ANNUAL REPORT 2008-09 MINISTRY OF DEFENCE GOVERNMENT OF INDIA

Ministry of Defence
Government of India

ANNUAL REPORT

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Annual Report
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1

THE SECURITY ENVIRONMENT

Vigil at Siachen

Each of India's neighbours is undergoing a transition, giving rise to varied political experiences and experiments. The menace of terrorism and the proliferation of arms, drugs and nuclear technology pose dangers that merit constant attention

1.1 The first decade of the 21st century has made it increasingly evident that security threats are unconstrained by borders. India lives in a difficult neighbourhood. Each of India's neighbours is undergoing a transition, giving rise to varied political experiences and experiments. Most of these transitions are proceeding smoothly and have led to the spread of democracy. However, the menace of terrorism and proliferation of arms, drugs and nuclear technology pose dangers that merit constant attention. In the midst of this region, India continues to be a centre of economic activity, a beacon of democracy, a bastion of stability and a champion of peaceful coexistence and non-violence.

THE GLOBAL SECURITY ENVIRONMENT

1.2 The developments in 2008, particularly the challenges confronting the global financial system, created unprecedented strains in the global security environment. The global financial crisis led to the onset of economic recession. The instability in the US financial system, largely due to the failure of a regulatory system, spread to the world economy with economic growth slowing down in several countries.

1.3 After a new Administration assumed charge in the USA, US foreign and security policies are being watched as they are expected to have a significant impact on global and regional issues, as well as on the security environment. The US-led global war on terrorism has shown mixed results. The security situation in Iraq improved considerably. The security situation in Afghanistan deteriorated with the resurgence of the Taliban. In March 2009, after a policy review, the US announced a comprehensive, new strategy for Afghanistan and Pakistan, emphasizing a regional approach. In the aftermath of the terrorist attacks in Mumbai, the US goal is to disrupt, dismantle and defeat Al Qaeda and its safe havens in Pakistan and to prevent their return to Pakistan or Afghanistan.

1.4 The strategic partnership between India and Russia was further strengthened in 2008. Cooperation in strategic areas such as defence, space and nuclear energy received further impetus in 2008. During the State Visit of the President of Russian Federation, Mr. Dmitry Medvedev to India on December 4-5, 2008, an agreement for construction of additional nuclear units at Kudankulam and at other sites and an agreement on India-Russia joint human space flight programme were signed.

1.5 India and EU are strategic partners. Europe is a major trade and economic partner of India and the strengthening of our economic and political ties is an important policy imperative. The annual India-EU Summit was held in Marseilles in September 2008 at which the Joint Action Plan was reviewed. New India-EU activities were identified for promoting peace and comprehensive security. India has an annual security dialogue with the EU.

1.6 India and Japan have established a strategic and global partnership, based on shared interests and values and on advancing bilateral, regional and multilateral cooperation in the interests of promoting peace, stability and development in Asia and beyond. The two countries share a common interest in the safety and security of the sea lanes of communication, as well as in other areas, including the fight against terrorism, peace-keeping and disaster management. This vision is reflected in the Joint Declaration on Security Cooperation that was signed during the Prime Minister's visit to Japan on October 22, 2008. Both countries have agreed to develop a specific Action Plan on the basis of the Joint Declaration.

1.7 The international community remains concerned about the Iranian nuclear programme. The UN Security Council Resolution 1835 adopted in September 2008 urged the Iranian government to suspend all uranium enrichment related and other proliferation sensitive nuclear activities. The situation in West Asia took a turn for the worse with tensions increasing sharply as the Israeli Defence Forces launched massive military strikes in the Gaza Strip. India has had historical links with West Asia and has vital interests in the region, including in the energy and food security areas. India therefore, seeks promotion of stability in the region. The Central Asian Region is also endowed with energy resources. India has historical and civilizational links with the countries of Central Asia and pursues a non-intrusive and collaborative approach to promote stability in the region.

1.8 India's 'Look East' policy envisages progressive and multifaceted integration with South East Asia to create conditions for long-term economic growth, interdependence and prosperity in Asia. India's role in the ASEAN Regional Forum and the East Asia Summit is aimed at building a new architecture of stability and peace in the region.

1.9 The African region is witnessing changing influence patterns both in the security and economic domains. The increase in piracy targeting merchant vessels off the coast of East Africa poses dangers to safety of the sea lanes. The emergence of Somalia as a hub for terrorists having linkages with transnational

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organized crime is a cause of major concern globally. The Indian Navy has been actively involved in combating maritime piracy in the region.

INDIA'S REGIONAL SECURITY ENVIRONMENT

1.10 For its further growth and prosperity, India needs a secure and peaceful periphery. Working in that direction, India has striven to give its neighbours stakes in its own growth, through trade, investment and services. At the same time, India continues to take all measures for the security and safety of all its citizens.

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1.11 Stability in Afghanistan is in our strategic interest. India has therefore invested heavily in the reconstruction of Afghanistan's war damaged infrastructure and in the development of its indigenous capacity in different fields. The continued deterioration of the internal security situation in Afghanistan and the resurgence of Taliban, Al Qaeda and other terrorist groups since 2006 constitute a threat to stability of the entire South and Central Asian region. The terrorist attack on the Indian Embassy in Kabul on July 7, 2008, in which five Embassy personnel

Raksha Mantri addressing Troops at Baramulla in Jammu & Kashmir

and a large number of Afghan nationals were killed, demonstrated that India's efforts at reconstruction and development were implacably opposed by these groups. Security in southern and eastern Afghanistan is closely related to developments in the bordering regions of Pakistan where sanctuaries provide the bases from which these terrorist groups operated. The convergence of extremist and terrorist groups in Afghanistan with those operating out of Pakistan, often with the patronage of its State agencies, has consequently contributed immensely to the deterioration of India's external security environment.

1.12 Security related developments in Pakistan also continued to impact on our regional security environment. Although as in previous years the FATA areas and the NWFP as a whole remained the principal areas of extremist activity and violence, the year also witnessed a marked rise in terrorist incidents all over Pakistan, including in the capital, Islamabad. The unimpeded growth of extremist and terrorist organisations in Pakistan was marked by an increase in ceasefire violations, continued infiltrations across the LoC, as also major terrorist attacks. All this placed an immense strain on the India-Pakistan Composite Dialogue process. The terrorist attack on Mumbai in November 2008 and the clear evidence that the attack was planned and launched by Pakistan have thereafter led to a pause in the process.

1.13 The expanding footprint of extremist and terrorist organisations in Pakistan and the fact that many of them have a known record of terrorist attacks against India amounts to a security challenge with serious implications for us. The continuing links of these organisations with organs of the Pakistan State adds greater complexities and dangers to the evolving situation confronting us. Strengthening of our security apparatus both internally and on our frontiers is, therefore, a national priority of the highest order. Pakistan's history of military and quasi-military adventurism underscores the seriousness of the threat we face.

1.14 India has a strategic and cooperative partnership with the People's Republic of China, which has been further progressed during high level visits in 2008-09. The two countries are seeking to build a relationship of friendship and trust, based on equality, in which each is sensitive to the concerns and aspirations of the other. The armed forces of the two countries are engaged in building greater understanding through joint military exercises, through a regular defence dialogue since 2007 and through exchanges of military delegations. India and China are also engaged in negotiations on the Boundary Question and have agreed to maintain peace and tranquility in the border areas through the implementation of mutually agreed confidence building measures, pending the final settlement of the boundary issue.

1.15 India has taken note of China's statement in the White Paper on China's

National Defence in 2008 that it will never seek hegemony or engage in military expansion now or in the future, no matter how developed it becomes. India has also taken note of the double digit growth in Chinese defence expenditures over the previous 20 years, which has led to significant modernization of its defence forces, both in terms of quality and quantity. China's stated objectives, in their White Paper, of developing strategic missile and space-based assets and of rapidly enhancing its blue-water navy to conduct operations in distant waters, as well as the systematic upgrading of infrastructure, reconnaissance and surveillance, quick response and operational capabilities in the border areas, will have an effect on the overall military environment in the neighbourhood of India. Consequently, China's defence modernization needs to be monitored carefully in the foreseeable future for the implications that it can have on the security and defence of India. Similarly, its military assistance and cooperation with Pakistan and other countries in our neighbourhood, as well as the possibility of enhancing connectivity with Pakistan through the territory of Jammu & Kashmir, illegally occupied by China and Pakistan and with other countries will also have direct military implications for India. India will engage China to seek greater transparency and openness in its defence policy and posture, while taking all necessary measures to protect the national security, territorial integrity and sovereignty of India.

'Sarang' an Indian Air Force Air Display Team in action

1.16 Nepal witnessed a major political transition from monarchy to a republican form of government during the year. The Communist Party of Nepal (Maoist) formed a coalition government, with Mr. Pushpa Kamal Dhal 'Prachanda' as the Prime Minister. Bilateral high level visits since the formation of the new government include those of the new Prime Minister of Nepal to India in September and November 2008 and of the External Affairs Minister to Nepal in November 2008, during which both sides agreed to work together to further the bilateral relationship. Existing bilateral mechanisms have since been reactivated. Considerable challenges remain to Nepal's peace process. A fragile situation in Nepal poses challenges to India's security, especially in view of the open border between the two countries. A stable and prosperous Nepal is in India's interest.

1.17 India has close ties with Bhutan. Elections were held in March 2008 within the framework of the new Constitution. India and Bhutan have also signed a new Treaty of Friendship, consistent with the contemporary circumstances. India continued with the policy of deepening its political, economic, cultural and social ties with Bhutan by extending help in the implementation of the latter's 9th Five Year Plan. India has committed to continue to extend its support to the regime in Bhutan. In the recent past, the Bhutanese government has outlined its plans to democratize the nation. India has conveyed willingness to extend all possible support to Bhutan for accomplishing this transition. Bhutan displayed courage and good neighbourliness in acting against military camps and bases or operations of Indian insurgent groups, in the interest of mutual security.

1.18 Developments in Bangladesh have an influence on India's security as India shares long land borders with Bangladesh. India has sought to engage Bangladesh in a wide-ranging dialogue, including on developmental and security issues. The restoration of democracy in Bangladesh, after two years of rule by a caretaker government was a positive development for the region and for India-Bangladesh relations. The Awami League led Grand Alliance won more than a three fourth majority in the Jatiya Sansad in the elections held in December 2008. Under the new government, Bangladesh is expected to focus on social and economic development. India looks forward to a further intensification of bilateral ties, especially in relation to India's security concerns regarding Indian insurgent groups from the North East and other forces inimical to India operating from its territory.

1.19 The security situation in Sri Lanka underwent a major change in the year under review. The Sri Lankan Army has succeeded in taking control of areas held by LTTE since the internal strife began. India has been concerned about the humanitarian cost of the conflict and has actively worked to ensure the safety and welfare of the affected civilian population. India has advocated a political solution of the conflict and is committed to a peaceful resolution of the conflict, taking

into account the interests of all communities, including the Tamil population, within a united Sri Lanka.

1.20 Maldives is a friendly neighbour of India situated in a strategic region of the Indian Ocean. Democratic elections were held in Maldives resulting in a change of government. India has traditionally had a friendly relationship with Maldives and will continue to work towards the further deepening of bilateral ties. During the visit of the Maldivian President to India, a number of bilateral agreements were signed to further strengthen the bilateral relations. The growing defence ties between the two countries are a factor of stability in the region.

1.21 Myanmar, strategically located at the tri-junction of South and Southeast Asia, holds great importance for India in comprehensive security terms. India provided prompt relief to Myanmar when cyclone Nargis devastated Myanmar's coast in May 2008. Myanmar's adoption of a new Constitution, following a referendum in May 2008, paves the way for elections in 2010. India desires a stable Myanmar with an inclusive and broad based national reconciliation process, including ethnic groups. High level visits and regular consultations continued throughout the year. India is engaging Myanmar in the economic, energy and power sectors.

1.22 India's credible minimum deterrence plays an important role in the regional security calculus. While maintaining a posture of minimum deterrence, India has announced a policy of no-first-use and a policy of non-use against non-nuclear weapon states. India also continues to maintain a voluntary, unilateral moratorium on nuclear testing. India consistently pursued the objective of global disarmament based on the principles of universality, non-discrimination and effective compliance.

While maintaining a posture of minimum deterrence, India has announced a policy of no-first-use and a policy of non-use against non-nuclear weapon states.

1.23 India is looking at nuclear power as a safe, secure and clean energy resource for meeting its growing development needs. In September 2008, the Nuclear Suppliers Group (NSG) adopted a decision enabling India to resume full civil nuclear cooperation with the international community. India also signed an Agreement on Application of Safeguards to Civilian Nuclear Facilities (ISSA) with the IAEA. Following the decision of the NSG, India has entered into nuclear cooperation agreements with France, Russia, US and Kazakhstan that will help develop India's nuclear energy industry and meet its burgeoning energy needs.

1.24 The need for enhanced maritime security has to be seen in the backdrop of a long coastline facing the Arabian Sea on the West, the Bay of Bengal to the east and the vast Indian Ocean in the South. Increased economic activity along the coast and the growth of major towns has heightened this necessity.

1.25 Over the recent years, maritime issues like the security of sea-lanes, piracy on the high seas, energy security, WMD, terrorism etc have become important elements in India's security. The Indian Navy has played an outstanding role in curbing piracy in parts of Indian Ocean. The efforts of the Indian Navy have been widely appreciated and contribute to regional and global security.

The Indian Navy has been given the overall responsibility for maritime security which includes coastal and offshore security.

1.26 The Mumbai terror attacks, which were perpetrated by a group of terrorists who came to Mumbai from Karachi via the sea, have once again highlighted the importance of the maritime dimension in India's security. The Indian Navy has been given the overall responsibility for maritime security which includes coastal and offshore security. They will be assisted by the Coast Guard, State Marine Police and other Central and State agencies. The DG Coast Guard has been designated as Commander Coastal Command and will be responsible for overall coordination between the Central and State agencies in all matters relating to coastal security.

1.27 A number of measures are being operationalised for strengthening coastal security including, setting up of Joint

Marine Commandos in action

Operation Centres. Further, assets and manpower of Coast Guard are being enhanced to meet the growing challenge of threats from the sea and coastal surveillance requirements. A system for continuous and coordinated monitoring of coastal security has been put in place.

INTERNAL SECURITY CHALLENGES

1.28 The internal security scenario in the country can be broadly seen in terms of various specific theatres which have been witnessing a mixed hue of separatist, ethnic and other forms of violence, subversive/ terrorist/ extremist activity in Jammu & Kashmir and some insurgency in some North Eastern States, particularly, Assam, Manipur and Nagaland; Naxalite violence in some areas of certain States, particularly in Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand and Orissa; periodic incidents of terrorist attacks and bomb blasts etc., in various parts of the hinterland; communal tensions and violence; and sporadic incidents and episodes which may affect public order through large scale agitations, street violence etc.

1.29 While the overall situation in the country, seen in the light of the above, remained largely under control during 2008, the occurrence of a number of major terrorist incidents and bomb blasts etc., in different parts of the country, including the terrorist attack in Mumbai in November 2008, raised serious concerns about the internal security scenario. On the communal front also, while the situation, in macro terms, has remained, by and large, under control, there were disturbing incidents in some parts of the country, particularly in Orissa where there was communal violence which also led to communal tension and confrontation in certain other States of the country. There were some instances of major and prolonged agitations during the year, which led to disturbance of public order and disruption of normal life in the affected areas such as, the agitation by the Gujjars in Rajasthan in pursuance of their demands for being given Scheduled Tribe Status, the agitation in Jammu & Kashmir in the wake of the controversy relating to the transfer of land to the Shri Amarnath Yatra Shrine Board, and in West Bengal, in the context of the demand for a separate Gorkhaland State.

1.30 Following the Mumbai terror attack, the Government has taken a number of steps to further strengthen the internal security apparatus, including the establishment of National Investigation Agency, enactment of Unlawful Activities Prevention Amendment Act, 2008 to deal with various facets of terrorism and making the Multi Agency Centre (MAC) in the Intelligence Bureau functional on 24x7 basis to share intelligence with all other Central and State agencies. The strengthening of security forces, law enforcement machinery, intelligence and coordination amongst diverse agencies and with the States, is also being attended to on priority.

1.31 India faced daunting security challenges which are spread along the entire spectrum of conflict. These challenges are interrelated and they span the political, economic, military and technological dimensions; consequently, the responses to these also have to be inclusive of these dimensions, for which the country and its defence forces are fully geared.

2

ORGANISATION AND FUNCTIONS OF THE MINISTRY OF DEFENCE

Prime Minister and Raksha Mantri with three Service Chiefs at the Combined Commanders' Conference

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 equipment. 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)

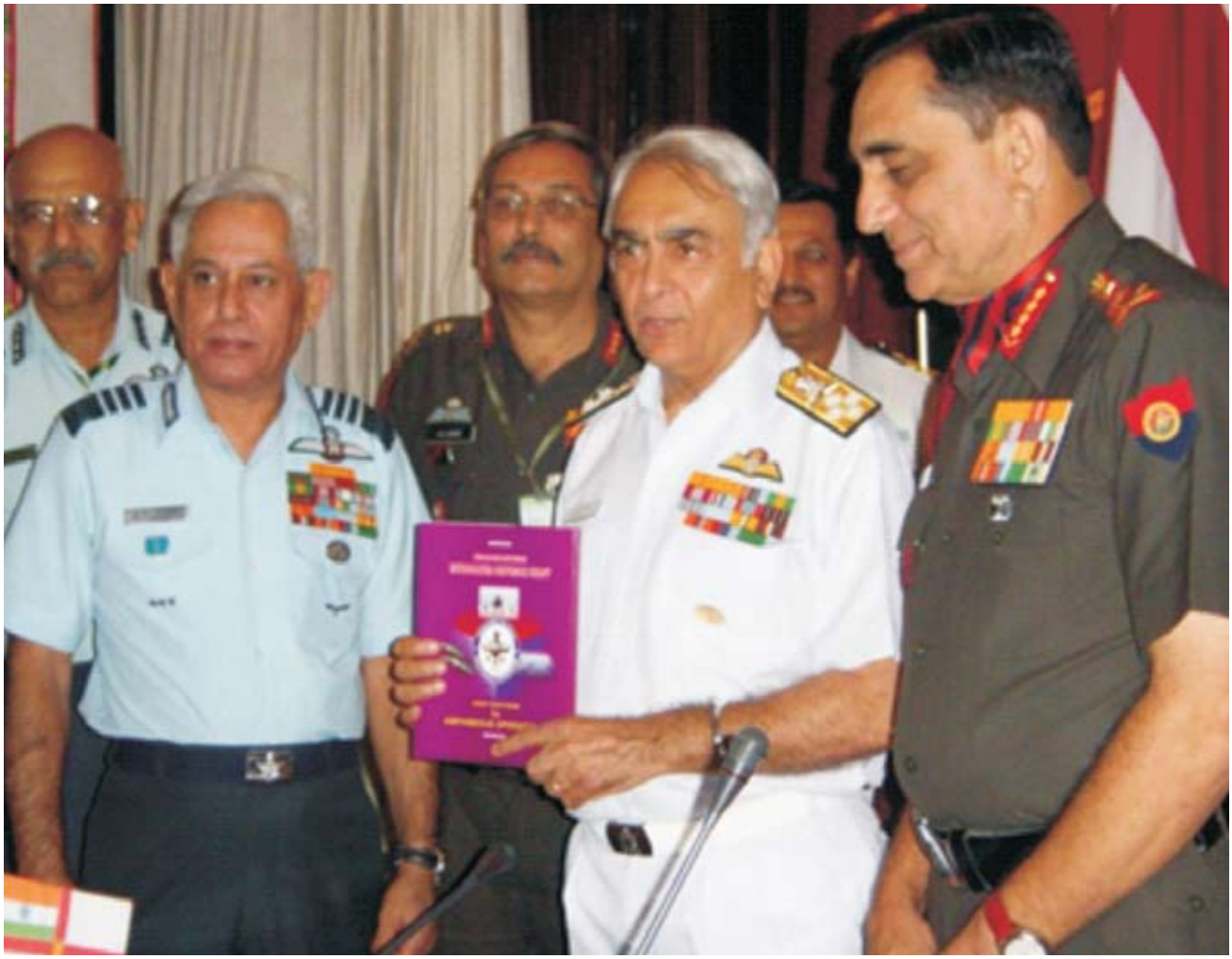
2.6 HQ IDS was created on October 1, 2001 based on the recommendation of the Group of Ministers which was setup in 2000 post Kargil to review the Nation's higher defence management. Since then, HQ IDS has been acting as the single point organisation for inculcating jointness and synergy between the Armed Forces, by way of integrating policy, doctrine, war fighting and procurement.

2.7 **Jointness within the Services:** A number of Committees have been instituted to improve Jointness in Decision-making, Operations, Perspective Planning, Forces Development, Intelligence, Doctrine, Training, Logistics, Personnel Management, Communications and Information Warfare. New Inter Service Working Groups have been constituted on Information Security, Combat Identification, Precision Force, Area Missile Defence, Terrorism and Integrated Logistic Support.

2.8 **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.

2.9 **Joint Doctrines:** The Joint Doctrine for Amphibious Operations and Doctrine for Employment of Joint Special Forces for strategic and operational level tasks were released on September 9 and September 30, 2008 respectively. Joint Psychological Operations Doctrine, Joint Doctrine on Sub Conventional Warfare, Joint Space Doctrine and Doctrine on Joint Maritime Operations are in the process of being prepared.

2.10 **Multi National Peace Keeping Exercise:** AMAN SENA, an exercise on United Nations mandated, integrated Peace Support Operations (UNPSO) was conducted



Release of Joint Special Forces Doctrine by Chiefs of the three Services

by the College of Defence Management from May 21 to 29, 2008 under the aegis of HQ IDS. The exercise was a first of its kind endeavour by India in which 35 officers from the Armed Forces of 13 countries of Indian Ocean Region besides 45 officers from India were given an exposure to the nuances of complex UN Peace Support Operations.

2.11 **Defence Information Technology Consultative Committee (DITCC):** This Committee has been constituted for joint interaction between the MoD, Armed Forces, Academia and Industry to synergise and steer directions towards a fully integrated approach in implementing Information Technology matters in the MoD, three Services and various organisations under MoD. The CISC is the Chairman of this committee which has members from MoD, three Services, Ministry of Communications & IT and DRDO, and co-opted Members from Academia, Industry and other Government organisations.

2.12 **Centre of Excellence:** In order to develop and customize indigenous products available in the realms of Information Security and Information Assurance, a Centre

of Excellence on Information Assurance (COEIA) has been set up at IIT Kharagpur for information technology related activities with the initial funding from MoD. This centre will be the umbrella organisation for provisioning of information assurance related R & D projects for MoD and the three Services.

2.13 **Centre for Joint Warfare Studies (CENJOWS):** The nascent think tank organisation, Centre for Joint Warfare Studies under the stewardship of Patron-in-Chief, the Raksha Mantri carried out a host of activities towards furtherance of intellectual thinking in the field of Defence Strategy and Regional Security. Prominent among these were Seminars on 'Indian Way of War Fighting' and 'Indian Experience in Force Projection' and round table discussions on 'India China Security Dynamics' and 'Perspective on Central Asia and Implications for India'. Seminal work has been carried out in a study on Evolution of Joint Framework for National Security Decision Making.

2.14 **Seminar on Amphibious Warfare:** A Tri Services seminar on Amphibious Warfare was conducted at Pune from January 19 to 20, 2009. Leading strategic analysts of the Nation presented papers at the Seminar which was attended by Service Chiefs and senior serving and retired officers.

2.15 **Diamond Jubilee Re-Union:** The premier tri service military training institution of the country National Defence Academy at Pune celebrated its Diamond Jubilee Re-union from December 6-8, 2008. President of India was the Chief Guest for the occasion. In addition to the Governors of Punjab and Arunachal Pradesh and Chiefs of three Services, alumni both serving and retired, attended a wide variety of events to commemorate the historic occasion.

SERVICES HEADQUARTERS

2.16 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.

2.17 A number of Committees dealing with defence related activities assist the 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.

2.18 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, 2008 onwards is given in Appendix-II to this report.

ESTABLISHMENT OF ARMED FORCES TRIBUNAL

2.19 The Government have decided to establish an Armed Forces Tribunal (AFT) for the adjudication or trial of disputes and complaints with respect to commission, appointments, enrolment and conditions of service in respect of persons subject to the Army Act, 1950, the Navy Act, 1957 and the Air Force Act, 1950 and also to provide for appeals arising out of orders, findings or sentences of Courts Martial held under the said Acts and for matters connected therewith or incidental thereto.

2.20 The Armed Forces Tribunal Act, 2007 (55 of 2007) has been notified on December 28, 2007. The Act has come into force w.e.f. June 15, 2008. Establishment of the Tribunal is yet to be notified. The Principal Bench of AFT is being set up at New Delhi. The Tribunal will have three courts each in the Principal Bench at New Delhi and Regional Benches at Chandigarh and Lucknow, and one each in Regional Benches at Jaipur, Kochi, Guwahati, Kolkata, Mumbai and Chennai. Justice A.K. Mathur, former Judge, Supreme Court, has assumed the charge as Chairperson of the Tribunal.

The Armed Forces Tribunal Act, 2007 has come into force w.e.f. June15, 2008 with its Principal Bench at New Delhi and Justice A.K. Mathur, former Judge, Supreme Court, has assumed the charge as Chairperson of the Tribunal.

DEFENCE (FINANCE)

2.21 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.

2.22 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 were revised in 2006 to incorporate experiences gained since 2005.

2.23 The Defence Procurement Procedure 2006 was an attempt to establish a formalized set of guidelines for capital acquisition 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 aims at ensuring expeditious procurement and puts emphasis on highest degree of probity and public accountability, transparency in operations, free competition and impartiality.

2.24 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. It contains significant changes aimed at strengthening the procurement framework and making it more transparent and impartial. These include the broad details of the trial methodology to form part of the Request for Proposals so that vendors are aware at the outset itself of the modalities by which their products will be evaluated. Directions to vendors during the course of trials and results of the evaluations along with reasons for disqualification, if any, will now be communicated in writing to them and placed on record. 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.

2.25 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.

2.26 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.

2.27 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.

2.28 With a view to bringing in more transparency and clarity in procurement procedure in DRDO, comprehensive amendments have been carried out in Purchase Management – 2006 document.

2.29 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 2006-07 and 2007-08, as also the Revised Estimates for 2008-09 and Budget Estimates for 2009-10 are given in the Table No. 2.1 and charts at the end of this chapter.

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

Table 2.1

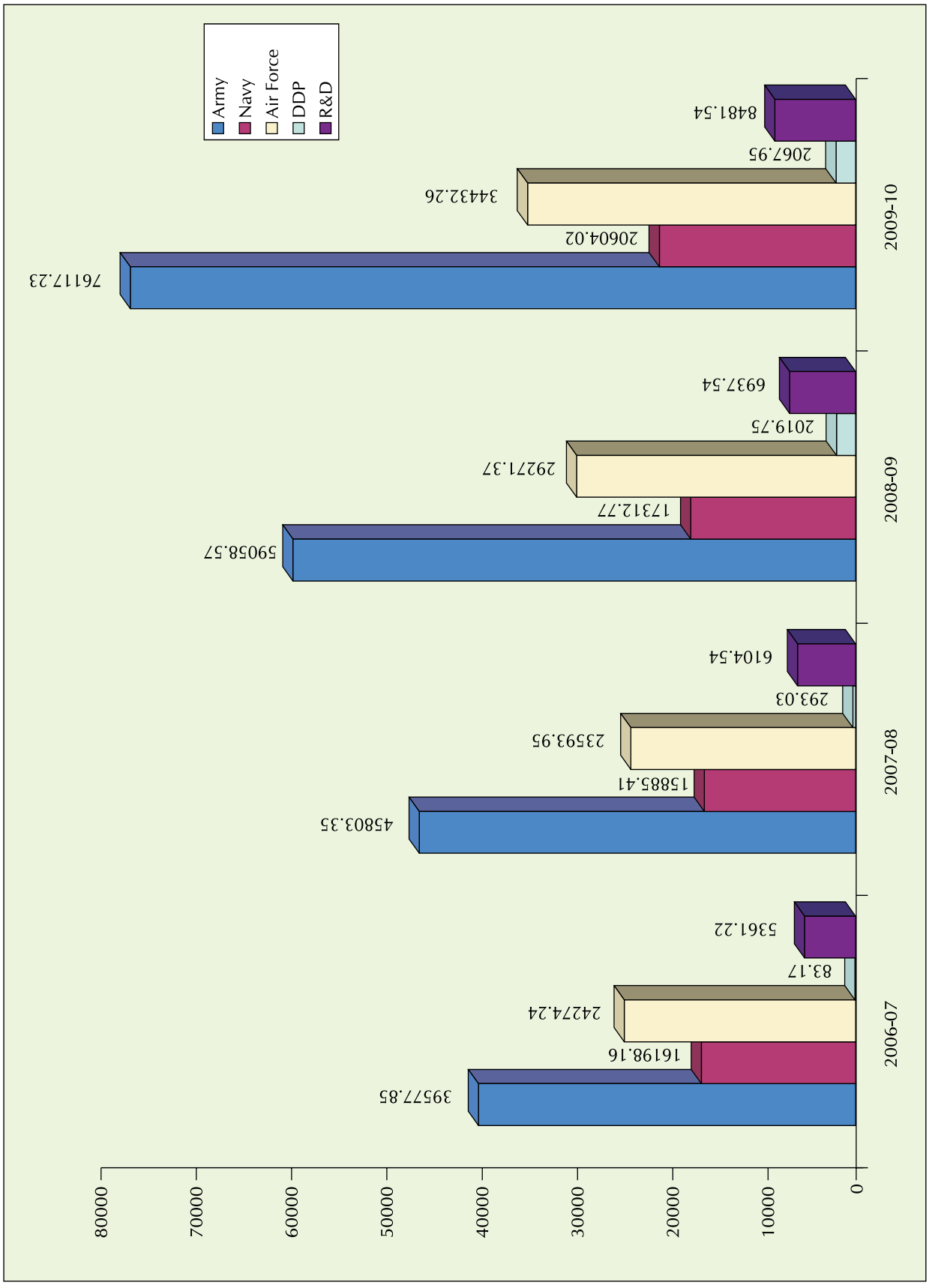
Service/ Department-wise Break-up of Defence Expenditure

(Rs. in crores)

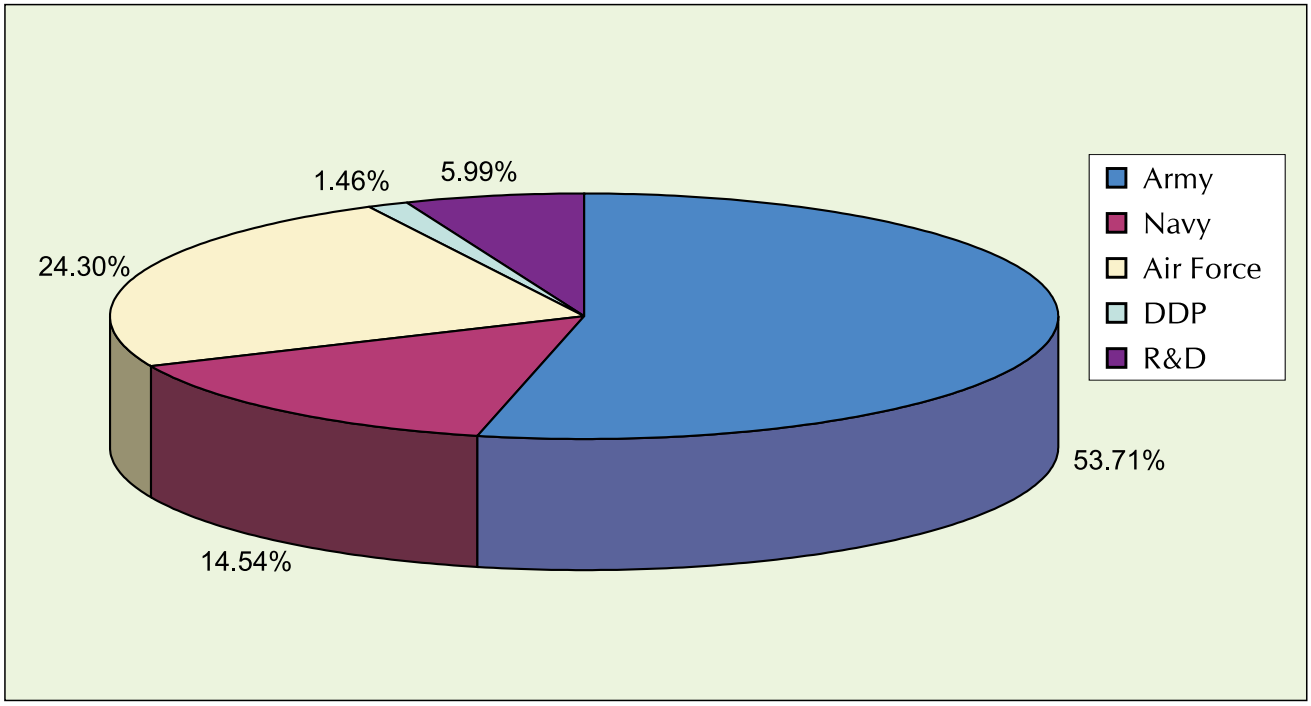
Service/ Department (Rev + Cap)		2006-07 Actuals	2007-08 Actuals	2008-09 RE	2009-10 BE
Army		39577.85	45803.35	59058.57	76117.23
Navy		16198.16	15885.41	17312.77	20604.02
Air Force		24274.24	23593.95	29271.37	34432.26
DDP	**DGOF**	-252.70	-38.89	1502.18	1505.45
	DGQA	335.87	331.92	517.57	562.50
	Total	83.17	293.03	2019.75	2067.95
R&D		5361.22	6104.54	6937.54	8481.54
Total		**85494.64**	**91680.28**	**114600.00**	**141703.00**

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

Service/Department-wise Break-up of Defence Expenditure



Service/ Department-wise Expenditure as Percentage of Total Defence Expenditure 2009-10



3

INDIAN ARMY

A T-90 Tank marching past the saluting base during Army Day Parade

The Indian Army stands vigil along the border - watchful, prepared for any sacrifice - so that the people of the country may live in peace and with honour

3.1 The infusion of high technology based precision weaponry has enhanced the lethality of future warfare manifold. The spectrum of threat ranges from the nuclear to the conventional and the asymmetric, with terrorism emerging like a hydra-headed monster. The rigours of climate i.e., the glacial heights and extreme cold, dense mountainous jungles and the heat and simoom of the deserts also need to be factored. The ethos of the Army is ingrained in all soldiers with an unwavering will to succeed, accepting their grave responsibility and an unbridled ability to give their lives for others.

3.2 The Indian Army has time and again lived up to its tradition of valour, heroism, sacrifice and fortitude. It stands vigil along the border - watchful, prepared for any sacrifice - so that the people of the country may live in peace and with honour.

MODERNISATION OF ARMY

3.3 A pragmatic vision of the shape, size and role of the Army in the long term perspective makes the modernization process of the Army dynamic and the technology process more towards development of a Threat Cum Capability Based Force'. The Army has to be prepared for multi spectrum orientation changes and be always a `Ready and Relevant Army' as per anticipated challenges of the future.

3.4 **Mechanised Forces:** The Mechanised Forces, which constitute a significant and essential segment of Defence Forces with a formidable combat potential and operational worth are moving towards a major technological shift. The effort to modernize Mechanised Forces continues, wherein additional quantities of ATGMs for BMP-2 and T-90 tank have been contracted with M/s BDL. The ICV BMP-2/2K is being modernized by upgrading its existing NBC System, Fire Detection and Suppression System and also providing an upgraded new Power pack. The scheme to fit environmental control for ICV BMP-2 is in an advanced stage of procurement. Additional BFSR (MR) mounted on HMV TATRA is also being procured.

3.5 **Artillery:** The artillery is acquiring an array of guns, missiles and rocket systems with long ranges and superior firepower as also state-of-the-art surveillance systems. This will enhance the range, accuracy and lethal power of the artillery and make it a more potent force in the future besides extending its reach to the operational and strategic depth.

3.6 **Weapon System:**

(a) **BrahMos Weapon System:** BrahMos Supersonic Cruise Missile is an all weather, fire-and-forget missile capable of being launched from land, sea, sub-sea and air with a range of approximately 290 Kilometers.

(b) **Smerch Multi Rocket Launcher System (MLRS):** This Russian versatile and devastating MLRS is already in service.

(c) **Pinaka Multi Barrel Rocket Launcher System (MBRLS):** This is an indigenous MBRL. It is expected that the first consignment of equipment will be handed over to the Army soon.

3.7 **Upgradation of Vehicle Platform:** The existing Vehicle Platform of GRAD BM-21 is of 1980 vintage and requires upgradation. Consequently, upgraded vehicle platforms are under procurement.

3.8 **Development of Indigenous 130 mm Cargo Ammunition:** Ordnance Factory Board (OFB) successfully demonstrated the indigenous 130mm Cargo ammunition produced by them in technical collaboration with IMI, Israel.

3.9 **Electronic Fuzes:** Electronic Fuzes for 105mm, 103mm and 155 mm guns for point detonation, VT and carrier shells were introduced into service after the due process of trial evaluation.

3.10 **Upgraded Indigenous Forward Observation Simulator (UI FOS):** Bharat Electronics Limited (BEL), Bangalore has successfully developed an Indigenous Forward Observation Simulator.

3.11 **Joint Training:** A long term Memorandum of Understanding (MOU) has been signed between India and Singapore for training of SAF Artillery personnel at the School of Artillery, Devlali. A bilateral training exercise between Indian Army and Singapore Armed Forces (named **'Exercise Agni Warrior**') was conducted in November 2008.

ARMY AIR DEFENCE

3.12 The major focus is to acquire and replace vintage missile systems and acquire a common successor for AD Gun Systems. To enhance the surveillance and fire control capabilities, it is planned to procure **3D Tactical Control Radars** and successor of existing Fire Control Radars.

ARMY AVIATION

3.13 The procedure to strengthen Army Aviation by replacing the existing helicopter fleet with Reconnaissance and Surveillance Helicopters having better capabilities and capacity is being pursued. Army is also in the process of acquiring weaponised platforms based on the indigenously manufactured **Advanced Light Helicopter (ALH).**

ENGINEERS

3.14 The capability of Corps of Engineers is being strengthened by replacing existing bridge systems with state of the art indigenous bridges, which will enhance tactical mobility of our field formations. Procurement of new earth moving plants and material handling cranes is also being done to reduce the fatigue factor for troops.

SIGNALS

3.15 The Corps of Signals has taken a number of major strides in consolidating the various networks of Indian Army. ASCON and Command Integrated Network links have been consolidated into one Army network. Defence Communication Network, a prestigious tri-service project, will provide connectivity to strategic elements of Army, Navy, Air Force and IDS. Upgradation of ASCON, which will incorporate concept of integrated surveillance system and ASCON Hotspots, has been planned. New indigenous Radio Sets with Frequency Hopping capability and Data transfer facility have been issued to the field formations to improve the capability of Network Centricity in the Army.

INFANTRY

3.16 The present situation in the region warrants state-of-the-art systems for the Infantry. The focus is to enhance the fire power and personal protection. This is being achieved through endeavour for better quality personal weapons, thermal imaging devices, mine protected vehicles and improved radio communication systems. A contract has been signed for supply of Boot Anti Mines for use by Infantry. Bullet proof vehicles and shot guns are being procured for counter insurgency operations. Incidents like 26/11 have underlined the need to equip all infantry battalions suitably for rapid reaction. This is being achieved by procuring specialised items for the Ghatak Platoons of Infantry Battalions.

3.17 Containerised vehicles for communication systems and light specialist vehicles (multipurpose) are under trial evaluation and are likely to be procured in the next financial year.

TERRITORIAL ARMY

3.18 The Territorial Army (TA) is a voluntary, part time Army consisting of otherwise gainfully employed Indian citizens, eager to perform their role in the country's defence in the event of national emergency by relieving the Regular Army of their static duties and by aid to civil authorities in dealing with natural calamities and maintenance of essential services.

COAS at the Piping Ceremony to formally induct famous cricketer Kapil Dev into Territorial Army

3.19 **Raising of Additional Companies:** Two additional Companies each for 127 Inf Bn TA (Eco) and 130 Inf Bn TA (Eco) have been raised in March 2008. These are being funded by the State Government of Uttarakhand.

3.20 **Raising of TA Gp HQ at Northern Command:** The proposal to raise the TA Gp HQ at Northern Command has been approved.

RASHTRIYA RIFLES (RR)

3.21 RR remains the Counter Insurgency/ Counter Terrorist Arm of the Indian Army. The kind of surgical operations being carried out now-a-days has resulted in drastic reduction in own casualties. Operational performance of Rashtriya Rifles has been exemplary. This has been possible due to high motivation level of troops, a good intelligence network and an excellent rapport with local population and civil administration. However, success in proxy war has not been without a cost. Many gallant officers and men of Rashtriya Rifles have made the supreme sacrifice in the relentless pursuit of our objective.

ACHIEVEMENTS

3.22 Achievements of Rashtriya Rifles formations and units from January 2008 to March 2009 are given in Table 3.1 and Table 3.2.

During the period from January 2008 to March 2009, Rashtriya Rifles have killed 224 terrorists and apprehended 116.

Table 3.1

Terrorists Neutralised by Rashtriya Rifles (from January 2008 to March 2009)		
(i)	Killed	224
(ii)	Surrendered	27
(iii)	Apprehended	116

Table 3.2

Recoveries Made by Rashtriya Rifles (from January 2008 to March 2009)		
(i)	Rifles (All Types)	322
(ii)	Pistol	134
(iii)	LMG/UMG	14
(iv)	RL/UBGL	58
(v)	Grenades	1507
(vi)	Improvised Explosive Devices	145
(vii)	RS	159
(viii)	Explosives	549.9 Kgs.
(ix)	Ammunition	46,307 rds.

3.23 **Honours and Awards:** In keeping with the highest traditions of the Army, the force proved its mettle in battling militancy with exemplary professionalism. The success of the Force in various operations leading to general improvement of situation is borne out by the honours and awards won by the Rashtriya Rifle units and personnel. The total tally of awards from January 1, 2008 till January 26, 2009 is given in Table 3.3.

Table 3.3

Sr. No	Awards	Total
(a)	Ashok Chakra	02
(b)	Kirti Chakra	07
(c)	Ati Vishishta Seva Medal	03
(d)	Shaurya Chakra	20
(e)	Sena Medal(Gallantry)	109
(f)	Sena Medal (Devotion to duty)	15
(g)	Vishisht Seva Medal	18
(h)	Mention-in-Dispatch	49
(j)	COAS CC	157
	Total	**380**

COUNTER INSURGENCY OPERATIONS & INTERNAL SECURITY SITUATIONS

3.24 The security challenges that face the nation today are varied, sophisticated and complex. From growing threats in the domain of conventional/ nuclear conflicts, to maintenance of vigil on our unsettled borders, to combating a proxy war in Jammu & Kashmir and numerous insurgencies in the North East, the Indian Army faces multidimensional challenges. Additionally, the Army faces threats to Internal Security from the naxal menace and terrorism.

JAMMU & KASHMIR

3.25 The security situation in the State is firmly under the control of the Security Forces (SF). Due to a strong counter infiltration posture and relentless counter terrorism operations conducted by the Army, violent incidents by terrorists have declined significantly in comparison to the preceding year. The secure environment thus created, enabled a high voter turnout in the recent assembly elections in the State, thereby contributing towards the strengthening of the democratic process.

SITUATION ON THE BORDERS

3.26 (a) **Line of Control/ International Border (LC/ IB):** The year 2008 saw a spurt in firing incidents along the LC/ IB. Between January 2008 to March 2009, a total of 87 firing incidents took place, of which 51 were ceasefire violations by Pakistan, wherein Pakistani posts resorted to targeting our counter infiltration deployment and surveillance grid; possibly to disrupt the same and abet infiltration. The violations were repeatedly brought to the notice of Pakistani authorities through established mechanisms.

(b) **Infiltration:** The counter infiltration posture was strengthened, especially during the summer to prevent infiltration. The effort met with success. The assessed successful infiltration for the period from January 2008 to March 2009 is 57, compared to 311 during the corresponding period in year 2007. Infiltration attempts by terrorists, however continue. During the period, 44 infiltration bids were foiled, with 61 terrorists being killed in action.

In the Hinderland 383 terrorists were killed during the period from January 2008 to March 2009 and 193 apprehended.

3.27 **Situation in the Hinterland:** From January 2008 to March 2009, 383 terrorists were killed and 193 apprehended by the Army while suffering 73

fatal casualties in the process. The terrorist leadership has been successfully targeted with a total of 66 middle level leaders being eliminated during the period.

North East

3.28 The security situation in the North Eastern States has shown significant improvement. The Army continues to spearhead the Counter Insurgency (CI) and Counter Terrorist (CT) operations supported by other Central/ State Forces. Sustained operational pressure from the Security Forces has forced many Under Ground (UG) groups to seek ceasefires or initiate dialogue with the Government.

3.29 **Assam:** In Assam, relentless operations by the Army against the United Liberation Front of Assam (ULFA), resulted in the killing/ apprehending of over 476 ULFA cadres. Demoralisation in the ranks has triggered a spate of surrenders with over 382 ULFA cadres surrendering between January 2008 to March 2009. Similar pressure led to a critical split in the ranks of the 28 Battalion, with a large number of cadres approaching the Government for a ceasefire. There is overwhelming popular support for the peace process and pressure is mounting on senior ULFA leaders to come to the negotiating table.

3.30 'Suspension of Operations' Agreements with other smaller UG Groups in Assam like the National Democratic Front of Bodoland (NDFB), Dimasa Halam Doagah (DHD) and the United Peoples Democratic Solidarity (UPDS) are holding. In South Assam, however, the breakaway faction of the DHD - the DHD (J) - indulged in rampant killings and extortion earlier in the year, adversely affecting work on critical infrastructural (road and rail) projects. Resultantly, the Army stepped up operations in the area, consequent to which the situation improved considerably.

3.31 **Nagaland:** In Nagaland, Inter Factional Clashes (IFCs) between the NSCN (IM) and

Raksha Mantri, Chief of Army Staff, Defence Secretary and other Senior officials at the War Memorial at Tawang, Arunachal Pradesh

NSCN (K) continue unabated. Army and Assam Rifles (AR) units, operating within the framework of the CFGRs, have succeeded in minimising violence between the NSCN factions and ensuring the security of civilians.

3.32 **Manipur:** In Manipur, operations by the Army and Assam Rifles are continuing. During the period from January 2008 to March 2009, 279 cadres of various outfits were killed while over 1076 were apprehended.

3.33 The 'Suspension of Operations Agreement' with the Kuki and Zomi UG Groups (initiated by the Army in 2005) was formalised into a Tripartite Agreement involving the Centre and the State in August 2008. This ushered peace in the Kuki and Zomi inhabited areas in Manipur, though the Meitei UG Groups continue to remain hostile. However, after the Agreement with the Kuki Groups, pressure is mounting on the Meitis to join the peace process.

3.34 **Tripura:** In Tripura, the situation in the State improved significantly, although sporadic incidents of violence by UG groups continue. Due to sustained operational pressure and a 'Surrender cum Rehabilitation' policy announced by the State Government, over 441 cadres of various UG Groups surrendered during the period.

NAXAL VIOLENCE

3.35 The Indian Army's role continues to be one of offering advice and assistance in training to strengthen police mechanisms in the affected states. At the request of Ministry of Home Affairs(MHA), Indian Army Teams visited the States of Chhattisgarh, Bihar and Jharkhand to review the situation first hand. The reports filed have been well received by MHA with a number of positive spin offs. Counter terrorism schools have been sanctioned for Bihar, Jharkhand, Orissa and Chhattisgarh.

SITUATION ALONG THE LAC

3.36 As China seeks to assert its centrality in the Asian Security Order, the qualitative and quantitative quotients of its military profile are bound to grow. While this is obviously a cause for concern, there is no reason for undue alarm.

3.37 The situation along the LAC remains peaceful. The mechanisms of Confidence Building Measures are under implementation. Indian Army's response, however, continues to be watchful, firm and precise.

INDIAN ARMY'S CONTRIBUTION TO UNITED NATIONS PEACE KEEPING OPERATIONS

3.38 India continues to be the third largest contributor to United Nations Peace Keeping Operations. The Indian Army is presently taking part in five on-going peace missions. These are UNIFIL (Lebanon), MONUC (Congo), UNMIS (Sudan), UNDOF (Golan Heights) and ONUCI (Ivory Coast).

3.39 India has so far provided two Military Advisors, 12 Force Commanders and one Division Commander in various United Nation Missions. Towards the fulfilment of India's commitment to the UN and peace, 124 Indian soldiers have, so far, made the supreme sacrifice. In recognition of their gallant and

distinguished service while serving the noble cause of world peace, Indian Army personnel have been honoured with 1 Param Vir Chakra, 5 Maha Vir Chakras, 1 Kirti Chakra, 19 Vir Chakras, 3 Shaurya Chakras, 4 Yudh Seva Medals, 10 Sena Medals and 2 Vishisht Seva Medals.

3.40 **Centre For United Nations Peace Keeping (CUNPK):** A Centre For United Nations Peace Keeping (CUNPK) was established in September 2000 in New Delhi to train Indian and foreign officers deputed for UN Peacekeeping Mission. The CUNPK has conducted six International Seminars, five National Seminars, 22 International Training Capsules for Contingent Officers, Military Observers, Civilian Police, Staff & Logistics Officers, one Multinational Peace Keeping Operation Exercise (PKO), one Annual Conference of International Association of Peace Keeping Training Centres (IAPTC) and six Bilateral Seminars. 351 foreign participants from 71 countries have been trained till date.

3.41 The CUNPK was the Secretariat for the 14th Annual Conference of International Association of Peacekeeping Training Centres (IAPTC) from October 5 to 11, 2008 at the National Defence College, Abjua, Nigeria. The event was attended by 144 participants from 30 countries.

ARMY SPORTS

3.42 Mission Olympics Wing of Army continued to achieve greater sporting glory, winning numerous international medals. For the first time, the Indian Contingent included as many as six sportsmen participating in the Beijing Olympics.

3.43 Three rowers of Army Rowing Node (ARN) represented the Nation in Beijing Olympics. As part of the process of creating world class sporting infrastructure, an international level 2.2 Km long rowing channel is nearing completion at ARN, Pune.

3.44 Naib Subedar Surendra Singh of Army Sports Institute (ASI), Pune, established a new National Record in 10,000m after breaking the existing 32 years old record. Major NS Johal of Army Yachting Node (AYN), Mumbai is today the highest ranking Asian in Finn class of Sailing.

HONOURS AND AWARDS

3.45 **Tenzing Norgay National Adventure Award 2007:** The following two Junior Commissioned Officers (JCOs) have been awarded Tenzing Norgay National Adventure Award 2007 for their achievements in the field of mountaineering by Ministry of Youth Affairs and Sports :

(a) Sub Mohinder Singh, Shaurya Chakra, DOGRA SCOUTS.

(b) Sub Neel Chand, Shaurya Chakra, DOGRA SCOUTS.

3.46 This award is equivalent to Arjuna Award. The award was presented to the JCOs by the President of India on August 29, 2008 at Rashtrapati Bhawan.

4

INDIAN NAVY

Indian Navy - a multi-dimensional Service

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

4.1 The Indian Navy (IN), by virtue of its capability, strategic positioning and robust presence in the Indian Ocean Region (IOR), has been a catalyst for peace, tranquillity and stability in the IOR. It has engaged other maritime nations by extending hand of friendship and co-operation. For the smaller nations in our neighbourhood as well as nations that depend on the waters of the Indian Ocean for their trade and energy supplies, the Indian Navy ensured a measure of stability and tranquillity in the waters around our shores. To achieve its tasks Indian Navy is enhancing its capabilities, cooperation and inter-operability with regional and extra regional navies. Apart from combating piracy and terrorism at sea, Indian Navy is also surveying the waters, providing Search and Rescue (SAR) facilities to those in distress, coordinating navigational warnings over a vast oceanic area and a myriad of minor but vital tasks that keep the global maritime related industry, and the global economy, in good health.

NEW PROJECTS/ INDUCTIONS

4.2 In order to augment the Indian Navy force level, a number of ships, submarines, survey vessels, auxiliary support vessels etc. are under construction in India and abroad. The indigenous Aircraft carrier is also under construction at CSL, Kochi.

4.3 **Derby Firing:** Firing of Derby Missile was successfully conducted by IN at the Dabolim Air to Air Range from IN Sea Harrier in March 2008. This is the first successful firing of Beyond Visual Range (BVR) missile by IN.

4.4 **Induction of UH3H:** Six UH3H utility helicopters have been inducted in the service. Intensive Flying Training Unit (IFTU) for UH3H helicopters has been set up. The unit was commissioned as Indian Naval Air Squadron (INAS) 350 on March 23, 2009.

MAJOR EXERCISES

4.5 **Defence of Gujarat Exercise (DGX 08):** DGX 08 was conducted from November 10 to 22, 2008. IN Ships from HQWNC along with IAF Jaguars and Mirage aircraft participated in the exercise.

4.6. **TROPEX 08:** TROPEX 08 was held during the year on Eastern Seaboard. The exercise was divided into three phases viz an Independent Workup Phase, Joint work up phase and the Tactical Phase.

Joint Exercises Planning

4.7 **TROPEX 09:** TROPEX 09 was conducted on the Western Seaboard from January 27 to February 25, 2009. Ships of both Eastern and Western Fleet participated in the exercise.

4.8 **Tatraksha XXIII:** Tatraksha is conducted twice a year with participation from Army, Navy, Coast Guard, Indian Air Force, BSF, State police and Customs, to check the responses of various agencies towards meeting the challenges in the Creek area. This year the exercise was conducted from April 7 to 10, 2008 in the Gulf of Kutch, to check our preparedness against infiltration through land and sea boundaries.

4.9 **Mini-Tacex 08:** Mini-Tacex cum Amphex was held in Andaman & Nicobar Islands from September 10 to 28, 2008. Three IN Ships participated in the exercise.

4.10 **Horn of Africa Patrol:** Three IN Ships undertook a joint patrol off the Somali Coast with French Naval Ship Courbet from August 11 to 15, 2008. The exercise was termed as 'Horn of Africa Patrol' and was aimed as a deterrent against the rampant piracy off the Somalian coast. One French Maritime aircraft (Atlantique) also participated in the patrolling and operated from Djibouti.

4.11 **SHESHNAG 08:** The first ever tri-services amphibious planning Table Top

Exercise in the field of Expeditionary Operations was conducted at Maritime Warfare Centre, Visakhapatnam from August 4 to 13, 2008. This Table Top Exercise was envisaged consequent to the INDO - US HABUNAG series of exercises conducted in the year 2006 and 2007. A total of 38 officers from the three services of the Indian Armed Forces took part in SHESHNAG 08. The exercise set in motion the transformation process of an infantry Brigade's conversion to amphibious Brigade.

4.12 **Beaching Exercises:** The ships of the Andaman and Nicobar Flotilla completed a total of 261 beaching operations at various islands during the period, in order to validate beaches afresh post Tsunami of 2004. More than 114 deployments were also carried out, in order to maintain presence in the far flung islands and to deter poaching, illegal immigration and other unlawful activities. Frequent visits to all ports of the Islands are being undertaken in order to provide unhindered logistic support.

4.13 **Submarine Exercises:** Submarines participated in all major exercises like TROPEX 08 and multinational exercises like SIMBEX 08 and Varuna 08.

4.14 **Op Demo/ Display:** IN Aircraft (Chetak, Dornier and Kamov) participated in an Operational Demonstration at Vijaywada from January 7 to 12, 2008.

OVERSEAS OPERATIONS

4.15 **Overseas Deployments:** Overseas Deployments are undertaken by ships of

Predators of the Deep – The Submarine Arm

Anti-Piracy Deployment

Indian Navy in support of the country's foreign policy. Such missions are for Flag showing, fostering better relations with friendly foreign countries and enhancing foreign cooperation. Important Overseas Deployments undertaken in 2008 included deployments to the Gulf of Aden, Red Sea, South Indian Ocean, South China Sea, and Malacca Straits etc.

4.16 **Training Squadron:** As a part of the training curriculum, Training ships of Indian Navy and Coast Guard visited Jakarta, Bali, Singapore and Phuket in SE Asia in January 2008 and Colombo and Mauritius in September 2008.

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

4.17 **Doha International Maritime Defence Exhibition and Conference (DIMDEX):** The Qatari Emiri Navy hosted the inaugural International Maritime Exhibition at Doha from March 17 to 19, 2008 wherein ships from 20 countries participated. INS Beas and Pralaya (both Indian built ships) represented India in the DIMDEX. The ships called on at Muscat and Doha during the deployment.

4.18 **Anti - Piracy Operations:** In keeping

with the aim of preventing hijackings in the Gulf of Aden, the Indian Navy has deployed one warship continuously in the Gulf of Aden with effect from October 23, 2008, to establish presence in the area, so as to deter the pirates and provide assurance to the Indian flagged merchant ships (along the route followed by the Indian Flagged merchant ships).

4.19 **Relief Support to Bangladesh:** In January 2008, Bangladesh faced severe brunt of the devastation caused by cyclone 'Sidr'. In order to provide relief, the Indian Navy deployed Landing Ship Gharial and two LSTs with relief material and shipments of 5000 tones of rice to Bangladesh.

4.20 **Operation Sahayata at Myanmar:** Following the devastation caused along the Myanmar coast by the very severe cyclonic storm 'Nargis', two IN Ships were deployed with integral disaster relief bricks and additional stores. The ships disembarked the relief material at Yangon on May 7, 2008.

4.21 **IDEX 09:** INS Sarvekshak participated in the International Defence Exercise 09 (IDEX 09) at Abu Dhabi from February 22 to 26, 2009.

OVERSEAS SURVEYS

4.22 **INS Nirdeshak and Investigator:** In pursuance of hydrographical co-operation, INS Nirdeshak and Investigator undertook

Aid to Myanmar

hydrographical and continental shelf surveys of Maldives, Seychelles and Mauritius from January 25 to April 24, 2008. During the deployment, the ship also transshipped medical stores to Seychelles and ammunition stores to Mauritius.

EXERCISES WITH FOREIGN NAVIES

4.23 In continuation with the policy of enhancing co-operation with foreign navies, a series of exercises were conducted during the year. The details of these exercises are enumerated in the succeeding paragraphs.

4.24 **MILAN 08:** MILAN 2008 was conducted at Port Blair from January 18 to 23, 2008. A total of eight foreign ships and 15 delegates from 11 countries viz Australia, Brunei, Bangladesh, Indonesia, Myanmar, Malaysia, New Zealand, Singapore, Sri Lanka, Thailand and Vietnam participated in the event. On completion of MILAN 08, a Maritime Patrol Aircraft exercise was conducted off Port Blair with the Singapore Navy from January 23 to 25, 2008.

4.25 **SIMBEX 08:** SIMBEX, an annual bilateral exercise with the Republic of Singapore Navy, was conducted on the Eastern seaboard in March 2008. Advanced level exercises were conducted for the first time in the Bay of Bengal.

4.26 **INDINDO Corpat:** Coordinated patrol with Indonesia 'INDINDO Corpat' along the International Maritime Boundary Line(IMBL) between India and Indonesia is done twice annually since its inception in 2002. The eleventh Corpat was carried out from March 6 to 26, 2008.

4.27 **KONKAN 08:** The third IN-RN bilateral exercise KONKAN 08 was conducted on the Western seaboard in May 2008. Seven ships of Royal Navy including nuclear propelled submarine HMS Trafalgar, one French Naval ship and seven IN Ships participated in the exercise.

4.28 **VARUNA 08:** The Indo – French annual Exercise VARUNA 08 was held in May 2008 on the Eastern seaboard. Three IN Ships represented the Indian Navy, while the French Navy was represented by Dupleix.

4.29 **IBSAMAR:** Two IN Ships participated in India-Brazil-South Africa Maritime (IBSAMAR) Exercise from May 2 to 16, 2008 off South Africa. Two Brazilian and four South African naval ships participated in the exercise. During this deployment, IN ships made port calls at Maputo and Nacala in Mozambique, Male in Maldives, Port Louis in Mauritius and Port Victoria in Seychelles.

4.30 **HABUNAG 08:** IN–USN Expeditionary Operation Table Top exercise, HABUNAG 08 was conducted at the Maritime Warfare Centre, Visakhapatnam in September 2008. A total of 17 officers from the US Navy/ Marine Corps and 42 officers from the Indian Armed Forces participated in the exercise. The exercise envisaged joint operations by the two navies on a Humanitarian Assistance/ Disaster Relief (HA/ DR) mission in a limited-threat environment in the aftermath of Tsunami that struck a fictitious island nation in the Indian Ocean Region.

Joint Exercises at Sea

4.31 **MALABAR 08:** Indo-US Bilateral Naval Exercise, MALABAR 08, was conducted off Goa from October 17 to 24, 2008. The US Navy was represented by seven ships including the aircraft carrier USS Ronald Reagan, one Los Angeles class nuclear submarine (USS Springfield) and P3C Orion aircraft. The Indian Navy was represented by eight ships, one Shishumar class submarine and aircrafts (including Sea Harriers).

4.32 **Coordinated Patrols:** Coordinated patrolling was undertaken with Indonesian Navy from October 13 to 30, 2008, the Thai Navy (RTN) from October 29 to November 5, 2008 and with Indonesian Navy from March 5 to 26, 2009.

Indigenously built INS Kesari was commissioned into the Indian Navy in April 2008 whereas two Water Jet - Fast Attack Crafts Chetlat and Car Nicobar were commissioned on February 16, 2009.

COMMISSIONING AND DECOMMISSIONING OF IN SHIPS

4.33 Indigenously built INS Kesari was commissioned into the Indian Navy in April 2008. Two Water Jet - Fast Attack Crafts Chetlat and Car Nicobar were commissioned into the Indian Navy on February 16, 2009, at Chennai. INS Ghorpad, INS SDB T-55 and INS SDB T-56 were decommissioned during the year.

TRAINING

A Ship Handling Simulator, Submarine Control Room Trainer and Electronic Support Measure trainer have been set up for imparting quality realistic training to the personnel.

4.34 **Commissioning of Ship Handling Simulator:** A Ship Handling Simulator (SHS) was commissioned at Maritime Warfare Centre (Vizag) on April 15, 2008. The simulator is used for training officers of the executive branch in complex procedures of entering and leaving different Indian harbours. A large number of major harbours, different class of ships and submarines have been replicated in the simulator. The crew can also be trained to manoeuvre ships in close proximity of each other, as is often required during operations at sea. SHS is the third simulator procured by the Indian Navy for imparting quality realistic training in ship handling.

4.35 **Submarine Control Room Trainer:** A working model of Sindhugosh class submarine control room trainer was set up. The Control Room Trainer encompasses EKM submarine Control Room and other compartments. All the compartments are integrated with control room using intercom and equipment status indicating units. It provides the trainee with a realistic feel of control room during the conduct of submarine drills and emergency procedures involving specific compartments as well as entire submarine.

4.36 **Electronic Warfare Trainer:** An Electronic Support Measure (ESM) trainer has been set up at Submarine School for training ESM operators. The pre-loaded self sustaining simulation on a commercial PC has been modified into the prototype model and is being used to give hands on experience to the operator. The implementation of this project has immensely improved the quality of training.

4.37 **Para Jumping and Sky Diving Training:** Naval aircraft and helicopters (Dornier, Sea King, UH3H and Chetak) were utilised for training the Naval Sky Diving Team, MARCOS and for conduct of basic sky diving courses. More than 1500 para/ free fall jumps were undertaken during the past one year.

ADVENTURE AND SPORTS

4.38 **XXVII Indian Antarctic Expedition:** One officer and one sailor from IN took part in the XXVII Indian Antarctic Expedition. In addition, one officer and one sailor have also been nominated for the XXVIII Indian Antarctic Expedition planned in January 2009.

4.39 **The Himalayan Adventure Training Camp (HATC-08):** The participants of HATC are children of Naval personnel in the age group of 12 to 16 years. HATC 08 was conducted at Bakartach, Solang from May 20 to June 4, 2008. The team undertook a trek to Beas Kund, the origin of river Beas, and also participated in Paragliding at Solang, Skiing at

Rohtang pass and White Water River rafting on river Beas at Bhunter.

4.40 **Trekking Expedition:** A trekking expedition from Okha to Junagadh was organised from March 12 to 15, 2008 with the theme "Clean, Green and polythene free India". A team of one officer and 24 sailors, including DSC Jawans and civilians participated in the event.

5

INDIAN AIR FORCE

Su-30

The Indian Air Force (IAF) is undergoing a phase of transformation. Not only is there a large scale modernisation and induction of new equipment, but also an accompanying doctrinal change in operational employment

5.1 The IAF today has leapfrogged a generation ahead and has acquired advanced war-waging capabilities. Meanwhile, it continues to enhance its professional reputation, by superlative performances in many international exercises and missions, both at home and abroad.

AIRCRAFT ACQUISITION

5.2 **Su-30MKI:** The IAF has inducted state-of-art Su-30MKI aircraft in operational squadrons. HAL has already manufactured and delivered Su-30 MKI aircraft against the Block-I Contract.

5.3 **Hawk AJT:** Twenty Hawk AJT aircraft have been inducted at AF Station, Bidar. Production of Hawk by HAL has also commenced and the first aircraft from this series is already operational with IAF.

5.4 **Aircraft for Special Operations (C-130J-30):** Procurement contract of C-130J-30 aircraft for special operations from US Government has been signed. The C-130J-30 aircraft is capable of operating during day and night and adverse weather conditions, and is equipped with state of the art avionics.

Hawk AJT

Su-30 Refueling Mirage-2000, mid air.

5.5 **AWACS:** Airborne Warning and Control System (AWACS) are being procured to significantly enhance the effectiveness of both Offensive and Defensive operations of the IAF. Induction of AWACS would also enhance the force projection capabilities of the IAF in emergent situations.

5.6 **Boeing Business Jet (Boeing 737-700 IGW):** Three Boeing Business Jets (BBJs) were procured to supplement the VVIP squadron of the IAF from M/s Boeing. The three aircraft were delivered between August 2008 and January 2009. They have been successfully inducted into the VVIP Fleet.

AIRCRAFT/ HELICOPTER UPGRADES

5.7 **MiG-29, Mirage-2000 and Mi-17:** Contract for MiG-29 mid life upgrade and extension of total technical life was signed with RAC MiG, Russia. IAF is also processing upgradation of the Mirage-2000 and Jaguar aircrafts and Mi-17 helicopters in order to optimise their utilization. The avionics upgrade of the Jaguar aircraft fleet is in progress. Upgrade of Jaguar aircraft is in the pipeline with indigenous design and development.

5.8 **Avionics Upgrade of the existing DO-228 Aircraft:** To keep the DO-228 aircraft abreast with the latest technology, all the existing aircraft are being upgraded with the latest avionics.

5.9 **AN - 32 Fleet Upgradation:** Present TTL (total technical life) of 25 years of AN-32 aircraft is expiring from the year 2009 onwards. In order to exploit the aircraft further, TTL extension up to 40 years and re-equipment with latest version of systems to meet the present ICAO standards for the entire AN-32 fleet is being undertaken.

INDIGENISATION

5.10 **Indigenous Development of Spares:** Indigenisation of spares required

Mirage-2000 Upgrade

MiG-29 Upgrade

Mi-17 Upgrade

for overhaul is a continuous process. Indigenisation of more than 80,000 lines of spares has been accomplished by the Base Repair Depots (BRDs) for various fleets of IAF. The private sector is actively involved in the indigenisation efforts of IAF. More than 2500 vendors have registered with IAF. The BRDs of IAF are now in the process of indigenising Low Volume, High Cost, High Technology spares.

5.11 **Development Projects:** Various developmental projects have been taken up by IAF BRDs for developing indigenous substitutes for spares. Development Projects amounting to almost Rs. 3.9 crore are under progress at various BRDs.

Indigenisation of more than 80,000 lines of spares has been accomplished by the Base Repair Depots for various fleets of IAF.

5.12 **Indigenous Manufacture of Aerotyres:** In a boost to indigenisation of manufacture of aero tyres which IAF has so far been procuring from foreign OEMs for its various fleet, M/s MRF has successfully developed tyres for Chetak Helicopters.

5.13 **Indigenisation of Arrester Barriers:** In order to achieve self reliance in the field of Aircraft Arrester Barriers a

long term plan was prepared to replace all imported barriers with ADRDE indigenized barriers. While a total of 21 barriers have already been replaced, varying quantities of 40T capacity and 20.4T capacity are under installation and some being procured in the 11th Plan. Indigenisation of maintenance and overhaul spares of imported Arrester Barriers is also under progress. Approximately 800 lines of spares have already been indigenised.

FLIGHT SAFETY

5.14 **Accident Statistics:** The accident rate of the IAF has shown a steady decline from 1.48 in 1971-72 to 0.40 in 2007-08. This has been achieved by instituting various proactive measures by the Indian Air Force to avoid/minimize accidents, combined with a renewed emphasis on training and safety related emphasis in operations.

5.15 **Major Achievements:** Major achievements/ events for the period from April 1, 2008 onwards are as follows:-

(a) **Flight Safety Audits:** Regular flight safety audits of flying stations in conjunction with DASI (Directorate of Air Staff Inspection) inspections are being carried out.

(b) **Operational Risk Management (ORM):** ORM has been introduced as a tool to help the field level commanders to make decisions concerning a mission. The Directorate of Information and Technology (DIT) has created a programme for this. It is under trial at three flying stations of the IAF and once proven, it is proposed to be implemented at all other bases.

The accident rate of the IAF has shown a steady decline from 1.48 in 1971-72 to 0.40 in 2007-08.

(c) **Vermiculture:** In order to scientifically dispose off the garbage at Air Force stations and thus manage bird activity, IAF has launched a "Zero Garbage" scheme for IAF bases. This scheme has made the environment cleaner, reduced bird activity and contributed towards increase in air safety. The scheme has been implemented at all major Air Force Stations.

(d) **Anti Bird Measures:** Various bird control measures adopted in the IAF have shown encouraging results. Detailed survey of birds at flying stations by professionals, both in-house as well as from institutions such as the Bombay Natural History Society, have resulted in bringing down the number of bird hit accidents. Procurement of Bird Collision Avoidance Radar and additional microlite aircraft is under process. An ornithological cell has been set up to carry pit study periodically and create specific modules for each bird at such bases, which are implemented for reducing bird menace.

(e) **Courses Run at IFS:** Instructional Flying School (IFS)

carried out courses for education of personnel to prevent and investigate accidents. These courses integrate the latest knowledge and technology available in the world.

(f) **Joint Quality Audits:** Joint quality audits of production and maintenance facilities have been carried out to minimize technical defect related issues. Joint teams include members from HAL.

(g) **FOD Prevention:** Towards Foreign Object Damage (FOD) prevention, dedicated FOD prevention programmes have been initiated specific to each base. In addition one hundred and twelve Mechanical Runway Sweepers (MRS) are being procured apart from eighty sets of specialized FOD equipment to clear critical areas and those not accessible by MRS.

(h) **Integrated Flight Safety Management System (IFMS):** DFS maintains records of aircraft accidents/incidents for an in-depth analysis and adoption of necessary preventive measures. An advanced IT based project was undertaken in 2005 for increased research and analysis facilities and to allow multiple users to access the data simultaneously. A web based application Integrated Flight Safety Management System (IFSMS) has been installed for this purpose. With connectivity being addressed by the AFNET project, the IFSMS will provide real time exchange of Flight Safety information among all functionaries in the IAF.

NAVIGATION AND COMMUNICATION AIDS

5.16 **Radars:** To enhance electronic surveillance, a large number of ground based radars are being inducted. Radars in different categories like Aerostat, Medium Power Radar (MPR), Low Level Light Weight Radar (LLLWR), Low Level Transportable Radar (LLTR), and Surveillance Radar Equipment (SRE) will greatly improve airspace management.

5.17 **Communication Equipment:** The IAF is acquiring state of the art communication equipment across all spectrums. These include SATCOM, HF and V/UHF sets with associated encryption equipment to provide secure and reliable communications for all Command, Control and Combat elements.

WORKS SERVICES

5.18 **Works Services for Development of Airfields:** IAF airfields in the coming years have to increasingly sustain the bulk of operations by aircraft of SU 30 class, Flight Refueller Aircraft (FRA) and Airborne Warning and Control System (AWACS). Apart from these, a large number of airbases being joint user aerodromes, have to support operations of heavy/wide bodied

civil aircraft. To sustain uninterrupted air operations by these aircraft, it is necessary that existing surfaces are suitably upgraded and maintained. During 2007-08, resurfacing of five runways has been sanctioned at a cost of Rs 281.87 crore.

5.19 **Infrastructure for Induction of Boeing Business Jet (737-700 IGW):** Works services for hangar, parking bay and technical accommodation for three Corporate Jets to be inducted in the Air HQ Communication Sqn at a cost of Rs 21.52 crore was sanctioned as a Special Project. Work is in progress on fast track.

5.20 **Interactive Fire Arm Training Simulator (IFATS):** Contract for procurement of IFATS for enhancing the marksmanship and firing skill of air warriors has been finalised. The installation of the equipment at designated AF Stations will commence shortly.

CEREMONIALS

5.21 **Participation of AWSO at Berlin Air Show:** The performance of the Air Warrior Symphony Orchestra at Berlin Air Show-2008 from May 24 to June 1, 2008 won wide acclaim.

5.22 **Standard/Colour Presentation Ceremony:** The President of India presented the Standard/Colour to 59 Sqn and AFTC on November 12, 2008 at AFTC, Bangalore.

5.23. **Standard Presentation to 108 Sqn and 105 HU:** The President of India

German Chancellor and Raksha Mantri at the Berlin Air Show, May 2008

presented the "Standards" to 108 Squadron and 105 Helicopter Unit, in a ceremonial parade held at Air Force Station, Gorakhpur. 108 Squadron was formed on November 20, 1959. 105 Helicopter Unit, since its raising on November 23, 1959 is the second oldest helicopter unit of the IAF.

5.24 **Phasing out of MIG-23 BN:** The MiG-23 batallion of Indian Air Force retired on March 6, 2009, after 28 years of glorious service to the Nation. A befitting farewell in the form of a 'phasing out ceremony' was held at its last home, No. 221 Squadron at Air Force Station, Halwara. The ceremony was presided over by the Chief of Air Staff. Wg Cdr YJ Joshi and Sqn Ldr TR Sahu of 221 Sqn flew the aircraft on its last flight.

SECURITY

5.25 **IAF Special Force Garud:** Garuds are being trained as a special ground combat force with the objective to providing force multiplier effect to air operations and to bring synergy in joint operations with sister services. During the year, Garud force conducted a joint exercise with NSG and participated in exercise Red Flag (USA) as a part of the IAF contingent.

Garud Force

President of India Awarding Standard to 105 HU

5.26 **Modernisation of Security Infrastructure:** Security infrastructure is being modernized through introduction of biometric based Access Control System, Night Vision Devices (NVDs) and smart power fences.

6

COAST GUARD

Indian Coast Guard Ship 'Sangram' in exercise with Korean Coast Guard Ships

The Indian Coast Guard has a force level of 43 ships, 45 aircraft and helicopters, 19 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 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 three Regional Headquarters at Mumbai, Chennai and Port Blair. The three Regional Headquarters exercise command and control in the waters adjoining the entire coastline of India, through 11 Coast Guard District Headquarters.

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 helicopters, 19 boats/craft and 23 non-commissioned boats/craft in its fleet to

Commissioning of 'ICGS Sankalp' by Raksha Mantri

carry out regular surveillance of the Maritime Zones of India and the areas of interest. One Advanced Offshore Patrol vessel 'Samrat' constructed by M/s Goa Shipyard Limited (GSL), Goa has also been commissioned. The first 90 meter replacement Off-shore Patrol Vessel (OPV) 'Vishwast' was launched on July 4, 2008 at M/s Goa Shipyard Ltd and is also likely to be commissioned. The other new additions to the Coast Guard force include one Pollution Control Vessel – 'Samudra Prahari', one IPV (In-shore Patrol Vessel) and two Interceptor Boats. The 2nd Pollution Control Vessel being built by M/s ABG Shipyard Ltd. Surat was launched on March 27, 2009. In addition in the XI plan the procurement of 27 more aircraft including 4 Dorniers, 3 Chetak helicopters is at various stages. In view of current security scenario Government has approved the procurement of 14 twin engine helicopters and 16 light helicopters. To overcome immediate shortage of aircraft inventory, Indian Coast Guard is progressing the procurement of 8 twin engine helos on dry lease and 12 fixed wing aircraft on wet lease.

IMPORTANT MILESTONES AND ACHIEVEMENTS

6.6 **Commissioning of ICGS Sankalp:** The Advanced Offshore Patrol Vessel 'ICGS Sankalp' was commissioned by Raksha Mantri on May 20, 2008.

6.7 **Commissioning of ICGAE Porbandar:** The Coast Guard Air Enclave, Porbandar was commissioned by Raksha Rajya Mantri on June 12, 2008.

Commissioning of 'ICGAE Porbandar' by Raksha Rajya Mantri

6.8 **Launching of first replacement OPV:** The first 90 meter replacement OPV 'Vishwast' was launched on July 4, 2008. This vessel is being constructed at M/s GSL, Goa and likely to be commissioned shortly.

6.9 **Affiliation of ICGAS Daman with Maratha Light Infantry (MLI) Regiment:** ICGAS Daman is the first ICG unit in the history of the service to be affiliated to an Army Regiment. ICGAS Daman has a memorial for the victory of Jangi Paltan of Maratha Light Infantry who captured the Air Field of Daman from Portuguese and subsequently liberated Daman on December 19, 1961.

6.10 **Launching of OPV, ICGS Vishwast:** The first of the three OPVs under construction at M/s GSL Goa, CGS Vishwast was launched on July 4, 2008. It is designed to be propelled by MTU engines delivering 18000 KW of Power making the vessel traverse extended ranges of 4500 NM at a cruising speed of 12 -14 knots. Besides being capable of providing pollution response and external fire fighting, the ship will be equipped with state of the art Integrated Platform Management System for machinery and bridge controls.

6.11 **Commissioning of 6th AOPV:** Sixth AOPV of Indian Coast Guard, ICGS Samrat was commissioned by Raksha Mantri on January 21, 2009. The ship was built by M/s Goa Shipyard Ltd at Goa. The ship has an overall length of 105 mtrs and propulsion by 2 MAN main engines to achieve a maximum speed of 23.5 knots. The ship has endurance to sustain at sea for 25 days with an economical speed of 12 knots. The ship

is fitted with CRN – 91 guns and can also provide pollution response operation at sea.

6.12 **Launching of 2nd Pollution Control Vessel (ABG Yard 222):** The 2nd PCV being built by M/s ABG Shipyard Ltd, Surat was launched on March 27, 2009. The overall length of the vessel is 94 mtrs (approx). The vessel can achieve a maximum speed of 20.6 knots. The endurance of PCV is 6000 NM at cruising speed of 12–14 knots.

INTERNATIONAL COOPERATION

6.13 Overseas Deployment:

(i) ICGS Veera with integral helo was nominated as part of 1TS for Overseas deployment to Muscat, Bandar Abbas, and Abu Dhabi from March 24, 2009 to April 11, 2009.

(ii) **International Maritime Search and Rescue Conference (IMSARCON):** The SOLAS convention stress upon establishment of an international search and rescue (S&R) plan responsible to the needs of maritime traffic for the rescue of persons in distress at sea and to promote cooperation among S&R organisations around the world. With this as the backdrop, the Indian Coast Guard conducted two days conference on "International Maritime Search and Rescue" from March 11 to 12, 2008 at New Delhi. The presentation of papers by experts from 16 countries and

Raksha Mantri inaugurating International Maritime SAR Conference

international organisations followed by the ensuing discussions evoked keen response and interactions between participants. The conference was inaugurated by Raksha Mantri on March 11, 2008 at Vigyan Bhavan, New Delhi. Overall, 22 international delegates attended the conference.

Coast Guard Ships and Aircraft Undertake Various Search and Rescue Operation and were instrumental in saving 623 lives at sea.

(iii) **NMSARB Meeting:** The seventh meeting of the National Search and Rescue Board was held at Goa on May 8, 2008. Presentations were made in the meeting on "Report on SAR Activities 2007-08" and "Low Cost Distress Alert Transmitter (DAT) system" developed by ISRO for fishermen. The SAR Report presentation was followed by presentation of SAR Award to MV Scan Brasil for her promptness in responding to a distress alert by MV Gerudu Empire in October 16, 2007 thereby significantly contributing in saving 12 lives. The ESSAR SAR award for the year 2007 was presented to Coast Guard Ship Kasturba Gandhi for Search and Rescue of eight crew from a Merchant Trawler in extreme adverse weather conditions and for carrying out Medical Evacuation from Merchant Vessel Nova Sea.

6.14 **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 Coast Guard are shown in Table 6.1.

Table 6.1

Sl.No.		Since Inception	From January 1, 2008 to March 31, 2009
(i)	Contraband seized	503.159 crores	5.5 lakhs
(ii)	Poaching trawler apprehension	1055 boats 10037 crew	128 boats 802 crew
(iii)	Smuggling vessels apprehension	120 boats 731 crew	14 boats 16 crew
(iv)	Search and Rescue (SAR) Missions	1297	103
(v)	Search and Rescue Sorties	2460	159
(vi)	Lives Saved	4815	623
(vii)	Oil spill incidents responded	57	--
(viii)	Oil spill incidents out of country	01	--

7

DEFENCE PRODUCTION

Commissioning of ICGS "SANKALP" GSL Yard 1187

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, missiles, a variety of electronic devices and components for the defence sector, and alloys and special purpose steel. 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 through joint ventures with leading companies in different fields. They have also been focusing on commercializing new products developed from time to time by the defence research establishments and also on indigenizing production as far as possible.

7.2 The following are the major organisations directly under 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 Limited
- Bharat Dynamics Limited
- Mishra Dhatu Nigam Limited
- Directorate General of Quality Assurance
- Directorate General of Aeronautical Quality Assurance
- Directorate of Standardisation
- Defence Exhibition Organisation

ORDNANCE FACTORIES

7.3 The Ordnance Factories Organisation is the largest and oldest departmentally run production organisation in the country. It is primarily engaged in the manufacture of Defence hardware for the Armed forces. The Ordnance Factories were established with a mandate to ensure self-reliance in manufacturing of Defence hardware.

7.4 The pre-independence factories had capacities for production of not only finished stores but also basic and intermediate materials because of inadequate industrial infrastructure in the civil sector. With the gradual development of industrial infrastructure in public and private sectors, the factories set up after independence have been outsourcing their requirements from small and medium industries.

The Ordnance Factories Organisation, the largest and oldest departmentally run production organisation in the country is mandated to ensure self-reliance in manufacturing of Defence hardware.

7.5 **Organisation Structure:** The Ordnance Factory Board (OFB) has a Chairman and 9 functional Members. Out of these, five members head operating divisions and four Members are for Staff functions. In addition, the Government has constituted a special Board, with representation from the Ministry of Defence, Army and Defence Research and Development Organisation (DRDO) for providing appropriate input on resource planning, upgrading technology of products and efficient functioning of OFB.

7.6 **Human Resources:** Ordnance Factories have a large pool of qualified and experienced personnel. National Academy of Defence Production (NADP) Nagpur, a premier training institute caters to the training need of Gr. 'A' officers, Ordnance Factories Institutes of Learning (OFIOL) take care of the training need of Gr.'B' officers and staff. All the Ordnance Factories have training institutes for training industrial employees and trade apprentices.

7.7 **Product Profile:** Ordnance Factories continuously upgrade products and the manufacturing technologies, to meet the emerging needs of Defence Forces. The product range of Ordnance Factories is as under:

Weapon Items: Small Arms (Rifles, Pistols, Carbines, Machine Guns), Tank Guns, Anti-Tank Guns, Field Howitzers, Artillery Guns, Mortars, Air Defence Guns, Rocket Launchers and Naval Gun Systems.

Ammunition Items: Ammunitions for all the above weapon systems, Rockets, Missile Warheads, Mortar Bombs, Pyro Technique (Smoke, Illuminating, Signal), Grenades and Bombs, Mines & Flares for Air Force, Naval ammunition, propellant and fuzes.

Armoured & Transport Vehicles: Tank T-72 'Ajeya', Tank T-90 'Bhishma', Infantry Combat Vehicles, Armoured Ambulance, Bullet Proof and Mine Proof Vehicles, Special Transport Vehicles and Variants.

Troop Comfort Items: Parachute for Army & Air Force, High Altitude and Combat Clothing, Tents of Various Types, Uniforms & Clothing Items, Floats For Light Assault Bridges.

Opto Electronics: Optical Instruments and Opto-Electronic Devices/ Fire Control Instruments for Armored Vehicles, Infantry and Artillery Systems.

Others: Special Aluminum alloys for aviation and space industry, Field Cables, Water Browsers etc.

7.8 **Diversification into Civil Trade and Exports:** As a policy, major thrust is being given to achieve optimum capacity utilization not only by securing additional workload from the Armed Forces but also by making sustained efforts through diversification to non-defence customers and exports.

7.9 **Achievements:** Some of the important achievements of Ordnance Factories in the current financial year are:

(i) **E-Procurement:** OFB has started e-procurement in all Ordnance factories in a phased manner for transparency as per Mission Mode Project and reduction in procurement lead time.

(ii) **Pinaka Rocket**: The multi-barrelled Pinaka Rocket has been successfully developed jointly by Defence Research and Development Organisation (DRDO) and Ordnance Factory Board (OFB). The bulk supply has commenced during the year.

(iii) **Micro Alloy Steel:** Metal & Steel Factory, Ishapore in collaboration with Bengal Engineering and Science University (BESU) developed a type of ultra high strength steel called "Micro Alloy Steel" that can lessen the weight of weapons without compromising in power.

(iv) **Anti-Material Rifle (AMR):** 20mm AMR Rifle has been productionized for Ministry of Home Affairs.

7.10 **Quality Management:** Implementation of Total Quality Management (TQM) concept has been given a major thrust in all the Ordnance Factories. Ordnance Factories have switched over to Quality Management System confirming to ISO-9001:2000 standards. All the laboratories in the Ordnance Factories are accredited to NABL and conform to ISO/ IEC 17025 new standards. Warranty scheme has been introduced since May, 2007 for all products/ stores supplied to Indian Army.

7.11 **Self certification in Ordnance Factories:** Ordnance Factories have started the process of self-certification, thereby, standing guarantee to their products supplied to the Armed Forces.

7.12 **Research and Development:** In-house Research and Development activities towards product and process improvements are receiving great thrust in Ordnance Factories. Latest solid modeling techniques and sensitivity analysis are being used to meet the design needs of defence stores. Extensive use of CAD/ CAM has significantly reduced the time from the stage of conceptualization to the development of prototype.

7.13 **Modernisation:** Modernization of infrastructure is a continuous process in Ordnance Factories adopted to update the plants and machineries matching both quantitative and qualitative requirement of the products projected in the Perspective Plan. A capital investment of Rs.574 crores is planned in the year 2008-09 and investment

of Rs.2,374 crores has been planned in XI plan period.

HINDUSTAN AERONAUTICS LIMITED (HAL)

HAL has produced 11 types of aircraft from in-house R&D and 14 types under license.

7.14 Hindustan Aeronautics Limited (HAL) is a "Navratna" Defence Public Sector Undertaking. 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 achieved a turnover of Rs. 10,260 crores in 2008-09.

7.15 HAL's core business activities *inter alia* included 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 and Manufacture of Structures and Integrated systems for space launch vehicles and satellites.

7.16 The Company has produced 11 types of aircraft from in-house R&D and 14 types under license. Major products currently in the production range are :

- SU-30 MKI,
- Jaguar,
- Hawk,
- Dornier 228
- Dhruv (ALH),
- Cheetal helicopters.

Weaponised Dhruv taking its maiden flight

7.17 The Light Combat Aircraft (LCA) and the Intermediate Jet Trainer (IJT) whose limited series production has been launched, would be inducted into the Service after certification in 2009 and 2010 respectively.

7.18 Design work on the Light Combat Helicopter (LCH) has progressed considerably and the build of the first prototype has commenced in 2008.

7.19 The new design & development projects being launched are Fifth Generation Fighter Aircraft, Multi-role Transport Aircraft, Light Utility Helicopter, Medium Lift Helicopter, Turboprop Trainer and UAVs.

7.20 The Company also plays a major role in the Country's space programme. Structures & completely integrated assemblies for launch vehicles and satellites are produced by the Aerospace Division dedicated to meet the production requirements of aerospace structures for ISRO.

7.21 **Achievements:**

(i) Company has achieved the financial targets in respect of major performance parameters such as Sales, Value of Production and Profit for the period April 2008 to March 2009.

(ii) The first Hawk Advanced Jet Trainer produced at HAL was handed over to the IAF in August 2008.

(iii) A significant breakthrough was achieved in exports by securing an order for supply of 7 ALHs to Ecuador.

(iv) Design and development of Observer Trainer upgrade on DO-228 aircraft was completed for the Navy.

(v) First set of Liquid Hydrogen and Unsymmetric Dimethyl Hadrazine Tanks for the GSLV MK III was handed over to ISRO on October 16, 2008. These are the first 4 meter class tanks produced for the prestigious Geosynchronous Satellite Launch Vehicle Mk III which is designed to carry 4 - 5 Ton communication satellites to Geosynchronous orbit.

(vi) Space vehicle structures were also produced for the ISRO's Chandrayaan mission who has witnessed successful launch.

(vii) Performance of the Company was rated as "Excellent" for the 7th consecutive year in 2007-08.

(viii) HAL had achieved exports of Rs. 421 Crore for the financial year 2008-09.

7.22 During the period the Company received MOU Excellence Award for the year 2006-07 (Top Ten Public Sector Enterprises). HAL has been receiving the award consecutively since 2001-02.

7.23 The Company has also been conferred with "Raksha Mantri's" Awards for Excellence for the year 2006-07 under the categories Best Division/ Factory Award and Group Individual Award.

7.24 All the Divisions of HAL have implemented requirements of ISO 9001–2000 QMS standard and obtained certification. Seven Divisions have also implemented the Aerospace Sector Quality Management System requirements stated in AS 9100

standard and obtained certification. Four of these Divisions have also obtained NADCAP certification (National Aerospace Defence Contractors Accreditation Programme – USA) for special processes such as NDT, heat treatment, welding etc.

7.25 Sixteen Divisions have implemented requirements of ISO 14001 – 2004 EMS standard and obtained certification.

Bharat Electronics Limited (BEL)

7.26 Bharat Electronics Limited (BEL) is a multi-technology, multi-product company with strong presence in the field of Radars and Sonars, Communication Equipment, Opto-Electronics, Electronic Warfare, Tank Electronics and Strategic Components. It was awarded the status of "NAVRATNA Public Sector Enterprise" in 2007.

7.27 BEL has Compounded Annual Growth Rate (CAGR) of 10% over the last 5 years. BEL supplies Electronic Equipments to the Indian Defence Services, Para-military Forces and other Government users like All India Radio, Doordarshan, BSNL, MTNL, VSNL, Airport Authority of India, Meteorological Department, Railways etc. BEL also supplies Professional Electronic Components.

7.28 BEL has two Joint Venture Companies (JVC) - GE-BEL (with General Electric, USA) and BEL-Multitone (with Multitone UK) and a subsidiary company called BEL Optronics Devices Limited. GE BEL Pvt. Ltd. was set up to manufacture CT Max and other latest version X-Ray Tubes for the first time in the country. BEL Optronic Devices Ltd. (BELOP) has successfully manufactured and supplied I.I. Tubes to the Army for over a decade. To meet the emerging needs of the Army, BELOP is now proposing to go in for the latest technology of SUPERGEN/ 3rd Gen. Tubes.

BEL is a multi-technology, multi-product company with strong presence in the field of Radars and Sonars, Communication Equipment, Opto-Electronics, Electronic Warfare, Tank Electronics and Strategic Components.

7.29 **Research & Development:** BEL is spending about 3% to 5% of its turnover on research and development In BEL Development & Engineering (D&E) groups in each of the 9 Units/SBUs have been established. Central D&E at Bangalore is developing specialized technology modules for Unit D&E. Central Research Laboratories (CRLs) at Bangalore & Ghaziabad are set up for research in futuristic areas. The company bagged 2007-08 SODET Gold award for innovations for key contribution in the development of EW System.

7.30 **New Products introduced during 2008-09:** Some of the new products supplied to various customers during 2008-09 were Digital Mobile Radio Relay (DMRR), Wide Area Network for BSF (BSF WAN), Missile Approach Warning System (MAWS), KITE Mk II, SANKET Mk III, Radar Finger Printing System (RFPS), Digital Signal

Analyzer Processor (DSAP), Light Vehicle based Direction Finding System (LVDF), TI SIGHT IGLA and BFSR MR MAST, Flight Control Panel, Airborne Encoder Decoder to ADE, IFF Cabs, Synchronization Supply Unit and IPMUX to BSNL, Wide Area Network to Border Security Force, etc. Besides, communication equipment, costal communication network equipment was also exported.

7.31 **Achievements:**

(i) BEL has adopted Six Sigma concept for quality enhancement and total quality management. During 2007-08, 138 Six Sigma projects were completed. All the Divisions/ Units certified for ISO 9001 & ISO 14001.

(ii) BEL has adopted Business Excellence Model of CII Exim Bank excellence award. During 2008-09, 4 Units/ SBUs got certified for "Strong Commitment to Excel".

(iii) Three for BEL's Business Units certified for AS 9100 for meeting the aerospace requirement and four more Units/ SBUs identified for certification during 2008-09.

(iv) Pune Unit has been certified for ISO 13485:2003, an international standard covering design and development, production, installation and servicing of medical devices.

(v) BEL achieves an annual cost reduction of around 3 - 4% of the sales turnover.

7.32 **Awards:** BEL received Raksha Mantri's award for excellence in the Institutional Category for the year 2006-07. BEL has won the SCOPE Meritorious Award for R&D, Technology Development and Innovation for the year 2006-07. Indian Institute of Materials Management's Corporate Excellence Award for 2008 was also received by the Company.

BHARAT EARTH MOVERS LTD (BEML LTD)

7.33 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, Defence products and Railway & Metro products. The company also serves the various core civil sectors of the economy such as mining, steel, cement, power, irrigation, construction, road building. It also provides e-engineering solutions through its Technology Division and trades non-Company products, components, aggregates and commodities for domestic and international markets through its Trading Division.

7.34 BEML Ltd. has its Corporate HQ at Bangalore and manufacturing complexes, all in the State of Karnataka. The Company also owns a subsidiary – Vignyan Industries, which manufactures steel castings. The company's International Business covers over 50 countries in Asia, Africa, Europe and Latin America. The company has recently opened its overseas offices in Malaysia, Brazil and China.

7.35 BEML Ltd. manufactures and supplies Ground support equipment such as Tatra based High Mobility trucks, Armoured

Recovery vehicles, Heavy Recovery vehicles, Pontoon Bridge System, Vehicles for Missile projects, Tank transportation trailers, Milrail wagons and coaches, Mine ploughs, Crash Fire Tenders, Aircraft Towing tractors, Aircraft weapon loading trolley, Transmission and final drive systems for BMP Combat vehicles, Suspension system for Battle Tanks. The company also supplies Bull Dozers, Excavators and Motor Graders to DGBR and Army for Border road construction/ maintenance, snow clearance and other civil works.

7.36 BEML Ltd. set for itself a challenging vision of achieving Rs 5000 crore turnover by 2013-14, the golden jubilee year of the company. To realize the above vision, several bold and innovative strategic initiatives were taken which have yielded positive results leading to significantly improved performance over the last five years. Some of the major strategic initiatives which acted as drivers of profit and performance, were organisational restructuring, cost reduction and improving profitability etc. The concept of 'In-house Outsourcing' was introduced whereby, facilities are provided within the company premises to entrepreneurs to manufacture and supply identified items at competitive rates.

7.37 **Research & Development:** The

Metro Coach manufactured by BEML under license from Rotem, South Korea

Technology Division offers end-to-end solutions and services across the whole product development cycle including design, modeling, analysis, simulation, prototyping, testing and documentation. The state-of-the-art infrastructure in this Division and skill sets are comparable to the best in the industry. Technology Division is presently operating in four different business segments viz. Auto, Aerospace, Defence and Rail & Metro.

7.38 The Company has entered into a host of technology tie-ups with major global leaders, such as with TEREX Corporation, USA, for high capacity dump trucks and ROTEM, South Korea for state-of-the-art Metro Coaches etc. In-house Research & Development was also given a thrust and necessary resources were provided which resulted in development of mining and constructions products, defence products and rail and metro products.

7.39 Rs.400 crore was approved by Board for CAPEX in 2006-07 and 2007-08 and Rs 418 crore in 2008-09 under modernisation and upgradation projects to bring out significant improvements in overall quality, cost effectiveness, aesthetic appeal and productivity.

7.40 **Productivity Improvement:** As a result of various efforts, 15% increase in capacity has been achieved in manufacturing and 25 % in assembly areas. Voluntary Retirement schemes were introduced for unskilled and non-technical personnel and the Company could bring down employee strength. As a result of these measures, turnover per employee has increased from Rs.9 Lakh to more than Rs.22 Lakh in 5 years.

7.41 **Achievements:**

(i) Additional Land (1109 acres) along with two manufacturing facilities were acquired from the adjoining PSU Bharat Gold Mines Ltd (BGML) at Kolar Gold Fields as a strategic expansion move. One of these facilities has now been established as Rail Unit-II for Coaches and Wagons and the other as ancillary to Mining & Construction Division.

(ii) Bangalore Complex of the company was developed as a center for Metro Coach manufacture by putting up necessary manufacturing infrastructure, the first of its kind in India with the necessary technology from M/s. Rotem, South Korea. More than 220 coaches have already been built and supplied to Delhi Metro Corporation during the past 2 years and orders for further Metro coaches for DMRC are under final stages of execution.

(iii) With a view to step up Diesel Engine production volumes, a new assembly line was established at Engine Division, Mysore.

(iv) The company has earned export revenues to the tune of Rs 304.78 Crores in 2008-09 as compared to Rs 200.62 Crores in 2007-08, an increase of over 52 % over the last year.

(v) As a further step towards extending global footprint, **BEML (Malaysia) Sdn.**

Bhd – was launched during the year to have a global warehouse and to promote BEML products in the South East Asian Market.

(vi) China outsourcing office of BEML Ltd. at Shanghai commenced its operations from April 2008 to concentrate on outsourcing and marketing of high end mining equipment.

(vii) BEML Ltd. received Raksha Mantri's Award for Excellence - 'Institutional Award for Best Performance in Exports for the year 2006-07'.

(viii) The company has tied up defence business for the strategically important new Defence products, Self Propelled Mine Burrier System with M/s TDA Armaments, a subsidiary of Thales, France and Light Armoured Vehicle with M/s General Dynamics Land Systems, Canada and Dry Support Bridge System with M/s WFEL Limited, UK. BEML Ltd. also tied up for ToT with M/s Tatra, Czech Republic for producing Tatra Engines with Euro-II/ Euro-III compliance for Defence application, domestic supply and also global outsourcing for OEM and parts . The engines will be produced in Engine Division, Mysore.

(ix) The prestigious order for supply of 150 Metro Coaches for Bangalore Metro Rail Corporation valued Rs.1672.49 Crore was won by BEML and letter of Acceptance was signed on February 16, 2009.

(x) On the Modernization & Expansion front, BEML completed setting up of new assembly facility for manufacture of transmissions at H&P Division, KGF and a new automated assembly line for engines at Mysore complex. For augmentation of capacities, BEML also committed Rs 130 crores for modernization of plant and machinery .

(xi) During the year 2008-09, power to the tune of Rs.3.42 Crore has been supplied to state grid from BEML's 5 MW wind power generation unit in Gadag District.

(xii) BEML Ltd. received SCOPE Award for Excellence and Outstanding Contribution to the Public Sector Management - Medium PSE Category.

MAZAGON DOCK LIMITED (MDL)

7.42 Mazagon Dock Limited (MDL) is a Premier Ship Builder of the Nation, capable of building warships of upto 6800 tonne displacement and merchant ships of up to 27000 DWT.

7.43 Mazagon Dock Ltd is engaged in construction of warships including Destroyers, Corvettes, Submarines, New Generation Stealth Frigates, Offshore Patrol Vessels, construction of various types of merchant ships and repairs / modernisation of warships, submarines and merchant ships. Fabrication of Offshore Platforms and allied activities for Oil Exploration and general Heavy Engineering jobs were also carried out in the Yard.

7.44 The Company has built and delivered to the Indian Navy six Leander Class Frigates,

three Godavari Class Frigates, one Cadet Training Ship, three Missile Corvettes, four Missile Boats, three Destroyers and two Submarines as also seven Offshore Patrol Vessels (OPV) to the Coast Guard.

MDL has built and delivered to the Indian Navy six Leander Class Frigates, three Godavari Class Frigates, One Cadet Training Ship, three Missile Corvettes, four Missile Boats, three Destroyers and two Submarines and seven OPV to the Coast Guard.

7.45 MDL has also built and delivered Cargo Ships, Passenger Ships, Supply Vessels, Multi Purpose Support Vessels, Water Tankers and various types of Small Crafts like Tugs, Dredgers, Fishing Trawlers, Barges & BOPS for various customers in India as well as abroad. The Shipbuilding division of the Company has been accredited with ISO 9001-2000 Certificate. MDL was awarded Mini Ratna status in September 2006.

7.46 **Achievements:**

(i) The company received SCOPE Award for "Excellence and outstanding contribution for the Public Sector Management: - Special Institutional (Turnaround) for 2006-07. Quality Circle Teams got Excellent class study Awards at National Convention on Quality Circle 2008.

(ii) Keel of Barge, Yard No.08013 was laid on February 25, 2008. They have also laid Keel of MSV Yards 26775 & 26784 in July 2008.

(iii) Implementation of ERP Launched in MDL and is in progress.

(iv) At present, MDL is building six frontline warships under two major shipbuilding projects and six submarines under a separate project. In the civil sector one dredger is being built for the DCIL and one Export order for two nos. Multipurpose Support Vessels is being built for M/s. Greatship Global Services Pte Ltd. Singapore.

7.47 **Modernisation:** Mazagon Dock Limited is engaged in creating additional facilities through the "Mazdock Modernization Project (MMP)". This includes creation of facilities viz. Wet Basin, Modular Workshop, Heavy Duty Goliath crane, Cradle Shop and Stores. The infrastructure that will be created through these Projects will facilitate reduction in construction period of vessels and enable early delivery of ships. Foundation stone of Mazagon Dock Modernization Project was laid on February 6, 2009.

GOA SHIPYARD LIMITED

7.48 Goa Shipyard Ltd (GSL) is one of the leading shipyards, building medium- sized sophisticated vessels for Indian Navy, Indian Coast Guard and others. It commenced functioning with its own Board of Directors since September 29, 1967. Government of India has conferred the status of Mini Ratna, Category-I in March 2007.

7.49 Goa Shipyard Limited is an ISO- 9001 certified company. The product range of

the shipyard comprises of 105m Advanced Offshore Patrol Vessels (AOPV), 105m Naval Offshore Patrol Vessels (NOPV), 90m Offshore Patrol Vessels (90m OPV), Offshore Patrol Vessels (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. So far, 182 vessels have been built.

7.50 **Diversification:** GSL has diversified into supply of stern gear equipment in collaboration with M/s. Wartsila LIPS Defence, France, Constructing Damage Control Simulator (DCS) for Indian Navy at INS Shivaji, Lonavla and Survival at Sea Training Facility Unit (SSTF) for Oil and Natural Gas Commission (ONGC). In addition, proposals are in progress for construction of Fire Fighting Training Unit (FFTU) and Water Survival Training Facility (WSTF) for Indian Navy.

7.51 The Company has embarked on a major exercise of diversification into building Glass Reinforced Plastic (GRP) boats to cater for orders from Ministry of Home Affairs. Dedicated infrastructure facilities have already been set up for construction of these GRP boats. GSL is also venturing into building Shore Based Test Facility (SBTF) for aviation specialization.

7.52 **Achievements:**

(i) For the first time in the Yard's history, concurrent production of nine major vessels of cumulative contract value of Rs. 3674 crores has commenced. Three out of these are prototype vessels.

(ii) For the first time, under the Public-Private Partnership concept, outsourcing for hull construction up to 1 deck have been placed for 90 m OPVs, on M/s. Shoft Engineers, Bharauch, Gujarat.

(iii) Goa Shipyard Limited bagged the Raksha Mantri's award for Excellence "Best Performing Shipyard" and "Design Effort" 2006-07 in August 2008. This is the second consecutive year GSL has bagged this award.

(iv) GSL has achieved record value of production to the tune of Rs. 317.21 crore for 2007-08, the highest since inception of the company. Profit after Tax increased from Rs.9.92 crores to Rs.69.96 crores. Net worth increased from Rs. 175.29 crores to Rs. 271.66 crores.

(v) Ship construction period for AOPV Class of vessels has been brought down to 41 months.

(vi) Three vessels are being exported to Royal Omanese Navy, Sultanate of Oman.

(vii) Two proto type vessels designed in house by GSL have been launched.

7.53 **Shipbuilding:**

(i) **Mine Counter Measure Vessels (MCMV) for Indian Navy:** GSL was nominated for series construction of Mine Counter Measure Vessels (MCMV) for Indian

Raksha Mantri presenting Excellence Award for "Design Effort" for design and construction of Offshore Patrol Vessels to GSL

Navy. Request For Proposal (RFP) has been issued on August 28, 2008. Production is likely to commence from 2011.

(ii) **Sail Training Ship(STS) for Indian Navy:** Contract signed with Indian Navy for construction of Sail Training Ship (STS) similar to INS Tarangini on March 28, 2008. Production commenced on December 31, 2008. Contract of the value of Rs.190 crore has been signed for Glass Reinforced Plastic with Ministry of Home Affairs. Order has been placed on M/s. Motomarine, Greece for Transfer of Technology (ToT) for the construction of the GRP boats at GSL.

(iii) **Shore Based Test Facility (SBTF) at INS Hansa:** GSL has been nominated as the main fabricator for setting up Shore Based Training Facility at INS Hansa, Goa.

7.54 **Modernisation:** Goa shipyard has commenced the implementation of planned modernisation programme after which the capacity of the yard is expected to enhance by nearly three folds. M/s. Haskoning Netherland B V, Netherlands, a world-class consultant, is working as consultant for GSL Modernisation Project. The modernisation plan includes modern steel fabrication facility, ship lift and transfer system, dry land berths for ship construction and repairs, modern outfit shops, GRP facility and two 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 crore is planned to be executed in four phases.

Garden Reach Shipbuilders & Engineers Ltd.

7.55 Garden Reach Shipbuilders & Engineers Ltd. (GRSE), has kept pace with the expanding maritime interests of India and is now recognized as a leading shipbuilding yard and manufacturer of high value, high technology, complex engineering items in Eastern India. The Company has been granted the **Category-1 Mini Ratna status.** The main business activity of GRSE is shipbuilding and ship repair for the Indian Navy and Coast Guard which contributes about 81% of the total production. Remaining 9% comes from production of ship borne engineering items, Bailey Bridges, project activity and diesel engines. The shipyard has a vast range of technical expertise and experience built up over the last 125 years.

7.56 **Modernisation:** Raja Bagan Dock (RBD) Unit was acquired on July 01, 2006. The said Unit is being renovated and upgraded. The Keel of the first seven ships Yard Nos.2057 to 2063 laid from January 27, 2007 to July 29, 2008. The first two ships were Launched on November 23, 2007, November 27, 2007 and next two ships on July 16, 2008 . Further keel of Waterjet FACs 2061,2062 and 2063 have been laid simultaneously on July 29, 2008. Acquiring of RBD has thus lead to enhancement of capacity.

7.57 For sometime past, GRSE has been taking steps to up-grade and modernize its infrastructural facilities apart from normal renewal and replacement. The foundation stone of the Modernisation Project at GRSE, Main Yard was laid on February 19, 2009.

7.58 **Achievements:**

(i) The second of the series INS Kesari (Yard No. 3015) was commissioned on April 5, 2008 at the Eastern Naval Command Base, Visakhapatnam.

(ii) The third and last ship of this series, Airavat (Yard No. 3016) was delivered to Indian Navy on March 30, 2009.

(iii) Two number Passenger-cum Vehicle Ferries built by GRSE Yard Nos.2067 and 2068 (MV Lapathy and MV North Bay) for the Administration of Andaman & Nicobar Islands were commissioned on July 21, 2008.

(iv) The first two Water Jet Fast Attack Crafts (WJFAC), INS Car Nicobar and INS Chetlet (Yard No. 2057 & 2058) were delivered to the Indian Navy on January 9, 2009.

(v) The next two Water Jet Fast Attack Crafts Yard Nos. 2059 and 2060 (INS Cinque and INS Cheriyam) were launched on July 16, 2008.

(vi) The Keels of Water Jet Fast Attack Crafts, Yard Nos. 2061 , 2062 and 2063, were laid on July 29, 2008. This

is the first time in the history of GRSE, these vessels have been launched on the same day.

(vii) On November 7, 2008 GRSE received RM's Award of Excellence for the year 2006-07 in the categories of Innovation and Import substitution.

BHARAT DYNAMICS LIMITED

7.59 Bharat Dynamics Limited (BDL) was established in 1970 for manufacture of Guided Missiles. It is one of the few strategic industries in the world that possesses the capability to produce state-of-the-art missiles. Besides producing indigenously developed Prithvi missile systems under the IGMDP, BDL is engaged in the production of Konkurs-M and Invar (3UBK-20) Anti Guided Missiles in collaboration with Russia. In-house developed CMDS (Counter Measures Dispensing System) has been accepted by the Indian Air Force. BDL is working in close association with DRDO for technology absorption/assimilation and extending support by providing missile subsystems/ integration of missiles for conducting trials of missiles like Akash, Nag, Article K-15 and Agni Variants (A1, A2 and A3). The Company has ventured into productionising underwater weapon systems such as Advanced Light Weight Torpedo (TAL) and Light Weight Mines in Concurrent Engineering mode.

7.60 **Exports:** BDL has exported the Infrared Radiation Interference Indicators (IRII) worth $ 1,56,966.50 to ELOP, Israel during the year 2007-08.

Secretary, Defence Production being apprised about various projects of BDL

7.61 **Economy Measures:** 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 consumption, fixed and variable overheads and contingency expenditure are being continuously reviewed and pruned to the barest minimum.

MISHRA DHATU NIGAM LIMITED

7.62 Mishra Dhatu Nigam Limited (MIDHANI) was incorporated as a Public Sector Undertaking under the Administrative Control of Department of Defence Production & Supplies, Ministry of Defence 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 formed part of the production.

7.63 **Achievements:**

(i) Erection of the new 6.5 T vacuum Induction Melting Furnace, which is critical equipment in the modernization of MIDHANI, was completed during the year**.**

(ii) MIDHANI has manufactured and supplied several critical materials such as Maraging steels, Titanium alloys, Nickel base and Cobalt base Superalloys, Niobium-Hafnium alloy and a host of special purpose high strength steels in mill forms like large size rings, plates, forgings, rods, strips and wire

(iii) A record production of 402 heats (2011 Tons) was achieved in Titanium Shop, Vacuum Arc Remelting Furnace (VAR-I) during 2008-09.

(Iv) Six ingots of N3M, N2 steel were directly rolled from Ingot stage into billets at Alloy Steel Plant (ASP), Durgapur thus increasing productivity and yield. This process route enabled MIDHANI to avoid the expensive in-between forging operation and reduce processing time.

(v) Developed Nickel base superalloy SNi 693M for nuclear Application, developed high toughness low alloy steel for armour Application, developed ultra high strength low alloy steel for aerospace fastener application, modified 12% Cr marternsitic stainless steel for nuclear application and developed cold rolled alpha-beta titanium alloy.

SALES OF ORDNANCE FACTORIES AND DEFENCE PSUS

7.64 The total value of sales issues by Ordnance Factories and Defence Public Sector Undertakings during the last three years, is given in table 7.1. Defence Public Sector Undertakings and Ordnance Factories have exported items worth Rs 859.60 crore during the year 2008-09.

Table 7.1

Year	Ordnance Factories Total sales	Public sector undertakings Total Sales	(Rupees in crore) Grand Total
2006-07	6197.35	15849.30	22046.65
2007-08	6937.81	16763.00	23700.81
2008-09	7305.00	19864.00	27169.00

INDIGENISATION

7.65 **Private Sector Participation:** To achieve the quest for self-reliance in the Defence sector, continuous efforts are being made to indigenize Defence equipment wherever technologically feasible and economically viable. Department of Industrial Policy and Promotion (DIPP) has, so far, issued 119 letters of Intent (LOIs)/ Industrial Licenses (ILs) to private sector companies for manufacture of a wide range of defence equipment on the recommendation of the Ministry of Defence.

7.66 Consequent to opening up of the Defence Industry Sector for Indian private sector participation with Foreign Direct Investment (FDI) permissible up to 26%, subject to licensing, 6 joint ventures have been, so far, formed between Indian and foreign companies and Industrial Licenses (ILs) issued for manufacture of various defence equipments.

Department of Industrial Policy and Promotion has, so far, issued 119 letters of Intent/ Industrial Licenses to private sector companies for manufacture of a wide range of defence equipment on the recommendation of the Ministry of Defence.

DIRECTORATE GENERAL OF QUALITY ASSURANCE

7.67 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.

7.68 **Organisational Structure and Functions:** 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 are integrated to achieve maximum efficiency. The essential functions performed by the Organisation are as follows:

(a) Quality Assurance of defence stores and equipments procured indigenously or ex-import.

(b) Rendering assistance in productionising of the DRDO developed projects.

(c) Render technical advice to Service HQrs and promote standardisation.

(d) Investigation of defects and rendering advice on remedial measures to eliminate/ minimize the occurrences of the same.

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

(e) Preparation, Updating and Issue of Drawings, Specifications, Technical Publications and Quality related Instructions.

(f) Issues of DGQA Approval/ Assignment List and Cataloguing of Defence Stores.

(g) Providing Technical guidance and formulation of General Staff Qualitative Requirement (GSQR), association during Trial Evaluation, Development, etc, extension of self life and post-production services of Defence Stores.

(h) Formulation of guidelines/management of grant of product specific self-certification.

7.69 **Achievements:** The major achievements of DGQA Organisation are as follows:

Table 7.2

Year	Value of stores (in crores)
2006-2007	18,473.24
2007-2008	13,298.78
2008-2009 (till Feb, 2009)	13,805.44

(a) **Quality Assurance of Stores:** DGQA ensures that stores accepted are strictly as per laid down specifications and performance parameters. The value of stores quality assured during the last three years is given in Table 7.2.

(b) **Self Certification:** DGQA organisation awards Self Certification status to Quality Conscious Firms/Manufacturers who have well established Quality Management Systems and demonstrated consistent product quality during the execution of successive Defence Supply Orders. 58 Manufacturers have been awarded Self-Certification till date.

DIRECTORATE GENERAL AERONAUTICAL QUALITY ASSURANCE (DGAQA)

7.70 The Directorate General 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 HQ, Defence PSUs and Trade sources during various stages of procurement and manufacture of Defence Aero stores.

7.71 The organisation is headed by a Director General at HQ New Delhi and three Deputy Director General one each placed at HQ New Delhi, Bangalore and Lucknow with other technical officers from diverse discipline, committed to meet the objectives, mission and responsibilities of the organisation.

7.72 During 2008-09 QA coverage has been provided for stores valuing Rs. 12,746.32 crores.

7.73 **Important Policy Decisions/ Initiatives taken:**

(i) MSQAA team provided QA coverage for one set of ground system of Brahmos.

(ii) Three officers from DGAQA received award of performance and excellent contributions for DRDO project TARANG. The award was presented by the Pime Minister.

(iii) Two officers of DGAQA included in DRDO award team for path breaking research/ outstanding technology development for the year 2007 in missile, presented by the Prime Minister.

(iv) Transfer of QA responsibility of input materials to Ordnance Factories has been finalised with ordnance Factory Board initially for a period of two years.

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

(vi) Officers from DGAQA have assisted IAF in technical evaluation of MAFI projects in India and abroad.

7.74 **Transfer of inspection responsibilities from DGAQA to OFB:** With the intention to move towards self-certification by the manufacturer, the responsibility for input material and stage/ interstage inspection, vendor registration in respect of air armament stores manufactured at Ordnance Factory, 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 DGAQA will be carrying out inspection only at critical stages followed by proof, Quality audits, engineering observations, spot checks etc.

DIRECTORATE OF STANDARDISATION

7.75 The primary objective of the Directorate of Standardisation is to establish commonality in equipment and components among the three Services so that the overall inventory of the Defence Services is reduced to the minimum. The objective is sought to be achieved through:

(a) Preparation of Standardisation documents such as Joint Service Specifications, Joint Service Preferred Ranges, Joint Service Rationalised Lists, Joint Service Guides, Joint Service Policy Statements, Joint Service Qualitative Requirements and Approval Notifications.

(b) Codification of Defence Inventory.

(c) Entry Control.

7.76 The following Committees monitor the Standardisation and Codification activities:

(a) **Standardisation Committee:** It is the Apex-level Body, which lays down overall Standardisation Policy Guidelines.

(b) **Committee of Chairman Standardisation Sub-Committee (CCSSC):** Chaired by Additional Secretary (DP), it guides Standardisation activities through 13 Sub-Committees.

(c) **Defence Equipment Codification Committee (DECC):** Chaired by Joint Secretary (Supplies), it guides and monitors Codification activities.

7.77 The significant achievements are given below:-

(a) **Standardisation:** 774 No of standards documents have been formulated during the period.

(b) **Codification:** 44,002 items have been codified during the year.

(c) **Updation:** 3,727 items have been updated during the year

7.78 **Membership at Allied Committee/135:** A landmark agreement has been signed with Allied Committee (AC/135) on June 10, 2008 for India to become a member of AC/135, the Apex Body of NATO Codification System (NCS) committed to increase effectiveness and efficient efficiency of global logistics system and operations of the participating nations and to provide the bridge necessary to facilitate global logistics operations. Directorate of Standardisation will act as the National Codification Bureau (NCB) for India.

DIRECTORATE OF PLANNING & COORDINATION

7.79 The Directorate of Planning and coordination was set up in 1964 with primary objective of preparing overall plans for the production of defence equipment in the country. The Directorate functions as an attached office to the Department of Defence Production. It is the nodal point within the Department for activities related to Defence Acquisition Council, International Cooperation in defence production, major programmes and projects related to development and production of armoured vehicles and armaments in the Ordnance Factory Board, important communication and shipbuilding projects and offsets in defence procurement.

7.80 The Directorate coordinates within the Department of Defence Production in formulating views on categorization of Capital Acquisition plans of the three services circulated by HQ Integrated Staff, for consideration of SCAPCC, SCAPCHC and Defence Acquisition Council (DAC). The Directorate also acts as the nodal body for coordinating view points of the Department on agenda placed before Defence Procurement Board. The Directorate also functions as the secretariat for the Defence Offsets Facilitation Agency(DOFA), which is a single window organisation to facilitate foreign vendors in fulfilling their offset obligations.

DEFENCE EXHIBITION ORGANISATION

7.81 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.

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

7.82 **Standing Defence Exhibition:** To conduct distinguished visitors, foreign dignitaries, delegates and purchase missions, DEO maintains throughout the year, permanent Defence Exhibition at Defence Pavilion, Pragati Maidan, New Delhi, which gives them a glimpse of the range of products and services being offered by the Indian Defence Industries and their capabilities.

7.83 **India International Trade Fair (IITF):** Defence Pavilion participates in IITF held every year in Pragati Maidan, New Delhi during 14-27 November. During IITF 08, an elaborate display of exhibits was organised by the DPSUs, the OFB, DRDO, DGQA and DGAQA to give a glimpse to general populace about the multi-faceted capabilities and products of Indian defence industries. Publicity stalls were also activated by the Armed Forces and Coast Guard.

7.84 **International Exhibitions in India:** 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.

(a) **AERO INDIA:** The seventh edition of Aero India 2009 was held on February 11 to 15, 2009. The Airshow received an overwhelming response from leading industries of the world in the field of civil and military aviation sector. More than 600 exhibitors from 26 countries had displayed their products and services. More than 2 to 3 lac visitors and more than 50,000 business visitors visited the show. 20 Foreign aircraft and 60 Indian aircraft participated in the show. Delegates of 48 countries and business heads of various reputed companies visited the show.

(b) **DEFEXPO INDIA:** Defexpo India 2008, the fifth edition was organized at Pragati Maidan, New Delhi from Feb 16 to 19, 2008 in association with Confederation of India Industry (CII). It had the unprecedented participation of 475 companies including 292 from 32 countries. All the DPSUs, the OFB and DRDO participated in the exhibition displaying their wide range of defence systems and services. During Defexpo 2008, a special emphasis was laid to showcase the R&D capabilities of Indian Defence Industries and to enhance their export prospects, alongwith projecting the Indian Defence Market as a future vital distinction for investment. High level delegation from 47 countries attended the exhibition.

7.85 **International Exhibitions Abroad:** With a view to provide impetus to export potential to Indian Defence Industry, DEO organises "India Pavilion" for major defence products being manufactured by them. During the financial year 2008-09, India Pavilions were set up at the Defence Services Asia (DSA) in Kuala Lampur, Malaysia (April 21-24, 2008), Berlin Air Show (ILA) in Berlin, Germany (May 27 to June 1, 2008) and Africa Aerospace and Defence (AAD) in Cape Town, South Africa (September 17-21, 2008).

INVESTMENT

(Rs. in crore)

Name of PSUs	2006-07		2007-08		2008-09	
	Equity	Govt. loans	Equity	Govt. loans	Equity	Govt. loans
HAL	120.50	-	120.50	-	120.50	-
BEL	80.00	-	80.00	-	80.00	-
BEML	36.87	-	41.77	-	41.77	-
MDL	199.20	-	199.20	-	199.20	-
GRSE	123.84	-	123.84	-	123.84	-
GSL	29.10	-	29.10	-	29.10	-
BDL	115.00	-	115.00	-	115.00	-
MIDHANI	137.34	-	137.34	-	146.34	-
TOTAL	**841.85**	**-**	**846.75**	**-**	**855.75**	**-**

WORKING RESULTS

VALUE OF PRODUCTION AND SALES (Rs in crore)

Name of the PSUs	2006-2007		2007-2008		2008-09(Provisional)	
	Value of Production	Value of Sales	Value of Production	Value of Sales	Value of Production	Value of Sales
HAL	9201.88	7783.61	8791.52	8625.33	11162.38	10260.00
BEL	4012.76	3952.70	4111.37	4102.54	5263.82	4618.74
BEML	2590.75	2601.79	2826.95	2713.34	3178.20	3016.42
MDL	1872.24	18.65	2,321.69	6.06	2532.00	14.00
GRSE	641.66	713.74	573.47	556.65	614.36	720.60
GSL	267.07	152.79	317.21	26.94	477.05	464.03
BDL	385.84	433.51	505.85	454.38	519.00	464.00
MIDHANI	223.88	192.51	296.40	255.01	346.77	306.15
TOTAL	**19196.08**	**15849.3**	**19744.46**	**16740.25**	**24093.58**	**19863.94**

WORKING RESULTS OF OFB
VALUE OF PRODUCTION AND SALES

(Rs in crore)

2006-2007		2007-2008		2008-2009	
Value of Production	Value of Sales	Value of Production	Value of Sales	Value of Production	Value of Sales
8282.72	6197.35	9312.62	6937.81	10603.00	7304.75

Profit After Tax

(Rs. in crore)

Name of the PSUs	2007-08	2008-09
HAL	1631.88	1559.40
BEL	826.74	743.65
BEML	225.65	248.40
MDL	240.86	231.41
GRSE	74.47	44.48
GSL	69.97	82.10
BDL	47.65	40.00
MIDHANI	35.54	40.38
TOTAL	3152.76	2989.82

8

DEFENCE RESEARCH AND DEVELOPMENT

Astra Missile

Defence Research & Development Organisation is fully dedicated towards progressive enhancement of self-reliance in defence systems and also to enhance R&D infrastructure and capability of the country

8.1 The Defence Research & Development Organisation (DRDO) has come a long way since its inception on January 1, 1958 to become a major Science & Technology force to recon within the country. Starting as a very small organization with only 10 laboratories, DRDO has grown multi-dimensionally and emerged as a strong and mature organization with a vast network of 50 laboratories, spread across the country.

8.2 DRDO is dedicated towards progressive enhancement of self-reliance in defence systems and also enhancement of R&D infrastructure and capability of the country. It has a vision to promote the corporate strength and to make the country independent of foreign technologies in critical spheres and also to act as a reservoir of expertise in the most sensitive scientific and technological domains. DRDO plays many significant 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. Today, DRDO is one of the finest models of R&D organizations in the world.

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 Engineering and Naval Systems (ACE&NS); Missiles & Strategic Systems (MSS); Aeronautics & Materials Science (AMS); Services Interactions (SI); Life Sciences & Human Resources (LS&HR); Electronics & Computer Sciences (ECS); Resources & Management(R&M); and Implementation.

8.4 **DRDO Headquarters:** DRDO HQrs is organized in two different types of HQrs Directorates, namely Technical Directorate and Corporate Directorate. The Technical Directorates include Directorates of Aeronautics; Armaments; Combat Vehicles and Engineering; Electronics and Computer Sciences; Materials; Interaction with Services for Business; International Cooperation; Technology Acquisition; 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; Public Interface; and a Center for Technology Extension & Cooperation. These Directorates assist laboratories in improvement of their infrastructure, creation of new facilities, induction of manpower, coordinating with other ministries/ departments, etc. and also in getting Government approvals for taking up projects in their respective areas.

8.6 **DRDO Laboratories/ Establishments:** Various programmes/ projects are being 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, opto-electronics, military engineering systems, life sciences, advanced materials, composites and underwater sensors/weapons, warship 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 & Engineering Laboratories, 10 Life Sciences Laboratories and 3 Naval Systems Laboratories, which aim at achieving their set missions.

8.7 DRDO has two societies, namely Aeronautical Development Agency (ADA) and Society for Integrated Technology Applications & Research (SITAR). 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. Defence Institute of Advanced Technology (DIAT), which attained status of Deemed University in 2005, organizes courses on wide 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. Gallium Arsenide Enabling Technology Centre (GAETEC) at Hyderabad is a foundry, set up for design, development and fabrication of critical microwave components for various programmes undertaken by DRDO and Department of Space.

HUMAN RESOURCE DEVELOPMENT

8.8 DRDO has adopted a dynamic and systematic approach for manpower development. 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.

8.9 Every year, scientists are recruited through an annual competitive examination at national level called Scientist Entry Test (SET). In addition to this, talents are also searched through campus interviews, scholarship schemes through Aeronautic Research and Development Board (ARDB) and PhD scholars under Registration of Student with Scholastic Aptitude (ROSSA).

MANPOWER STRENGTH

8.10 At present the total manpower strength is about 28,500, which includes about 7,500 scientists 10,500 technical staff and remaining Admin & Allied from various cadres.

8.11 **Knowledge and Skills Upgradation:** Technical, managerial and soft skill Training Programmes/ Courses have been organized by DRDO to cater to the present and futuristic requirements of scientific and technical know-how for its projects. Under Research & Training scheme, a significant number of personnel have been sponsored to undergo M.E/ M.Tech courses in various disciplines at IIT's, IISc and other engineering institutions of repute. Additionally, provision for studying MS, M.Tech and PhD courses at DIAT, Deemed University have been made available. Similarly, under the Continuing Education Programme (CEP), a number of courses have been organised in different disciplines for various categories. DRDO has three training institutes namely, Defence Institute of Advanced Technology (DIAT), Institute of Technology Management (ITM) at Mussoorie and DRDO Training Institute at Defence Laboratory, Jodhpur to cater to the training needs of its scientists and personnel.

PROJECTS MONITORING AND REVIEW MECHANISM

8.12 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. 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/ establishments. 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/ establishments. 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.

PROGRAMMES AND PROJECTS

DRDO had made great strides towards making the country self-reliant in the areas of military technology and enabled our Armed Forces to progressively enhance their combat effectiveness through development of state-of-the-art weapon systems and technologies.

8.13 DRDO had made great strides towards making the country self-reliant in the areas of military technology. Over the past few 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 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 missile, Prithvi, a tactical battlefield missile, has two versions of ranges 150 km & 250 km with about 1 tonne and 500 kg payloads, respectively. Both versions have been inducted into Armed Forces. Prithvi-II was flight tested successfully by Users and DRDO on May 27, 2008.

Agni-I Missile: With a range of 700 km, surface-to-surface Agni-I missile has single stage solid rocket motor and can carry one tonne warhead. It can be configured to fire from road/ mobile launcher. With the development of Agni-I, the range gap between Prithvi-II & Agni-II has been bridged. Agni–I has been inducted in to Services.

Agni-II Missile: The range for Agni-II is more than 2000 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 in to Services.

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 1500 kg warhead. Agni-III has been successfully test fired on May 7, 2008.

Dhanush Missile: It is a Naval version of Prithvi missile with a range of 250 km and a payload of about 500 kg. Weaponisation of INS Subhadra and Suwarna has been completed.

Akash Missile: Medium range (25 km), surface-to-air missile, Akash has multiple target handling capacity with digitally coded command guidance system. User trials of Akash Air Force version have been completed successfully. Air Force is considering

procurement/ induction of two squadron of Akash Missile system.

Nag Missile: Nag is a third generation anti-tank missile with "top-attack" and "fire and forget" capability. Two developmental flight trials have been conducted successfully during August 2008. User trial Phase-I have been successfully completed against moving/ static target and Phase-II has been planned in mid–2009.

***BrahMos Supersonic Cruise Missile*:** BrahMos supersonic cruise missile, a joint venture product of India and Russia is the best in the family of cruise missiles. This is a universal missile, capable of being launched from multiple platforms based on land, sea, sub-sea and air against sea and land targets. Fifteenth successive successful launch of BrahMos Missile was carried out on March 5, 2008 demonstrating the land attack capabilities of the missile launched from land and sea. Sixteenth launch was carried out on December 18, 2008 from the Universal Vertical Launcher from the moving ship. Indian Army and Indian Navy have already inducted the missile system in their armories. Air version of the missile is under development. An improved version (Block-II Army Version) was test fired successfully on March 4, 2009 in Pokhran Field Ranges.

BrahMos Missile

Astra Missile: Astra is an air-to-air missile being indigenously designed and developed to engage and destroy highly maneuvering supersonic aerial targets. Two developmental flight trials have been completed successfully during September 13-14, 2008. Simulated guided flight from ground to prove terminal guidance phase has been planned during mid-2009.

Long Range Surface-to-Air Missile (LR-SAM): It is 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. Static test of two flight motors and two launch clearance tests with short burn motors have been conducted successfully.

Shaurya Missile: DRDO successfully test fired Shaurya, a medium range surface-to-

surface missile with a range of 600 km, on November 12, 2008. The missile is capable of carrying conventional warheads with a payload of about one tonne.

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 advance stage of flight-testing. As on date, seven aircraft – two Technology Demonstrators (TDs), three Prototype Vehicles (PVs), and two Limited Series Production (LSP) versions – have flown 1088 flights. All trials are progressing well towards grant of Initial Operational Clearance (IOC) to the aircraft by 2010 and Full Operational Clearance (FOC) by 2012. IAF has placed its first order of 20 aircraft. The first batch of 10 aircraft will be delivered to IAF by mid 2010 and the next batch by November 2011. Also, 2 Trainer-version PVs and 6 LSPs aircraft are presently under various stages of built-up.

Tejas programme is now undergoing the next phase of trials viz., weapon trials and hot weather trials, which will be completed by mid-2009. Weapon Release Trials on Light Combat Aircraft, Tejas with 25 lb, 1000 lb and 3 kg bombs at Jamnagar have been successfully completed. First 1000 lb bomb from Tejas has been released on March 12, 2009.

Light Combat Aircraft (LCA) for Navy: Spin-off of LCA Tejas, this Naval-version aircraft would be adaptable to aircraft carriers and will accordingly have modified landing gears and 4 degree drop-down nose. The first naval-version prototype is scheduled for integration and testing by mid-2009. Work is in progress to ensure its roll out by 2010.

Kaveri Engine for LCA: Gas Turbine Research Establishment (GTRE), Bangalore is developing the Kaveri Aeroengine to meet the requirements of the indigenous LCA. Its further development is being progressed as a joint-venture with M/s SNEMCA of France. Once this joint-venture is finalized, an indigenous aeroengine for LCA is expected to be available in about 48 months.

Kaveri Engine for Naval Ship: Kaveri Marine Gas Turbine (KMGT) is a spin-off of the Kaveri aeroengine project. This engine has been successfully tested at Naval facilities at Vizag. The present version engine is being improved for higher thrust and endurance so as to make it useful for Indian Naval Ship.

Missile Approach Warning System & Laser Warning System: Defence Avionics Research Establishment (DARE), Bangalore has indigenously developed a 'Missile Approach Warning System and Laser Warning System' for military aircraft and successfully tested it on IAF's Avro transport aircraft. The Indian Army has sought this technology for its Cheetah helicopters; About 69 systems will be mass-produced by Bharat Electronics Limited with know-how from DARE. IAF and HAL have also asked DARE to flight-prove this system for their MI-17 medium-lift helicopters and Light Combat Helicopter, respectively.

Dual Colour Missile Approach Warning System: DARE has embarked upon joint-development of Dual Colour technology in collaboration with Israel for its indigenously developed Missile Approach Warning System.

Medium Altitude Long Endurance UAV, RUSTOM: It is being designed to carry out surveillance and reconnaissance missions to meet the requirements of all the three Services. DRDO plans to develop the Rustom system in association with a Production Agency cum Development Partner (PADP) which is being identified from within the Indian industry. Configuration design of Rustom has been completed and wing tunnel test is in progress.

Upgradation of Mig-27 Aircraft: DRDO has upgraded Mig-27 aircraft with state-of-the-art digital avionics to make it the front line strike aircraft for the Indian Air Force. Advanced capabilities, such as Integrated Flight and Fire Control, which enable the pilot for "Hands Free Weapon Delivery" has been cleared for Final Operational Capability.

8.16 **Electronic Systems:**

Battle Field Surveillance Radar – short Range (BFSR-SR): The radar is a simple, easy to use and user-friendly surveillance e-sensor, in that an Infantry soldier can install and effectively put the radar into operation within five minutes. Audio and visual aids help identify and classify a target decisively. The radar is also a potential ground based e-sensor for Border Security Force, Coast Guard and Police for surveillance of designated areas. The radar would be a very cost-effective perimeter surveillance sensor for airports, large industrial and other infrastructure.

Multifunction Phased Array Radar – Rajendra: Rajendra is the primary sensor at the battery level for Akash surface-to-air missile weapon system. The radar has capability to perform extensive search, track multiple aircraft and missiles, and to command and guide own multiple missiles concurrently. The radar system is mounted on two tracked vehicles - Battery Level Radar (BLR) and Battery Control Centre (BCC) to be available to tactical forces for all types of operations. The radar has established self-reliance in that area of phased array based weapon control technology. IAF has successfully evaluated Akash weapon system. Based on the evaluation, supply order for a few squadrons of Akash weapon system is being placed by IAF.

3D Medium Range Surveillance Radar - 3D CAR: It is built as Central Acquisition Radar for Akash surface-to-air missile weapon system. It covers elevation upto 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. IAF has placed orders for a few Rohini radars for Akash Missile system and for deployment at Air bases for surveillance. The Navy has placed orders for a few Revathi radars, which

is under user trials. Another variant **3D Tactical Control Radar (3D TCR)** based on a GSQR from the Army is being developed at BEL with design support of DRDO. User trials have been completed successfully.

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. The radar is developed for the Army in partnership with Bharat Electronics and it will be a force multiplier for Artillery. Four phases of User trials have been completed successfully.

Super Vision 2000 Radar: It is a multi-mode surveillance radar system that can search and detect sea surface and airborne targets. The Radar has additional weather and beacon modes. Imaging modes, like Range Signature (RS) and Inverse Synthetic Aperture Radar (ISAR) are 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 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.

Bharani Radar

3D 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.

Primary Radar for Airborne Early Warning and Control (AEW&C): AEW&C program is to meet the operational needs of IAF. Two systems are to be developed for evaluation. The primary radar has electronically steerable active array antenna with a range of over 3000 km. The primary role of the radar is to provide surveillance for air defence, early warning, capability in aiding in tactical missions against intruding enemy aircraft or in deep penetration offensive strikes. Critical technologies have been developed and a scaled down version of the antenna is in advanced stage of realisation.

Synthetic Aperture Radar (SAR) for UAV: The synthetic Aperture Radar with Ground Moving Target Indicator (SAR/GMTI) has emerged as one of the important airborne sensors for surveillance, reconnaissance and precision targeting. These are all weather, day/night long-range sensors and can be used to provide crucial ground imagery for both peacetime information gathering and for use in conflict. Its Preliminary Design Review has been completed and sub-systems realisation are in progress.

Medium Power Radar, Arudra: The project was sanctioned in November 2008 to develop a ground based rotating active array radar for IAF with 300 km range for Air Defence application.

Active Electronically Scanned Array (AESA) Radar: This project was also sanctioned in November 2008 to develop Airborne AESA based radar and associated technologies. Under this project design of Active Array Antenna Unit (AAAU) and realisation of Exciter Receiver Processor Unit will be carried out.

Integrated Electronic Warfare Programme for Army, Samyukta: It is a joint programme of DRDO and Indian Army. This programme aims for indigenous development of an integrated EW system covering 1.5 MHz – 40 GHz. It has Communication (Com) and Non-communication (Non-com) segments. The system comprises 145 vehicles having the capabilities for surveillance, interception, monitoring, analysis and jamming of all

Indigenous Electronic Warfare Programme for Indian Army, Samyukta

communication and radar signals. The system has successfully participated in the various exercises conducted by Army in the past. The project has been successfully completed. All the three Communication Control Blocks have been productionised and delivered by BEL to the Users after successful demonstration and User trials. The Factory Acceptance Trials and limited user trials of Non-Com Segment have been completed and both blocks have been delivered.

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 3000 km from the center of the country using indigenous GSAT-2 Satellite.

Sangrhaha (Electronic Warfare Programme for Indian Navy): The systems have been successfully installed, tested and inducted in the designated platform by Indian Navy. Users have placed repeat orders on M/s BEL for more such systems.

SAMVAHAK: A Corps to Battalion level Command Information and Decision Support (CIDSS) to collect, collage, process and disseminate information between commanders of various formations has been successfully fielded in designated Corps.

Electro-Optical Fire Control System for Naval Ships (EON-51): Mother System has been developed and installed in INS-KIRCH for sea evaluation trials. Navy has conveyed approval for placement of order for initial quantity of three numbers of EON-51 for three P-17 Ships.

8.17 Combat Vehicles and Engineering:

Main Battle Tank (MBT), Arjun: Army has already placed an indent for production of 124 tanks to Heavy Vehicles Factory, Avadi, Chennai. Out of 124 tanks, 31 tanks have already been handed over to Army. Accelerate User Cum Reliability Trial (AUCRT) on two production tanks PT003 and PT009 was successfully completed.

Carrier Command Post Tracked (CCPT – BMP-II) : A General Staff project for design and development of Carrier Command Post Tracked (CCPT) equipped with Artillery Combat Command and Control System (ACCCS), for deployment of Self Propelled (SP) Artillery gun, was sanctioned to CVRDE. Installation, integration and testing of Automatic Fire Detection and Suppression System, Automatic NBC System and Electro-mechanical Drive Units for Remote Control Weapon System (RCWS) in CCPT has been successfully completed.

Armoured Ambulance: Army has placed an indent for manufacture of 50 numbers of Armoured Ambulance to Ordnance Factory, Medak (OFMK) and these are under production. As on date, out of 50, 15 vehicles have been completed the post stationary checks and are undergoing final integration and inspection.

Aircraft Project – PTO Shaft: The project envisages the design and manufacture of

a lightweight, high speed shaft capable of transmitting 250 hp at 16810 rpm. Accordingly, CVRDE has successfully designed and developed flexible PTO Shaft for LCA Tejas. Limited Qualification Testing (LQT) has been successfully completed to qualify the shaft for certification. The PTO Shaft has been cleared for Engine Ground Run Test of LCA Tejas.

Combat Improved Ajeya (CIA) Tank: Army has placed indents on HVF, Avadi, for manufacture and supply of 692 nos. of tanks with Explosive Reactive Armour (ERA), Global Positioning System (GPS), Integrated Fire Detection & Suppression System (IFDSS) and reconfigured Smoke Grenade Discharger (SGD). A total 649 CIA tanks (both OE & OH) have been rolled out from HVF till date.

Defensive Aids System (DAS) : As part of the project 'Development of Defensive Aids System", the Mobile Camouflage System (MCS) has been developed and integrated in MBT Arjun. The performance Evaluation Trial was conducted successfully in the month of June 2008. Field evaluation Trial of the system will be conducted at MFFR during May/ June 2009.

Modular Bridge: Forty meter MLC70 system and related hardware have been realized. Extensive in-house technical trials are in progress. Its Probable Date of Completion (PDC) has been extended up to June 2009. A fresh case for development of 46m MLC70 system has been processed for sanction.

Short Span Bridging System: User trials for 5m bridge system have been completed and MET trials are in progress. Two prototypes of 10m bridge system will be ready soon.

Remotely Operated Vehicle (ROV): ROV is an Automated Mobile Platform for multi purpose Payloads designed and developed by DRDO. It is an electrically powered state-of-the-art robot capable of being remotely controlled over a range of 500 m. It can be utilized continuously for three hours before a recharge. It can be used for handling Improvised Explosive Device (IED), augmented with X-ray scanning and an explosive-based Water Jet Disrupter and NBC Reconnaissance systems. All trials and DGQA evaluation have been completed and the vehicle is ready for the induction to Army. A supply Order for 20 Nos of ROV has been issued by IHQ of MOD/WE Dte to DRDO on March 27, 2009.

Counter Mine Flail (CMF) on T-72 Tank: This project envisages to develop flail system on T-72 Tank Chassis to breach a minefield and create a vehicle safe lane of 4m width. User trials have been completed and major improvements have been suggested.

Integrated Field Shelter for NBC Protection: Production order for 101 Nos of Integrated Field Shelter for NBC protection has been placed by the Indian Army. The equipment is under production.

PJ-10 Weapon Launch System: Four Mobile Autonomous Launcher systems, 9 Mobile Replenishment Vehicles, 2 Workshop

Vehicles and 2 Mobile Cranes have been delivered to the Army. One Regiment has been raised for BrahMos Weapon System. Universal Vertical Launcher Module 8 has been installed on the warship INS Ranvir.

Akash Weapon Launch System: The system has been accepted by the IAF and the production activity is in progress. IAF has decided to induct two squadrons which includes 16 Nos of Missile Launcher and associated ground systems developed by R&DE(E).

Futuristic Infantry Combat Vehicle (FICV): DRDO is assisting Army in the feasibility study and formulation of specifications and procurement methodology for replacing the existing fleet of BMP-2ICVs with indigenous FICVs. As pre-project activities, DRDO has taken up a TD project titled "Development of enabling technologies for FICV".

Unmanned Ground Vehicle (UGV): A technology demonstrator project for development of wheeled UGV System comprising a Pilot System Unit and two UGVs, to perform surveillance and NBC reconnaissance roles have been completed by Vehicles Research and Development Establishment (VRDE).

Armoured Engineering Reconnaissance Vehicle (AERV): AERV is an all terrain tracked vehicle based engineer reconnaissance platform, capable of acquiring accurate data for variety of combat engineering tasks such as bridging, breaching and track construction. The vehicle is equipped with state-of-the-art instrument package that enable terrestrial and under water survey in hatch down condition. The Army has placed an order for sixteen vehicles. OFP, Medak and BEL are the production agencies. Total fourteen AERVs have been delivered to the Army.

Armoured Amphibious Dozer (AAD): AAD is a tracked vehicle based equipment, designed to carry out earth moving tasks in support of bridging operations by mechanized forces, under combat environment. An order for six vehicles has been placed by Army, with OF, Medak, as the production agency. The first off production vehicle was realized in 2008 and subjected to confirmatory trials by Army. Design modifications as suggested by Army are under progress.

National Centre for Automotive Testing (NCAT): NCA consists of test tracks, emission, photometry, EMI / EMC and safety laboratories with support infrastructure to provide a one stop solution to the testing requirements of Defence Services and Automotive Industry. NCAT is an approved agency for testing and evaluation of vehicles and their sub systems/ components for certification for compliance to various national and international standards and regulations. A new 850 meter long test track to measure pass by noise of automobiles has been completed.

Instrumented Composite Tower for Avalanche Study: Experimental test site for study of Avalanche dynamics is under development at MSP-10. SASE has designed Instrumented Composite Tower of 10m

height for monitoring of avalanche dynamics parameter. The tower has provision for measurement of avalanche flow and force parameters, like velocity profile, flow depth, discharge, normal and shear forces, etc. The construction of the tower is in progress at MSP-10 avalanche site near Dhundi field Research Station in Himachal Pradesh.

Micropile Foundation: Micropiles have been designed and developed for the effective transfer of snow pressure due to creep and glide movement of snow pack at steep slope varying from 30º to 45º. A 145m running length of Snow Nets with 76 micropiles has been erected as technology demonstration at MSP-4 avalanche site on approach road to proposed Rohtang Tunnel near Manali (HP). The study of this technology is being carried out to solve the avalanche problems of various avalanche sites.

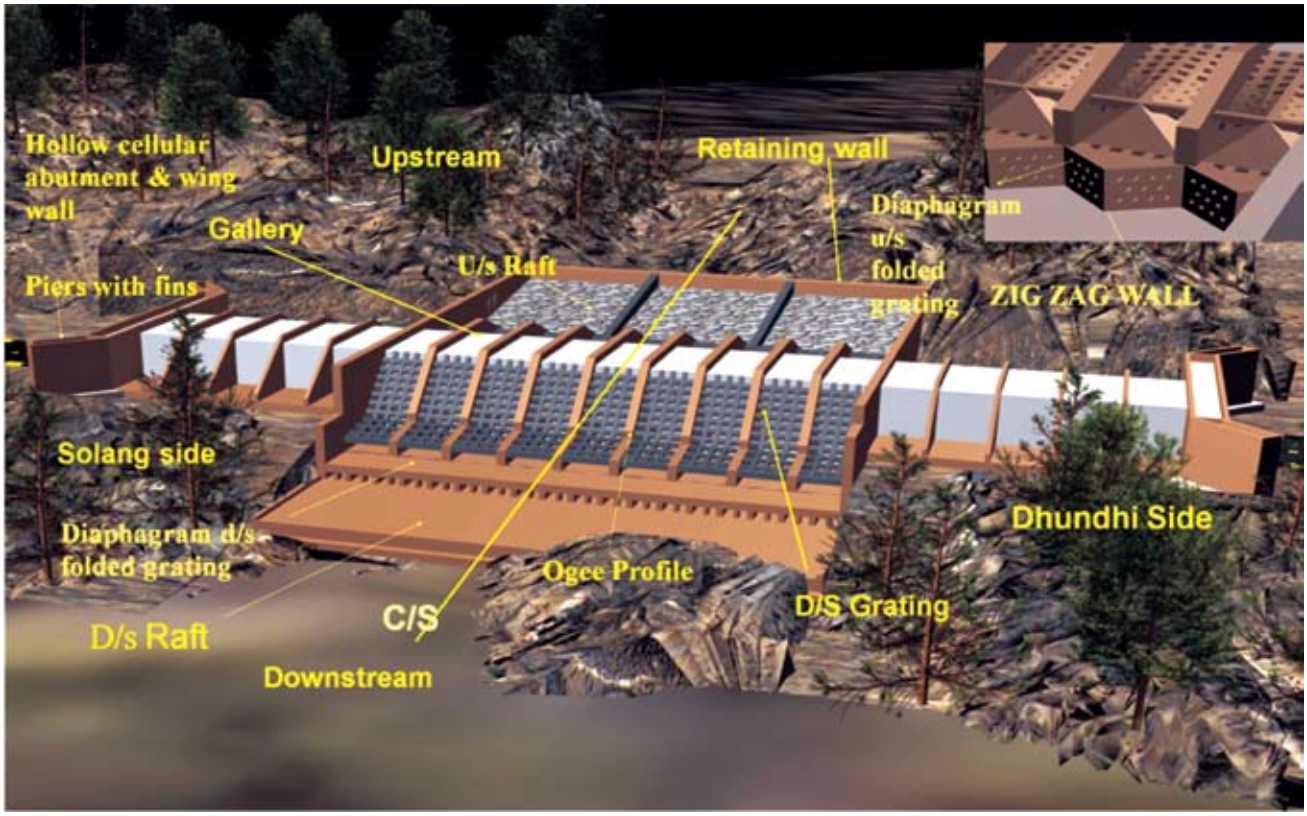
Weather and Avalanche Forecast: Regular weather and avalanche forecast are being disseminated to the troops deployed over Northwest Himalaya through Mountain Met Centres and Avalanche Forecast Centres established at Srinagar (J&K) and Sasoma (Siachen Glacier). For this, a network of surface observatories, 3 upper air observatories and 42 state-of-the-art automatic weather stations are maintained and regular met and avalanche forecast is made. A fine resolution mesoscale model in nested grid approach is being run at SASE, Chandigarh to derive quantitative weather forecast 3 days in advance at 9 km x 9 km resolution over Northwest Himalaya. Also, statistical models developed, and used for accurate avalanche forecast 2-3 days in advance over various road axes of J&K and Himachal Pradesh, covering area of Army deployment. SASE has entered into an MoU with ISRO for establishing Doppler Weather Radar in Himalayas and with a view to improve the avalanche forecasting capabilities.

Snow Gallery: Snow Gallery has been designed for the mitigation of avalanche hazard. This gallery once constructed will be the first of its kind in the country. The gallery will protect the highway from avalanche hit. The construction work of Snow Gallery has been handed over to BRO and it is under progress at MSP-7 avalanche site on approach road to Rohtang Tunnel, Himachal Pradesh.

8.18 **Armaments:**

Multi Barrel Rocket System – Pinaka: DRDO has achieved a significant breakthrough in "free flight artillery rocket system technologies" with the indigenous development of a Multi Barrel Rocket System – Pinaka of 37.5 km range. Pinaka weapon system has been successfully developed.

Trajectory Correction System (TCS) for Pinaka (Phase-I): To improve the accuracy of Pinaka Rocket to 0.4% of range, a Joint Development Programme entitled 'Development of Trajectory Correction System (TCS) for Pinaka (Phase I)' between DRDO & IMI, Israel was undertaken. The demo trials of Pinaka TCS Rocket were successfully completed in July 2008.



Snow Gallery

5.56 mm Indian Small Arms System (INSAS): This has been developed having the state-of-the-art technologies with lighter, more compact and less recoil load on the soldier. Over 9.0 lakhs of rifles, 50,000 LMG and 120 crore rounds of ammunition have already been produced so far with production value of over Rs 4000 crore. Authority Holding Sealed Particulars (AHSP) transfer of 5.56 mm LMG to CQA (SA) completed on July 30, 2008.

PZT-Based Electro-ceramics: Modified Lead Zirconate Titanate (PZT) Piezoelectric Ceramics, a class of polycrystalline oxide materials find wide ranging applications in electro-mechanical/ mechano-electrical energy conversion transducers. PZT has been successfully developed. Technology of material composition and processing is available for commercial exploitation.

Under Barrel Grenade Launcher (UBGL): The UBGL is an "add on" attachment to INSAS Rifle 1B and AK-47 Rifle and thus converts the weapons into dual caliber weapons, allowing the soldier to fire KE Ammunition. Integrated iron sight as well as Beta Light Sight (BLS) are provided for day and low light condition firing. UBGL has been introduced into service by Army. Para Military Forces have also placed an indent for 100 nos on OFB.

Modern Sub-Machine Carbine (MSMC): It is a compact, light, easy to carry and operate sub-machine carbine with effective range of 200m for close quarter battle. This carbine

can effectively penetrate 24 layers of Kevlar Soft Body Armour (SBA) at 200m range. Confirmatory User trials has been successfully conducted in April 2008 at Infantry School Mhow, meeting all major GSQR parameters. User recommended MSMC with certain improvements for next stage of evaluation. User validation trials were conducted in January 2009.

84 mm Light Weight Launcher (LWL): It has been successfully developed. The state-of-the-art composite technology has been established for the first time in gun barrel design. It is lighter by almost half of the weight of the existing in-service 84mm RCL Mk-2 weapon. The weapon has successfully undergone User, hot (desert) and cold (high altitude) climatic troop trials. Technology for productionisation of composite barrels of 84 mm LWL has been transferred to OFB on April 29, 2008.

Bund Blasting Device (BBD) Mk-I: With a view to hasten the process of forward movement of Army, DRDO has designed and developed a device called Bund Blasting Device. The device is man portable. After successful completion of the User's Trials, BBD has been inducted into Service.

Multimode Hand Grenade: TBRL has developed a hand grenade which uses preformed cylindrical mild steel fragments to achieve uniform distribution.

Multi-P Charge Warhead: A state-of-the-art multi-P charge Warhead has been designed, developed and tested against the 10mm MS target at 10m stand-off. The Warhead can be used to defeat aerial targets including incoming missiles. The Warhead contains 91 numbers of liners.

Advanced Demolition Devices (ADDs): A wide range of ADDs has been developed to replace the existing demolition devices currently used by Indian Army. DGQA trials of ADDs (followed by user trials) completed successfully and the User evaluation is in progress.

84 mm Incendiary Ammunition: 84 mm incendiary ammunition developed by HEMRL for specific applications demonstrated to DG infantry using Light Weight Launcher in June 2008.

β-HMX: β-HMX is the most powerful explosive in bulk. The process for manufacture has been established at 1 kg level and scaled up to 20 kg level. During this year, a fully automated 20 kg semi batch reactor unit, has been erected and commissioned at HEMRL. The plant is running regularly and the yield is 60% which is globally comparable.

Amorphous Boron Powder (ABP): A process for manufacture of ABP Gr-II (85-88% purity) has been established having a 10 kg per month capacity. All the present Igniter compositions are using this Boron. Further, oxidative roasting process has been established to improve the purity to $>92\%$.

Synthesis of CL-20 at 5 kg/batch: Hexanitrohexaazaisowurtzitane (HNIW),

popularly known as CL-20, with cage structure is considered the most powerful explosive of today which can release energy at a much higher rate than any other explosive known. This facility has been established first time in India to develop CL-20 at 5 kg/batch level indigenously and has made available 25 kg for ongoing R&D projects. The material produced will find application in various current and advanced explosives formulations. By acquiring this technology development, DRDO has entered in the elite club of few western countries who have the advanced technologies in the area of energetic materials.

Mine Inflammable (MI) : The MI has been developed to prevent enemy movements across water surfaces, like Ditch-cum-Bunds (DCBs) and canals by generating high temperature flare, which spreads and floats on water. The flame created by MI covers a circular diameter of 7–10 meters and burns for 2-3 minutes. The height of the flame is 2-3 meters and the temperature is in the range 1200–1300°C. The floating material can cling on to any surface and thus can effectively transmit the fire to any body that may be present within the flame zone. The shelf life of MI units was of 4 years previously. The modified fuze is expected to enhance the life of MI to about 10 years.

Modular Combustible Case for 130 mm & M-46 Field Gun and 105 mm IFG: Currently brass cartridge cases are being used in 130

Mine Inflammable (MI)

mm and 105 mm field gun ammunition. In order to replace brass, HEMRL has developed resin based Modular Combustible Case (MCC) for Modular Charge System (MCS). This will save around 50% of brass thus the round will become lighter in weight.

Modernization Instant Fire Detection and Suppression System (IFDSS) for BMP-2 & 2K: There is a long felt need to upgrade the IFDSS of the ICV BMP-2 and BMP-2K with state-of-the-art IFDSS which will provide protection against fire to the complete ICV (i.e for both engine as well as crew compartment), with faster detection and extinguishing time. Compact version of IFDSS has been developed and performance evaluation has been carried out including environmental and EMI/ EMC tests. User trials have been conducted successfully to demonstrate the efficacy of system.DGQA trials have also been carried out successfully. IFDSS for BMP-2&2K has been accepted by the Army and recommended for introduction into the Services.

8.19 **Naval Systems:**

Hull Mounted Sonar (New Generation) – HUMSA (NG): It is the state-of-the-art ship borne sonar designed and developed in the concurrent engineering mode. Complete ToT of the system has been made to Bharat Electronics Limited. Two systems have been cleared for installation.

Low Frequency Dunking Sonar (LFDS): This is airborne sonar meant for Advanced Light Weight Helicopter (ALH) for detection of enemy targets at far ranges. The sea trials of this sonar onboard trials ship has been completed and presently, the system is being installed by Hindustan Aeronautics Limited.

Low Frequency Dunking Sonar

Diver Deterrence Sonar & Seabed Array System: To meet the requirement of coastal surveillance of Indian Harbours, Naval cluster of labs are working on Diver Deterrence Sonar and Seabed Array system. These systems are in the advance stages of technical trials.

Towed Array Sonar & Torpedo Defence Systems: Indigenous towed array and torpedo defence systems under projects Mareech & Nagan are in the advance phase of User Associated Trials.

Tarpedo Advanced Light (TAL) Mk-I: TAL Mk-1 torpedo developed by NSTL has been cleared for induction into Service. Initial order of 25 no. Torpedoes is being placed on Bharat Dynamics Limited, Hyderabad.

Varunastra: Varunastra is a ship launched heavy weight torpedo with enhanced endurance and ranges. This torpedo is presently under technical trials. This underwater weapon is likely to be inducted into service in the year 2010.

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 AIP technology are being demonstrated. Under this a 300W Air – Hydrogen ambient temperature fuel cell stack using nafion membrane has been developed and demonstrated.

8.20 **Advanced Materials:**

NBC Recce Vehicle: DRDO is executing LSP order of 8 NBC Recce Vehicles from Army. The first production model has undergone the confirmatory trial in the month of June 2008 at CME, Pune.

Mobile Medical Post (MMP): Mobile Medical Post (MMP) has been developed based on SOP of Indian Navy for providing first aid and rescuing injured persons. This vehicle has been handed over to Indian Navy in June 2008.

Varunashtra

Modernisation of NBC Protection System of BMP–2 & 2K: The project 'Modernisation of NBC Protection system of BMP–2 & 2K' has been successfully completed. MET Trials of the system were carried out in February 2008. EMITEE Trials were carried out in January 2008 and September 2008. The trials were successful and the equipment is acceptable to the user.

NBC Water Purification System (WPS): A Limited Series Production (LSP) order for 10 nos. of Mobile NBC Water Purification System" has been received from the Army HQrs. The system is capable of producing purified water at 3 m^3/hr from water contaminated with NBC agents as well as turbidity and dissolved salts. The confirmatory User trials have been successfully completed on first production model.

Synthesis of Iron Oxide Colloidal Nanocrystal Clusters Based Aqueous Ferrofluid: A room-temperature solution-phase process has been developed to synthesize transparent Fe_3O_4 Colloidal Nano-particles Clusters (CNCs) which are composed of small primary nano-crystals. Fe_3O_4 CNCs is increasingly becoming attractive for wide range of applications including high-density information storage, magnetic refrigeration, ferrofluids, magneto chromic and magneto-optical devices, as well as in several biomedical applications like magnetic resonance imaging (MRI) and targeted drug delivery.

Software for Camouflage Pattern Generation: **SIGMA MK-II:** The software has been used for Camouflage Pattern Generation and/ or design of the camouflage scheme for various equipment and installations. Training on Software has also been provided to a number of officers and jawans from the Army.

Advanced Composite Materials and their Lay-up to Protect Memory Module of Flight Data Recorder (AN-32 Aircraft): Advanced microporous thermal insulation and impact shock absorbing composite materials have been developed to protect memory module of indigenous flight data recorder of AN-32 aircraft. Design lay-up of these materials in the form of blocks and panels was finalized for development of prototype memory module of FDR. Materials and lay-up process have been provisionally approved by CEMILAC, Bangalore.

Synthetic Life Jacket MK-I: It is a life saving appliance intended for use during crossing the water obstacles and bridging operations by the Army. The store has been accepted by the Army after successful User Trials. The bulk production of this store has also been successfully established. After completion of supplies amounting to a total quantity 37500 of Life Jackets MK-I to the Army, the Authority Holding Sealed Particulars (AHSP) responsibility has been transferred to CQA (T&C).

Titanium Sponge Production Technology: Production of titanium from indigenous raw material ($TiCl_4$) on an industrial scale of 3000 kg/batch by the state-of-the-art "Combined Process Technology" has been successfully

developed at DMRL. The sponge product satisfies stringent international standards recommended for applications including critical parts of aero-engine. Based on this technology, the country's first commercial titanium sponge plant is being set up at M/s Kerala Minerals and Metals Limited, Kollam, Kerala with an initial capacity of 500 tons per annum, with funding from ISRO. This plant is expected to go into commercial production by the end of 2009, thereby paving the way for commercial exploitation of the country's large (3rd largest in the world) reserves of titanium ore.

Ceramic Cores for Kaveri Engine Aerofoil Castings: Through sustained research and development efforts at DMRL, a viable process based on Ceramic Injection Moulding has been developed. The capability of the shaping process is demonstrated by making highly complex and intricate ceramic cores required for making the five critical Kaveri gas turbine engine blades and vanes. These cores meet the stringent dimensional and other quality requirements needed for their use in the investment casting components. Currently, this process is being extended to produce cores for land based turbine blades, a spin-off benefit for civilian applications.

Near-Alpha Titanium Alloy Titan 29A for Aero Engine: Development of a near-alpha high temperature titanium alloy Titan 29A was undertaken by DMRL, in association with MIDHANI for aero-engine applications. An all-out effort has culminated in the successful accomplishment of the technology for the production of semifinished feedstocks (bars and billets), duly certified by airworthiness agencies. Blade forging and ring rolling technology has also been successfully established in collaboration with Hindustan Aeronautics Limited, Bangalore.

Ceramic Composite Armour for Light Combat Helicopter: This light weight composite armour has been developed for protection of Light Combat Helicopter (LCH) against 7.62mm AP using advanced ceramics and polymer composites. Ballistic trials of the developed armour have been successfully completed and the armour meets the protection requirements of LCH.

High Pressure Turbine (HPT) Blade for Adour Engine: Vacuum investment casting technology has been established for production of intricate, hollow castings, meeting the stringent requirements of Kaveri engine. This indigenous technology has successfully been extended to produce directionally solidified hollow HPT blades for Adour engine, in association with HAL. Efforts are on to produce ceramic cores, the only component procured from a foreign source, also in-house. This technology will soon be transferred to HAL, Koraput for commercial production.

8.21 Life Sciences Systems/ Products:

Submarine Escape Set: The submarine Escape set consists of a hydro suit and a closed circuit automatic breathing apparatus, which can be used for escape from an abandoned submarine from depth of 100m.

Submarine Escape Set

User trials of Submarine Escape Set were conducted successfully and system has been cleared for production.

Flame Retardant Overalls: It is used as an outer garment to provide protection to the aircrew. It prevents burn injury and provides sufficient time to escape from the scene of fire. Air Force has accepted it for introduction into Services.

Computerized Pilot Selection System: A state-of-the-art embedded micro controller based computerized pilot selection system with built-in security features has been designed and developed for the selection of pilots for modern aircraft. The system captures accurate, reliable and high-speed data relating to the skills of a candidate appearing for pilot selection.

Nitric Oxide Delivery System: Soldiers deployed for high altitude duties are prone to develop acute mountain sickness, high altitude pulmonary oedema and other diseases of high altitude malacclimatization. An indigenous Nitric Oxide and Oxygen Delivery System consisting of 15 ppm Nitric oxide and 50% oxygen meant for treatment of high altitude pulmonary oedema patients has been developed and installed at designated high altitude.

Drugs Developed: Thirteen drugs developed have been cleared by Drug Controller General of India for phase I to phase III clinical trials for protection against nuclear, biological and chemical warfare agents and high altitude generated medical problems.

Greenhouse: Greenhouses of various sizes and shapes have been designed to provide suitable environment for the growth and development of plants leading to higher productivity of crops at high altitude regions. Various cladding materials, viz., ultraviolet-stabilized polyethylene films of different grades, glass, fiber-reinforced plastic and polycarbonate are used to provide suitable environment for the growth and development of plants leading to higher productivity of crops. Sixteen greenhouses have been installed at designated stations for round the year availability of fresh vegetables.

Biodiesel: A biodiesel programme has been initiated for production of biodiesel from the seeds of Jatropha plant. A high yielding Jatropha cultivar has been identified. A transesterification unit has been installed for processing and the trial runs have been completed.

SELF-RELIANCE

8.22 DRDO has developed a number of systems/ products/ technologies, of which a large number have been productionised and inducted in to Services and many are in the process of manufacturing and production stage. The value of systems/ products/ technologies developed by DRDO and inducted in to the Services or in the process of induction stands at over Rs. 50,000 crore.

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TECHNOLOGY TRANSFER AND CONSULTANCY

8.23 Several technologies developed by DRDO have been successfully transferred to the industries and many of the dual-use technologies are being commercially exploited. Several industrial

Prime Minister presenting the Titanium Trophy to the High Energy Materials Research Laboratory (HERML), Pune

entities have been encouraged to actively interact during the development phase of complex projects, pioneering the concept of "Concurrent Engineering".

8.24 DRDO has also rendered technical advice and helped in modernization of Police Forces by offering technologies and products of relevance to the Police Forces. A system of continuous interaction with the Bureau of Police Research & Development has been put in place. Several products such as Body Armour for personal protection, Riot Control gear, Water Cannons, Riot Control Vehicles and several other products developed by DRDO have been provided in sizeable numbers towards modernization of Police Forces.

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 2008, DRDO participated in DEFEXPO 2008, a major international exposition held at Delhi. It also showcased its products at Singapore Air Show, Berlin Air Show, and Africa Aerospace and Defence exhibitions. It also participated in Indian Science Congress held at Andhra University, Visakhapatnam, International Trade Fair held at Pragati Maidan, Delhi.

FOREIGN COLLABORATION

8.26 The Directorate of International Cooperation in DRDO is functioning as the nodal point of interaction for all matters related to International Cooperation in the field of Defence R&D. The major foreign partners of DRDO are Russia, USA, France, Israel, Germany, UK, Singapore, Belarus and Kyrgyzstan. DRDO has entered into an MOU with the Kyrgyz Republic on setting up a joint Kyrgyz – India Moutain Bio-Medical Research Centre in Bishkek. Eight new projects in the area of Laser Technology and Powder Metallurgy are nearing finalization with Republic of Belarus. Republic of Belarus has offered collaborative R&D in the field of High Power Electro-Magnetic Sources, Night Vision Devices and Control Systems. Belarus has proposed setting up of Joint R&D Centre in Minsk. DRDO has initiated signing of a framework agreement with Hungary on cooperation in "Defensive Aspects of Microbiological and Radiological Detection".

BASIC RESEARCH

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.

8.27 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.

8.28 **Aeronautical Research & Development Board (AR&DB):** AR&DB was established in February 1971. The Board is currently funding 77 projects with a ceiling of RS. 5 crore in the upstream area of aeronautics research and development at 25 academic and research institutions in the country.

8.29 **Armament Research Board (ARMREB):** Under ARMREB, a total number of 103 projects have been sanctioned at a total cost of Rs12.48 crore 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, 77 projects have been completed and 26 projects are ongoing. A total number of 30 workshop/ conference/ symposium at national/ international levels were sponsored.

8.30 **Naval Research Board (NRB):** The NRB continued to support the basic research applicable to naval/ marine technologies. Since its inception in August 1996, 179 projects at a total cost of Rs 50.60 crore have been accorded to the academic/ research institutions and academics of repute. During this year, 55 projects have been sanctioned at a cost of Rs 15.55 crore.

8.31 **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 24 projects have been recommended for funding during the current year. Four patents have been filed and one is under process. 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.

8.32 **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.

8.33 **Contracts for Acquisition of Research Services (CARS):** CARS has been introduced for the procurement of research services from academic institutions. In this scheme, a laboratory of DRDO can seek the expertise and access the facilities of academic institutions. A DRDO laboratory is authorized to award a project worth Rs. 10

lakh to an individual or institution. A sum of about Rs. 15 crore per year is being utilised by the DRDO under the CARS scheme.

EXTRAMURAL RESEARCH

8.34 Extramural Research activities of DRDO strive for tapping scientific knowledge and research expertise of academic institutions and research laboratories to provide impetus to technology development. The technologies thus developed forms the backbone to various long/ short term DRDO projects and programmes. During the current financial year, 62 new projects worth Rs. 25 crore have been sanctioned. There are 225 ongoing projects involving Rs. 120 crore funded by DRDO.

INTELLECTUAL PROPERTY RIGHT (IPR)

8.35 To accord selective protective legal cover to intellectual property generated through research activities of DRDO, 101 IPR applications (including 13 filed in foreign countries) were filed on products/ processes in the field of materials, electronics, biomedical sciences and food technology. During the current financial year, 48 patents (including 1 in foreign country) were granted and in addition, 2 designs were registered in India. To promote IPR awareness, 4 awareness programmes/ workshops/ patent clinics were held during the period in different laboratories.

DRDO GOLDEN JUBILEE CELEBRATIONS

8.36 The year 2008 was a special year for DRDO as it celebrated Golden Jubilee after 50 years of dedicated service to the Nation. DRDO organised a yearlong Golden Jubilee programme. The aim was to highlight DRDO's tangible and intangible contributions to the nation building among S&T organizations, academia, industry, foreign partners as well as to bring greater awareness among the general public and media and also to attract young talent into DRDO fraternity. Raksha Mantri formally launched the yearlong Golden Jubilee Celebrations on January 9, 2008. Thereafter a number of events such as Lab-Cluster symposia, Conferences, Exhibitions in Schools and Colleges, etc. were organized. To cap the yearlong celebrations, DRDO along with FICCI organised Golden Jubilee Conference on "Managing Defence R&D" during December 3-5, 2008 in New Delhi. This milestone 3-day event provided a platform to visionaries from Defence R&D Organizations, Military Commanders, Think Tanks, Government Officials, Industry Leaders and other major players from across the globe for fruitful interactions and deliberations.

9

INTER-SERVICE ORGANISATIONS

Raksha Mantri releasing a coffee table book 'Soldiering On...' at a ceremony to mark the centenary of Armed Forces' Journal 'Sainik Samachar'

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 operational as well as infrastructural support to the Armed Forces. The organisation has expertise in a wide range of civil works, ranging from conventional buildings and factories to specialized projects including airports, runways and marine works.

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 and construction activities. MES has an annual budgetary workload exceeding Rs. 8,900 crore. It 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.

Military Engineer Services organisation has expertise in a wide range of civil works, ranging from conventional buildings and factories to specialized projects including airports, runways and marine works.

9.4 Major works taken up by the Military Engineer Services during the year are:

(a) **Naval Academy Project, Ezhimala:** The project Naval Academy, Ezhimala was inaugurated by the Prime Minister on January 8, 2009. The Academy will be fully functional during 2009.

(b) **Manekshaw Centre:** The construction of the state-of-the-art complex housing the Officers Mess, Auditorium and Convention Centre is under construction in Delhi Cantonment at a cost of Rs. 65.73 crore.

(c) **Corps Headquarters Building Complex:** Corps Headquarters building and ancillaries have been constructed in the Jodhpur Military Station. The building has been designed based on the concept of Indo Sarcenic style of Architecture, assimilating the 'Rajasthani' culture.

(d) **New and Renewable Energy Sources:** In order to enhance usage of non-conventional energy sources for Defence Forces, several initiatives have been taken in consultation with the Ministry of New and Renewable Energy and The Energy Research Institute (TERI). Solar water heaters are being incorporated in all new Hospitals projects and cook houses. In addition, pilot project on wind energy of 10 KW capacity has been planned in the State of Tamil Nadu.

(e) **Multi Level Car Parking for Electronic Radar Development Establishment at Bangalore:** The design feature of the Parking Complex includes parking space

Officers' Accommodation - Kochi, constructed under Married Accommodation Project

for 400 two wheelers in basement. The ground, first, second floors and terrace has capacity of 70 four wheelers, each with scope for future expansion. The building complex is designed to incorporate all modern utilities and services. The cost of project is Rs. 8.14 crore and has been completed on January 2, 2009.

The Armed Forces Medical Services (AFMS) provide comprehensive health care to the serving Armed Forces personnel, their families and dependents.

(f) **Infrastructure for Business Boeing Jet (BBJ):** Work for new hanger of size 92 x 50 m with an overall height of 18m alongwith alteration to existing hanger, manoeuvre area and allied facilities at an estimated cost of Rs. 27 crore is in progress at Air Force Station, Palam.

9.5 **Married Accommodation Project (MAP):** The Married Accommodation Project has been undertaken for providing adequate residential/ married accommodation for defence service personnel. Under Phase-I of the project, which is under execution, 20355 Dwelling Units have been constructed so far. Phase-II of the Project, involving construction of 66,727 Dwelling Units at an estimated cost of Rs. 9,395.71 crore has been approved by the Government in May, 2008.

ARMED FORCES MEDICAL SERVICES (AFMS)

9.6 The Armed Forces Medical Services (AFMS) consist of the Medical Services of the Army, Navy and Air Force and Director General, Armed Forces Medical Services. Each Medical Service is under a Director General Medical Service (DGMS) in the rank of Lt. Gen 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. AFMS provide comprehensive health care to the serving Armed Forces personnel, their families and dependents. In addition, personnel of para military organisations, while posted in the field and other Central Police/ Intelligence Forces operating in the disturbed areas of the country, are provided treatment by the AFMS. The Armed Forces Medical Services are also providing medical care to the ex-servicemen and their dependents to the extent possible.

9.7. Important policy decisions taken during the year:

(a) **Cadre Restructuring Phase–II of AFMS officers :** Government have approved the proposal of Cadre Restructuring Phase-II for better promotion prospects in respect of the Permanent Commission Cadre officers by increasing the number of Select Grade appointments in the rank of Brigadier and equivalent, Maj Gen and equivalent and Lt Gen and equivalent in AFMS.

(b) **Augmentation of manpower for AFMS:** Government has approved augmentation of manpower by 3,530 personnel, which includes medical officers, dental officers, nurses, para medics and civilian (Tech).

9.8 **Armed Forces Medical College (AFMC) Admission 2008:** 130 (105 boys and 25 girls) were admitted to the college. In addition 6 sponsored candidates, 2 each from Nepal, Bhutan and Afghanistan were also admitted.

9.9 **Advance Course:** A total of 131 officers were detailed for undergoing advanced course training in various specialities in Armed Forces Medical College, Pune and other Universities. 9 Medical, Dental and Military Nursing Services officers have been detailed for various training courses abroad this year.

9.10 **HIV/ AIDS Prevention and Control Programme in the Indian Armed Forces:** Armed Forces have a very vibrant and comprehensive HIV/ AIDS Prevention and Control Programme in place since 1992. This unique and effective programme has helped the Armed Forces to effectively control the incidence of HIV/ AIDS among personnel and their families.

9.11 **Introduction of New Vaccine:** Continuing with the thrust for providing the highest quality of health to Armed Forces personnel and their families, the Armed Forces Medical Services have introduced the Measles Mumps and Rubella (MMR) vaccine.

9.12 **Disaster Management Cell:** The Armed Forces Medical Services have been very active in providing medical relief in the wake of natural disasters both within the country and abroad. Relief teams were deployed in Myanmar from May 17 to June 3, 2008 which treated over 14000 patients in the wake of cyclonic storm " Nargis" that ravaged the Irrawady delta region on May 2/3, 2008. Medicines worth nearly Rs 4.5 lakhs were air lifted to China following an earthquake affecting the Sichuan province on May 12, 2008. 33 medical relief teams were deployed and worked tirelessly round the clock in flood affected districts of Supaul, Saharasa, Madhepura, Purnia and Araia in Bihar after River Kosi breached its embankments. The teams attended to about 90,000 patients. A medical team including Surgeon & Anaesthetist has been sent to Sri Lanka on March 9, 2009 to establish an Indian Field Medical Hospital to provide urgent humanitarian surgical and medical health care to civilians and Internally Displaced Persons (IDP) from North Eastern region.

9.13 **Artificial Limb Centre, Pune:** Artificial Limb Centre, Pune is a pioneer in the field of Prosthetics and Orthotics. A state-of-the-art Computer Aided Design (CAD) and Computer Aided Manufacture (CAM) unit has been installed at the Centre this year. The equipment is set to revolutionalise the manufacture of modern prosthesis with considerable saving of cost and time.

DIRECTORATE GENERAL DEFENCE ESTATES

9.14 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 functions through five Principal Directorates at Jammu, Chandigarh, Kolkata, Lucknow, Pune and one Directorate at Jaipur. The Principal Directorates/ Directorate in turn supervise a number of field offices, such as the offices of the Defence Estates Officer, Assistant 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.

Ministry of Defence owns approximately 17 lakh acres of land throughout the country which is managed by the three Services and other Organisations like Ordnanace Factories Board, DRDO, DGQA and CGDA etc.

9.15 The Ministry of Defence owns approximately 17 lakh acres of land throughout the country which is managed by the three Services and other Organisations like Ordnanace Factories Board, DRDO, DGQA and 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.

9.16 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).

9.17 The Defence Estates Department undertakes hiring of residential accommodation and hiring/ requisitioning of land for the Armed Forces. Considering the hardship of the local population, the Ministry of Defence has given special emphasis on revision of rentals of hired/ requisitioned lands occupied by Security Forces in J&K.

9.18 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 the 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 Officer Commanding-in-Chief of the Command and Principal Directors, Defence Estates at the intermediate level and by the Central Government through the Director General Defence Estates at the apex level. Elections to 61 Cantonment Boards were held in accordance with the provisions of the Cantonments Act, 2006 and Cantonment Electoral Rules, 2007.

9.19 The resources of the Cantonment Boards are very 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 a certain extent by way of grant-in-aid to balance the budget of some of the Cantonment Boards which are financially deficit. During the financial year 2008-09, Grant-in-aid to the tune of Rs. 44 crore was paid to the state aided (deficit) Cantonment Boards.

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

9.20 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).

9.21 The functions of 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 Service 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 and framing/ amendment of recruitment rules for various grades, re-verification of character and antecedents of employees working in sensitive organizations, Cadre Review/ Restructuring of AFHQ civilian cadres, work related to Pay Commission and review of Peace Establishment (PE) of AFHQ/ ISOs.

(d) **Finance and Materials Division:** This Division provides material support to 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 Armed Forces HQrs and coordinates the Major Works Programmes at the Defence Headquarters.

The office of the Chief Administrative Officer provides civilian manpower and infrastructural support to the Services Headquarters and the Headquarter offices of Inter-Service Organisations under the Ministry of Defence.

(f) **Training, Coordination and Welfare Division:** The training requirements of civilian personnel posted in the Services Headquarters and in the ISO's are looked after by the Defence Headquarter Training Institute (DHTI), functioning under the aegis of the CAO. During the year, DHTI has conducted 80 courses,

imparting training to approximately 1,835 Civilian and Service personnel.

9.22 **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 Defence Headquarters Security Zone. On November 17, 2008, Raksha Mantri released an updated "Manual of Security Instructions – 2008" applicable in the Defence HQrs Security Zone. A consolidated and up to date version of "Fire Orders – 2008" has also been issued in December, 2008.

DIRECTORATE OF PUBLIC RELATIONS

9.23 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-Service 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 adequate publicity in the print and the electronic media.

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

9.25 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). The Sainik Samachar celebrated its centenary on January 2, 2009.

9.26 The Broadcasting Section of the Directorate coordinates 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.

9.27 Operation by Marine Commandos and assistance provided by Army and Air Force during Mumbai terror attack and the subsequent review of Coastal Security were widely publicized. Some of the other major events for which media coverage was arranged by the Directorate were 'Aero India-2009'; DEFEXPO INDIA-2008; Induction of Advanced Jet Trainer-HAWK; President's presentation of Standard to 108 Squadron and 105 Helicopter unit of the IAF; TROPEX-2009; successful launch of Agni III, Interceptor Ballistic Missile and Shourya missiles; vertical ship launch of BrahMos supersonic cruise missile, setting up of the Armed Forces Tribunal etc.

ARMY PURCHASE ORGANISATION

9.28 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 and vanaspati, tea and milk products are procured from the Central and State public sector undertakings and national/ state level cooperative consumer/ marketing federations by way of invitation of tenders and placing contracts. Whole milk powder, butter tinned and desi ghee are procured from the members of the National Cooperative Dairy Federation of India through negotiated contracts. Tinned items like vegetables, fruits, jams, milk, meat and fish, coffee, egg powder etc. are procured from registered suppliers including private parties through open tender. During the year 2008-09, Rs. 1,094.79 crore was provided to the Army Headquarters for procurement of above items.

SERVICES SPORTS CONTROL BOARD

9.29 Services Championships: Services Sports Control Board (SSCB) conducts and co-ordinates various sports activities in the three Services. During the period, a total of four teams (Army Red, Army Green, Indian Navy and Air Force) participated in 29 Services Championships/ Trials conducted under the aegis of SSCB.

9.30 Best Services Sportsman: On the basis of performance in the Services, National and International Championships of the preceding years, one sportsman is selected from the three Services. Petty Officer (PO) Naveen Kumar was adjudged "Best Services Sportsman" for the year 2007-08.

9.31 **Arjuna Award:** Naib Subedar V Johnson of Army was conferred with Arjuna Award for Boxing for the year 2007-08.

9.32 **National Championships:** SSCB is affiliated to 29 National Sports Federations and participates in 39 National Championships including 10 Junior Sections. Till date, 29 National Championships have been conducted by the concerned Federations. Services won the Teakwondo, Rowing, Weight lifting, Hand Ball and Fencing Championships.

International Championships

9.33 **Commonwealth Youth Games:** Commonwealth Youth Games were held at Pune, India from October 12 to 18, 2008. A large number of athletes from the Services took part. The Indian contingent won 33 gold, 26 silver and 17 bronze medals in individual and team events.

9.34 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 wrestling, shooting and boxing championships.

ARMED FORCES FILMS & PHOTO DIVISION

9.35 The Armed Forces Films & Photo Division (AFFPD) is primarily responsible to meet the requirements of Services 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.

9.36 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, 1,165 titles in 16 mm sizes, 241 titles in VHS format, 34 titles in VCD format and 22 titles in DVD format.

9.37 At present, AFFPD have a total of 88 films on its production schedule, out of which 34 films have been completed and 15 films are on the verge of completion.

9.38 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

9.39 The National Defence College (NDC) was inaugurated on April 27, 1960 by the then Prime Minister, Pandit Jawaharlal Nehru. Located in the heart of Delhi, the College has grown from strength to strength in the last 49 years and has established a name for itself as a centre of excellence on matters pertaining to national security and strategic studies. The institution endeavours to provide an academic and professional setting that is conducive to higher learning and mental stimulation.

9.40 The NDC runs a 47-week Course every year for selected senior Defence and Civil Services officers from India and Defence officers from friendly foreign countries. The Course is structured to cover Socio-Political, Economy, Science, Technology, International Security Environment, Global Issues, India's Strategic/ Immediate Neighbourhood and Military Dimensions of National Security. The NDC Course is now recognized by the Madras University for award of M.Phil in Defence and strategic studies.

SCHOOL OF FOREIGN LANGUAGES

9.41 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 Foreign languages to personnel of the three Services. It also caters to the needs of other Ministries and Departments of the Government of India. Besides, civilian students are also admitted for Certificate of Proficiency, Advanced Diploma, Interpretership Courses and Short-term Courses/ ad-hoc courses. The languages taught on regular basis at the SFL are Arabic, Bahasa Indonesia, Burmese, Chinese, French, German, Italian, Persian, Pushto, Russian, Spanish, Sinhala, Tibetan, Japanese, Thai, Malay, Hebrew and Vietnamese.

9.42 The School of Foreign Languages is the controlling organisation for other Defence Institutions where foreign languages are taught namely National Defence Academy, Khadakvasla and Army Education Corps Training Centre and College, Pachmarhi. It

conducts examinations and issues diploma to the successful candidates. For the Indian Foreign Service (IFS) probationers, it is obligatory to qualify the Advanced Diploma (IFS) examinations conducted by the Institute. The School of Foreign Languages also conducts examination in Regimental Languages, viz. Nepali at various Service Units all over the country.

9.43 During the year 2008-09, a total of 1,445 students were enrolled at SFL for various courses.

HISTORY DIVISION

9.44 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, Military Costume in 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, the Indian Troops in Korea 1953-58, Operation Shanti and Terrific Responsibility (The Battle for Peace in Indo-China).

9.45 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 HQrs and various Units on a regular basis for preservation and use. During the year, about 3600 operational records, mostly of classified nature were received.

9.46 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 ceremonial matters by way of suggesting names for new establishments and acquisitions, designing their crests and badges and coining suitable mottoes

COLLEGE OF DEFENCE MANAGEMENT

9.47 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.

9.48 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.

9.49 College of Defence Management conducts Higher Defence Management Course (HDMC), Senior Defence Management Course (SDMC), Management Development Programme (MDP),Defence Management Course and External Capsules.

DEFENCE SERVICES STAFF COLLEGE

9.50 The Defence Services Staff College (DSSC) is one of the oldest military institutions in India. It was established in 1905 in Deolali and has been functioning at Wellington since 1950. The DSSC imparts training to middle level officers of the three Services besides a few civilian officers and officers from friendly foreign countries. The college conducts a 45 week training programme from June to April every year. The Staff Course at DSSC aims at imparting training in operational and staff functions in an Inter-Service as well as Joint Service environment.

MINISTRY OF DEFENCE LIBRARY

9.51 The Ministry of Defence library provides literature on subjects relevant to planning and policy formulation in the Ministry of Defence, three Services 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. The reading material for the library is selected by a Book Selection Committee. During the year the library added 1.854 books, subscribed 126 journals / Periodicals and 24 Newspapers.

10

RECRUITMENT AND TRAINING

A view of the Passing out Parade at Indian Military Academy, Dehradun

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.

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

(a) **National Defence Academy (NDA) and Naval Academy:** 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/ Naval Academy for Permanent Commission and Officers Training Academy (OTA) for Short Service Commission.

ARMY

10.3 **Recruitment of Commissioned Officers in the Army Through Non-UPSC Entries:** Apart from recruitment through the UPSC, the commissioned officers are also recruited in 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 two years' 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 only), 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 two years' 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 two years' ante-date seniority on commissioning.

(d) **10 + 2 Technical Entry Scheme (TES):** Candidates who have qualified 10 + 2 CBSE/ICSE/State Board Examination with minimum aggregate of 70% 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 specialized training for the Arm/Service into which they are commissioned.

(e) **Women's Special Entry Scheme Officers (WSES-O):** Eligible women candidates are recruited in the Army as Short Service Commissioned Officers through the (WSES-O). Commission is granted in Corps of Electronic and Mechanical Engineers, Engineers, Signals, Army Education Corps, Army Ordnance Corps, Army Educational Corps, Military Intelligence Corps, Judge Advocate General's Branch and Army Air Defence. Women are offered Short Service Commission in five streams, viz. Non-Technical, Technical, NCC (Special), Judge Advocate General and Post Graduate/ Specialist, for a period of ten years, extendable by further four years purely on voluntary basis. Recently, Government has allowed option for Permanent Commission for Army Education Corps and Judge Advocate General Branch. The duration of training is 49 weeks at Officers Training Academy, Chennai. Candidates who have passed or are appearing in final year/ semester of B.E/ B.Tech in notified streams, are eligible to apply for

Short Service Commission (Women) (Technical). Candidates have to appear for SSB interview followed by Medical Test. The applicants for Non-Technical stream are required to apply through UPSC. Candidates who qualify the written examination conducted by the UPSC come up for SSB interview, as is applicable to Short Service Commission male officers. Twenty percent of allotted seats from Non-Technical stream are 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 interviews. 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 direct to Addl Directorate General of Recruiting, Integrated Headquarters of Ministry of Defence (Army).

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 Directorates 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 between 21 to 27 years, can apply for Judge Advocate General Branch. Eligible candidates are called for direct SSB interview and thereafter for medical test. It is a Short Service Commission Entry wherein suitable candidates can opt for Permanent Commission.

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

(i) **Army Cadet College (ACC) Entry:** The eligible Other Ranks (ORs) in age group of 20-27 years having minimum two years of service, with 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 having 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 March, 2009) is given in Table 10.1.

Table 10.1

S No	Academy	Entry	Inducted
1.	NDA	Army	574
		Navy	114
		Air Force	209
		Total	897
2.	IMA	IMA (DE)	392
		ACC	246
		SCO	48
		PC(SL)	73
		Total	759
3.	OTA	SSC(NT)	273
		SSCW	99
		NCC	96
		JAG	-
		Total	468
4.	Tech Entries	UES	96
		SSC(Tech)	08
		10 + 2TES	267
		TGC	87
		Total	458
Grand Total			2582

10.5 **Recruitment of Personnel Below Officers Rank (PBOR)**: 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 carry out recruitment through rallies in their respective areas of jurisdiction.

In the Army, there are 11 Zonal Recruiting Offices, two Gorkha Recruiting Depots, one Independent Recruiting Office and 59 Army Recruiting Offices in addition to 47 Regimental Centres which carry out recruitment of PBORs through rallies.

10.6 Recruitment of Personnel Below Officers 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 test, 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 2007-08, the recruiting organization has enrolled 34859 recruits into the Army.

10.7 **Eligibility for Award of Bonus Marks in Respect of Sons of Servicemen/ Ex-servicemen/ War Widow/ Widow:** Instructions have been issued to ensure that only one son of Servicemen/ Ex-servicemen/ War Widow/ Widow avails the benefits being granted in the form of Relaxation in Physical Standards and grant of Bonus Marks.

10.8 **Bonus Marks to Service Soldier to Re-muster as Junior Commissioned Officer(Religious Teacher):** To ensure uniformity among all Services candidates applying for re-mustering as Junior Commissioned Officer (Religious Teacher), it has been decided that they will be awarded 20 Bonus Marks on qualifying the written examination.

INDIAN NAVY

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

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

(i) **Recruitment through NCC:** Under this scheme University Graduates holding NCC 'C' certificates with minimum 'B' grading are eligible to apply. The short listed candidates are then sent for SSB interviews.

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

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

(iv) **Electrical Branch:** Short Service Commission through University Entry Scheme, SSC (L) Schemes and Permanent Commission through 10 + 2 (Tech) Scheme.

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

(vi) **10 + 2 (Tech) Scheme:** The Scheme is a Permanent Commission entry for commission in the Engineering and Electrical branches of the Indian Navy. Under the scheme, candidates with 10 + 2 (PCM) qualification, after selection through the Services Selection Board, are sent to the Naval Academy for the Naval Orientation Course. Thereafter, they undergo a four-year Engineering course at INS Shivaji/ Valsura. On successful completion of the course they are granted Permanent Commission in the Electrical and Engineering branches of the Navy.

(vii) **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. The 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.

(viii) **Women Officers:** Women are being inducted into the Navy, as Short Service Commission (SSC) officers in the Executive (ATC, Law & Logistic Cadres), Education Branch and the Naval Architecture Cadre of the Engineering Branch. Indian Navy has also introduced SSC (Observer) entry scheme for women also w.e.f. July, 2008. These women officers would have same tenure as their SSC men counterparts of 10 years extendable to 14 years.

(ix) **Permanent Commission to SSC Officers (Men and Women):** Permanent Commission would be granted to SSC officers of Education, X/ Law and E/ Naval Constructor Cadres for batches being inducted with effect from Jan 09 onwards.

10.10 **Recruitment of Sailors:** Advertisements in all leading National & Regional newspapers and Employment News are

published inviting applications from the eligible volunteers. Publicity material is also despatched to a large number of schools/ colleges and all Zilla Sainik Boards. The local administration carries out the publicity drive in rural/ backward areas through local media. Recruitment of sailors in the Navy is carried out after the process of a written examination, physical fitness test and medical examination.

10.11 **Types of Entries of Sailors:** 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 Navy has introduced Naval Recruitment Biometric Authentication System in recruitment. This will help to eliminate impersonations and has enabled the data management process automated.

INDIAN 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, it continues to maintain its high standards for induction of personnel.

10.14 **Recruitment of Officers through Non-UPSC Entries:** Recruitment of Commissioned Officers in the Indian Air Force is mainly done through the Union Public Service Commission (UPSC). For technical branches, women special entry scheme, National Cadet Corps (NCC) special entry scheme, service entries, recruitment is made directly through the Recruiting Directorate for the Indian Air Force.

(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 Commission:** Under this entry, serving personnel with minimum 10 years of service (of technical and non-technical trades) of the rank of Sergeant and above upto the age of (36 - 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 joining for 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 50% 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, 2008 to December 31, 2008 is given in Table 10.2.

Table 10.2

(a)	Flying Branches	National Defence Academy	140
		Air Force Academy Combined Defence Service Examination	38
		Air Force Academy Direct Entry (National Cadet Corps)	06
		Air Force Academy Direct Entry (Airman)	Nil
		Short Service Commission (Men) Flying (Pilot)	64
		Short Service Commission (Women) Flying (Pilot)	09
(b)	Technical Branches	University Entry Scheme	28
		Aeronautical Engineering Course	68
		Service Entry Commission	Nil
		Short Service Commission (Women) Technical	34
		Short Service Commission (Men) Technical	23
(C)	Ground Duty Branches	Ground Duty Officers Course	34
		Service Entry Commission	05
		Short Service Commission (Women)	52
		Short Service Commission (Men)	04

10.16 **Recruitment of Personnel Below Officer Ranks (PBORs):** The selection of Airmen is carried out through a centralized selection system on all India basis. Recruitment of airmen in the IAF is conducted through the Central Airmen Selection Board, located at New Delhi with the help of fourteen Selection Centres located all over the country. Besides the scheduled Selection Tests, Recruitment Rallies are also conducted in different parts of the country to provide opportunities to eligible candidates belonging to remote/ low response/ border/ insurgency affected areas and island territories and also to maintain healthy demographic representation.

Recruitment of Airmen in the IAF is conducted through the Central Airmen Selection Board, located at New Delhi with the help of fourteen Selection Centres located all over 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 mainstreams:

(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 (Pilot/ Navigation):** Male/ female candidates having bachelor's degree in mathematic 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.

(c) **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.

(d) **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/ Navigation)/ General Duty (Pilot/Technical) is made through Coast Guard Selection Boards.

10.19 **Induction of Personnel Below Officer Ranks(PBORs) 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 mainstreams:

(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 mathematic 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 Naval Academy Mandovi and Zamorin respectively along with the Naval cadets. On completion of basic training, the under trainee officers are attached to various Naval/ Air Force/ Coast Guard Establishment/Coast Guard ships for professional training. Meritorious and outstanding officers are deputed for specialised courses in India and abroad for specialization and higher courses as per schedule.

(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. The duration of the training varies from branch to branch.

(c) **Specialised Coast Guard Training:** Various specialised training are also imparted to both officers and Enrolled Personnel. Coast Guard specific training is being conducted at Coast Guard Training Centre, Kochi.

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

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.

10.23 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 officer's cadre of the Armed Forces. The Sainik Schools prepare boys academically, physically and mentally to join Armed Forces through the National Defence Academy (NDA).

10.25 Sainik Schools admit boys into classes VI and IX. Their age should be 10 – 11 years for classes VI and 13 – 14 years for class IX as on 1st July 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.

10.26 Admission to class XI on the basis of class X Board examination results was introduced in Sainik Schools from the academic session 2007–08 in order to achieve optimum utilization of available infrastructure and to provide a more competitive environment to the aspiring cadets.

RASHTRIYA MILITARY SCHOOLS

10.27 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

10.28 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.

10.29 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

10.30 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.

10.31 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.

Around 100 lady officers 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.

INDIAN MILITARY ACADEMY, DEHRADUN

10.32 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.

10.33 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 Examination 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)

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

OFFICER TRAINING ACADEMY, CHENNAI

10.35 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.

10.36 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.

10.37 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 (Woman) for Graduate/Post Graduate Lady Cadets.

ARMY WAR COLLEGE, MHOW

10.38 Re-designated as the Army War College(AWC) from January 15, 2003, the earlier College of Combat was created out of Infantry School and established as an independent institution on April 1, 1971. A premier all arms tactical training institution for officers, the AWC performs the important functions of evaluation of new concepts and doctrines in the fields of tactics and logistics. Training is imparted in the following courses:

(a) **Higher Command Course :** The course aims to train officers for higher command, with particular reference to command of a division and for holding senior staff appointments. The course of 40 weeks duration is run only for Indian officers from the three Services.

(b) **Senior Command Course :** The course aims to train selected Major/ Lieutenant Colonels equivalent rank officers of all arms and services in tactical employment of a Battalion/ 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. Each course is of 13 weeks duration. Approximately 10% vacancies are offered to friendly foreign countries, Para Military Forces and Central Police Organisations. Three such courses are conducted every year.

(c) **Junior Command Course :** This course aims to train officers of all arms and services in the tactical employment of a Rifle Company/Combat Team as part of Battalion Group or Combat Team, as also in training and administration of a sub unit in peace and war. A course is of 10 weeks duration and trains 400 officers. Approximately 10% vacancies are offered to friendly foreign countries, Para Military Forces and Central Police Organisations. Four such courses are conducted every year.

(d) **Formation Commanders Orientation Programme (FCOP):** The aim of the programme is to prepare potential divisional commanders for command of their formations. The programme is run for four weeks every year and is meant only for Indian Officers.

JUNIOR LEADERS WING, BELGAUM

10.39 The Junior Leaders Wing(JLW) at Belgaum is training junior officers, JCOs and NCOs in Sub Unit Level Tactical and Special Mission Techniques to enable them to carry out assigned operational missions in varied terrain under severe stress and strain and be able to command and administer their Sub-Units effectively in war and peace. It trains officers and NCOs of Army, Para Military Forces, Central Police Organisations and friendly foreign countries in commando type of operations and makes them capable of either forming part of special mission groups or leading independent missions in all types of terrain and operational environment.

JUNIOR LEADERS ACADEMY, BAREILLY

10.40 Junior Leaders Academy (JLA) was set up in 1998 with the aim of imparting institutionalized training in leadership and related subjects to the Junior Leaders i.e.

JCOs and Sr NCOs of all arms and services with a view to making them more effective.

10.41 The following courses are conducted for JCOs/NCOs of all Arms and Services:

(a) **Junior Leaders Course (JLC):** It is a six-week course of newly promoted JCOs and Senior NCOs (approved for promotion to be JCOs). Six courses are conducted to train 3,240 students.

(b) **Potential Subedar Majors (PSMs) Orientation Course:** It is a four week course for 108 newly promoted Subedar Majors or Senior Subedars (approved for promotion to Subedar Majors). Six courses are conducted annually to train 640 students.

JUNIOR LEADERS ACADEMY, RAMGARH

10.42 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. From February 2003, the institution has been imparting training to 648 candidates every year.

HIGH ALTITUDE WARFARE SCHOOL (HAWS), GULMARG

10.43 The aim of the School is to train selected personnel in all aspects of high altitude (HA) mountain warfare and develop techniques for fighting in such terrains. HAWS conducts two series of courses, viz, Mountain Warfare (MW) and Winter Warfare (WW) at Sonamarg and Gulmarg respectively for officers, JCOs and NCOs. The training periods broadly run from January to April (WW Series) and May to October (MW Series). Personnel from the School have scaled some of the important peaks in the world including Mt. Everest, Mt Kanchenjunga and Mt. Mckinley in the USA.

COUNTER INSURGENCY & JUNGLE WARFARE SCHOOL (CIJW), VEIRANGTE

10.44 The CIJW conducts courses for Officers, JCOs/NCOs in counter insurgency techniques, language courses in Assamese, Bodo, Nagamese, Manipuri/Tangkhul as also imparts Pre-induction Training (PIT) for all units prior to induction into insurgency areas.

COUNTER INSURGENCY PRE INDUCTION TRAINING BATTLE SCHOOLS

10.45 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.

INFANTRY SCHOOL, MHOW

10.46 The Infantry School is the largest and oldest military training institution of the Indian Army. Courses conducted at Infantry Schools are Young Officers Course, Platoon Weapon Course, Mortar Course, Anti Tank & Guided Missile Course, Medium Machine gun & Automatic Grenade launcher (J/N) Course, Section Commanders Course, Automatic Data Processing Course, Sniper Course and Support Weapon Course. The institution is training Officers, JCOs and ORs of not only infantry but other arms and services also, besides Para Military Forces and Civil Police Organisations. The institution is at present training more than 7,000 officers, JCOs and NCOs in a year.

COLLEGE OF MATERIALS MANAGEMENT

10.47 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. It also has the approval of All India Council of Technical Education (AICTE).

10.48 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

10.49 The School of Artillery, Deolali, 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.

10.50 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

10.51 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, other arms and armed forces personnel of friendly foreign countries in Air Defence related subjects.

10.52 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

10.53 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.

10.54 Since 1992, the ASC College has been affiliated to Rohilkhand University, Bareilly for award of diplomas/ degrees in Logistics and Resource Management.

ARMY EDUCATION CORPS TRAINING COLLEGE AND CENTRE, PACHMARHI

10.55 The AEC Training College & Centre, Panchmarhi is a Defence Seat of Excellence in Educational Training in the Armed Forces. Only one of its kind, it is both a Category 'A' establishment and a Category 'A' Regimental Centre. It is also an Autonomous College affiliated to Barkatullah University, Bhopal with academic and administrative powers to design, conduct, test and award its own courses and degrees.

10.56 The Department of Map Craft runs a ten week long Map Reading Instructors Course for AEC Officers and Personnel Below Officer Rank (PBOR) of all Arms and Services of Indian Army, Para Military Forces personnel and personnel from friendly foreign countries.

10.57 The 12-week long Unit Education Instructors (UEI) Course trains ORs from all Arms and Services of the Indian Army to be effective instructors in their units.

10.58 The Foreign Language Wing (FLW), which is one of the three Divisions of the AEC Training College & Centre, a premier node of foreign language training, not only in the Armed Forces but also in the national academic environment has two digitized language labs, each with a capacity of 20 students.

MILITARY MUSIC WING, PACHMARHI

10.59 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

Foreign PBORs: Training in Military Music

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.

REMOUNT AND VETERINARY CORPS CENTRE AND SCHOOL, MEERUT

10.60 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, PUNE

10.61 With a view to producing prospective medal winners at international sporting events, the Army Sports Institute(ASI) at Pune has been set up alongwith Army Sports Nodes in selected disciplines at various places 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.

ARMY SCHOOL OF PHYSICAL TRAINING, PUNE

10.62 Army School of Physical Training (ASPT) a premier institution imparting systematic and comprehensive instruction to personnel of the Army regarding the conduct of physical training in units and sub units, also imparts basic training in

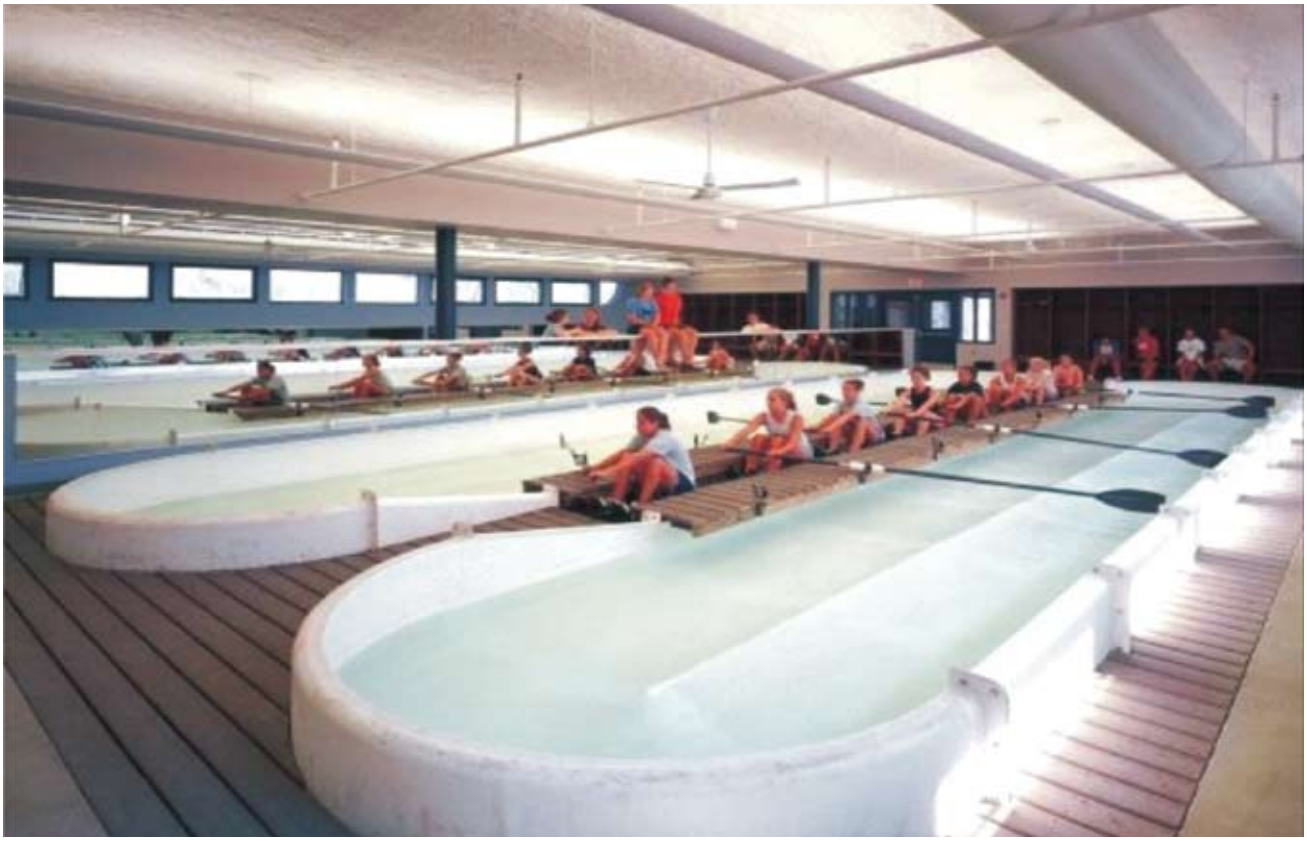
Sports and Games with a view to improving the standard in the Army and complement physical training through recreation in games and sports. These courses are attended by Officers, JCOs and ORs of the Army, Para Military Forces and service personnel from friendly foreign countries. In collaboration with National Institute of Sports, ASPT has started six allied sports in Boxing, Volleyball, Basketball, Swimming and Life Saving, Judo and Yoga Courses for PBORs.

COMBAT ARMY AVIATOR TRAINING SCHOOL, NASIK ROAD

10.63 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

10.64 The College of Military Engineering at Pune is a premier technical institution conducting training for personnel of the



Indoor Training Tank ARN CME Pune

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

10.65 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.

10.66 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.

10.67 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

10.68 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.

MILITARY COLLEGE OF TELECOMMUNICATION ENGINEERING (MCTE), MHOW

10.69 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.

MILITARY INTELLIGENCE TRAINING SCHOOL AND DEPOT, PUNE

10.70 The Military Intelligence Training School and Depot (MINTSD) is a premier establishment responsible for imparting training on Intelligence Acquisition, Counter Intelligence and Security aspects to all ranks of the Indian Army, Navy, Air Force, and Para Military Forces and personnel of friendly foreign countries. Civilian officers of the Department of Revenue Intelligence are also trained at this establishment. The School has the capacity to impart training to 90 officers and 130 Junior Commissioned Officers/ Non Commissioned Officers of all the arms at a time. The School trains approximately over 350 Officers and 1100 Junior Commissioned Officers/Non Commissioned Officers every year.

ELECTRONIC AND MECHANICAL ENGINEERING SCHOOL (EME), VADODARA

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

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 neighboring 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

The Contingent of Veteran Ex-servicemen at Republic Day Parade

The Department of Ex-servicemen Welfare formulates various policies and programmes for the welfare and resettlement of Ex-servicemen 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. The 3 offices of Directorate General (Resettlement), Kendriya Sainik Board (KSB), and Ex-servicemen Contributory Health Scheme (ECHS) have been notified as Attached offices of Department of Ex-servicemen Welfare w.e.f. February 28, 2009. The resettlement and welfare activities of the Department of Ex-servicemen are carried out through these three organisations. While the KSB, headed by Raksha Mantri as ex-officio President of the Board, lays down general polices for the welfare of ESM and their dependents and also for administration of welfare funds, the office of Directorate General of Resettlement implements various policies/ schemes/ programmes of the Government, 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, which are subordinate offices of the Department of Ex-servicemen Welfare.

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 as well as the State Government.

RESETTLEMENT

11.3 The main thrust of the Department of Ex-servicemen Welfare is on resettlement/ rehabilitation 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

Nearly 60,000 armed forces personnel retire or are released from active service every year.

Annual Conclave of Directorate General Resettlement

a very valuable, disciplined, well- trained and dedicated talent pool for the nation which has to be utilized for nation building. This is sought to be achieved through the following modalities:-

(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) has been entrusted with the responsibility of preparing both ex-servicemen and retiring service personnel for a second career. Since the focus of training is on resettlement of ESM, in civil life, the course modules have been devised to cater for the requirements of the public/ private and the corporate sector.

11.5 **Officers' Training:** The Directorate General (Resettlement) organizes 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 are 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.

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 introduced. 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. Popular vocational courses on Computer Applications including DOEACC 'O' level, Computer Hardware Maintenance, Repair & Maintenance of Electrical and Electronics Appliances and the like are also continuing. The number of PBORs who have completed various courses during the last three years are given in Table 11.1.

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. The number of beneficiaries of these courses in the last three years are given in Table 11.2.

Table 11.1

Scheme	2006-07	2007-08	2008-09
PBOR Training	7379	14503	32398*

* includes PBOR trained in career transition capsule course at all regimental centres.

Table 11.2

Scheme	2006-07	2007-08	2008-09
ESM Training	279	411	1432

11.9 To improve the training, the following new initiatives have been taken:

(a) **Conduct of Security Courses at Regimental Centres:** To meet the aspirations of PBOR, security related courses are being conducted at Regimental Centres.

(b) To enhance employability level, a module on 'Analysis of Financial statements and Financial Performance of companies' has been added to the Independent Directors Course.

(c) Conduct of Career Transition Courses at all Regimental Centers including preparation of CVs has been on for last 10 months, with the primary aim of making the PBOR aware of the challenges in the civil environment. Plans are underway to remodel the Career Transition Capsule into a Career Transition Course of 4 weeks duration, so as to empower the PBOR and improve their employability.

(d) To enhance the scope of employment, award of diploma on completion of dissertation work, after 24 weeks management course, has been initiated, as offered by few of the Institutes.

RE-EMPLOYMENT

11.10 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 dependants of deceased service personnel on compassionate grounds.

51,057 ESM have gained employment as against the target of 47,300 during 2008.

11.11 **Reservation in Government Jobs:** The Central Government has kept the following reservation in services for ESM:-

(a) 10% in Group 'C' posts, 20% in Group 'D' posts

(b) 14.5% reservation 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) In Defence Security Corps, 100% vacancies are reserved for ESM.

11.12 **Placement through DGR:** Persistent efforts made by Directorate General (Resettlement) 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. 51,057 ESM have gained employment as against the target of 47,300 during 2008. The details of some of the major placements done are as under: -

During 2008, 1491 officers have been sponsored for various employment opportunities.

(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.

(b) **Security of Currency Chests:** Fresh forays have been made into the banking sector also. The Reserve Bank of India has issued instructions to banks that they may avail services of DGR sponsored ESM Security Agencies/ companies/ corporations only for guarding arrangement of currency chests.

(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.

(d) **Officer's Employment:** During 2008, 1491 officers have been sponsored for various employment opportunities.

SCHEMES FOR SELF-EMPLOYMENT

11.13 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.

11.14 **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 details of registration and allotment of Army Surplus vehicles are given in Table 11.3.

Table 11.3

Year	Total Number of Applications Registered with DGR	Number of Allotment of Vehicles by MGO Branch
2006	695	1893 *
2007	1082	933
2008	2642	1653

* Allotment on carried forward registration.

11.15 **Coal Transportation Scheme:** This is a popular scheme in vogue since the last 28 years. The ESM Coal Companies have performed to the total satisfaction of the Coal Subsidiaries and have established themselves as the main work force of Coal India Limited (CIL). 10 ESM Coal Companies were sponsored in 2008 benefiting 213 ESM.

11.16 **Coal Tipper Scheme:** This welfare scheme for widows/ disabled soldiers is linked with the Coal Transportation Scheme. Existing tipper attachment procedure has been streamlined, resulting in optimum utilization of ESM Companies' resources, which has translated into accommodating more number of widows and achieving higher satisfaction level.

11.17 **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 war-time/ peace-time widows and disabled soldiers. Eligible applicants are sponsored by DGR for the purpose. In 2008, 168 Eligibility Certificates were issued.

Mother Dairy Milk Booths and Fruit & Vegetable (Safal) shops

11.18 This is a time tested well paying self-employment scheme for ESM PBOR. In consultation with the Mother Dairy, the scheme is now being extended not only to the other cities of NCR viz Gurgaon, Noida and Greater Noida, but to other states too. Jaipur has been included in the scheme in March 2009.

11.19 Remuneration earlier received by aspirants running Mother Diary , Safal (Fruit & Vegetable) has been now enhanced to a lucrative amount of Rs 10,000/- per month (for first six months only) or 9 % of sales proceeds which ever is higher. The details of ESM sponsored and qualified for selection during the year 2008 are given in Table 11.4.

11.20 **Management of CNG Station by ESM (Officers) in NCR:** During the year

Table 11.4

Mother Dairy Milk Booths		Mother Dairy Fruit & Veg Shops	
ESM Sponsored	ESM Selected	ESM/ Dependents Sponsored	ESM/ Dependents Selected
407	227	187	80

2008, names of 13 ESM (Officers) were forwarded, of whom seven ESM (officers) have been selected. 16 more names have been sponsored in response to their request in March 2009.

11.21 **Herbal Farming:** ESM are being educated, motivated and encouraged to opt for herbal farming wherever it is more remunerative. "Safed Musli" used in several pharmaceutical formulations, "Stevia" which is an alternative for cane sugar useful for diabetic patients and Jatropha and Pongamia which are bio-diesel crops, have been taken up as a pilot project by the ESM.

PUBLICITY

11.22 Wide publicity of policies and various schemes sponsored by the Government 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 through the DGR by means of publications of periodical magazine 'Sainik Punarvas News Fliers', Brochures, Leaflets, articles in 'Sainik Samachar' and 'Baatcheet' exhibitions/ seminars and ex-servicemen rallies.

11.23 The Department of Ex-servicemen Welfare had put up a stall at the 'AERO INDIA - 2009' at Yelahanka AF Station, Bangalore from February 11 to 15, 2009 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.

WELFARE

11.24 **Kendriya Sainik Board (KSB):** The Kendriya Sainik Board under the Chairmanship of Raksha Mantri, 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". Financial assistance is provided to institutions such as paraplegic homes, Red Cross Society, 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.

ARMED FORCES FLAG DAY FUND

11.25 **Armed Forces Flag Day Fund:** Kendriya Sainik Board administratively controls the Welfare Fund for the welfare

Chief Minister of Delhi receiving the Trophy from Raksha Mantri for highest collection among States towards Flag Day Fund at the 28th Meeting of Kendriya Sainik Board

and rehabilitation of Ex-Servicemen, war widows/ disabled and their dependents. The management and administration of the Armed Forces Flag Day Fund rests with the Managing Committee with Raksha Mantri as its Chairman. The Fund has a corpus of Rs. 154.5 crores as on March 31, 2009.

11.26 **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 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, Assistance to orphan daughters, medical treatment and one time Penury Grant subject to maximum of Rs. 48,000/-. An amount of around Rs. 6 crore has been disbursed among 3,336 beneficiaries during the financial year 2008-09.

11.27 **Prime Minister's Scholarship Scheme:** 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)

An amount of Rs. 10.55 Cr has been disbursed to 3573 fresh Scholarships and 2907 renewal cases during the 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 and provide coverage for all diseases. 227 Polyclinics across the country have been operationalised. Out of 227 Polyclinics, construction is completed at 84 locations and is in progress at 21 locations. The total number of beneficiaries under the scheme is 29.83 lakh including 09.39 lakh ex-servicemen and 20.44 lakh dependents. 1234 hospitals/ diagnostic centres have been empanelled all over the country at 165 stations in addition to Military/ Government hospitals/medical colleges for referral facilities. The war disabled personnel have been exempted from payment of one time contribution for ECHS membership.

PENSION TO ARMED FORCES PERSONNEL

11.29 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).

11.30 The annual expenditure on Defence pension is given in Table 11.5.

Table 11.5

	Year	**(Rs. Crore)**
(i)	R.E. 2008-09	20,233.20
(ii)	B.E. 2009-10	21,790.00

11.31 Category-wise assessed number of Defence Pensioners as on 1.4.2008 is given in table 11.6.

11.32 Defence Pension Disbursement Agencies and number of Pensioners are given in table 11.7.

11.33 Consequent to the implementation of Government decision on the recommendations of the Sixth Central Pay Commission, necessary orders to revise the pension of Pre 2006 Armed Forces Pensioners/ Family Pensioners have been issued.

11.34 **Qualifying Service for Pension:**

(a) **For Commissioned Officers:** The minimum qualifying service required for earning retiring pension will be 20

Table 11.6

Category	**Service Pension**	**Family Pension**	**Total**
C.O.	37,710	13,249	50,959
P.B.O.R	12,21,684	4,29,240	16,50,924
Def. Civilians	3,82,595	1,34,426	5,17,021
Total	16,41,989	5,76,915	22,18,904

Table 11.7

Agency	No. of Pensioners	Percent
Public/ Private Sector Bank Branches (46000)	13,79,214	62.16
DPDOs - 61	5,86,395	26.44
Treasures - 640	1,55,000	6.99
Indian Embassy Nepal	89,530	4.03
Post Offices - 2	5,478	0.24
PAOs - 5	3,287	0.14
Total	**22,18,904**	**100**

years. In the case of late entrants, the minimum period of Qualifying Service for earning retiring pension will be 15 years.

(b) **For Personnel Below Officer Rank(PBOR):** The minimum qualifying service for earning service pension will be 15 years and 20 years in the case of Non-Combatants.

(c) Serving JCOs/ORs of Army and corresponding ranks of the Navy and Air Force granted EC/SSC will be eligible for retiring pension after 12 years of qualifying service.

11.35 **Retiring/ Service Pension:**

(a) **For Commissioned Officers:** Linkage of full pension with 33 years of Qualifying

Defence Pension Adalat - Raipur

Service is done away with effect from September 2, 2008. The Retiring pension of Commissioned Officers retiring/ invalided out on or after September 2, 2008 will be calculated at 50% of emoluments last drawn or average of reckonable emoluments drawn during last 10 months, whichever is more beneficial. Grant of retiring pension to the Commissioned Officers retired/ invalided out during January 1, 2006 to September 1, 2008 will continue to be governed by the Rules/ Orders which were in force immediately before coming into effect of the revised orders.

(b) **For Personnel Below Officer Rank(PBOR):** In case of PBOR, linkage of full pension with 33 years of qualifying service is dispensed with from January 1, 2006. Service pension of PBOR will be calculated at 50% of emoluments last drawn or average of reckonable emoluments drawn during last 10 months, whichever is more beneficial.

11.36 **Commutation of Pension:** Armed Forces Personnel shall be entitled to commute for a lump sum payment upto 50% of their pension.

11.37 **Additional Pension and Family Pension to Old Pensioners:** The quantum of pension available to the old pensioners shall be increased as detailed in Table 11.8.

11.38 **Minimum/ Maximum Pension:** If the amount of any monthly pension viz retiring pension/ service pension/ invalid pension/ special pension/ family pension admissible under the provisions works out to less than Rs. 3500/- per month, it shall be stepped up to Rs. 3500/- per month. In case, where service element of disability pension falls short of Rs. 3500/- p.m., the same shall be stepped up to Rs. 3500/- p.m. There will be a maximum ceiling on the amount of service pension/ Invalid pension/ Special pension and ordinary family pension upto 50% and 30% respectively of the highest pay in the Government.

11.39 **Floor Ceiling:** In the case of pensioners in receipt of civil and military pension, the floor ceiling of Rs. 3500/- will not apply to the two pensions taken together and the individual pension will be governed by respective Pension Rules. Accordingly,

Table 11.8

AGE OF PENSIONER	ADDITIONAL QUANTUM OF PENSION
From 80 years to less than 85 years	20% of basic pension/family pension
From 85 years to less than 90 years	30% of basic pension/family pension
From 90 years to less than 95 years	40% of basic pension/family pension
From 95 years to less than 100 years	50% of basic pension/family pension
100 years or more	100% of basic pension/family pension

the floor ceiling of Rs. 3500/- will apply individually to the civil and military pension. In case a pensioner is in receipt of pension as well as family pension the floor ceiling of Rs. 3,500 will apply individually to such pension and family pension.

11.40 **Double Family Pension:** In the case of re-employed pensioners, with effect from July 27, 2001, family pension admissible under the Employees Pension Scheme, 1995 and the Family Pension Scheme, 1971 under the Employees Provident Fund Act, 1952 has been allowed in addition to the family pension admissible from military side.

11.41 **Ex-Gratia Awards in cases of Death of Cadets (Direct):** In the event of death of a cadet due to causes attributable to or aggravated by military training, Ex-gratia award is payable subject to certain conditions at the following rates:

(a) Ex-gratia lump sum of Rs.2.5 lakh

(b) An ex-gratia of Rs.1275/- per month in respect of both married and unmarried personnel, to Next-of-Kin (NOK) in addition to above. The ex-gratia lump sum is admissible in cases of death of cadets occurring on or after August 1, 1997. However, the benefit of revised monthly ex-gratia amount as mentioned at (b) above is admissible to pre-August 1, 1997 cases also with financial benefits with effect from August 1, 1997.

RECENT IMPROVEMENTS

11.42 Unmarried daughters beyond the age of 25 years have been made eligible to family pension at par with widowed/divorced daughters subject to fulfillment of conditions specified in this behalf and these provisions are equally applicable to those settled in Nepal.

11.43 The procedure for grant of family pension to the handicapped child for life has been further streamlined. Now the Disability Certificate will be issued by a Medical Board comprising a Medical Superintendent or a Principal or a Director, or Head of the Institution or his nominee as Chairman and two other members, out of which atleast one shall be Specialist in the particular area of mental or physical disability. The Disability Certificate will be required once if the disability is permanent and in case the disability is temporary, after five years.

11.44 Military Service Pay has been allowed @ Rs.2000/- p.m. to PBOR and @ 6000/- p.m. to Commissioned Officers upto the level of Brigadiers and equivalents. This will be taken into account for the purpose of fixation of pay and pension of those retiring on or after January 1, 2006. Military Service Pay will also be taken into account in respect of Pre 1.1.06 retirees for the purpose of Modified Parity.

12

COOPERATION BETWEEN THE ARMED FORCES AND CIVIL AUTHORITIES

Flood Relief Operation by Army

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, essential services and 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

Internal Security

12.2 **Gujjar Agitation – Rajasthan:** Consequent to renewal of the Gujjar Agitation in Rajasthan on May 24, 2008 and requisitioning by the State Government, 33 Army Columns were deployed in the affected areas.

12.3 **Shri Amarnath Shrine Board (SASB) Agitation:** Consequent to renewal of SASB Agitation on August 1, 2008 and requisitioning by the State Government, 34 columns were deployed in the affected areas to keep the strategic lines of communications open and help the Central Police Organisations/police stabilise the situation.

12.4 **Terror Strikes in Mumbai:** Consequent to terror strikes in Mumbai on November 26, 2008, civil administration requisitioned Army Columns. Accordingly, ten Columns, two Bomb Disposal Teams and one Mine Detection Team were deployed from November 26 to 30, 2008.

Disaster Relief

12.5 **Myanmar:** In the aftermath of the cyclone (NARGIS) in Myanmar on May 2, 2008, disaster relief stores (costing approximately Rupees 5.4 crores) which included tents, tarpaulins, FRPs, MREs, water purifying straw and medicines were despatched in six IL-76 and two AN-32 sorties. Two medical teams were also deployed to tend to the cyclone ravaged and to provide relief and succour to about 15,000 persons.

12.6 **China:** In the aftermath of the earthquake in China on May 12, 2008, disaster relief stores (costing approximately Rupees 6.2 crores) which included tents, blankets, sleeping bags, MREs, water purifying straw and medicines were despatched in nine IL- 76 sorties.

12.7 **Pakistan:** In the aftermath of floods in NWFP, 6,000 blankets, 10,000 mosquito nets and a medical BRICK were despatched to Pakistan on September 5, 2008.

12.8 **Sri Lanka:** Following developments in Sri Lanka, an Indian Field Medical Unit (comprising 7 Officers, 2 MNS, 6 Junior Commissioned Officers and 37 Other Ranks) was despatched to Sri Lanka to cater to the urgent medical requirements of civilians and Internally Displaced Persons being evacuated out of the conflict zone. The above was augmented with a surgical team of ten members, medical equipment and additional medicines in March 2009.

37 Army columns and Engineer Task Forces were deployed in the flood affected areas of Bihar.

12.9 **Flood Relief:**

(a) Following a breach in Kusaha (near the Indo – Nepal border) and the River Kosi changing its course, approximately 400 villages were critically affected in the State of Bihar. At the request of the civil administration, 37 Army columns and Engineer Task Forces (ETFs) were deployed in the affected areas. Additionally, a Bailey Bridge was set up on National Highway – 106, near Madhepura on October 11, 2008.

(b) Flood relief was also carried out in a number of affected areas of Assam, West Bengal, Uttar Pradesh, Madhya Pradesh, Jharkhand, Punjab, Gujarat and Haryana. A total of 28 columns and ETFs were deployed.

12.10 **Op SADBHAVANA:** The Army undertook a large number of civic action programmes aimed at "Winning the Hearts and Minds" of the people in Jammu & Kashmir and North Eastern States, as part of the strategy for conflict resolution. These programmes focused at fulfilling the needs of the people and to alleviate their problems; developing remote and inaccessible areas so as to assuage the feeling of alienation and moulding public opinion towards peace and

Relief Operations by Army

Training Camp

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 J&K and the North East, such activities are being implemented under Operation SADBHAVNA. Similar activities are also being undertaken as part of Operation GOOD SAMARITAN in the North East.

12.11 **Allocation of Funds:** The details of funds allocated in the financial year 2008-09 for J&K and North Eastern States are as under:

(a) **Operation Sadbhavana:**

(i) Jammu & Kashmir - Rs 48.16 crore

(ii) North Eastern States - Rs 15.00 crore

(b) Operation Samaritan: - Rs 1.0 crore

12.12 The core concept of the Army in this regard has been that human security is the element of national security which can only be ensured through human and infrastructure development.

12.13 **Thrust Areas:** The thrust areas which have been identified are as under:

(a) Human Resource Development.

(b) Infrastructure Development Initiatives.

(c) Health Care.

(d) Efforts in the Social Sector including Empowerment of Women.

(e) National integration tours.

12.14 **PM's Reconstruction Plan for J&K-Micro Hydel Projects:** Under the Prime Minister's Reconstruction Plan for J&K, the Army has undertaken the task of construction of 1000 Micro Hydel Projects (MHPs). Of these, a total of 300 MHPs are under Op SADBHAVANA, 265 MHPs have been financed by Border Area Development Programme (BADP) and 435 MHPs are being funded by the Ministry of Non Conventional Energy Sources (MNES). The details of the projects completed and handed over to civil administration as on February 28, 2009 are given in Table 12.1.

Table 12.1

Regions	Allotted	Completed	Handed Over
Ladakh Region	100	93	93
Kashmir Region	550	550	550
Jammu Region	350	350	350
Total	**1000**	**993**	**993**

7 projects in Ladakh region are currently under construction.

Disaster Management

INDIAN NAVY

12.15 Defence–Civil cooperation is an integral part of the duties of the uniformed personnel and the Indian Navy lays great importance to this aspect. Initiatives of the Indian Navy towards promoting Defence-Civil Cooperation are detailed in the succeeding paragraphs.

12.16 **Evacuation of Police Casualties:** On a request received from the District authorities of Visakhapatnam regarding the attack by CPI(Maoist) group on the elite Greyhounds (police commandos), who were proceeding in a launch from Boddapadu to Chitrakonda near the Orissa-Andhra Pradesh border, a search and recovery effort was undertaken by the Eastern Naval Command from June 29 to July 12, 2008. The operation was carried out for 14 days in coordination with the IAF, police and Civil Administration despite the inhospitable terrain, difficult diving site and adverse weather conditions. All 38 bodies reported missing were recovered and ferried to Vizag. In addition, 15 injured personnel were also ferried to Vizag. IN and civil divers were able to successfully float and recover the sunken boat. A total of 12 small arms, one grenade launcher, one two inch shell, grenades, ammunition with magazines, haversacks, Bullet Proof Jackets and one mobile phone of the police party were also recovered through dedicated diving efforts. Two IN Chetaks, one Seaking 42C and two IAF MI-17 helicopters were employed for the recovery operations.

12.17 **Flood Relief Operations in Bihar:** A total of 217 IN personnel and 66 rubber inflatable Gemini boats from Mumbai, Visakhapatnam and Kochi were deployed in the flood affected areas of Bihar in September 2008. The teams rescued more than 11,141 personnel during round the clock relief operations for over 14 days. Two

Aerial Survey of Bihar Floods by Cabinet Secretary and Defence Secretary

days rations of all naval personnel amounting to 93 MT (approx cost Rs 37.5 lakhs) was distributed to the affected populace through the local administrative officers in Begusarai, Saharsa and Madhepura on September 4 and 5, 2008.

The Naval teams rescued more than 11,141 personnel during round the clock relief operations for over 14 days in Bihar.

Aid to Civil Authorities - Overseas

12.18 **Disaster Relief Operations in Myanmar:** INS Rana and INS Kirpan were immediately deployed from Vizag on Humanitarian Assistance and Disaster Relief mission to Mayanmar after cyclone 'Nargis'. The ships embarked relief and rehabilitation material from Port Blair on May 5, 2008 and set sail for Yangon harbour. Indian ships were the first ships to enter Yangon harbour after the cyclone. In addition to provisions and medical stores, the ships also carried clothing, utensils, portable generators and water tanks. The timely supply of relief material was greatly appreciated by Myanmar government and drew accolades from the international media.

12.19 **Disaster Relief Operations in Bangladesh:** INS Gharial was deployed to Chittagong for transfer of relief material to Bangladesh. The deployment was carried out in four phases during the period December 9, 2007 to January 26, 2008. The ship carried a total of more than 4000 metric tons of rice during the four phases.

12.20 **Diving Assistance:** Apart from the offensive Counter Terrorism Operations, the MARCOS provide rescue and recovery cover under the aegis of 'Op Sadbhavna'. In aid to civil authorities, diving operations were carried out to recover bodies in river Jhelum during Op Khanpura (February 2008) and Op Ningli (August 2008).

12.21 **Casualty Evacuation (CASEVAC):** On the request of the district administration, IN Aircraft at Eastern Naval Command carried out a number of Search and Rescue missions to locate and rescue stranded fishermen and civilians from the sea. IN also provided support to the state administration in its fight against Naxalism by carrying out timely evacuation of injured police personnel on various occasions during the year.

12.22 **Deployment of Flood Relief Teams:** Flood Relief Teams from Western Naval Command were deployed during monsoons from June 2 to end September 2008, at Ghatkopar, Malad, and Colaba at Mumbai to provide assistance to civil administration.

COAST GUARD

Flood relief operations:

12.23 (i) **West Bengal:** Coast Guard District Headquarters No.8 (West Bengal) conducted flood relief operations in East Midnapur and Narghat districts from June 21-22, 2008. The Coast Guard relief team distributed approximately 4-5 Quintals of food material, medicines and plastic sheets in the affected area.

(ii) **Orissa coast:** Due to incessant rain resulting in flooding in Kunjang areas, Coast Guard District HQ No.7 at Orissa received a request from local civil administration for flood relief assistance on September 20, 2008. Food items and medicines were distributed to stranded people by Coast Guard relief team along with civil administration. CG helicopter dropped food packets in affected area.

AIR FORCE

12.24 On numerous occasions the transport fleet of IAF was called upon to undertake missions to provide aid to civil authorities which were accomplished promptly and in exemplary manner. Some of the noteworthy achievements are as under:

(a) **Deployment of Para-military forces:** The transport fleet of IAF was utilized to position approximately 5,700 CRPF and 980 BSF personnel in a very short time.

(b) **Flood Relief in Bihar, Orissa and Uttar Pradesh:** Year 2008 saw the states of Bihar, Orissa and UP ravaged by floods, which destroyed the homes of millions and rendered them homeless. The IAF's transport fleet rose to the occasion. Timely action on the part of the fleet and round the clock deployment was crucial not only in saving lives but also in preventing an escalation of the crisis. A total of twenty two IL-76, forty six AN-32 and nine Avro aircraft were deployed round the clock to provide relief material, medicines, personnel, casualty evacuation etc. In all, the transport fleet helped transport 620 tonnes of relief material and 5600 personnel. The helicopter fleet also performed creditably by flying 641 hrs in 635 sorties.

Flood Relief operations by IAF in Bihar

(c) **Support in fighting terrorism:** One Mi-17 1V helicopter was utilised for deploying NSG commandos during the terrorist attacks in Mumbai on November 26, 2008.

(d) **Air Maintenance:** Regular air maintenance is undertaken by IAF helicopters in far flung and remote areas in Jammu & Kashmir, hills of Uttarakhand and North East region. Regions in far flung areas of the country such as Ladakh, Arunachal Pradesh etc. are sustained round the year by the transport fleet through routine air maintenance which entails supplying of food material, clothing, medical equipment etc. to the civilian population. Air maintenance activities assume special significance in the winter months when snowfall and inclement weather conditions impede normal transportation links to these locations.

(e) **Landslide in J&K:** To overcome the contingencies arising out of outbreak of heavy rains and landslide in Jammu & Kashmir in February 2009, the IAF airlifted 207 MT of essential commodities, medicines and personnel. This was in addition to the 200 MT of routine air maintenance task carried out by IAF for Jammu & Kashmir.

13

NATIONAL CADET CORPS

Raksha Rajya Mantri inspecting the Guard of Honour by NCC Cadets at NCC Republic Day Camp

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 of tomorrow

13.1 The National Cadet Corps (NCC) was established under the NCC Act, 1948. It has completed 60 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 of tomorrow. The motto of NCC is **"Unity and Discipline".**

13.2 The total sanctioned strength of NCC cadets is 13 Lakhs. The wing-wise distribution of the cadet strength is as under: -

(a)	Army Wing	-	822858
(b)	Air Wing	-	56111
(c)	Naval Wing	-	56941
(d)	Girls Wing	-	285719
	Total	**-**	**1221629**

The NCC's presence extends to **606 districts** of the country covering **8454 schools** and **5377 colleges.**

TRAINING OF CADETS

13.3 **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. The 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 enrolled strength of cadets numbering approximately 6.5 lakhs attend at least one camp per year. Approximately 900 such camps are conducted in a training year. The camps are of 12 days duration for senior boys/ girls and 10 days duration for junior boys/ girls.

(b) **National Integration Camps (NIC):** A total of 38 NICs were scheduled in the training year 2008-09 and 24,918 cadets from all States and Union Territories participated in these NICs during the current training year. In addition, Special NICs of 12 days duration have been scheduled/ conducted at the following places:

The camps help in developing camaraderie, team spirit, dignity of labour, self confidence and the most important aspects of Unity and Discipline.

(i) **Special NIC, Leh:** A special NIC was conducted at Leh in July 2008 wherein a total of 200 cadets from all parts of the country participated.

Chief of Air Staff interacting with NCC Cadets

(ii) **Special NIC, Kohima:** The special NIC in the North East was conducted at Kohima in November-December, 2008 with the participation of 600 cadets from all over the country.

(iii) **Special NIC, Port Blair:** Special NIC Port Blair (Andaman & Nicobar Island) was held in February 2009 and 180 cadets from all parts of the country participated.

(iv) **Special NIC, Kakinada:** A Special NIC was conducted at Kakinada during October 2008 wherein a total of 500 cadets from all parts of the country participated.

(v) **Special NIC, Jaisalmer :** A Special NIC was conducted at Jaisalmer in the first half of November, 2008 wherein 300 cadets from all parts of the country participated.

(c) **Vayu Sainik Camp (VSC):** Every year an All India Vayu Sainik Camp for Air Wing senior cadets is organised for a period of 12 days. This year the camp was conducted at Jakkur Airfield (Bangalore) from October 13 to 24, 2008, with strength of 420 boy and 180 girl cadets.

(d) **Nau Sainik Camp (NSC):** This camp is also organised once a year for 12 days for senior cadets. The camp was conducted at Visakhapatnam from

Chief of Naval Staff inspecting the Guard of Honour by NCC Cadets

September 4 to 15, 2008. 400 boy and 160 girl cadets from 16 State Directorates participated in this camp.

(e) **Thal Sainik Camps (TSC):** Two concurrent TSCs are conducted at NCC Parade Ground Camp, Delhi every year. This year the camps were conducted from September 22 to October 3, 2008. 640 boy and 640 girl cadets took part in these camps.

(f) **Leadership Camps:** These camps are conducted on an All India basis. They include four Advance Leadership Camps (ALC), and three Basic Leadership Camps (BLCs). These camps impart training to 3220 boy and girl cadets.

(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 a spirit of adventure. Four of these camps are held at Gwalior in Madhya Pradesh and four camps at Neyyar Dam near Thiruvananthapuram in Kerala. 1080 boy and girl cadets attended these camps.

(h) **Republic Day Camp-2009:** Republic Day Camp-2009 was inaugurated by the Vice President of India and visited by Raksha Mantri, Raksha Rajya Mantri, Chief Minister of Delhi, three Service Chiefs and other dignitaries. During the Camp, a horse show and two cultural programmes were held. 10 officers and 66 cadets from friendly foreign countries visited the camp as part of the Youth Exchange Programme (YEP).The Republic Day Camp – 2009 was successfully concluded on January 29, 2009.

13.4 **Attachment Training:** The NCC cadets derive first hand experience of immense value by attachment to the Armed Forces units. During the year, attachments scheduled were as under: -

440 officers and 20,000 cadets were attached to the regular army units, including women officers and 560 senior girl cadets.

(a) 440 officers and 20,000 cadets were attached to the regular army units, including women officers and 560 senior girl cadets.

(b) 120 Senior Division boy cadets were attached to the Indian Military Academy, Dehradun while 48 Senior Wing girl cadets were attached with Officers Training Academy, Chennai. Both attachments were for duration of two weeks.

(c) 1000 girl cadets were deputed for attachment with various Military Hospitals.

(d) 38 Senior Division boy and 12 Senior Wing girl cadets of Air Wing were attached to the Air Force Academy, Dundigal for 13 days in two batches.

(e) 200 Senior Division boy cadets and 15 Associate NCC officers (ANOs) were attached to various Air Force flying stations for a duration of 14 days.

(f) **Naval Attachment – INS Mandovi:** Attachment training camp for 25 Naval Wing Senior Division boy cadets was conducted at the Naval Academy, INS Mandovi, Goa for a duration of 12 days during December 2008-January 2009.

NCC Cadets displaying pipe bands during Republic Day Camp

13.5 **Gliding and Microlite Flying:** Microlite/ Gliding facilities are provided at 47 NCC Air Squadrons. The NCC Air Squadrons have carried out 8,210 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. A total of 7,212 hours of microlite flying was undertaken during the past year.

13.6 **Sea Training:** NCC cadets of the Naval Wing, during their sea training and attachment, are imparted intensive training in a variety of Naval subjects. 295 cadets were attached to ships of the Eastern and Western Naval Command and Coast Guard for sea training during the year.

13.7 **Foreign Cruise:** The following foreign cruises were conducted during the year:-

(a) **Naval Cruise:** Nine senior Naval boy cadets sailed to Colombo and Mauritius from September 8 to October 5, 2008 on board Indian Naval Ship.

(b) **Coast Guard Cruise:** Five senior Naval boy cadets sailed to Indonesia and Australia in January 2009 on a cruise organised by the Coast Guard.

13.8 **Adventure Training:**

(a) **Mountaineering Courses:** 300 Boy and girl cadets from all Directorates were nominated to attend various courses at Nehru Institute of Mountaineering, Uttarkashi, Himalayan Mountaineering Institute, Darjeeling and Directorate of Mountaineering and Allied Sports, Manali during the year.

(b) **Mountaineering Expeditions:** Two mountaineering expeditions, one each for the Senior boy cadets and Senior girl cadets were conducted during the year. The boys team undertook an expedition to Bhagirathi Peak (6454 M) in May/ June 2008 and the girls team successfully scaled the Thelu Peak (6000 M) in August/ September 2008. Since 1970, the NCC has conducted 62 mountaineering expeditions, of which 33 were for boys and 29 for girls.

(c) **Cycle and Motor Cycle Expeditions:** These expeditions are organised both at the national and state levels. During the current year, numerous cycle and motorcycle expeditions were organised by various Directorates to give the cadets the spirit of adventure. These expeditions also carried a social message to integrate India and create awareness on various challenges facing the country.

(d) **Trekking Expeditions:** A total of 10 trekking expeditions were conducted during the year 2008-09 with the participation of 1,000 cadets per trek. Another trek to the Valley of Flowers with a strength of 500 senior boy cadets was also conducted.

(e) **Para Sailing:** Para sailing is conducted at each Group level as a part of adventure activity for boy and girl cadets of NCC. During the past year, 13,000 cadets have been exposed to this activity. Five para sailing nodes have been established at Delhi, Kolkata, Bengaluru, Sholapur and Kamptee to train the trainers.

Parasailing

(f) **Para Basic Courses:** Every year 40 boy and 40 girl cadets undergo the para basic course for 24 days at the Army Aviation Training School (AATC), Agra.

(g) **Slithering Demonstration:** 10 senior boy and 10 senior girl cadets practiced for the slithering demonstration planned during PM's Rally in January, 2009.

(h) **Desert Camel Safari:** This adventure activity was conducted from November 22 to December 2, 2008 in the Jaisalmer district of Rajasthan with the participation of 20 NCC cadets. In addition, 2 officers and 10 cadets from Singapore also participated in this event..

(j) **White Water Rafting:** A white water rafting node has been established at Raiwala (Haridwar). The equipment for white water rafting for Punjab and West Bengal nodes has also been procured.

(k) **Hot Air Ballooning:** A hot air ballooning node is being established at Bhopal.

(l) **Sailing Expeditions:** 23 major whaler sailing expeditions were conducted during the year.

YOUTH EXCHANGE PROGRAMME (YEP)

13.9 **Outgoing YEP Visits:** A total number of eight visits were undertaken during the year as part of the YEP. The countries visited were Maldives, Russia, Singapore (three separate visits), Sri Lanka,Vietnam and Kazakistan.

13.10 **Incoming YEP Visits:** Heads of Departments, Officers and cadets from 9 friendly foreign countries participated in the NCC Republic Day Camp in January 2009.

Hot Air Ballooning

Cadets from Bangladesh also participated in the Yatching Regatta at Chilka in February 2009.

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

13.11 NCC has adopted community development activities with the aim of rendering selfless service to the community, protecting the environment and to assist weaker sections of the society in their upliftment. This is achieved through a wide range of 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:-

NCC has adopted community development activities with the aim of rendering selfless service to the community, protecting the environment and to assist weaker sections of the society in their upliftment.

(a) **Tree Plantation:** NCC cadets plant saplings and maintain them in conjunction with the concerned State Departments/ colleges/ schools and villages. This year around 3 lakh saplings were planted by NCC cadets.

(b) **Blood Donation:** Cadets donated blood as voluntary services whenever needed by Hospitals and the Red Cross. This year 18,817 cadets donated blood.

(c) **Old Age Homes:** Old age homes in the country are patronised and regularly visited by NCC cadets to provide a helping hand.

(d) **Adult Education:** NCC cadets visit remote areas, villages and underdeveloped areas to emphasise the need for education and to assist in the conduct of the adult education programmes.

(e) **Community Projects:** Cadets of NCC participate in the rural and urban community projects and other development works like village track improvement, well-cleaning etc.

(f) **Disaster Relief:** NCC has always extended its helping hand during natural and other calamities. Over

14

DEFENCE COOPERATON WITH FOREIGN COUNTRIES

Raksha Mantri with the Minister of Defence and National Security, Maldives, Mr Ameen Faisal, who visited India in February 2009

Defence cooperation encompasses all activities undertaken by the Ministry of Defence including the Armed Forces to avoid hostilities, build and maintain trust and contribute to conflict prevention and resolution

14.1 Defence cooperation has been an important aspect of national security and strategy. It encompasses all activities undertaken by the Ministry of Defence, including the Armed Forces, to avoid hostilities, build and maintain trust and contribute to conflict prevention and resolution.

14.2 India has nourished a long history of defence cooperation with several countries ranging from the Far-West to the Far-East. India actively participated in several UN Peacekeeping missions; more than 7000 Indian troops participated in UN Peacekeeping Missions in Congo, Sudan, Ivory Coast, Lebanon, Israel and Timor Leste. As a prominent regional player, we took special efforts to strengthen defence relations with neighbouring countries.

14.3 Our relationship with our largest neighbour **China** is progressing smoothly. The second Annual Defence Dialogue with China was held on December 15, 2008 in New Delhi. The Indian side was led by Defence Secretary, Shri Vijay Singh and the Chinese side was led by Lt Gen Ma Xiaotian, Deputy Chief of General Staff, PLA. The second Joint Army Training Exercise 'Hand in Hand' on the theme of 'Counter-Terrorism' was held from December 4-13, 2008 at Belgaum, India. The PLA Naval Chief Admiral Wu Shangli visited India in November, 2008. Our Chief of Air Staff, Air Chief Marshal F. H. Major visited China from November 2-6, 2008.

India actively participated in several UN Peacekeeping missions; more than 7000 Indian troops participated in UN Peacekeeping Missions in Congo, Sudan, Ivory Coast, Lebanon, Israel and Timor Leste.

14.4 We continued to support **Afghanistan** in its efforts to stabilize its political and security situation. Mr. Abdul Rahim Wardak, Minister for National Defence of the Islamic Republic of Afghanistan visited India during April 6-11, 2008. The Defence Minister of Afghanistan met Raksha Mantri and Chief of Air Staff and discussed matters relating to defence cooperation.

14.5 Our defence cooperation with **Bangladesh** is marked by bilateral visits and participation of each others Armed Forces personnel in training courses. The Chief of Army Staff Gen Deepak Kapoor visited Bangladesh in July, 2008.

14.6 Defence cooperation with **Maldives** also continued apace. The Minister of Defence and National Security, Maldives, Mr. Ameen Faisal visited India in September, 2008 and in February, 2009. Chairman COSC and CNS, Admiral Sureesh Mehta visited Maldives from February 22-24, 2009.

14.7 India's bilateral relations with **Mongolia** have been friendly. Chief of the Army Staff, Mongolia visited India to attend Def-expo during February 2008. He met Raksha Rajya Mantri on February 19, 2008 and discussed measures to strengthen Defence Cooperation between the two countries. Exercise Khan Quest on UN peacekeeping operations was held during September, 2008 in Mongolia. The 4th round of Joint Military Exercise 'Nomadic Elephant' was held in India from November 17-30, 2008.

14.8 Defence relations with **Singapore** have been growing steadily. During the year 2008, RRM visited Singapore for the 7th Shangri-La Dialogue held in May-June, 2008. Taking bilateral cooperation to a further level both sides signed a Bilateral Agreement (BA) for Joint Army Training and Exercises in India on August 12, 2008 along with associated Protocols. The 3rd Meeting of the India Singapore Defence Working Group (DWG) was held on July 15, 2008 in New Delhi. Defence Secretary led a delegation to Singapore to attend the 5th India Singapore Defence Policy Dialogue (DPD) on October 7-8, 2008.

14.9 Our relationship with **Malaysia** has been cordial. Raksha Mantri led a high level delegation to Malaysia from January 6-8, 2008 at the invitation of Deputy Prime Minister &

Russian Defence Minister AE Serdyukov with Raksha Mantri
at the 8th IRIGC Meeting

Minister of Defence of Malaysia, Mr. Mohd Najib. Raksha Mantri met Prime Minister of Malaysia Mr. Abdullah Badawi and Foreign Minister Mr. Syed Hamid Albar. Delegation level talks were held on January 7, 2008 wherein various issues pertaining to defence cooperation between the two countries were discussed. A Joint Statement was released during the visit which identifies mechanisms for implementation of cooperation. IAF is satisfactorily conducting training of Royal Malaysian Air Force Personnel (RMAF) in terms of the provisions of the Protocol signed on December 5, 2007.

14.10 Our relations with **Vietnam** have always been warm and cordial. Defence Secretary led a four member delegation to Hanoi for the 4th India Vietnam Security Dialogue during October 9-10, 2008. Both sides discussed the entire spectrum of bilateral defence cooperation viz exchange of visits, increase in number of scholarships for Vietnamese officers to study in India, naval cooperation, training, exercises on search and rescue for humanitarian purposes etc.

14.11 There has been a steady growth in the defence ties with **Japan.** Chief of Naval Staff paid a visit to Japan in August, 2008. Japanese Naval Ships visited India (Mumbai) in August, 2008. The visiting Japanese Foreign Minister, Masahiko Kooumura met Raksha Mantri on August 5, 2008. Navy to Navy Staff Talks have been established with Japan and the inaugural talks were held in New Delhi during November 11-12, 2008. The 5th Military to Military Talks with Japan were held in New Delhi on February 9, 2009.

14.12 India and **Australia** have cordial relations. Both countries are full dialogue partners of ASEAN Regional Forum. The meeting of the India-Australia Joint Working Group on Defence was held on February 14, 2008 at Canberra. The inaugural Air Force to Air Force Staff Talks was held in New Delhi in April, 2008. The Chief of Naval Staff and Chairman COSC visited Australia during November 5-8, 2008.

14.13 India and **Oman** share cordial and friendly relations. The 3rd India-Oman Joint Military Cooperation Committee (JMCC) meeting was held in New Delhi during March 23-24, 2009. The Indian delegation was led by the Defence Secretary while the Under Secretary, Ministry of Defence, Sultanate of Oman led the Omani side.

14.14 India and **Qatar** have had a long history of friendly relations. An Agreement concerning Defence Cooperation has been signed with Qatar on November 9, 2008 during the visit of PM to Qatar. Shri Vijay Singh, Defence Secretary signed on behalf of Ministry of Defence. The Agreement, inter-alia, aims to promote military to military cooperation, cooperation in specific areas agreed upon including areas of product support and services, cooperation in defence science and technology etc.

14.15 India and **UAE** have signed an MoU on Defence Cooperation in 2003. In terms

of this MoU, a Joint Defence Cooperation Committee (JDCC) has been set up. The second Meeting of the JDCC was held in Abu Dhabi on June 2-3, 2008.

14.16 India and **Israel** continue to share cordial defence relations. Mr Amir Kain, Head of DSDE (MALMAB) led a delegation to India during July 21-23, 2008. Mr Yosi Ben Hanan, Director SIBAT paid a visit to India during 22-23 July, 2008. Maj Gen (Res) Ehud Shani, Head of Defence Export and Cooperation Department (SIBAT), Israel visited India and held meetings with senior officers on December 8, 2008. Secretary (Defence Production) led a delegation to Israel in September, 2008. Both the countries have agreed to set up a Sub Group on Defence Procurement, Production and Development to promote cooperation in this area in a more effective manner. This Sub Group is co-chaired on the Indian side by Director General (Acquisition). The second meeting of this Sub Group was held in New Delhi on February 13-14, 2008, while its 3rd meeting was held in Tel Aviv during September 21-23, 2008. Defence Secretary led a delegation to Israel to attend the 7th Meeting of the India-Israel Joint Working Group on November 12, 2008.

14.17 India has traditionally very warm ties with **Egypt**. The 2nd Meeting of the Indo-Egypt Joint Defence Committee was held at Special Secretary Level on June 9, 2008 in New Delhi. The Egyptian side was led by Maj Gen Mohamed Mohsen Saad El Shazly, the Assistant Chief of Operations Authority. Both sides discussed issues of mutual interest and decided the activities in the field of military cooperation for the year 2008-09.

14.18 Our relations with **South Africa** have been steadily improving. A South African delegation led by Mr. T.E. Motumi, Chief of International Affairs, Deputy Director General visited India for participating in the 6th meeting of India-South Africa Joint Defence Committee held in New Delhi on March 13-14, 2008. COAS visited South Africa in November, 2008.

14.19 India's defence relationship with **Russian** Federation has been a long standing one, 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. Meetings of the Indo Russian Working Groups 'Military Technical Cooperation' (MTC WG) and 'Shipbuilding Aviation and Land Systems' (SALSWG) were held in New Delhi on August 18-19, 2008. These working groups were co-chaired by DG (Acq) and Secretary (DP) respectively from Indian side. The 8th protocol of the two working groups was signed at the conclusion of these meetings. The 8th meeting of the India-Russia Inter Governmental Commission on Military Technical Cooperation (IRIGC-MTC) was held in New Delhi on September 29, 2008. The meeting was co-chaired by Raksha Mantri and Mr AE Serdyukov, Defence Minister of Russia. During the meeting,

many issues of mutual interest in the field of defence were discussed. It was also agreed to extend the programme for military technical cooperation beyond 2010 and to establish a High Level Monitoring Committee (HLMC) at the level of Defence Secretary to monitor the implementation of the agreed Military Technical Cooperation activities and to explore new areas of cooperation. A Protocol was signed by the two Defence Ministers on the conclusion of 8th IRIGC-MTC meeting. The newly established HLMC held its first meeting in India on December 2-3, 2008. Defence Secretary led the Indian delegation while Mr. Mikhail Dmitriev, Director, Federal Service on Military and Technical Cooperation (FSMTC) led the Russian delegation. Additional Secretary, Ministry of Defence led a delegation to Russia from November 5-7, 2008 to discuss the draft Inter Governmental Agreement (IGA) on after sales product support. The Russian Defence Minister Mr A E Serdyukov visited India during December 4-5, 2008 as member of the high level delegation led by the Russian President.

14.20 India's defence relations with **Poland** have been cordial. Both sides have set up a Joint Working Group (JWG) on defence cooperation under the provisions of the India-Poland Agreement on Defence Cooperation of 2003. The 4th meeting of the JWG was held in New Delhi in October, 2008. The Polish delegation was headed by Mr. Zenon Kosiniak-Kamyzs, Secretary of State, Ministry of National Defence, Poland and Secretary (DP) co-chaired from the Indian side. Mr Bogdan Klich, Minister of National Defence of the Republic of Poland visited India during November 4-6, 2008. He held meeting with Raksha Mantri on November 4, 2008 wherein various bilateral cooperation issues were discussed.

14.21 Our defence relations with **Bulgaria** have been progressing well. The 13th Session of the Joint Commission on India-Bulgaria Defence Cooperation (JCIBDC) was held in New Delhi on May 8-9, 2008 after a gap of about 8 years. The meeting was co-chaired by Special Secretary, Ministry of Defence, India and Mr. Yavor Kuiumdjiev, Deputy Minister of Economy and Energy, Republic of Bulgaria.

14.22 Defence relations with **Belarus** were sought to be further strengthened with the holding of the first session of the India-Belarus Joint Commission on Military Technical Cooperation in Minsk from May 27-30, 2008. The meeting was co-chaired by Special Secretary, MoD, Government of India and Maj Gen Rogohevski Piotr Ivanovich, First Deputy Chairman of the State Committee for Military Industry of the Republic of Belarus.

14.23 India's relationship with **Hungary** has remained cordial. In terms of the Agreement on Defence Cooperation signed between the two countries, a Joint Committee for implementation of the provisions of the Agreement has been set up. The 2nd India-Hungary Joint Defence Committee meeting was held in New Delhi on May 12-15, 2008. The Indian delegation was led by Secretary (Defence Production).

14.24 A bilateral defence cooperation dialogue between India and **UK** was established with the signing of the 'Terms of Reference for the Defence Consultative Group' in 1995. Since then, the defence relations between India and UK have been growing steadily. There are regular exchange of high level visits, training, and exchange of experts and joint projects for defence production between the two countries. Chief of Air Staff and Chief of Army Staff have visited UK in 2008. Air Chief Marshal Sir Graham Eric Stirrup, Chief of Defence Staff, UK, General Sir Tim Granville Chapman, Vice Chief of Defence Staff, UK and Sir Glen Torpy, Chief of Air Staff, UK visited India in 2008-2009. The 11th India-UK Defence Consultative Group Meeting was held in London, UK from May 18-21, 2008. Shri Vijay Singh, Defence Secretary, co-chaired the meeting from the Indian side and Sir Bill Jeffrey, Permanent Under Secretary of State for Defence co-chaired from the UK side. The 12th India-UK Military Subgroup Meeting (MSG) was held in India from December 17-18, 2008. The Indian delegation was headed by ACIDS (WSOI), HQIDS and the UK delegation was headed by Asst. Chief of Defence Staff, UK. The India-UK Defence Equipment Sub Group (DESG) meeting was held in India from December 1-2, 2008. The Indian delegation was headed by Additional Secretary (DDP) and the UK delegation was headed by Operations Director, UK.

14.25 India and **France** continue to share cordial and mutually beneficial defence relations. Mr Herve Morin, French Defence Minister visited India from January 24-27, 2008. During this visit, an Agreement between the Government of the Republic of India and the Government of the French Republic concerning the Protection of Classified Information and Material in the field of Defence was signed on January 25, 2008 by the French Defence Minister and Raksha Mantri at New Delhi. The French Navy Chief visited India during the 'IONS' held from February 14-19, 2008. The Chief of Naval Staff visited France from July 8-12, 2008. Mr Jean Marie Bockel, Secretary of State for Defence and Veterans, France called on Raksha Mantri on February 11, 2009 during AERO INDIA-2009. The 11th Meeting of India-France High-Committee on Defence Cooperation (HCDC) was held in Paris, France, from November 24-26, 2008. Shri Vijay Singh, Defence Secretary, was the co-chair from the Indian side and Mr. Jean-Marie Bockel, Secretary of State for Defence and Veterans was the co-chair from the French side.

14.26 Our defence relationship with **Germany** has been steadily growing. The highlight of defence cooperation with Germany was partnering Germany in the Berlin Air Show in May, 2008. Raksha Mantri visited Germany to inaugurate the Berlin Air Show along with German Chancellor Dr. Angela Merkel. During his visit, Raksha Mantri had a meeting with the German Defence Minister Mr. Franz Josef Jung. Lt Gen Hans Otto Budde,

Chief of German Army visited India from May 19-24, 2008. Mr Christian Schmidt, Parliamentary Secretary of the German Federal Ministry of Defence called on Raksha Mantri on February 11, 2009 during AERO INDIA-2009. The 3rd India-Germany High Committee on Defence Cooperation Meeting was held in New Delhi on March 9-10, 2009. Shri Vijay Singh, 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. The 3rd India-Germany Defence Strategic Sub-Group Meeting chaired by Joint Secretary (PIC) was held in New Delhi on January 21-22, 2009. The 4th India-Germany Defence Technical Sub-Group Meeting chaired by Joint Secretary & Acquisition Manager (Air) was held in New Delhi on January 22-23, 2009. The 3rd India-Germany Military Sub-Group Meeting was held in New Delhi on January 21-22, 2009.

14.27 Defence relations with **Italy** have been warm and cordial. An Indian delegation under the Chairmanship of Shri Vijay Singh, Defence Secretary visited Italy on March 17-18, 2008 for participation in the 7th India-Italy Joint Defence Committee Meeting. During the visit, Defence Secretary met the Deputy Defence Minister and CDS of Italy. Chief of Air Staff visited Italy from January 16-19, 2008. Lt Gen Fabrizio Castagentti, Chief of Italian Army Staff visited India from November 17-21, 2008. Gen Aldo Cinelli, Defence Secretary, Italy called on Defence Secretary on February 12, 2009 during AERO INDIA-2009. An Indian delegation under the Chairmanship of JS(PIC), visited Italy on March 13-14, 2008 for participation in the 4th India-Italy Joint Working Group meeting. The 5th India-Italy Military Cooperation Group (MCG) meeting was held in New Delhi on February 25-26, 2009.

14.28 The Defence Committee of the Parliament of **Finland** led by Mr Juha Korkeaoja, Chairman of the Committee, Finish Centre Party, visited India from February 22 to March 1, 2009. During this visit, a meeting was held with the Indian Parliamentary Committee on Defence on February 23, 2009.

14.29 Mr. Barth Espen Eide, **Norwegian** Secretary of State for Defence (Deputy Minister of Defence) visited India from May 5-8, 2008. During his visit he met Raksha Mantri on May 6, 2008.

14.30 Dr. Ewa Bjorling, Minister of Trade, **Sweden** visited India from March 28 to April 1, 2008. During the visit she met Raksha Mantri on March 31, 2008.

14.31 India's defence relations with **US** are an important element of the broader partnership between the two countries. There is increased bilateral defence cooperation as evidenced by regular conduct of military cooperation activities, frequent expert exchanges, high level visits and growing cooperation in defence research, procurement and production. US Secretary

of Defence, Dr Robert Gates visited India from February 26-27, 2008. During his visit, Secretary Gates met the Prime Minister, External Affairs Minister, Raksha Mantri and National Security Adviser. A delegation led by Raksha Mantri visited United States of America from September 7-10, 2008. Issues relating to India-US defence cooperation activities and regional security were discussed. General George W Casey, Chief of Staff, US Army visited India during October 16-18, 2008. Admiral Michael Mullen, Chairman Joint Chief of Staff Committee, USA visited India and called on Raksha Mantri on December 4, 2008. The 9th India-USA Defence Policy Group (DPG) meeting was held in Washington, USA from January 16-17, 2008. The Indian delegation was headed by Shri Vijay Singh, Defence Secretary and the US delegation was headed by Mr. Eric S Edelman, Under Secretary of Defence for Policy. The 6th Meeting of India-USA Defence Procurement and Production Group (DPPG) was held on August 7-8, 2008. The meeting was co-chaired by DG (Acquisition) from the Indian side and by Vice Admiral Jeffrey Wieringa, Director, and DSCA, USA from US side. The 9th India-US Military Cooperation Group (MCG) meeting was held in New Delhi from December 17-18, 2008.

14.32 Mr. Peter Gordon Mackay, Minister Of The Atlantic **Canada** Opportunities Agency (ACOA) And Minister Of National Defence,

The inaugural ceremony of Indo-China Joint Exercise 'Hand-in-Hand' 2008

Government of Canada visited India and met Raksha Mantri on February 19, 2008.

14.33 A memorandum of understanding in Defence Cooperation with Colombia was signed in **Colombia** on February 4, 2009.

14.34 India has widened and added depth to its defence cooperation activities with friendly foreign countries with the objective of contributing to global peace and harmony.

the years, NCC cadets have rendered outstanding service during floods, earthquakes, cyclones, train accidents and provided the healing touch.

(g) **Anti Leprosy Drive:** NCC cadets have launched anti-leprosy drive throughout the country and are helping various voluntary organisations.

(h) **AIDS Awareness Programme:** NCC participates actively in carrying out AIDS awareness programmes throughout the country. Lectures and interactive sessions on HIV/ AIDS are also being conducted during various camps.

(j) **Cancer Awareness Programme:** NCC cadets actively participate in Cancer Awareness Programmes (CAPs) organised at various cities. Cancer Care India (CACI), an NGO and NCC have joined hands to launch CAPs throughout the country. So far 25 such CAPs have been conducted.

(k) **UNICEF, HRD & NCC Literacy Programme:** A Memorandum of Understanding (MoU) was signed between NCC and UNICEF to educate girls from semi-urban and rural areas. This programme covered Madhya Pradesh, Rajasthan, Chattisgarh and Jharkhand and terminated on December 31, 2008.

SPORTS AND SHOOTING

13.12 **Jawahar Lal Nehru Hockey Cup Tournament:** Four NCC teams, one team each in sub junior boys' and junior girls' categories and two teams in junior boys' category participated in the prestigious Jawaharlal Nehru Hockey Tournament in 2008.

13.13 **Subroto Cup Football Tournament:** NCC fields two teams, every year in the prestigious Subroto Cup Football Tournament, in the junior category. NCC teams have been performing consistently well in the event and this year both the teams reached the quarter finals of the tournament.

13.14 **All India GV Mavlankar Shooting Championship:** Firing being one of the core training activities of NCC, shooting discipline enjoys special place in NCC sporting activities. NCC teams participate in the All India GV Mavlankar Shooting Competition and the prestigious National Shooting Championship Competition every year.

13.15 **Shooting Nodes:** To improve the standard of firing, five zonal nodes have been established at Asansol (East Zone), Vadodara (West Zone), Chandigarh (North Zone), Coimbatore (South Zone) and Kamptee (Central Zone) with a view to give maximum exposure to the NCC cadets so that they can compete at various National/ International competitions.

TRAINING OF STAFF

13.16 NCC has two Officers Training Academies (OTAs) one each at Gwalior (for female Instructors) and Kamptee (for male Instructors) for training of Associate

NCC Officers (ANOs) and Permanent Instructors (PI) staff. A series of pre-commission and refresher courses for ANOs and orientation courses for PI staffs are conducted every year at these two Academies. The facilities of INS Circar, Visakhapatnam and the Seamanship School, Kochi are also utilized for conducting similar courses for Naval Wing ANOs and PI staff while corresponding courses for Air Wing ANOs and PI staff are conducted at the Air Force station, Tuticorin.

The enrolment period of Senior Division/Wing cadets was reduced from existing 3 years to 2 years.

NEW INITIATIVES

13.17 **Restructuring of NCC (Reduction in Enrollment Period):** In order to accommodate more waitlisted schools/ colleges, within the existing cadet strength of 13 lakh, the enrolment period of Senior Division/Wing cadets was reduced from existing 3 years to 2 years from the training year 2008.This has led to substantial expansion of NCC coverage without increase in cadet strength.

15

CEREMONIAL AND OTHER ACTIVITIES

Fly Past by Indian Air Force Aircraft during Republic Day Celebrations, 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 was established in 1965 to undertake research on policy issues, primarily in areas related to defence, foreign policy and security. The research agenda of the IDSA has expanded to encompass a wide range of topics such as Terrorism and Counter Terrorism, Non Proliferation and Arms Control, Transformation of Warfare and Internal Security Challenges.

The Institute for Defence Studies and Analyses undertakes research on policy issues, primarily in areas related to defence, foreign policy and security.

15.4 Over the years, the Institute has grown in stature. According to the latest survey of the Think Tanks and Civil Societies Programme (TTCSP) of the University of Pennsylvania, IDSA has been ranked at the third position among the top 25 Think Tanks in Asia. Based on the recommendations of the University Inspection Commission, IDSA has also been recognised by the University of Madras as a Centre for conducting research leading to a Ph.D. degree in the faculty of Defence Studies.

15.5 The vigorous research work at IDSA has resulted in many publications. The Institute brings out four journals namely; 'Strategic Analysis' (Bi-monthly), 'Strategic Digest' (Monthly), 'Journal of Defence Studies' (Quarterly) and 'CBW Magazine' (a quarterly magazine on Chemical and Biological Weapons) and four News Digests, namely; 'POK News Digest' (monthly), 'Chemical

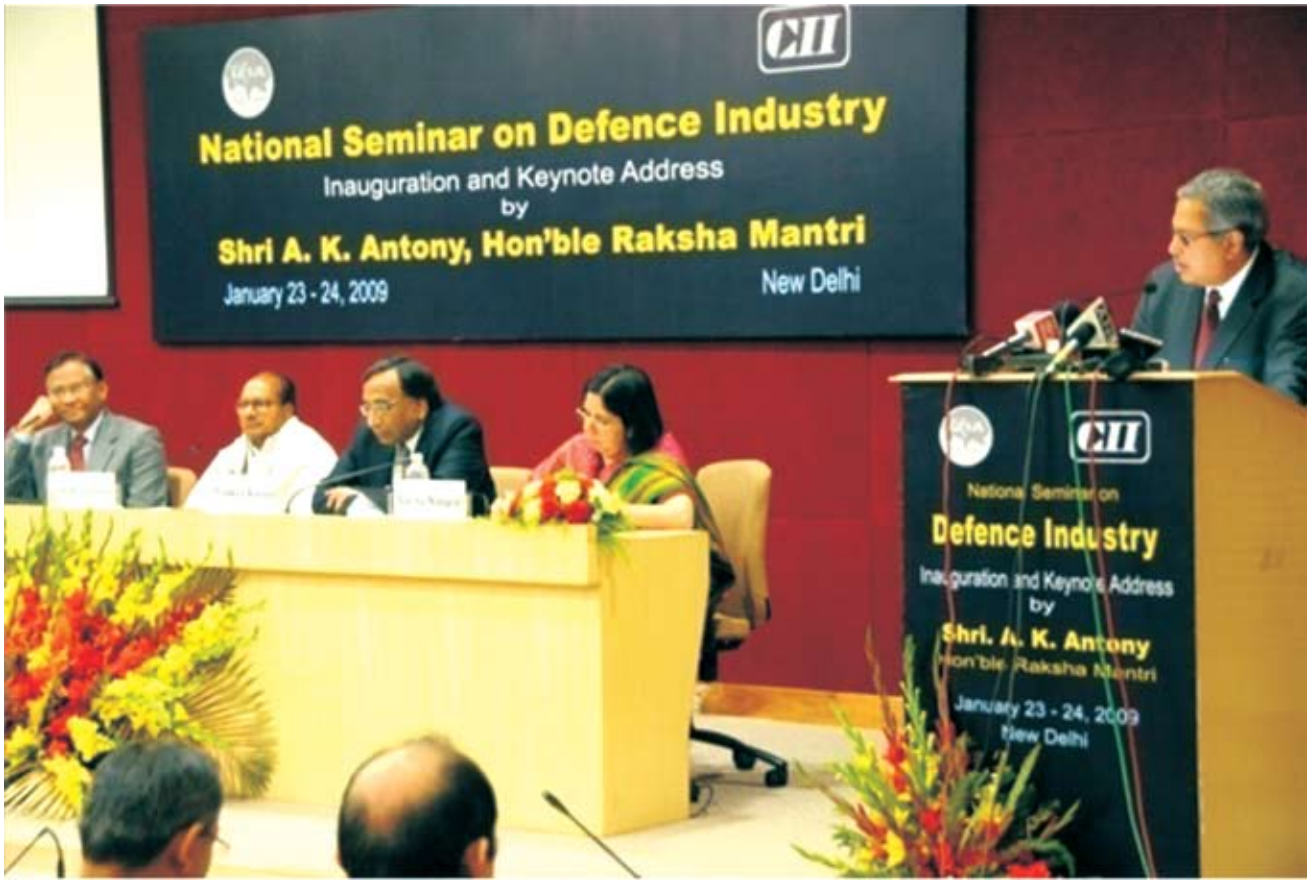
and Biological News Digest' (Monthly), 'The Week in Review' (weekly) and 'Current Journal Contents' (Monthly). During this period, the Institute also published fourteen books.

15.6 A number of seminars, round tables, lectures and dialogues with other think tanks on issues of national and international importance were held by IDSA throughout the year. The 11th Asian Security Conference on '*The Changing Face of Conflict and Evolving Strategies in Asia'* was held on February 3-4, 2009. Under the Bilateral Dialogues series, a discussion on "Regional Security Dynamics: Indian and Iranian Perspectives" was held with the Institute for Political and International Studies (IPIS). IDSA also hosted the Tenth Bilateral Dialogue with the Japan Institute of International Affairs (JIIA) in December, 2008.

15.7 Workshops organized during the year included; (i) Security Implications of Climate Change for India (ii) Communist Party of Nepal (Maoist)-Rise to Power in Nepal: Implications for India (iii) Outlook for the India-Brazil-South Africa (IBSA) Dialogue Forum; (iv) Resurgence of Russia and (v) Current Developments in J&K. A National Seminar was held on the subject of Defence Offsets which was inaugurated by the Raksha Mantri.

15.8 Other important initiatives of IDSA during this period included the conduct of the Second Annual International Conference

11th Asian Security Conference, 3-4 February 2009



National Seminar on Defence Industry January 23—24,2009

on "Changing Political Context in India's Neighbourhood : Prospects of Security and Regional Co-operation", organisation of a Strategic Affairs Workshop with the Development Concepts and Doctrine Centre of MoD, UK and holding of National Seminars on 'Defence Budget'; 'Defence Industry and Military' and 'Nation-Building-Experiences of Pakistan and Bangladesh', in partnership with the Academy of Third World Studies, Jamia Millia Islamia.

MOUNTAINEERING INSTITUTES

15.9 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 the General Bodies, nominees from amongst donors and/ or persons who are likely to promote the cause

of the Institute and representatives of Central and State Governments.

15.10 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. This 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.

15.11 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.

15.12 The Institutes conduct Basic and Advanced Mountaineering Courses, Method of Instruction Course (MOI), Search & Rescue Course (S&R) and Adventure Courses. The syllabi, duration, age limit of participants and grading system for various types of courses are almost uniform at all the Institutes.

15.13 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 students. Foreigners are also permitted to join these courses.

15.14 The courses conducted by these Institutes from April 2008 to January 2009 are detailed in Table 15.1.

15.15 The number of students trained in these courses are given in Table 15.2.

Table 15.1

Institute	Basic	Advanced	Adventure	MOI	S&R
NIM	10	06	10	02	02
JIM	Nil	Nil	22	Nil	Nil
HMI	05	03	02	–	–

Table 15.2

Institute	Basic	Advanced	Adventure	MOI	S&R
NIM, JIM and HMI	1124	316	2320	46	68

15.16 HMI also conducted six special courses comprising Advanced, Adventure and Rock Climbing Courses, in which 255 men and women were trained during the period.

15.17 NIM also conducted 42 special courses for various organizations from April 2007 to 31 December 2008 in which 852 men and women were trained.

15.18 A special adhoc Adventure Course was conducted for girls (total 677) of Primary Section at Jajjar, Kotly for a period of 7 days.

CEREMONIALS, HONOURS AND AWARDS

15.19 Ministry of Defence organises national functions like the Republic Day Parade, Beating Retreat Ceremony, Martyr's

Day and Independence Day. 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 2008-2009 are detailed in the following paragraphs.

Ministry of Defence organises national functions like the Republic Day Parade, Beating Retreat Ceremony, Martyr's Day and Independence Day.

15.20 **Investiture Ceremony, 2008:** The Defence Investiture Ceremony, 2008 was held at Rashtrapati Bhawan on May 7 and 14, 2008. The President awarded the following Gallantry and Distinguished Service Awards, announced on the Independence Day 2007 and Republic Day-2008 to the awardees and next-of-kins on the occasion which are detailed in Table 15.3 and Table 15.4.

Table 15.3

Gallantry Awards		
Kirti Chakra	10	(6 posthumous)
Shaurya Chakra	42	(16 posthumous)

Table 15.4

Distinguished Service Awards	
Param Vishisht Seva Medal	30
Bar to Ati Vishisht Seva Medal	3
Ati Vishisht Seva Medal	52

15.21 Other awards like Vishisht Seva Medal, Sena Medal, Nao Sena Medal, Vayu Sena Medal and Bar to these Medals were presented by the respective Chiefs of Staff and Senior Commanders at separate Investiture Ceremonies.

15.22 **Independence Day Ceremony, 2008:** 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 a wreath at the Amar Jawan Jyoti at India Gate paying homage to those who sacrificed their lives for the freedom of the motherland.

15.23 Gallantry awards announced on the Independence Day 2008 are detailed in Table 15.5.

Table 15.5

Award	Total	Posthumous
Ashok Chakra	2	2
Kirti Chakra	9	6
Shaurya Chakra	18	7
Bar to Sena Medal (G)	1	-
Sena Medal (G)	87	10
Nao Sena Medal (G)	6	2
Vayu Sena Medal (G)	1	-

15.24 **Vijay Divas:** Vijay Diwas was celebrated on December 16, 2008. On this occasion, the Raksha Mantri laid a wreath at the Amar Jawan Jyoti at India Gate.

15.25 **Amar Jawan Jyoti Ceremony, 2009:** The Raksha Mantri laid a wreath at the Amar Jawan Jyoti of India Gate in the morning of January 26, 2009. Two minutes silence was observed for paying homage to those who laid down their lives in safeguarding the integrity of our nation.

15.26 **Republic Day Celebrations, 2009:** 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 salutes. The President of Kazakhstan His Excellency, Mr. Nurulsultan Nazarbayev was the Chief Guest on the occasion. In an Investiture Ceremony, the President of India presented eleven Ashok Chakra awards (two awards announced on August 15, 2008 and nine awards announced on January 26, 2009) posthumously to the next-of-kins of the awardees who made the supreme sacrifice in the service of the nation.

The President of India with next-of-kin of a Gallantry Awardee at the Investiture Ceremony

15.27 Out of the 20 children conferred with the National Bravery Awards, one was posthumous. Nineteen National Bravery Award winning children seated in decorated Army Jeeps participated in the Parade. Tableaux of States/UTs, Central Ministries & Departments and cultural items by school children were the other attractions of the parade. The tableaux and children items reflected the cultural diversity of the nation. The parade concluded with a motorcycle display by the Jawans of the Army (Signals) followed by a Fly Past by Indian Air Force Aircraft.

15.28 The gallantry and distinguished service awards announced on the Republic Day are detailed in Table 15.6.

15.29 **Martyrs' Day Ceremony, 2009:** On January 30, 2009, the President laid wreath at Mahatma Gandhi's Samadhi at Rajghat. The Vice President, the Raksha Mantri, Raksha Utpadan Rajya Mantri, Raksha Rajya Mantri and other dignitaries also paid floral tributes. This was followed by observance of two minutes' silence at 1100 hours to pay

Raksha Mantri with three Service Chiefs paying tribute to martyrs at Amar Jawan Jyoti

homage to those who sacrificed their lives in India's struggle for freedom.

15.30 **Defence Investiture Ceremony, 2009:** The Defence Investiture Ceremony, 2009 was held at Rashtrapati Bhawan on March 19 and 25, 2009. The President awarded Gallantry and Distinguished Service Awards, announced on the Independence Day 2008 and Republic Day-2009 to the awardees and next-of-kins on the occasion which are detailed in Table 15.7 and Table 15.8.

15.31 Other awards like Vishisht Seva Medal, Sena Medal, Nao Sena Medal, Vayu Sena Medal and Bar to these Medals were presented by the respective Chiefs of Staff and Senior Commanders at separate Investiture Ceremonies.

It is the responsibility of the Official Language Division of Ministry of Defence to implement the Official Language Policy of the Government in the Ministry of Defence, its subordinate Offices, defence undertakings, etc.

OFFICIAL LANGUAGE DIVISION

15.32 It is the responsibility of the Official Language Division of Ministry of Defence to implement the Official Language Policy of the Government in the Ministry of Defence, its subordinate offices, defence undertakings, etc.

15.33 During the period under report, efforts

Table 15.6

Award	Total	Posthumous
Ashok Chakra	9	9
Kirti Chakra	13	6
Bar to Shaurya Chakra	1	1
Shaurya Chakra	30	8
Bar to Sena Medal/Nao Sena Medal/Vayu Sena Medal (Gallantry)	2	-
Sena Medal/Nao Sena Medal/ Vayu Sena Medal (Gallantry)	99	14
Param Vishisht Seva Medal	29	-
Bar to Ati Vishisht Seva Medal	1	-
Ati Vishisht Seva Medal	50	-
Uttam Yudh Seva Medal	2	-
Yudh Seva Medal	5	-
Bar to Vishisht Seva Medal	2	-
Vishisht Seva Medal	122	-
Bar to Sena Medal (Devotion to duty)	1	-
Sena Medal/ Nao Sena Medal/ Vayu Sena Medal(Devotion to duty)	62	-

Table 15.7

Gallantry Awards		
Kirti Chakra	22	(12 posthumous)
Shaurya Chakra	01	(posthumous)
Shaurya Chakra	48	(15 posthumous)

Table 15.8

Distinguished Service Awards	
Param Vishisht Seva Medal	29
Uttam Yudh Seva Medal	02
Bar to Ati Vishisht Seva Medal	01
Ati Vishisht Seva Medal	50

were continued to achieve the targets laid down in the Annual Programme formulated by the Department of Official Language, Ministry of Home Affairs. The main thrust was on the achievement of targets regarding Hindi correspondence, compliance of the provisions of the section 3(3) of the Official Language Act as also of rule 5 of Official Language Rules, implementation of various incentive schemes to do more official work in Hindi, training of Hindi, Hindi stenography and Hindi typing to the officers/

staff of Ministry of Defence. The progress in this regard was reviewed in the quarterly meetings on regular basis.

15.34 **Translation Work:** The Division remained engaged in translation work throughout the year. The material for translation from Hindi to English and vice-versa included general orders, notifications, resolutions, Agreements, Cabinet notes, Annual Report, administrative and other reports, Parliament Questions etc.

15.35 **Hindi Training:** During the period, officers/ employees of the Ministry were nominated for training in Hindi, Hindi Stenography and Hindi Typing regularly.

15.36 **Hindi Salahkar Samitis:** There are two Hindi Salahkar Samitis under the chairmanship of Raksha Mantri in the Ministry i.e. one for the Department of Defence Research & Development and Department of Ex-Servicemen Welfare and the other for the Department of Defence production. A meeting of the former Salahkar Samiti was held on May 5, 2008.

15.37 **Schemes for writing Hindi books and in-house Hindi magazines:** The Ministry has been implementing an exclusive scheme for encouraging writing of books originally in Hindi on defence related subjects since 1980. At present, there is a provision of awarding cash prizes (first, second, third and consolation prizes of Rs. 50,000/-, 30,000/-, 20,000/- and 10,000/- respectively) under the scheme. So far, 36 books have been awarded prizes.

15.38 **Hindi Pakhwara:** A 'Hindi Pakhwara' was organised in the Ministry from September 1 to 15, 2008. During the Pakhwara, 11 competitions were organised in which 152 officers and employees participated. Similar Hindi Pakhwaras were organised in the three Service Hqrs, all Inter-Service Organisations, Defence Undertakings and Defence offices, located all over the country.

15.39 **Official Language Inspections:** During the year, the First Sub-Committee of the Committee of Parliament on Official language carried out official language inspections of 32 defence offices located in different parts of the country. With a view to assess the progressive use of Hindi in official work in various defence offices, officers of the Ministry and Hqrs concerned and Department of Official Language (Ministry of Home Affairs) conducted official language inspections of 22 offices. In addition, inspections of eight Hqrs/offices at Delhi and 23 sections in the Ministry were also conducted.

WELFARE OF PERSONS WITH DISABILITIES

All combatant posts are exempted from Sections 33 and 47 of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995.

15.40 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

Table No. 15.9

Annual Statement showing the representation of the persons with disabilities in services in MoD (excluding Department of Defence Production) (As on January 1, 2008)

Group	No. of employees				
	Total	In identified posts	Visually handicapped	Hearing handicapped	Orthopaedically handicapped
Group A	12649	3255	1	1	44
Group B	18082	1770	6	6	97
Group C	139415	6069	122	166	986
Group D	127585	4047	257	276	660
Total	**297731**	**15141**	**386**	**449**	**1787**

Table No. 15.10

Annual Statement showing the representation of the persons with disabilities in services in Subordinate Offices under Department of Defence Production (As on January 1, 2008)

Group	No. of employees				
	Total	In identified posts	Visually handicapped	Hearing handicapped	Orthopaedically handicapped
Group A	2095	17	1	0	4
Group B	14320	137	2	4	85
Group C	76477	1891	88	124	745
Group D	26433	913	117	125	389
Total	**119325**	**2958**	**208**	**253**	**1223**

Production is presented in Table No. 15.9 and Table No. 15.10 respectively.

15.41 **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 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.

15.42 **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.

15.43 **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.

15.44 **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).

Raksha Mantri presenting a tricycle to a disabled Ex-serviceman

(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.

Disabled 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.

(c) **Grant to War Memorial Hostels:** Each regimental centre was provided by KSB non-recurring grant for construction and functioning of War Memorial Hostels to provide shelter to the children of war widows and war disabled. 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 Kirkee 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 the Queen Mary's Technical Institute for Disabled which imparts educational training to paraplegic soldiers.

(f) **Grant to St. Dunstan after care Organisation, Dehradun:** St. Dunstan's Organisation for blinded soldiers, Sailors and Airmen 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.

15.45 **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.

(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.

(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 but less than 15 years. Invalid gratuity is paid when the service rendered is less than 10 years.

(d) **Ex-gratia Awards in Cases of Death of Cadets(direct):** Ex-gratia awards are payable subject to certain conditions in the event of invalidment of Cadet (Direct) on medical grounds due to causes attributable to or aggravated by military training in the following rates:

(i) Monthly ex-gratia of Rs. 1275/- per month

(ii) Ex-gratia disability award @ Rs. 2100/- per month for 100% disability during the period of disablement. The amount is reduced proportionately from the ex-gratia disability award in case the degree of disablement is less than 100%.

The ex-gratia disability awards are applicable with effect from August 1, 1997. However, the benefit is admissible to pre August 1, 1997 cases also, with financial benefit with effect from August 1, 1997.

16

ACTIVITIES OF VIGILANCE UNITS

The Vigilance Division conducts regular and surprise inspection of sensitive spots, 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) and also the PMO on vigilance related issues and complaints. The Vigilance Division conducts regular and surprise inspection of sensitive spots, review and streamlining of procedures and initiating other measures for combating corruption. During the year, 7 gazetted officers (Group 'A') were given major penalty (MES-4, Naval HQ-3). Five complaints received from CVC were investigated and brought to a logical conclusion.

16.2 A special cell also functions under the Vigilance Division responsible for monitoring cases referred to the CBI.

16.3 For administrative convenience, the vigilance work in respect of the Department of Defence (including DRDO) and Department of Defence Production is being looked after by their respective Chief Vigilance Officers.

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 about the harmful effects of corruption.

16.4 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 about the harmful effects of corruption.

DEPARTMENT OF DEFENCE

16.5 In keeping with the highest traditions of the Services, sensitization against corrupt practices is carried out right from the ab-initio training stage and also on a regular basis across the entire stratum of the armed forces.

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 thoroughly by GVO 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. Periodic, Preventive Vigilance Inspections (PVI) 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. Vigilance Awareness Week is observed every year strictly as per the guidelines of CVC in a befitting manner. Appropriate exposure is being given to the Officer & Staff on a regular basis to acquire and hone the skills of Preventive & Punitive Vigilance.

DEFENCE PUBLIC SECTOR UNDERTAKINGS

16.8 **Hindustan Aeronautics Limited (HAL):** A detailed action plan on anti corruption measure was drawn by the Vigilance Department to conduct systematic vigilance inspection and suggest measures to plug loopholes in the existing system. As part of Preventive Vigilance, 1,265 inspections/ checks were conducted and 15 major Contracts and Purchases were checked in all the Divisions/ Complexes and corporate office resulting in 5 vigilance cases. The Vigilance Department received 91 complaints out of which 45 were taken up for investigation and 46 complaints were closed as per existing guidelines. Company's Tender documents are being hosted in downloadable form and information regarding enquiries/ tenders/ POs/ Contracts released/ payment to vendors are also being hosted on the website.

16.9 **Bharat Electronics Limited (BEL):** The Vigilance set up is headed by CVO who is reporting to CMD. The CVO is assisted by 20 Vigilance Committees. Each Unit has a Vigilance Committee responsible for implementing the various CVC guidelines and supervising vigilance activities. Job rotation is done for the staff working in sensitive and corruption prone areas. Surprise Regular Checks are also conducted. Intensive Examination of Civil, Electrical, Mechanical, Horticulture, Sub-Contract, high value item Purchases, Service Orders, and Consultancy Services as per the guidelines of CTE wing of CVC is also conducted regularly.

16.10 **Bharat Earth Movers Limited(BEML):** 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). Periodical Inspections at Regional Offices, District Offices, Shipping Department and Petrol Bunks in BEML units have been taken up and are carried out in a regular manner. High Value POs have been scrutinized and surprise checks were conducted at sensitive areas. Scrutiny of Sales order, Medical claims, Expense reports and APRs are being done on a regular basis. 25 Complaints were received from various sources and 22 were disposed after being verified/ investigated and forwarded to concerned authorities for further action. Online Complaint registration on vigilance matters included in the BEML website and so far 2 complaints have been received which are under investigation. Training session/ Workshops on Vigilance Awareness have been conducted to Executives and Non-Executives of BEML.

16.11 **Mazagon Dock Limited (MDL):** The Vigilance Department acts as an arm of the Central Vigilance Commission in the company. It tries to ensure integrity among the company's officers and to promote transparency and fairness in various

activities of the company such as procurement, recruitment etc. The department reviews tendering and other commercial procedures to ensure that these are carried out in accordance with the prescribed norms including CVC's circulars. The department also ensures adequate publicity including effective use of MDL's website.

16.12 **Goa Shipyard Limited (GSL):** The Vigilance set up in Goa Shipyard Ltd, headed by a Chief Vigilance Officer carries out regular and surprise inspections in sensitive areas and suggests improvements in systems and procedures with a view to preventing 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, that are opened every Monday, have been installed at various places in the premises of the Company. 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 Cash System (ECS) for payments.

16.13 The fraud prevention policy has been formulated, approved by the Audit Committee and Board of Directors and has been promulgated.

16.14 **Garden Reach Shipbuilders & Engineers Ltd.(GRSE):** The primary role of the Vigilance Department has been to achieve a corruption-free organisation by ensuring compliance of different orders/ guidelines issued from time to time by CVC/ CTE/ DPE and to ensure that different files pertaining to procurement/ disposal of different items, various contracts, recruitment of personnel have been scrutinized.

16.15 **Bharat Dynamics Limited (BDL):** The main emphasis of Vigilance Department during the year was improving vigilance administration by Leveraging technology, increasing transparency through effective use of the Website, in addition to tendering proactive preventive advice and systemic improvements/ suggestions. All the directives of CVC with respect to extensive use of Website have been complied with except e-payment as the Company's Bank M/s. Andhra Bank, is yet to gear up for this task.

16.16 **Mishra Dhatu Nigam Limited (MIDHANI):** During the period, effective measures were taken to improve Vigilance administration in the Company. Vigilance Department conducted surprise checks at different departments also on scrap management and issued preventive vigilance advices and system improvements wherever required. Vigilance Department was instrumental in formulation of Material Inspection Norms.

DEPARTMENT OF DEFENCE RESEARCH AND DEVELOPMENT

16.17 The main activities of the Vigilance Units in Department of Defence Research and Development Organization (DRDO) during the year are as under:-

- Periodic sensitization of all officers and staff on vigilance aspects at various levels.
- Sensitization programmes to root out corruption and mis-management of public funds and public resources.
- 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 vigilance charge sheets.
- Ensuring compliance of procedures of purchase management laid down by DRDO through periodic vigilance inspection of laboratories/ establishments.

17

EMPOWERMENT AND WELFARE OF WOMEN

A woman officer leading Network Operation Centre at Republic Day Parade

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**: In a significant step, the tenure of Women Officers in Short Service Commission has been increased from 10 years to 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. As per a recent decision of the Government, Women Short Service Commission Officers in the Army are granted 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 Commission 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 Commission Officers.

The Government has approved grant of Permanent Commission to Short Service Commission (Women) Officers prospectively in select branches/ cadres of Armed Forces.

17.3 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 Commission Officers.

17.4 In the Regiment of Artillery, Corps of Signals, Corps of Engineers, Corps of Electrical and Mechanical Engineers, Army Service Corps (Food Scientists and Catering Officers), Army Ordnance Corps, Intelligence Corps, Army Education Corps, Judge Advocate General's Department and the Army Postal Service, women officers join as Short Service Commission Officers.

17.5 The Government has approved grant of Permanent Commission to Short Service Commission (women) Officers prospectively in select branches/ cadres of Army viz., Judge Advocate General (JAG) Department and Education Corps.

INDIAN NAVY

17.6 Since their induction, women officers have been accorded equal opportunities in every way as their male counterparts, to the extent feasible and subject to service exigencies, to ultimately ensure operational effectiveness of the service.

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

17.8 **Permanent Commission:** The Government has introduced grant of Permanent Commission prospectively to the Short Service Commission women officers of the Executive Branch (Law Cadre), Education Branch and Engineering Branch (Naval Architecture Cadre).

17.9 **Outward Bound Team Building Exercise:** All women "Outward Bound Team Building Exercises" are also being conducted for the women employees to develop their self confidence, spirit of adventure, endurance and team spirit which pay rich dividends in their personal lives by way of enhanced satisfaction, confidence and sense of achievement.

INDIAN AIR FORCE

17.10 Women were first inducted into the IAF more than 15 years ago. It has been the endeavour of the service to give every opportunity to women to participate and excel in all spheres of employment and avenues. Women are employed in all the branches of the IAF, including the flying branch. IAF maintains identical standards in terms of eligibility criteria, training pattern & duration and career courses etc. The women

A woman officer of IAF commanding a contingent at Air Force Day Parade

officers are eligible for promotion at identical years of service and criteria as their male counterparts and they are presently holding appointments in the service which are supervisory in nature.

17.11 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. Accordingly, women joining the IAF for the training courses commencing in January 2009 in these branches would be eligible for grant of Permanent Commission subject to vacancies available, demonstrated performance and service requirements.

INDIAN COAST GUARD

17.12 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 posts. Unlike the other Armed Forces, the women officers in Coast Guard have the option to serve till superannuation, except for GD (CPL Holders) Short Service Entry.

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.

DEFENCE RESEARCH AND DEVELOMPENT ORGANISATION (DRDO)

17.13 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.

17.14 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

17.15 **Hindustan Aeronautics Limited (HAL):** 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(WIPS)" under the aegis of SCOPE (Standing Conference of Public Enterprises). HAL is a Member of the WIPS Forum. Based on the guidelines, necessary steps have been taken to prevent sexual harassment of Women at workplace.

17.16 **Bharat Electronics Limited (BEL):** Over the years, women in BEL have come a long way and at present there are women GM and AGM, Senior DGMs, DGMs, and Managers across Units. Company have WIPS representatives to carry out WIPS activities in their Unit apart from Co-ordinator and treasurer nominated by BEL Bangalore.

17.17 During the year 2008-09 training programme and Guest lectures were scheduled exclusively for women on various subjects of specific interest such as self-development, health approach, family counseling, managing adolescent children, safety at home, nurturing nutrition in family etc.

17.18 For prohibition of Sexual Harassment of women employees at work place, "Complaints Committee" have been constituted, headed by a senior Women Executive, which is functioning smoothly.

17.19 **Bharat Earth Movers Limited(BEML):** The Company has constituted Women Cells in all the Production Units including 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.

17.20 **Mazagaon Dock Limited (MDL):** The Company provides Crèche facility for the children of female employees under the supervision of a lady doctor and one female attendant. Jamnalal Bajaj Institute of Management Studies, University of Mumbai, conducted training programmes for women employees of the company.

17.21 A Women Cell, headed by the Officer of the rank of GM, has been set up to deliberate on ways and means of promoting the growth and development of women employees towards harnessing their full potential. A database has been prepared to collect comprehensive information on the profile of women employees to evolve meaningful policy in order to improve the status and position of women employees. Similarly, a Standing Committee on Redressal of Complaints of Sexual Harassment has also been constituted.

17.22 **Goa Shipyard Limited(GSL):** Workshop for "Self Help Group" to encourage women for work avenues and financial independence has been organized. GSL is financing NGO – Asha Sadan, working for rehabilitation of children of sex workers by providing education, nutrition and vocational training at Baina.

17.23 Sports Authority of Goa organizes every year Women's Sports Festival for the benefit of women of Mormugao Taluka. Goa Shipyard Ltd in addition to giving financial support also promotes participation of

GSL women employees in various sports organized on this occasion.

17.24 **Garden Reach Shipbuilders and Engineers Limited (GRSE):** An 11 member Complaints Committee, headed by a Lady Officer and with 1 NGO representative has been set up to redress complaints of sexual harassment at work place. Periodic workshops are organised to sensitise employees on their rights and responsibilities.

17.25 **Bharat Dynamics Limited (BDL):** A 'Complaints Committee' headed by a senior woman officer has been constituted to inquire into complaints of sexual harassment. To encourage women employees, the Company accords necessary facilities for participation in the conferences/ programmes organized by CPSU forum i.e., Women In Public Sector (WIPS) and celebrates International Women's Day. Special empowerment programmes are being organized/ offered to the women employees.

17.26 **Mishra Dhatu Nigam Limited (MIDHANI):** Women's Day was celebrated on March 7, 2009 and lectures by eminent personalities were organized on this occasion.

DEPARTMENT OF EX-SERVICEMEN WELFARE

17.27 Department of Ex-servicemen Welfare deals with the rehabilitation and welfare of about twenty lakh ex-servicemen, four lakh widows of Armed Forces personnel and their families. The schemes of placement, training, self employment are available to all ex-servicemen equally irrespective of their gender. However, keeping in view the special attention which needs to be given to women, the Rajya Sainik Boards (RSBs) are encouraged to have women officials on their staff to attend to their problems/ grievances. A beginning has also been made by posting a lady officer in Kendirya Sainik Board.

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 and 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 Prabhag)

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, 2008 ONWARDS

RAKSHA MANTRI

Shri A. K. Antony — *From October 24, 2006 onwards*

RAKSHA UTPADAN RAJYA MANTRI

Rao Inderjit Singh — *From January 29, 2006 onwards*

RAKSHA RAJYA MANTRI

Shri M.M. Pallam Raju — *From January 29, 2006 onwards*

DEFENCE SECRETARY

Shri Vijay Singh
From July 31(AN), 2007 onwards

SECRETARY DEFENCE PRODUCTION

Shri Pradeep Kumar
From January 1(AN), 2008 onwards

SECRETARY EX-SERVICEMEN WELFARE

Dr. Satyanarayana Dash
From December 31, 2007 to March 03, 2008

Smt. Deepa Jain Singh
From March 20, 2008 to July 31, 2008

Shri Siddhartha Mahavir Acharya
From August 28, 2008 onwards

SECRETARY (DR&D) AND SCIENTIFIC ADVISOR TO RAKSHA MANTRI

Shri M. Natarajan
From August 31, 2004 onwards

FINANCIAL ADVISOR(DEFENCE SERVICES)

Smt. N.K. Narang
From July 1, 2007 to March 31, 2008

Smt. H.K. Pannu
From April 1, 2008 to March 31, 2009

CHIEF OF ARMY STAFF

General Deepak Kapoor,
PVSM, AVSM, SM, VSM, ADC
From September 30 (AN), 2007onwards

CHIEF OF NAVAL STAFF

Admiral Sureesh Mehta
PVSM, AVSM, ADC
From October 31 (AN), 2006 onwards

CHIEF OF AIR STAFF

Air Chief Marshal F.H. Major,
PVSM,AVSM, SC, VM, ADC
From March 31(AN), 2007 onwards

SUMMARY OF LATEST COMPTROLLER & AUDITOR GENERAL (C&AG) REPORT ON THE WORKING OF MINISTRY OF DEFENCE

Report No. CA 4 of 2008: Union Government (Defence Services) Army and Ordnance Factories.

II Ministry of Defence

Para 2.1 Irregularities in procurement of Bullet Proof Vehicles

The Ministry of Defence procured 200 Bullet Proof Vehicles (BPV) worth Rs. 31.64 crore in July 2005 from a private firm. These vehicles were reported defective by the users. Besides compromising safety Army HQ, citing urgency of requirement favoured the procurement of vehicle manufactured by a particular firm. In addition Director General of Ordnance Services purchased nine BPVs of different type from the same firm in February 2007 at the cost of Rs. 4.12 crore. Extra expenditure of Rs. 68 lakh was also incurred by not considering the offer of an Ordnance Factory to supply similar vehicles at lower rate.

III Army

Para 3.1 Procurement of special clothing and Mountaineering Equipment

Army HQ has been procuring special clothing for troops deployed in extreme cold climate conditions such as Siachen glacier for over two decades without any technical specifications and in violation of basic norms of procurement. This resulted in rejection of special clothing items worth Rs. 28.81 crore either in inspection or by end users in respect of ten contracts valuing Rs. 48.88 crore concluded for the years 2002-06. Items worth Rs. 9.98 crore were accepted after re-inspection or by levying small penalty.

Para 3.2 Avoidable extra expenditure in procurement of blankets.

Director General of Ordnance Services (DGOS) initially did not plan properly the procurement of blankets for troops despite the requirement being projected in October 2001 and later projecting emergent requirements procured Rs. 3.5 lakh blankets from private firms at a rate two times higher than the rate offered by the handloom sector. On one hand, DGOS incurred extra expenditure of Rs. 9.17 crore on procurement from private firms at higher rate, on the other hand, it could not ensure that the blankets reached the troops on time for winter 2005-06. Thus inefficient planning and poor procurement management by DGOS led to avoidable expenditure and inconvenience to troops.

Para 3.4 Avoidable loss due to acceptance of defective ammunition.

Instead of replacing the entire lot of 10,000 rounds of ammunition supplied by a foreign firm which was found defective in receipt

inspection, DGOS got only 1071 rounds replaced. Later due to an accident in firing, the whole lot was discarded resulting in loss of Rs. 13.65 crore. Another lot of 10,000 rounds, which was also found defective in inspection was yet to be discarded, posing a risk to the safety of troops.

IV Works and Military Engineer Services

Para 4.1 Misutilisation of Project Contingencies

Chief Engineer Bhopal misused project contingencies of Rupees one crore of ten different projects executed at different stations for constructing office accommodation without obtaining sanction of competent financial authority.

Para 4.2 Excess payment due to defective water meter

Due to delay in replacement of defective water meter, MES, Jodhpur had to make excess payment of Rs. 76.24 lakh on account of water charges for the period from July 2004 to March 2007 to Public Health Engineer Department (PHED) Rajasthan.

V Border Roads Organisation

Para 5.1 Avoidable extra expenditure due to ambiguities in the contract

Ambiguities in the contracts regarding specification of steel for use in superstructure of two bridges resulted in extra expenditure of Rs. 64.51 lakh besides delay in execution of projects, as the work had to be retendered.

VI Ordnance Factory Organisation

Para 6.1 Performance of Ordnance Factory Organisation

The Ordnance Factory Organization comprising 39 Ordnance Factories with manpower of 1.12 lakh is engaged in production of arms, ammunition, equipment, clothing etc. primarily for the Armed Forces of the country. The value of production aggregated to Rs. 7957.53 crore in 2006-07, which was 09.69 per cent lower than the value of production of Rs. 8811.59 crore in 2005-06.

The total expenditure of Ordnance Factory Organisation has decreased from Rs.6847.13 crore to Rs.6191.89 crore during 2005-06 to 2006-07.

During 2006-07, production of 117 items (out of 438 items for which demands existed and targets were fixed) was behind schedule.

During 2006-07, Export target has increased by 66.67 per cent as compared to 2005-06.

Para 6.3 Abnormal delay in execution of Ordnance Factory Project Nalanda

Inadequacies in planning for setting up an Ordnance Factory at Nalanda for production of bi-modular charge system of ammunition leading to repeated revisions in the project cost estimates coupled with failure of the Ministry of Defence in firming up their decision regarding enhanced outlay for the project has seriously jeopardized the project. As a result, no value for money had been derived from the huge investment of Rs. 376.93 crore made

as of July 2007. Besides, estimated cost of the project has shot up from Rs. 941.13 crore to Rs. 1570 crore.

Para 6.5 Extra expenditure due to failure to exercise option clause

Failure of Ordnance Factory Board to direct the Ordnance Factory Ambernath to exercise option clause in procurement of additional quantity of copper cathode against its existing order on M/s Minerals and Metal Trading Corporation to meet the requirement of Ordnance Factory Katni, despite having an opportunity to do so, resulted in procurement of copper cathode by the latter at an additional expenditure of Rs. 7.71 crore.

Para 6.10 Idle investment on leasing of unsuitable land

Land acquired on lease by Ordnance Factory Board in May 2001 at a cost of Rs. 1.05 crore from Kolkata Metropolitan Development Authority for construction of a Guest House, seminar-cum-conference room and Exhibition-cum-Display room at Kolkata yielded no value for money, as it could not achieve the intended objectives on account of its unsuitability for constructing buildings. Further, the possibility of alternate use is also uncertain in view of Ordnance Factory Board acquiring another five acres of land at a different locality in Kolkata to meet the intended objective.

Performance Audit

Supply Chain Management of General Stores and Clothing in the Army

Clothing and General Stores are important requirements for the Army. The Army procures and maintains inventory of over 20,000 items of Clothing and General Stores (GS&C) required for operationalisation of units and upkeep of troops, including special items of clothing and mountaineering equipment for troops in glacier region. There are approximately 20400 GS&C items, which include paint, detergents, cooking utensils, tentage items, parachute and personal clothings, special clothing and mountaineering items for troops operating in Glacier region.

A performance audit of the total Supply Chain Management of these GS&C items was conducted, covering the entire gamut of provisioning, procurement, stocking, issue, utilisation and user satisfaction. The performance audit revealed that the Supply Chain Management of General Stores and Clothing (GS&C) in the Army suffered from several systemic deficiencies. There was no effective coordination between Central Procurement Cell (CPC) of the Army HQ and lower echelons resulting in local purchases valuing Rs. 169.37 crore remaining unreported. This deficiency in the provisioning process entails the risk of substantial overprovisioning of items by CPC. Director General Ordnance Services at Army HQ inducted new products such as Prefabricated Huts, Superior Blankets Barrack, Detergents, Superior Paints, and Modular Gloves at a total cost of Rs. 89 crore, without need analysis, trial evaluation and revision of scales. The present system of GS&C procurements being highly centralised,

is unable to process procurements within the prescribed lead time. Hence, 67 per cent of the orders could not be placed within the given lead time, thus delaying procurement of stores and their supply to troops. GOC-in-C, Northern Command procured 25,754 Bullet Proof Jackets valuing Rs. 58.92 crore from a private firm at higher rates without giving details of the actual specifications and by waiving the requirement of inspection by Director General Quality Assurance resulting in extra expenditure of about Rs. 13 crore apart from lack of quality assurance of the critical items supplied to the troops for use in operational area.

Army HQ failed to ensure timely procurement of Special Clothing and Mountaineering items used in operational areas like Siachen resulting in stock out levels of these critical items being as high as 44 to 70 per cent. To meet shortage of these items, Army resorted to the unauthorised practice of issuing partly worn stores (PWS) to the troops in the glacier region. Such practice of recycling of special clothing items is not desirable on grounds of hygiene, operational suitability and overall morale of the troops. User survey conducted by Audit showed that 50 per cent of divisions/ regiments were not satisfied with the quality and fitting of the clothing supplied.

Army placed orders on trade in preference to Ordnance Factory leading to loss of productive capacity of Ordnance Factories which have been set up as dedicated source for manufacture and supply to Army and other Services. DGOS and Army Commanders procured 20,741 Tents from trade at the cost of Rs. 54.48 crore during 2006-07 denying orders to Ordnance Factories. Army HQ also ignored request of DGOF for placement of orders, and procured 4,750 Cover Water Proof valuing Rs. 2.65 crore from trade.

Computerisation and modernisation of the ordnance supplies have been undertaken without developing an appropriate and robust transportation model and a comprehensive business process reengineering for non-war like GS&C items. Several attempts of Army HQ over the last 40 years to modernise have been ad-hoc, directionless and fraught with time and cost overrun. In addition to diverting 432 personnel and after spending Rs. 243 crore, no measurable benefits were visible as of January 2008.

Basic objectives of operating a multi-echelon stocking and distribution system with predetermined levels of maintenance stock holding to ensure ready availability of the right material at the right place and at the right time to the troops were not achieved fully as there were persistent shortages of stores in the depots and 30 per cent of the user demands remained unmet, troops in the glacier region had to manage with old worn out clothing and there was high level of dissatisfaction amongst the troops about the quality of clothing supplied.

[Chapter-I of Report No. PA 4 of 2008 Army and Ordnance Factories (Performance Audit)]

Life Sciences Laboratories of DRDO

Life Sciences Group (LSG) laboratories under Defence Research Development Organisation (DRDO) are engaged in research and development work in the field of agriculture, food, life support systems, nuclear medicine, psychology and physiology of troops in diverse climatic conditions including high altitudes. Two categories of projects viz. Staff Projects and R&D Projects are undertaken by these labs. Staff Projects are invariably taken up at the instance of Services against existing or futuristic needs and are expected to achieve qualitative requirements projected by them.

A performance audit, focusing on relevance of R & D activities of the LSG labs to the Armed Forces, indicated the following:

The project planning in LSG labs lacked user focus as an overwhelming number of projects taken up were not based on requirements given by the users and were focused on pure research and development. Adherence to Plan was poor as 30 per cent of the planned projects were not taken up for implementation and, more than 50 per cent of the projects undertaken by labs were unplanned and adhoc. Proper linkages between Plan and Budget were not established as budgetary allocations to the labs were made on lump sum basis instead of adopting a system of project-wise allocations as planned. Most of the products developed by the Life Sciences Labs of DRDO were not exclusively applicable to Armed Forces in that only 29 per cent of the products developed during the last 17 years were in use by the Armed Forces. The Integrated Research Council, meant for co-ordination between the users, viz. three Services and DRDO had not met regularly as prescribed showing lack of user participation. Transfer of technology could be achieved only for 50 per cent of the products developed by the labs. Adequate attention has not been paid to patenting of the products developed. Similarly, insufficient attention was paid to filing and securing patents for the products/technologies developed by DRDO.

[Chapter-II of Report No. PA 4 of 2008 Army and Ordnance Factories (Performance Audit)]

Manufacture and issue of 23mm and 30mm Ammunition in ordnance factories

Ordnance Factories manufacture 23 mm and 30 mm ammunition for the Armed Forces. 23 mm ammunition is fired from Schilka four barreled gun to protect armoured troops against enemy air attacks by destroying low flying air targets and ground targets. 30 mm ammunition is used in Automatic Gun mounted on Infantry Combat Vehicle against light armoured targets, soft skinned targets, personnel at certain range and low flying aircraft at single shot firing as well as automatic firing.

Performance audit of the manufacture and issue of 23 mm and 30 mm ammunition by the ordnance factories covering the period 2002-07 disclosed the following:

Ordnance Factory Board (OFB) failed to redeploy resources for production of demand intensive 23 mm ammunition from the surplus resources available for production of 30 mm ammunition, though there has been declining trend in demand for the latter. Even the committed quantity for production and supply of 23 mm ammunition to the Army could not be supplied by OFB, resulting in avoidable import of ammunition worth Rs. 44.72 crore.

There was mismatch in the production of components in the component manufacturing factories and ammunition in the filling factories. This weakness in production planning led to the idling of production capacity in the first two quarters of each production year besides uneven production in both component and filling factories.

OFB allotted production target to component manufacturing factory without assessing actual requirement and the available stock in filling factories. This resulted in avoidable production and stock holdings in different stages. These coupled with inefficient and uneconomic production led to avoidable production/extra expenditure of Rs. 12.91 crore.

Three factories (Metal & Steel Factory, Ordnance Factory Khamaria and Gun & Shell Factory) issued warrants to production shops without extract from OFB or Inter Factory Demand (IFD) from sister factories, resulting in un-necessary production of components worth Rs. 12.09 crore.

Metal & Steel Factory and Ordnance Factory Badmal circumvented the laid down procedure and suppressed the excess consumption of materials/ components valuing Rs. 6.84 crore in production.

Due to excessive rejection rate, OFB suffered loss of Rs. 99.11 crore in the production and issue of 23 mm and 30 mm ammunition during 2002-07.

There was abnormal variation in cost of production of the same item in different factories, under-recovery of cost of Rs. 23.24 crore due to fixation of lower issue price by OFB and high cost of production of ammunition/components in ordnance factories compared to trade.

[Chapter-IV of Report No. PA 4 of 2008 Army and Ordnance Factories (Performance Audit)]

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 DRDOs for the year ended March 2007 (Report No. CA 5 of 2008) was presented in both houses of Parliament on 14 March 2008. Some of the important audit findings included in the Report are indicated below:

I. Upgradation of an Aircraft

IAF's Aircraft 'A' upgrade programme approved in August 1999 at a cost of Rs. 430 crore will have limited viability as

inherent problems being faced by the Aircraft and engines have not been resolved. The feasibility of the project was doubtful ab-initio and considerable time overruns would further dilute benefits of the project as the upgraded aircraft would have a very short residual life. Reductions in scope of the upgrade with the intent to contain costs have also truncated the envisaged role of the aircraft projected to the sanctioning authority. Besides, even the limited number of aircraft modified were accepted by IAF with restrictions. Project costs were severely understated and would actually be over Rs. 900 crore i.e. more than two times the approved cost while various unamortised and hidden cost remained out of the ambit of the project. Advance payment of Rs. 156 crore to HAL even before approval by the sanctioning authority was in violation of budgetary and financial controls. Failure to conclude a contract with HAL even after eight years of approval of the Project vitiated the control framework of the project.

(Paragraph 2.6)

II. Acquisition of VIP Boeing Business Jets

Ministry concluded a contract with M/s. Boeing Company of USA for acquisition of three Boeing Business Jets at an aggregated cost of Rs. 936.93 crore for VIP use to replace two existing Boeings of the Communication Squadron of IAF. The acquisition process for the VIP aircraft deviated from laid down procedures and well-recognized norms of propriety. Supplies valuing USD 50 million were contracted without the benefit of competition. Besides, the acquisition of both the aircraft and Self Protection Suite was inordinately delayed leading to a total cost escalation of USD 19.70 million. In addition, even after four years of the existing VIP aircraft becoming unsuitable for VIP flights, replacement aircraft are yet to be inducted. Procurement of a third additional aircraft as stand by arrangement costing Rs. 312.44 crore was avoidable. Despite spending Rs. 936.93 crore, newly acquired VIP aircraft will not be used for international travel necessitating continued use of Air India aircraft with all its adverse consequences.

(Paragraph 2.1)

III. Acquisition of Landing Platform Dock

Navy acquired an ageing 36 years old foreign ship from a foreign Government after refurbishment at a cost of USD 50.63 million without physical assessment of the ship. Poor condition of the ship entailed significant changes in the scope of the refurbishment work with cost of refurbishment, repairs, etc going up from USD 15 million to USD 36.94 million. Navy did not bring all costs for consideration of the Competent Authority while seeking approval.

(Paragraph 2.3)

IV. Delay in replacement of obsolete and decommissioned radars in IAF.

Ministry concluded a contract with Hindustan Aeronautics Limited in March 2002 for procurement of 17 Precision Approach Radars at an aggregated cost of Rs.193.10 crore. Acquisition of these critical Radars to replace obsolete/ decommissioned radars was

considerably delayed and Air Force bases are operating flights with old radars, identified as obsolete sixteen years ago, with operational limitations. The acquisition process also deviated from the prescribed procedure. Further, of the ten radars delivered by HAL only one could be made functional, that too, with intermittent failure and remaining nine radars costing Rs. 100.52 crore are yet to be commissioned.

(Paragraph 2.2)

V. Lack of transparency in awarding a Contract

Ministry concluded a contract with M/s ABG Shipyard Ltd., a private shipyard in March 2004 for acquisition of three pollution control vessels for the Coast Guard. The acquisition process followed by Coast Guard HQ lacked transparency and deviated from prescribed purchase procedures, which also contributed to delay. Flaws and distortions in the procedures adopted by the Coast Guard and the Ministry yielded no assurance that the decision taken to award a contract worth Rs. 368 crore for building specialized vessels to a private shipyard was technically sound and financially prudent. This is corroborated by the unsatisfactory progress of the project leading to revision in delivery schedule of the vessels. Payment of Rs. 221 crore released to the shipyard is not commensurate with the milestones specified.

(Paragraph 5.1)

VI. Sub-optimal performance of Pilotless Target Aircraft

Pilotless Target Aircraft (PTA) are required by Indian Air Force (IAF) for providing realistic airborne targets for training of aircrew and ground crew in air-to-air and surface-to-air weaponry. Although design and development of PTA commenced in 1980, DRDO and HAL failed to provide an indigenous PTA to meet the training needs of IAF even after a lapse of 27 years and after an expenditure of Rs. 165 crore. Despite the fact that initial development of a prototype failed to fully meet the Qualitative Requirements of IAF, DRDO went ahead with limited series production of PTAs. Further, clearance by the Ministry for bulk production without evaluating the performance of limited series production of PTA indicated serious flaws in development of technology and the production programme. Sub-optimal performance of three delivered PTAs led to IAF putting on hold its acceptance of the balance 12 PTAs ordered on HAL. IAF also withdrew its commitment to the PTA-II programme in favour of imports. The basic objective of providing IAF with realistic airborne target for weapon training hence remained unfulfilled seriously affecting training efforts.

(Paragraph 2.5)

VII. Delay in Procurement, Installation and Commissioning of a Training Simulator

Ministry concluded a contract in March 2004 with M/s. TSL Technologies Ltd, New Delhi to upgrade, at a cost of Rs 31 crore, an existing simulator installed in a Naval Training Establishment. Simulator, considered vital for the training of pilots and observers of Seaking helicopter, could not be upgraded

and inducted into the Indian Navy even after a lapse of a decade and expenditure of Rs. 18.52 crores affecting the quality of training. Associated costs of over Rs. 3 crores due to usage of helicopters could have been avoided had the project been completed on time. Related developments may lead to cancelling of the contract with extra financial implication of Rs. 18.50 crores, without ultimately achieving the objective.

(Paragraph 2.8)

VIII. Delay in setting up of Overhaul facilities

A project conceived in 1986 for the augmentation of repair and overhaul of Gas Turbine (GTs) for a class of ships in the Navy awaits completion even after two decades. As a result of lack of synchronization of various project activities, equipment and spares procured at a cost of Rs. 21.16 crore have remained unutilised for eight years since the date of purchase. Even after the completion of the project, its utility to the Navy will remain limited as the GTs have already received their scheduled overhaul from the OEM and benefits accrued from the project will be marginal as more than half of the service life of the ships, for which the facility is being created, would be over.

(Paragraph 2.7)

IX. Procurement of unsuitable Guns for Navy and Coast Guard Organization

Navy as well as Coast Guard placed orders on an Ordnance Factory, for manufacture of a type of gun without proper clearance of its prototype. Acceptance of guns costing Rs. 28.44 crore by Directorate of Naval Armament Inspection from the Ordnance Factory, for issue to Navy and Coast Guard was improper as the weapon platform is incomplete without an accompanying stabilized optronic pedestal compromising operational effectiveness, thus defeating the purpose of procuring these guns.

(Paragraph 2.4)

X. Upgradation of an Airport of Indian Navy

Government sanctioned up-gradation of an existing Naval Airport jointly used by Airport Authority of India in October 2002 at an estimated cost of Rs. 191.52 crore. Lack of integrated approach, synchronization and deficiency in planning on the part of Navy led to delay in construction of magazines and relocation of a Naval Armament Depot. As the risk factors for both aircrafts and explosive stores still exist, the upgraded airport is not usable for operation by the Long Range Maritime Reconnaissance aircraft of the Navy as well as bigger aircrafts of the civil airlines. As such, value for money for the investment of Rs. 145.16 crore remains unrealised.

(Paragraph 4.4)

XI. Non-crediting of Cash Flow Benefit to IAF

Ministry paid Rs. 370 crore as an advance to Bharat Dynamics Limited (BDL) in 1998-99 against a missile project for IAF. BDL passed

on cash flow benefit of Rs. 52.19 crore to IAF till March 2003. After 2002-03, BDL did not pass on the cash flow benefit to IAF against the advance held by them. As a result, IAF was deprived of revenue to the extent of Rs. 91.33 crore which could have been ploughed back into the project with diminishing financial liability to IAF.

(Paragraph 3.7)

XII. Non-recovery of interest due on ad-hoc advance

Under a sanction accorded by the Ministry, the Controller of Defence Accounts released an interest bearing ad-hoc advance of Rs. 113.40 crore in March 2002 to Bharat Electronics Limited against a project. Despite clear provision in the contract, Controller of Defence Accounts failed to recover interest of Rs. 46.70 crore from BEL on the adhoc advance provided to the company.

(Paragraph 3.6)

XIII. Procurement of sub standard components for a helicopter

Ministry concluded a contract in October 2003 with Indo Russian Aviation Limited, a joint venture company for procurement of rotables for helicopter 'D' at a cost of Rs. 12.43 crore. Fuel Control Units were supplied by IRAL from an unreliable source and were found to be substandard exposing helicopter 'D' to flight safety hazard and the helicopters had to be grounded for want of FCUs. Five Auxiliary Power Units costing Rs. 1.06 crore also failed and are yet to be replaced. While punitive action taken by Air HQ was ineffective being tentative and inadequate, the company was awarded further contracts for supply of equipment and spares for IAF by the Ministry and Air HQ. The firm also failed to supply 12 out of 82 lines of spares and equipment contracted for.

(Paragraph 3.2)

XIV. Unauthorised erection of Antenna on a defence building

An Air Force station violated canons of financial propriety and disregarded security safeguards by allowing a private company to erect an antenna on a defence building located in a sensitive security zone. Even though the company is exploiting facilities of public property, payments made by the company are regularly being deposited in the non-public account of the Air Force station. Air Force Officers have also been provided mobile phones free of cost by the company. The case needs detailed probe to fix responsibility for the violation and omission.

(Paragraph 3.9)

XV. Excess procurement of imported spares

Material Organisation, Kochi and Naval HQ worked out requirement for nine items of spares even though there was no demand outstanding for those spares revealing deficiency in provisioning. Failure to correctly assess the requirement of spares resulted in excess procurement, costing Rs. 6.20 crore. The spares have remained unutilized since their procurement in 2004-2006.

(Paragraph 4.3)

XVI. Non-realisation of revenue from disposal of felled trees

To establish a Naval Academy at Ezhimala, project authorities had cut large number of trees for site clearance. Failure of DEO Chennai to fix the minimum reserve price and consequential delay in disposal of 25,605 felled trees led to non-realisation of revenue to the extent of Rs. 1.87 crore by the Navy. Naval authorities also failed to make compensatory afforestation equal to ten times the number of trees cut, thus defying the above requirement of the Ministry of Environment subject to which the project was cleared.

(Paragraph 4. 7)

XVII. Express procurement of gear boxes for an Aircraft

Ministry placed an order in June 2005 on a foreign firm for procurement of 44 gear boxes for an aircraft of the IAF. Audit scrutiny revealed that failure of IAF to ensure timely repair and inadequate planning for technical life extension of gear boxes already held by IAF led to avoidable procurement of 44 gear boxes at a cost of Rs. 164.78 crore.

(Paragraph 3.1)

XVIII. Avoidable expenditure on import of Nikel Cadmium Cells

Despite instances of procurement of Nickel Cadmium Cells from the indigenous sources, Directorate of Naval Air Material overlooked the existence of the approved indigenous firms whose rates were much lower than the foreign supplier. As a result, the Directorate imported 1470 Nickel Cadmium Cells at a price nearly three times higher than the rates of approved indigenous cells, entailing an extra avoidable expenditure of Rs. 1.31 crore.

(Paragraph 4.2)

XIX. Procurement of spares for Off-shore Patrol Vessels

Three Off-shore Patrol Vessels of the Coast Guard became due for their 24000 hourly routine between April 2006 and January 2007. Owing to faulty maintenance planning and delays in taking up the scheduled maintenance routine of engines of the vessels, spares worth Rs. 7.90 crore remain unutilized. Further, over provisioning of spares led to avoidable expenditure of Rs. 57 lakh.

(Paragraph 5.2)

XX. Management of Transport in Air HQ and other IAF Units located in New Delhi

Air Force Station possesses a large fleet of passenger vehicles and huge establishment of MT drivers above the sanctioned establishment in violation of rules thereby flouting economy measures of the Government. Indiscriminate use of service vehicles resulted in unauthorised exploitation entailing an extra expenditure of Rs. 5.60 crore during the last three years which was unauthorisedly regularised by Air HQ.

(Paragraph 3.10)

Audit Report No. CA 12 of 2008 (Regularity Audit)

Garden Reach Shipbuilders and Engineers Limited

Material management in ERP system

Garden Reach Shipbuilders and Engineers Limited incurred Rs.3.76 crore upto June 2007 for the implementation of Phase-I of ERP system covering the operationalisation of Material Management Module. IT audit of the application revealed deficiencies in the customisation of the system and there were instances of inadequate input and validation controls which inhibited accurate and timely capture of data. There were deficiencies in security settings which exposed the system to the risk of unauthorized access and manipulation. The system could not carry out the function of inventory valuation in accordance with the accounting policy of the Company. Thus the system was not being utilized to its fullest extent.

Hindustan Aeronautics Limited, Bangalore

Financial module under ERP package

Hindustan Aeronautics Limited (Company) implemented Industrial Finance System (IFS) an Enterprise Resource Planning (ERP) package in three pilot sites (i.e.) Corporate Office, Aircraft Division and Helicopter Division between July 2004 and January 2006 with the objective of implementing uniform procedure and practices, on-line information for decision making and elimination of isolated islands of automation. Acquisition and implementation of ERP package and utilisation of financial module of IFS at three pilot sites was reviewed and following were observed:

- Selection process of ERP software was not transparent as the implementing partner was also involved as consultant in assessment and finalisation of software. The Company did not obtain the System Design documentation and was wholly dependent on the vendor resulting in additional burden of recurring expenditure.
- IT policy including IT security policy was not formulated.
- Physical and logical controls were weak and the data had not been properly classified for its criticality and sensitivity.
- System design deficiencies led to manual interventions to reconcile the system balances and accounts balances.

Audit Report No. CA 11 of 2008 (Regularity Audit)

Bharat Earth Movers Limited

Acceptance of advance without confirmation of rate of interest resulted in unnecessary interest payment of Rs.7.54 crore.

(Para 8.1.1)

Delay in initiating action to amend liquidated damages clause as sought for by the propriety item supplier resulted in delayed receipt of CKD components and foregoing of Rs.4.44 crore.

(Para 8.1.2)

Hindustan Aeronautics Limited

The Company incurred avoidable expenditure of Rs.5.99 crore due to lapse in evaluation of tender and awarding the contract to SVEC Construction Limited.

(Para 8.2.1)

The Company repaired 11 engines on free of cost basis though the defects were not precisely established on its part. This resulted in forfeiture of revenue of Rs.5.53 crore to the Company.

(Para 8.2.2)

The Company instead of restricting the procurement of SNFA bearings for service evaluation test alone went ahead and procured bulk quantity without clearance of AHQ resulting in unproductive inventory of Rs.5.08 crore.

(Para 8.2.3)

INDIA'S LIGHT COMBAT AIRCRAFT 'TEJAS' FLYING IN A FORMATION
DURING AERO INDIA-2009 AT BENGALURU

AN AERIAL VIEW OF THE WORLD CLASS NAVAL ACADEMY
COMMISSIONED AT EZHIMALA, KERALA