During the workshop, various guidelines issued by CVC were discussed. Special emphasis was laid on the Government's initiatives like the RTI Act, Integrity Pact and leveraging of technology to make the public authorities more accountable and transparent. As preventive vigilance action, various System Improvement measures have been introduced by the Departmental heads.

16.14 **Bharat Dynamics Limited (BDL)**: CMD and CVO, BDL participated in the 6th Anniversary of Vigilance Study Circle meet held on August 10, 2009, which was chaired by Central Vigilance Commissioner. E-reverse auction was conducted with respect to construction of Vizag Unit, and provision of clean room at Bhanur unit resulting in substantial savings to the organisation. About 20 E-reverse auctions have been organized till date. A three-member exclusive committee from Vigilance Department was constituted for recruitment of Land Displaced Persons at Bhanur Unit. Systemic improvement suggestions have been offered with respect to vendor registration and rating process. Vigilance Department has played proactive role in issuance of PF statements and ESI cards to the labourers working under the Annual Maintenance Contractor.

16.15 **Mishra Dhatu Nigam Limited (MIDHANI)**: During the year under review, effective measures were taken to improve Vigilance administration in the Company. A team of vigilance officials interacted with different departments and clarified several doubts from vigilance angle and explained appropriate CVC guidelines. Examination of procurement files, resulted in suggesting system improvements wherever required. Scrap disposal was closely monitored. Preventive vigilance advices and suggestions on system improvements were given on the lapses noticed during surprise/ routine checks.

DEPARTMENT OF DEFENCE RESEARCH AND DEVELOPMENT

16.16 The main activities of the Vigilance Units in Department of Defence Research and Development Organization (DRDO) during the year were as under:-

- Sensitization of all officers and staff on vigilance aspects at various levels.

- Vigilance inspections of laboratories/ establishments to ensure that standing instructions and orders are being implemented.
- Conducting confidential enquiries against malpractices and bringing the errant to book.
- Processing vigilance cases/ inquiries and preparation of documents for charge sheets.

17

EMPOWERMENT AND WELFARE OF WOMEN

Women Officers of Indian Air Force

With the induction of women in various non-combatant branches of the Armed Forces like logistics and law, a larger role is envisaged for them

17.1 The role of women has been increasing steadily in the field of national defence. Women are employed in Defence Production Units, Defence Research & Development Laboratories and as Doctors and Nursing Officers in the Armed Forces. With the induction of women in various non-combatant branches of the Armed Forces like logistics and law, a larger role is envisaged for them.

INDIAN ARMY

17.2 **Women Officers in the Army**: Women officers have been serving in the Armed Forces for about 80 years, first inducted in the Military Nursing Service in 1927 and then in the Medical Officers cadre in 1943. In the Armed Forces Medical Services there are both Permanent and Short Service Commissioned Officers.

Raksha Mantri interacting with a woman officer at Jammu

17.3 Women officers join as Short Service Commissioned Officers in the Corps of Engineers, Corps of Electrical and Mechanical Engineers, Army Air Defence, Corps of Signals, Army Service Corps, Army Ordnance Corps, Intelligence Corps, Army Education Corps and Judge Advocate General's Department.

17.4 In a significant step, the tenure of Women Officers in Short Service Commission has been increased to 10 years extendable upto 14 years of service. Besides, their promotional avenues have been substantially enhanced. Earlier, they were eligible for only one promotion, viz., to the rank of Major after 5 years of service. Women Short Service Commissioned Officers in the Army are now eligible for grant of time-scale substantive promotions to the rank of Captain, Major and Lt. Colonel Rank after 2, 6 and 13 years of reckonable service respectively. This is at par with the promotions available to the Permanent Commissioned Officers. In addition, with a view to ensuring gender equality, the training period of women officers in the Army in Short Service Commission has been increased from 24 weeks to 49 weeks, to be at par with male Short Service Commissioned Officers.

17.5 The Government has approved grant of Permanent Commission to Short Service Commissioned (women) Officers prospectively in select branches/ cadres of the Army viz., Judge Advocate General (JAG) Department and Education Corps.

INDIAN NAVY

17.6 **Women Officers:** Women are being inducted into the Navy, as Short Service Commissioned (SSC) officers in the

The Women Sky Diving Team of Indian Navy

Executive Branch (Observer, ATC, Law and Logistic Cadres), Education Branch and the Naval Architecture Cadre of the Engineering Branch.

17.7 **Permanent Commission to Women Officers:** The Ministry of Defence has introduced grant of Permanent Commissioned prospectively to the Short Service Commission women officers of the Executive Branch (Law Cadre), Education Branch and Engineering Branch (Naval Architecture Cadre).

INDIAN AIR FORCE

17.8 Women were inducted into the IAF from 1993. It has been the endeavour of the service to give every opportunity to women to participate and excel in all spheres of employment. Women are employed in all the branches of the IAF, including the flying branch. Recently the IAF has taken a major step forward and one woman pilot is trained on the Heavy-Lift IL-76 aircraft. IAF maintains identical standards in terms of eligibility criteria, training pattern and duration, and in-service training courses etc. Women officers are eligible for promotion at identical service seniority and similar criteria as their male counterparts, and also hold appointments in the service which are supervisory in nature.

17.9 Eligible women are recruited as Short Service Commissioned Officers in the branches of Flying, Aeronautical Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology. Recently, it has been decided to grant Permanent Commission to women in Education, Accounts and Admin (Legal) branches in the IAF from the training courses commencing in January 2009.

17.10 Women officers are encouraged and strongly supported in undertaking adventure activities. They regularly participate in Para-Jumping, Sky-diving, river rafting, skiing, trekking and Mountaineering. Several women are part of the IAF's Sky-diving Team 'Akashganga' and participate in the display events all over the country. Similarly, women participate in several sports activities through the IAF.

17.11 **Welfare and Resettlement:** Over 85% of all women officers married to serving IAF officers are co-located with their husbands – an unmatched record in the Armed Forces, and probably for any organisation with 11,000 officers, hundreds of far-flung bases and dozens of professional specialities. Women officers in the family way have a lower medical category which ensures their employment on light duties during the ante-natal period. All women officers are entitled to full maternity leave on full pay.

17.12 Towards rehabilitation of released SSC women officers, the Air Force coordinates with the DG Resettlement for subscribing to various resettlement courses sponsored by that Directorate. Women SSC officers undergo these courses in their last year of service, partly paid for by the service, and participate in the campus-selection coordinated by the IAF for absorption into the corporate sector.

INDIAN COAST GUARD

17.13 Women are recruited in Coast Guard only as officers in General duty, General Duty (Pilot/Navigation) and General Duty (CPL Holders Short Service entry) branches. The selection process for women is similar to that of male candidates. The women officers are posted in non sea going appointments. Unlike the other Armed Forces, the women officers in Coast Guard have the option to serve till superannuation, except for CPL holders and short service appointment candidates. In addition, recently, Coast Guard has also started Short Service Appointment Scheme for Women in General Duty branch.

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

17.14 DRDO is sensitive to the need with regard to empowerment and welfare of its women employees. Government instructions and directives issued on the subject are being followed in both letter and spirit. It is ensured that women employees are accorded equal opportunities for enhancement of their skills and knowledge and fulfilment of their potential. Their contribution towards advancement of the organizational objectives is appreciated and duly recognized. Laboratories and establishments of DRDO have been instructed to set up Women's Cell to look after the welfare of women employees. A similar Cell has also been constituted in DRDO HQrs for the purpose.

DRDO ensures that women employees are accorded equal opportunities for enhancement of their skills and knowledge and fulfilment of their potential and their contribution towards advancement of the organizational objectives is appreciated.

17.15 Similarly, various welfare measures have also been undertaken for the women employees in the Organisation. Crèches have also been opened as welfare measures in various laboratories/ establishments in DRDO located all over the country.

DEPARTMENT OF DEFENCE PRODUCTION

17.16 **Hindustan Aeronautics Limited(HAL):** The strength of women employees is 2512. All statutory welfare amenities have been extended to women employees. A sizeable number of women employees are in Supervisory and Executive cadres. All Women employees are provided with equal opportunities for advancement of their career. Women employees are also provided with opportunities to participate in all the programmes / activities of the Forum of "Women in Public Sector" under the aegis of Scope. HAL is a Member of the Women in Public Sector (WIPS) Forum and financially supports it. Based on the guidelines, necessary action has been taken to prevent sexual harassment of Women at the workplace.

17.17 **Bharat Electronics Limited (BEL):** BEL has a total workforce of 11,767

employees including 2491 women employees, 830 Executives & 1661 Non-executives. Over the years, women in BEL have come a long way and at present women are working as GMs, AGMs, Senior DGMs, DGMs, and Managers across Units.

17.18 In the light of the Hon'ble Supreme Court's Directions on prohibition of Sexual Harassment of women employees at work place, "Complaints Committees" constituted & headed by a senior Women Executives are functioning in BEL Units / Offices. International women's day was celebrated across the Company with great enthusiasm on 8th of March.

17.19 **Bharat Earth Movers Limited(BEML):** The Company has constituted Women Cells in all the Production Units including the Corporate Office to redress the grievances of the women employees in line with Supreme Court directives on sexual harassment. Provisions of the Maternity Benefit Act are extended to all women Employees / Officers. Crèche allowances of Rs. 100 are given to Women Employees / Officers having children below the age of 5 years. All Women Employees irrespective of their Wage group get 12 Days of Casual Leave as against 7.5 Days of Casual Leave to male Employees in Wage Groups A to D.

17.20 **Mazagaon Dock Limited (MDL):** 56 women employees have been recruited on contract for a two year term in operative category expanding their horizon of work. The Company provides Crèche facility for the children of female employees under the supervision of a lady doctor and one female attendant. The Company arranged various internal and external training programmes for women employees. A Women Cell in MDL, headed by the Officer of the rank of GM and four officers has been set up to deliberate on ways and means of promoting the growth and development of women employees towards harnessing their full potential. There is a Standing Committee on Redressal of Complaints of Sexual Harassment consisting of four MDL officers and one NGO member.

17.21 **Goa Shipyard Limited(GSL):** In GSL empowerment of women is given prime importance. Women employees' rights are protected and they are treated at par with the male counterparts. The principle of gender equality is very much visible in GSL and their fundamental rights are protected and are being exercised by the women employees without any fear.

17.22 Women employees have been given a power sharing and active participation in decision making. A representative of women is mandatory in all the unions/associations.

17.23 **Garden Reach Shipbuilders and Engineers Limited (GRSE):** Suitable amendments have been incorporated in the CDA Rules for Officers and Certified Standing Orders for unionised staff to prevent sexual harassment to women employees. An 11 member Complaints Committee, headed by a Lady Officer and with one

NGO representative is in place to redress complaints of sexual harassment at work place. Periodic workshops are organised to sensitise employees on their rights and responsibilities for maintaining a gender-just work place. Feedback is obtained from lady employees to ensure that there is no hostile environment. The Company provides equal employment opportunities and during the year under consideration, till November 30, 2009, a total of 22 women employees were appointed in GRSE in various capacities

17.24 **Bharat Dynamics Limited (BDL):** The Company has amended its Standing Orders and CDA rules and incorporated "Prohibition of Sexual Harassment of Women Employees at Work Place" as misconduct and constituted a 'Complaints Committee' headed by a senior woman Officer, to inquire into complaints of sexual harassment. Executives and non-executive women employees are also nominated to the representative positions in Recognized Trade Union & Officers Association. To encourage women employees, the Company accords necessary facilities for participation in the conferences/ programs organized by CPSU forum i.e., Women In Public Sector (WIPS) Creche facility for the children of women employees and special permission before and closing of the shift and also during lunch time for feeding their children.

17.25 **Mishra Dhatu Nigam Limited (MIDHANI):** MIDHANI is extending all facilities as per the statutes for the welfare of the women employees. Equal opportunities and platform were provided for women employees to perform their job with commitment and due dignity. International Women's Day was organized in MIDHANI. Eminent speakers delivered lectures on " Women at work Place". Women employees, both executives and non-executives are nominated for in-house as well as external training programs. During the year nine women Management trainees were recruited.

DEPARTMENT OF EX-SERVICEMEN WELFARE

17.26 In so far as Department of Ex-servicemen Welfare is concerned, it deals with the rehabilitation and welfare of about twenty lakh ex-servicemen, four lakh widows of former Armed Forces personnel and their families. The welfare schemes are already available for the empowerment of the widows. A special dispensation has been made to provide more benefits to the women/ girls in schemes such as Coal Tipper and P.M. Scholarship.

MATTERS DEALT WITH BY THE DEPARTMENTS OF THE MINISTRY OF DEFENCE

A. DEPARTMENT OF DEFENCE (Raksha Vibhag)

1. Defence of India and every part thereof including preparation for defence and all such acts as may be conducive in times of war to its prosecution and after its termination to effective demobilization.
2. The Armed Forces of the Union, namely, the Army, the Navy and the Air Force.
3. Integrated Headquarters of the Ministry of Defence comprising of Army Headquarters, Naval Headquarters, Air Headquarters and Defence Staff Headquarters.
4. The Reserves of the Army, Navy and Air Force.
5. The Territorial Army.
6. The National Cadet Corps.
7. Works relating to Army, Navy and Air Force.
8. Remounts, Veterinary and Farms Organisation.
9. Canteen Stores Department (India).
10. Civilian Services paid from Defence Estimates.
11. Hydrographic Surveys and preparation of navigational charts.
12. Formation of Cantonments, delimitation/ excision of Cantonment areas, local self-government in such areas, the constitution and powers within such areas of Cantonment Boards and authorities and the regulation of house accommodation (including the control of rents) in such areas.
13. Acquisition, requisitioning, custody and relinquishment of land and property for defence purposes. Eviction of unauthorized occupants from defence land and property.
14. Defence Accounts Department.
15. Purchase of food stuffs for military requirements and their disposal excluding those entrusted to Department of Food and Public Distribution.
16. All matters relating to Coast Guard Organisation, including:-
    (i) Surveillance of maritime zones against oil spills;
    (ii) combating oil spills in various maritime zones, except in the waters of ports and within 500 meters of off-shore exploration and production platforms, coastal refineries and associated facilities such as Single Buoy Mooring (SBM), Crude Oil Terminal (COT) and pipelines;

(iii) Central Coordinating Agency for Combating of Oil Pollution in the coastal and marine environment of various maritime zones;

(iv) Implementation of National Contingency Plan for oil spill disaster; and

(v) undertaking oil spill prevention and control, inspection of ships and offshore platforms in the country, except within the limits of ports as empowered by the Merchant Shipping Act, 1958 (44 of 1958).

17. Matters relating to diving and related activities in the country.

18. Procurement exclusive to the Defence Services.

B. DEPARTMENT OF DEFENCE PRODUCTION
(Raksha Utpadan Vibhag)

1. Ordnance Factory Board and Ordnance Factories.

2. Hindustan Aeronautics Limited.

3. Bharat Electronics Limited.

4. Mazagon Docks Limited.

5. Garden Reach Shipbuilders & Engineers Limited.

6. Goa Shipyard Limited.

7. Bharat Dynamics Limited.

8. Mishra Dhatu Nigam Limited.

9. Defence Quality Assurance Organizations including Directorate General of Quality Assurance and Directorate General of Aeronautical Quality Assurance.

10. Standardisation of defence equipment and stores including Directorate of Standardisation.

11. Bharat Earth Movers Limited.

12. Development of aeronautics industry and co-ordination among users other than those concerned with the Ministry of Civil Aviation and the Department of Space.

13. Indigenisation, development and production of defence equipment and participation of the private sector in the manufacture of defence equipment.

14. Defence exports and international cooperation in defence production.

C. DEPARTMENT OF DEFENCE RESEARCH & DEVELOPMENT
(Raksha Anusandhan Tatha Vikas Vibhag)

1. Apprising, assessing and advising Raksha Mantri on the influence on National Security of emerging developments in Science and Technology.

2. Rendering advice to Raksha Mantri and to the three services and inter-services organizations on all scientific aspects of weapons; weapon platforms; military operations; surveillance; support and logistics in all likely threats of conflict.

3. To function, with the concurrence of the Ministry of External Affairs, as the nodal co-ordinating agency of the Ministry of Defence on all matters relating to Instruments of Accord with foreign

Governments relating to the acquisition of technologies whose export to India is the subject of national security related controls of foreign Governments.

4. Formulation and execution of programmes of scientific research and design, development, test and evaluation, in fields of relevance to national security.

5. Direction and administration of agencies, laboratories, establishments, ranges, facilities, programmes and projects of the Department.

6. Aeronautical Development Agency.

7. All matters relating to certification of the design air worthiness of military aircraft, their equipment and stores.

8. All matters relating to the protection and transfer of technology generated by the activities of the Department.

9. Scientific analysis support and participation in the acquisition and evaluation proceedings of all weapon systems and related technologies proposed to be acquired by the Ministry of Defence.

10. To render advice on the technological and intellectual property aspects of the import of technology by production units and enterprises manufacturing, or proposing to manufacture, equipment and stores for the Armed Services.

11. To deal with reference made under section 35 of the Patents Act, 1970 (39 of 1970).

12. Financial and other material assistance to individuals, institutions and bodies corporate, for study and for the training of manpower on aspects of Science and Technology that bear on national security.

13. In consultation with the Ministry of External Affairs, international relations in matters connected with the role of Science and Technology in national security including :-

    (i) matters relating to relations with Research Organizations of other countries and with Inter-governmental agencies, particularly those which concern themselves, inter alia, with the scientific and technological aspects of national security.

    (ii) arrangements with Universities, educational and research-oriented institutions or bodies corporate abroad to provide for foreign scholarships and the training of Indian scientists and technologists under the administrative control of the Department.

14. Execution of works and purchase of lands debitable to the budget of the Department.

15. All matters relating to personnel under the control of the Department.

16. Acquisition of all types of stores, equipment and services debitable to the budget of the Department.

17. Financial sanctions relating to the Department.

18. Any other activity assigned to, and accepted by the Department through understandings or arrangements with any other Ministry, Department, Agency of the Government of India whose activities have a bearing on the scientific and technological aspects of national security.

D. DEPARTMENT OF EX-SERVICEMEN WELFARE (Poorva Senani Kalyan Vibhag)

1. Matters relating to Armed Forces Veterans (Ex-Servicemen) including pensioners.

2. Armed Forces Veterans (Ex-Servicemen) Contributory Health Scheme.

3. Matters relating to Directorate General of Resettlement and Kendriya Sainik Board.

4. Administration of:-

   (a) the Pension Regulations for the Army, 1961 (Parts I and II);

   (b) the Pension Regulations for the Air Force, 1961 (Parts I and II);

   (c) the Navy (Pension) Regulations, 1964; and

   (d) the Entitlement Rules to Casualty Pensionary Awards to the Armed Forces Personnel, 1982.

E. DEFENCE (FINANCE) DIVISION (Raksha Vitta Vibhag)

1. To examine all Defence matters having a financial bearing.

2. To render financial advice to the various functionaries of Ministry of Defence and the Service Headquarters.

3. To act as integrated Finance Division of Ministry of Defence.

4. To assist in the formulation and implementation of all schemes/ proposals involving expenditure.

5. To assist in the formulation and implementation of Defence Plans.

6. To prepare Defence budget and other estimates for the Defence Services, Civil Estimates of Ministry of Defence, estimates in respect of Defence Pensions and to monitor the progress of the schemes against the budget.

7. To exercise post-budget vigilance to ensure that there are neither considerable shortfalls in expenditure nor unforeseen excesses.

8. To advise heads of branches of the Armed Forces Headquarters in the discharge of their financial responsibility.

9. To function as the accounting authority for Defence Services.

10. To prepare the Appropriation Accounts for the Defence Services.

11. To discharge the responsibility for payments and internal audit of Defence expenditure through the Controller General of Defence Accounts.

MINISTERS, CHIEFS OF STAFF AND SECRETARIES WHO WERE IN POSITION FROM JANUARY 1, 2009 ONWARDS

RAKSHA MANTRI

Shri A. K. Antony — *From October 24, 2006 onwards*

RAKSHA RAJYA MANTRI

Shri M.M. Pallam Raju — *From January 29, 2006 to May 22, 2009 (previous spell)*
From May 28, 2009 onwards(current)

RAKSHA UTPADAN RAJYA MANTRI

Shri Rao Inderjit Singh — *From January 29, 2006 to May 22, 2009*

DEFENCE SECRETARY

Shri Vijay Singh
From July 31, 2007 to July 31, 2009

Shri Pradeep Kumar
From July 31(AN), 2009 onwards

CHIEF OF ARMY STAFF

General Deepak Kapoor, PVSM, AVSM, SM, VSM, ADC
From September 30 (AN), 2007onwards

SECRETARY DEFENCE PRODUCTION

Shri Pradeep Kumar
From January 1(AN), 2008 to July 31(AN), 2009

Shri R.K.Singh
From July 31(AN), 2009 onwards

CHIEF OF NAVAL STAFF

Admiral Sureesh Mehta PVSM, AVSM, ADC
From October 31 (AN), 2006 to August 31(AN),2009

Admiral Nirmal Verma, PVSM, AVSM, ADC
From August 31(AN),2009 onwards

SECRETARY EX-SERVICEMEN WELFARE

Shri Siddhartha Mahavir Acharya
From August 28, 2008 to May 31, 2009

Smt. Neelam Nath
From June 1, 2009 onwards

CHIEF OF AIR STAFF

Air Chief Marshal F.H. Major, PVSM, AVSM, SC, VM, ADC
From March 31(AN), 2007 to March 31(AN), 2009

Air Chief Marshal P.V. Naik, PVSM, VSM, ADC
From March 31(AN), 2009 onwards

SECRETARY (DR&D) AND SCIENTIFIC ADVISOR TO RAKSHA MANTRI

Dr. M. Natarajan
From August 31, 2004 to August 31,2009

Dr. V.K. Saraswat
From August 31(AN), 2009 onwards

FINANCIAL ADVISOR (DEFENCE SERVICES)

Smt. H.K. Pannu
From April 1, 2008 to March 31,2009

SECRETARY DEFENCE FINANCE

Smt. Indu Liberhan
From April 15, 2009 onwards

SUMMARY OF LATEST COMPTROLLER & AUDITOR GENERAL (C&AG) REPORT ON THE WORKING OF MINISTRY OF DEFENCE

Report No. CA 17 of 2008-09: Union Government (Defence Services) Army and Ordnance Factories

II Ministry of Defence

Para 2.2 Import of defective ammunition

Krasnopol ammunition is Artillery ammunition fired from 155 mm guns for destruction of enemy armour, high value mechanized forces and static pinpoint targets both during offensive and defensive operations. The ammunition (1000 rounds and 10 Laser Designators) was procured by Army in August 1999 at a cost of Rs 151 Cr. from firm M/s KBP Tula, Russia which did not meet GSQR and had limitation of range, angle and precision in high altitudes. The issue was raised in paragraph 4.2 of the Report on Union Government (Defence Services) No. 7A of 2001. In Action Taken Note Ministry replied that despite limitation of ammunition, it was procured because of operational urgency. Subsequently, during confirmatory firing in October 2006, the ammunition was degraded within its shelf life of 15 years. The firm was asked to repair the ammunition and its use was banned till its repair. The ammunition was yet to be repaired as of September 2008.

Meanwhile knowing limitation of ammunition, action for its repeat procurement was initiated in 2001 and contract was concluded with the same firm in February 2002 for procurement of 2000 round of 155 mm Krasnopol ammunition with 71 nos. laser designators at a cost of Rs 375 Cr. citing inescapable minimum requirement. The firm completed the delivery by April 2002. In June 2003 after more than a year the consignment was inspected by Artillery and during test firing of the ammunition in the high altitude, none of five round fired hit the target. Army therefore came to conclusion that ammunition was not suitable for high altitude firing. As a result the same limitation of the ammunition in high altitude persisted in second procurement also. Ministry of Defence in September 2003 raised a quality claim for whole amount. The vendor accepted it and carried out demonstration firing in India in June 2005 using modern ammunition developed by them. But performance of modern ammunition was also not satisfactory. Army therefore could not accept the offer of extended trial using modern version of ammunition as the product was totally different from the projectiles that were originally procured.

Thus, 3000 rounds of the ammunition worth 526 Cr. remained unavailable for use. Failure of Army to conduct adequate trials

and evaluations of the ammunition led to this situation despite the fact that procurements were carried out in view of the operational urgency and inescapable requirement.

Para 2.7 Non-renewal of lease of land occupied by Army golf Club

Mention was made in paragraph 18 of Report No. 7 of 1997 of the Comptroller and Auditor General of India that the lease of 49.03 acres of A-I Defence Land occupied by Army Golf Club, Delhi Cantonment was not renewed after 1989.

The proposals for renewal of lease from 1989 to 1999 to 2009 though initiated belatedly in 1984 and 2001 respectively, were awaiting decision by the Ministry. As per the prevailing Standard Table of Rent, DGDE assessed the lease rent at Rs. 1.72 Cr. per annum for the lease period from February 1989 to February 1999 and Rs. 4.19 Cr. per annum for the period February 1999 to February 2009. Besides the 49.03 acres of the above land, another 37.70 acres of A-1 defence land belonging to Rajputana Regimental Centre had also been occupied by the Army Golf Course, Delhi.

Army HQ, however, proposed to the Ministry that since the land being used for public usage like Golf and training activities, there was no need for execution of any lease. The contention of the Army HQ is inconsistent with the facts. Army Zone Golf, a registered society, is the apex body controlling the 93 Army Golf Courses all over India which are run on fee collected from the users. It is also to be noted that the renaming of Army golf Course at various stations as Environmental Park and Training Area had not changed their primary role as Golf Clubs. The Ministry may review the position in respect of similar Golf Courses in other stations and take appropriate action. The Army Golf Club also did not furnish details of its income and expenditure to the Ministry. This indicates that on one hand the club does not want to disclose the income it has been generating from its members for the use of defence land and on the other hand it wants to continue exploiting defence land without paying any lease charges as per rules.

Thus the Army Golf Club, Delhi was tacitly permitted by the Ministry for rent free use of defence land for over 19 years, though Rs 54.95 Cr. was recoverable up to February 2008.

III Army

Para 3.6 Misuse of special financial powers by Army Commanders

To facilitate procurement of stores/ equipment to cater for operational requirement such as readiness of strike corps for deployment, counter insurgency, aid to civil authorities, internal security duties etc. special financial powers are delegated to General Officer Commanding in Chief (GOC-in-C) of various Commands. Audit noticed cases of misuse of special financial powers by the Army Commanders of Western Command and Northern Command (NC) which are discussed below:-

Case-I: Procurement of Golf Carts in the guise of vehicles for transportation of patients in hospitals

On the pretext of transporting aged/ handicapped patients in the Military Hospitals, HQ Western Command procured five "Electric Multi Utility Vehicle" (Motorised Carts) in May 2006 for Rs 15.60 lakh under the Army Commander's special financial powers. While examining the utilization of those vehicles, it was found that three Motorised Carts received by Command Hospital, Chandimandir were issued to Shivalik Golf Course, Chandimandir, which further distributed to Army Golf Courses at Ambala and Jalandhar.

Examination of the specifications of the Motorised Carts further indicated that the EMUs procured were actually Golf Cart (Battery Golf Cart Model-27) which were purchased under a guise of 'Electric Multiutility Vehicle'. Though the Ministry denied the misuse but the evidences available support the misuse of these vehicles.

Case-II Procurement of Golf Carts in the guise of 'Track Laying Recee Vehicles'

Again, under a pretence of "Track Alignment Reconnaissance Vehicles" (TARVs) for the Regiments of Army Engineers, the Army Commander of Western Command procured 22 Golf Carts of the brand name "Club Car" at a cost of Rs 1.01 Cr. The 22 vehicles received in March 2008 were issued to nine Engineer Regiments responsible for the maintenance of Golf Courses. While four of the 22 vehicles were actually handed over to Shivalik Environmental Park and Training Area (Golf Course), no documents were available, to show that these vehicles were ever used for laying of track in operational areas.

Since operation and maintenance of Golf Courses is a non-Governmental activity, purchase of Golf Carts from Defence fund for issue to Golf Courses in the above two cases indicate misutilisation of Rs 1.17 Cr. of public money for non-public purpose by misrepresenting facts. This is also a serious violation of Army Commanders' special financial powers, which should not have been exercised for such purchases.

Case-III Improper Procurement of Trailers

Against a demand of a Corps HQ in Northern Command for three Trailers of 30 tons capacity along with Prime Movers for transportation of dozers by the Engineer Regiments in Ladakh sector, three Trailers of enhanced capacity of 50 ton were procured for Rs 26.10 lakh, under the Army Commanders special financial powers. Prime Movers for these Trailers were not however procured as the cost in that case would be higher and fall under capital procurement and therefore not permissible under the special powers. After the procurement was complete, Engineers Branch of Northern Command found that the Trailers procured were unsuitable for the intended use in the hilly terrain of Ladakh sector, as their turning radius was higher. The Trailers purchased

by exercising the special financial powers therefore remained without use since their purchase in January 2005.

Case-IV Irregularities in procurement of Stretchers

Northern Command HQ procured Field Stretchers (Light Weight) for use by the medical units under the special financial powers of the Army Commander at a total cost of Rs 73.33 lakh. The stretchers purchased were of 8 Kgs weight, which was double the maximum specified weight of 4 Kgs. On receipt the item was found deficient in specification as there was no provision to hold intravenous fluid bottles; the Stretcher could not be converted to a Field Hospital bed; the Stretcher was unsuitable for casualty evacuation as it could not float in water and helicopter evacuation facilities were unsuitable; and there was no provision for fitting of wheels. In spite of these deficiencies, the Board accepted the Stretchers under instructions from HQ Northern Command to avoid lapse of funds.

Para 3.4 Unauthorized use of A-1 Defence land by Army Welfare Education Society

Ministry of Defence in January 2004 decided 'in principle' to allot 25.559 acres of A-1 Defence land in Delhi Cantonment on leasehold basis to Army Welfare Education Society (AWES), a private society, for a period of 30 years for establishment of Army Medical College ignoring the suggestion of HQ Delhi Area regarding acute shortage of land for the Army units in Delhi. Accordingly, Army HQ instructed AWES to utilize the said land for opening of Medical College only after obtaining the Government sanction. In February 2004, Ministry asked DGDE to indicate lease rent and premium of Commercial rates of said land. In July 2005, the rent for Commercial purpose for said land was worked out to Rs. 8.72 Cr. per annum and premium of Rs 43.59 Cr. for 2004-05.

AWES started construction of Campus and hostel building of the medical college in August 2005 without any Government sanction for transfer of land and lease agreement. The work was completed in May 2007.

Thus, a private institution had unauthorizedly been allowed to construct Medical College in Delhi Cantonment on defence land, without obtaining sanction of the Government and execution of lease deed as of October 2008.

IV Works and Military Engineer Services

Para 4.1 Irregular diversion of savings of a project for execution of new works

A Zonal Chief Engineer irregularly diverted saving of a project to undertake new works valuing Rs 1.81 Cr. not originally contemplated in the approved project. He did not surrender such savings, as required under rules. This resulted in unauthorized expenditure of Rs 1.81 Cr. in violation of Defence works Procedures.

Para 4.2 Avoidable cost overrun in civil works

Failure of a Zonal Chief Engineer to cancel timely the outsourced consultancy contract for preparation of architectural and structural design despite serious default resulted in delay of three years in conclusion of contract for execution of sanctioned works, which led to a cost overrun of Rs 2.96 Cr.

V Border Roads Organisation

Para 5.1 Defective procurement of Hot Mix Plants

Director General Border Roads procured 18 defective Hot Mix Plants valuing Rs. 9.77 Cr. on the basis of incorrect technical evaluation and dilution of specifications in favour of the firm. Six of the plants were found defective during installation.

VI Defence Research and Development Organisation

Para 6.1 Avoidable expenditure on a research project

Armament Research and Development Establishment (ARDE) undertook technology demonstration project to enhance the capability of Pinaka Weapon System when the user was not interested in development of the technology. The project was foreclosed immediately after procurement of equipments costing Rs 1.06 Cr. citing persistent disinterest shown by user. Thus neither ARDE instantly acted on the user's suggestion to foreclose the project before procurement of equipment nor it finally completed the technology demonstration project leading to wasteful expenditure of Rs 1.06 Cr.

Departmental View and Present Status: The Paragraph was Partially Agreed to, any decision to short close the contracts before the realization of the store would have amounted to payment of major chunk of the contract cost as compensation to the two firms as both the firms had placed orders for the procurement of different components from Indian and foreign vendors. It was in this context that the contracts were allowed to continue to its logical completion (i.e. realization of store) and fulfill the contractual obligation.

The entire procurement make in the project are useful capital items and are being used in the day-to-day activities. Though these items, which were procured for the project, could not be used for the project, as the project itself was short closed. These items are becoming useful in other ancillary projects of Pinaka. Hence, the expenditure of Rs 1.05 Cr. is being used for other project of Pinaka in progress.

Consequent upon the vetting of the Action Taken Note by the Audit, the same has been forwarded to Monitoring Cell on 16 December, 2009 for being tabled in Lok Sabha Secretariat.

VII Ordnance Factory Organisation

Para 7.2 Extra expenditure due to delay in finalization of an offer

Failure of Heavy Vehicles Factory Avadi and Armoured Vehicles Head-quarters, Avadi

to firm up the commercial offer within the validity period had resulted in placement of order on the collaborator on a later date against revised commercial offer leading to avoidable liability of Rs 2.78 Cr. The avoidable liability was partially due to acceptance of abnormal rates of two items in the revised offer.

Para 7.8 Suspected fraud in reimbursement of Customs Duty to a supplier

A private firm got "reimbursement" of Customs Duty of Rs 31.20 lakh from Ordnance Equipment Factory Kanpur for supply of imported machines, by producing documents suspected to be forged to claim the reimbursement. Cross checking by Audit with Customs record disclosed that the supplier had produced Customs Duty exemption Certificate and did not pay Customs Duty for the import. On being pointed out in audit, the factory recovered Rs 31.29 lakh from the supplier.

Para 7.7 Non-incorporation of risk purchase clause leading to extra expenditure

Failure of Metal and Steel Factory, Ishapore to incorporate risk purchase clause in two supply orders for purchase of Ferro Molybdenum not only violated the Ordnance Factory Board's standing instructions on procurement but also put an additional liability of Rs 76.86 lakh on the Defence exchequer as the two firms defaulted in supply of 8875 Kg Ferro Molybdenum leading to placing of supply order at a much higher rate on another firm.

Para 7.10 Non/Under recovery of fixed electricity charges

Four Ordnance Factories based in Uttar Pradesh either failed to recover fixed charges on the consumption of electricity or under recovered the charges from the occupants of Factory Estates, resulting in non/under recovery of fixed charges, cumulatively amounting to Rs 3.19 Cr.

Defence Services (Air Force & Navy)

Summary of Important Audit observations by C&AG of India

Audit Report containing results of audit of Ministry of Defence in so far as they relate to Air Force, Navy and associated DRDO's for the year ended March 2008 (Report No. CA 18 of 2008-09) was presented in both the houses of Parliament on 24.7.2009. some of the important audit findings included in the Report are indicated below.

I Inadequate assessment and management of risks associated with acquisition of an aircraft carrier.

The objective of inducting an aircraft carrier in time to fill the gap in IN has not been achieved. The cost of acquisition has more than doubled to USD 1.82 billion (Rs 7,207 Cr.) in four years. At best, IN would be acquiring, belatedly, a second hand ship with a limited life span by paying significantly more than what it would have paid for a new ship.

(Paragraph 2.1)

II Undue favour to vendor in acquisition of submarines

Despite Indian Navy's depleting force level, Ministry took nine years to conclude a contract for the construction of six submarines. The inordinate delay led to enormous increase in the project cost to the extent of Rs 2,838 Cr. The procurement procedure lacked transparency and the submarine design had not proven its efficacy in any other navy worldwide. Technical evaluation conducted for the 'Y' class submarine including the missile to be fitted on-board was not comprehensive and was biased in favour of the vendor. Contractual provisions have resulted in undue financial advantage to the vendor to the minimum extent of Euro 58.20 million (Rs 349 Cr.) besides other unquantifiable benefits.

(Paragraph 2.2)

III Denial of Offset benefits of Rs 2,711 Cr. in acquisition of an aircraft

In placing the order for the acquisition of 40 aircraft 'M' costing Rs 9,036.84 Cr., Ministry/ IAF failed to go in for the offset clause as stipulated in the DPP. This led to the denial of corresponding benefit, amounting to Rs. 2,711 Cr., to Indian defence industry. The objective of urgent acquisition has also not been achieved.

(Paragraph 2.7)

IV Delay in payment of UN Death/ Disability compensation

Although more than five decades have elapsed since the first deployment of troops under UN Peace Keeping Missions, Ministry is yet to frame a policy on the mechanism to monitor the initiation and the settlement of the claims of the deceased/ disabled soldiers deployed for the missions. Ministry delayed disbursement of the compensation amount to personnel/ family members of the deceased.

(Paragraph 2.10)

V Procurement of defective missiles and excess missile launchers

42 of the 300 air-to-air 'X' type missiles acquired by IAF at a cost of Rs 76 Cr. became unserviceable during the warranty period. Further, 165 missiles remained unserviceable for significant periods. Though the shelf life of all the missiles would expire by June 2010 and despite having a stock of 440 missile launchers, the Air HQ procured 145 additional launchers between August 2006 and March 2008 rendering the expenditure of Rs 66.86 Cr. on their procurement largely infructuous.

(Paragraph 3.2)

VI Inordinate delay in installation of a radar on an aircraft

Five radars imported at a cost of Rs 24.88 Cr. could not be installed for more than three to five years after their acquisition. In the process the radars have not only lost 50 per cent of their life but also remained unavailable for operational purpose.

(Paragraph 4.1)

VII Improper implementation of radar fitment policy

Navy procured six radar 'R' for its modern stealth frigates and landing ship tankers under construction at a cost of Rs 18.85 Cr., even though performance of the radar had been sub-optimal and its phasing out was under active consideration.

(Paragraph 4.5)

VIII Integrated Logistic Management System (Air)

The ILMS (Air) application was implemented in August 2001 to enhance the efficiency of air stores logistics organization with regard to inventory provisioning, procurement, warehousing and distribution. The Navy needs to use ILMS optimally for effective and cost efficient managerial decisions.

(Paragraph 4.6)

IX Failure to have unsuitable equipment replaced promptly

The Navy failed to persuade a foreign firm to replace unsuitable items supplied. As a result, the expenditure of Rs 3.85 Cr. on their import was yet to yield any operational benefit to the Navy.

(Paragraph 4.7)

X Tardy progress in development of a radar

Despite almost a decade in developmental effort and spending Rs 27.88 Cr., DRDO has been unable to provide a radar as per the requirements of Navy. It closed the original project and initiated another 'Staff Project' with the same goals and new funding. Resultantly, the main aim of providing maritime radar for helicopter 'A' remains unfulfilled.

(Paragraph 6.1)

Departmental view and Present status: The Paragraph was partially agreed to, since the set objectives of radar under project "Development of Maritime Patrol Radar for Naval ALH" have been met. This was a maiden venture for LRDE, the long development time is owing to complexity in airborne radar system engineering, grey areas in processing, elaborate qualification and certification effort involved and very limited availability of the intended airborne platform for radar evaluation and optimization. Each sub-system has to be realized with a high degree of complexity and fineness. Qualification and certification process is very elaborate. The period lined with design, validation, refinement, optimization and tuning on an airborne platform is long drawn and calls for several hundreds of flying hours.

The MK-II version of radar is ready for user trials and the project Probable Date of Completion (PDC) is July 2010, therefore, all issues could be resolved by then. It is envisaged that, at the end of this PDC, NSQR Compliant radar would be ready for productionisation. The Action Taken Note has been forwarded to Audit on 30 September, 2009 for vetting.

Audit Report No. CA 23 of 2009-10 (Compliance Audit)

Bharat Electronics Limited

SAP was introduced in October 2006 in Bangalore Complex and subsequently in other units. Acquisition and implementation of SAP, utilization of Production Planning and Material Management modules of SAP at Bangalore Complex were reviewed. The review revealed that the savings projected by implementation of SAP towards inventory carrying cost, cost of goods sold and reduction in sundry debtors by the Company did not materialize. Failure to design the required controls in the system, inappropriate customization, lack of input controls and validation checks and inadequate controls during data migration resulted in the non-utilisation of the SAP system to its full potential and as a result the integrity and accuracy of the data could not be ensured. Consequently, the Company still depended on the legacy system and resorted to manual interventions in the current system.

Audit Report No. CA 24 of 2009-10 (Compliance Audit)

BEML Limited

The Company has been recognizing sales through deliberate violation of the various internal procedures prescribed in their quality manuals which was also in contravention of the principles enumerated in the Accounting Standard 9 prescribed under section 211(3 C) of the Companies Act, 1956 read with the Expert Advisory Committee opinion of the Institute of Chartered Accountants of India.

Para 6.1.1

The Company paid Rs.22.23 Cr. as TOT fee to the foreign collaborator in contravention of the terms of MoA.

Para 6.1.2

Undue delay on the part of the Company to issue/finalise the terms of purchase order resulted in delayed supply of BFAT wagons and consequential loss of Rs.6.50 Cr.

Para 6.1.3

Bharat Electronics Limited

Failure to obtain amendments to the contracts retained at the behest of the customer resulted in blockade of funds of Rs.48.61 Cr. and consequential loss of interest of Rs.4.81 Cr. besides extra contractual expenditure of Rs.3.41 Cr. towards repairs.

Para 6.2.1

Production for a foreign customer without necessary financial commitment resulted in accumulation of unused finished goods worth Rs.7.38 Cr. for over 2 years and consequential loss of interest of Rs.1.91 Cr.

Para 6.2.2

Hindustan Aeronautics Limited

Fraudulent payment of Rs.52.24 Cr. made under the guise of a new incentive scheme without approval of the Board of Directors

and in contravention to DPE guidelines.

Para 6.3.1

The Company transported five Dhruv helicopters for the exhibition when they were under investigation after the accident and bringing them back without participating in the air show resulted in an avoidable expenditure of Rs. 4.94 Cr.

Para 6.3.2

The agreement with ONGC had not been drafted with adequate care by including a specific clause for admission of taxes and duties prevailing on the date of sale, resulting in loss of Rs.4.82 Cr. due to non-reimbursement of service tax on repair/ overhaul services by ONGC.

Para 6.3.3

Failure to obtain specific exemption from the Government of India for payment of custom duty while obtaining the sanction for the project resulted in avoidable payment of custom duty of Rs.3.34 Cr.

Para 6.3.4

Smoke & Dust Rising out of the Bomb Explosion Caused by
A 1000 Ibs Bomb Dropped by SU-30 MI During Ex-Vayu Shakti 2010 at Pokharan on February 28, 2010

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