Annual Report 2007-2008

Annual Report 2007-2008 MINISTRY OF DEFENCE GOVERNMENT OF INDIA

A T-90 Tank ‘Bhishma’ in manoeuvre at Longewala, Rajasthan on February 24, 2008 re-enacting the historic battle of 1971

IAF Aerobatic team Surya Kirans performing during the induction ceremony of Hawk-132 Advanced Jet Trainers at Bidar

Annual Report
2007-08

Ministry of Defence
Government of India

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1

THE SECURITY ENVIRONMENT

Troops deployed along the Line of Control

As the world continues to shrink and get more and more interdependent due to globalisation and advent of modern day technologies, peace and development remain the central agenda for India.

1.1 India's security environment continued to be influenced by developments in our immediate neighbourhood where rising instability remains a matter of deep concern. Global attention is shifting to the sub-continent for a variety of reasons, ranging from fast track economic growth, growing population and markets, the untapped socio-economic potential of the region and the growing energy consumption levels. Alongside, some countries in the region have come to be the fountainhead of terrorism, thus inviting close attention of the world. The interests and presence of major powers in this region, coupled with the relative instability in our immediate neighbourhood are a matter of concern to India. India's rapidly growing economy, relative size and strategic location in the region thus brings the country into prominence in the world's geopolitics. India, nevertheless, remains committed to peace and stability in the region, which are fundamental for the continued economic development and prosperity of its people.

India remains committed to peace and stability in the region, which are fundamental for the continued economic development and prosperity of its people.

1.2 The preceding year witnessed a series of developments which impinge directly on India's security environment. These include the deteriorating situation in Pakistan and the continued unrest in Afghanistan and Sri Lanka. Stability and peace in West Asia and the Gulf, which host several million people of Indian origin and which is the primary source of India's energy supplies, is of continuing importance to India. The continuing threat posed by global terrorism underlines the importance of the need to devise cooperative efforts at a global level, between and among states.

1.3 There has been a marked deterioration in the internal situation of Pakistan, which has serious implications on overall stability and peace in the region. The assassination of former Prime Minister Ms. Benazir Bhutto was a setback to the forces of political moderation. The growth of extremist violence and terrorism in Pakistan has serious security implications for India. India wishes to create an atmosphere of trust and confidence, free from violence and terror, in our bilateral relations with Pakistan and is working on various confidence building measures with our close neighbour.

1.4 China is an important player in global affairs and is proceeding ahead with her well charted out goals in a focussed manner. China has been improving bilateral relations with her neighbouring countries at diplomatic, economic and military levels. In attempting to resolve the long outstanding border disputes, we are following a policy of constructive engagement.

India wishes to create an atmosphere of trust and confidence, free from violence and terror, in our bilateral relations with Pakistan and is working on various confidence building measures with our close neighbour.

1.5 Nepal is a natural ally of India and we share many common values and beliefs and also share an open border with Nepal. The political situation in Nepal has undergone a major change in recent years and it is hoped that the situation should stabilise soon as instability in the region often has a spill over factor into our country. Further, many citizens of Nepal serve in the Indian Army and have strong traditional people-to-people ties with Nepal. India will provide assistance within her means, required by Nepal to rehabilitate the social, economic and political fabric of Nepal.

1.6 We have recently seen an increase in violence, tension and conflict in Sri Lanka. We strongly believe that there is no military solution. What is required is a settlement of the political, constitutional and other

IAF SU-30s in Action

issues within the framework of a united Sri Lanka which addresses the concerns of all communities, especially the ethnic minority.

1.7 The security situation in Afghanistan has deteriorated in the recent past with the continued resurgence of the Taliban along the Pakistan-Afghanistan border. Terrorist attacks mounted by the Taliban have consequently increased significantly all over Afghanistan. We continue to support the process to help Afghanistan emerge as a stable democratic state. India has a vital stake in peace and stability in this region and has invested the services of nearly 4000 Indians and US $ 750 million for the purpose of rebuilding Afghanistan. Inimical interests are, however, attempting to scuttle our role towards rebuilding Afghanistan.

1.8 As a close and friendly neighbour of Bangladesh, we would like to see a peaceful, stable and a liberal democratic Bangladesh. We hope the roadmap announced by the Bangladesh Election Commission with regard to the next parliamentary elections to be held between October and December 2008, leads to early restoration of democracy and relative stability in Bangladesh. India is concerned about Bangladesh as she shares a boundary with many of our North-Eastern States.

1.9 Myanmar is of strategic significance to India. We need to ensure a peaceful periphery for India, especially on the security front, since we share a 1640 km. long border with her. The political reform and national reconciliation process initiated by the Myanmar government should be taken forward expeditiously in a broad-based and inclusive manner including Ms. Aung San Suu Kyi and various ethnic groups.

1.10 Amongst our other neighbours are two other countries viz. Bhutan and Maldives, who are continuing on the path to peace, development and stability. India is providing economic and technical assistance to these countries in various fields. India's relations with these countries are based on a strong foundation of mutual understanding, respect and trust.

1.11 Apart from a conventional war scenario for which the armed forces are prepared, the increasing ongoing internal security situation of a proxy war scenario also has to be taken into account. The security environment and instability in our neighbourhood could fuel disturbances for our internal security as well. The growing menace of terrorism continues to be an area of great concern, where we are facing newer challenges. Our armed forces are geared up to the challenges to meet this asymmetric threat. The succeeding paragraphs describe the factors that have a bearing on our internal security.

The growing menace of terrorism continues to be an area of great concern, where we are facing newer challenges. Our armed forces are geared up to the challenges to meet this asymmetric threat.

1.12 The current situation in J&K is well under control. The violence has been

brought down considerably by effective counter infiltration operations along the Line of Control and sustained counter terrorist operations by the security forces in the hinterland. This is a highly commendable achievement. But despite assurances, terrorist activities in Jammu and Kashmir and other parts of the country continued to be sponsored and supported from across the country.

1.13 There has been marked improvement in the security situation in some States of the North Eastern region. However, continued violence by some insurgent groups and their reported cross border links in some States, such as Assam and Manipur is a matter of concern. The armed forces therefore, continue to be deployed in aid to civil authorities in some area of the region. While the Government is open to talks within framework of the Constitution with any groups which abjure violence, all efforts are being made to bring about further improvement in overall security environment through holistic approach.

1.14 The extremist activities of 'Maoist/ Naxalites' have the potential for causing internal security problems in some areas of certain states. In this context, funding through illegal flows and possible links indulging in arms and smuggling are also matters of concern. The Government is following a holistic security-cum-development oriented approach to deal with the problem.

1.15 The security situation in India's extended neighbourhood of Mid-East and South-East Asia is being monitored

IAF Helicopter during slithering practice with Special Forces

as any deterioration in the region would adversely affect India's economic and energy security. Moreover, a large number of Indians serve in the countries of the Middle East and South East Asia - both regions with whom we share ancient civilisational ties. The safety and stability of the region is not only a matter of our security and energy needs but also one of umbilical linkages with India.

1.16 The energy situation is in a state of instability. We are expecting a steep rise in competition as the dependency increases along with the prices. We also have a vital stake in the security of the sea-lanes to our East and West. The Bay of Bengal is a region rich in natural gas and oil and could impact on the future energy calculations.

1.17 Today there are more challenges than opportunities to world peace and regional security. As the world continues to shrink and get more and more interdependent due to globalisation and advent of modern day technologies, peace and development remain the central agenda for India. With a steadily growing economy, India has a vital stake in a safe and secure world. India and Indians have increasingly become drivers of global growth and prosperity. We understand a strong defence force is a necessary pre-requisite for growth, stability and peace. India has been committed to prepare its level of defence preparedness to deter any type of threat both conventional as well as unconventional. During the year we have also contributed several troops to the United Nations in support of peace across the world. In the year gone by, India has made significant progress in expanding her defence cooperation with like-minded countries and has enhanced her ties with several countries across the world from within the Asia Pacific region to Europe, Americas and the African subcontinent not only to enhance the security environment of the region but also the global security scenario in order to maintain world peace, promote socio-economic collaboration and the overall development for the common good of all the people around the world.

2

ORGANISATION AND FUNCTIONS OF THE MINISTRY OF DEFENCE

Raj Rifles in Rupublic Day Parade

Ministry of Defence is required to ensure effective implementation of the Government's policy directions on defence and security related matters and execution of approved programmes.

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 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 (HQIDS)

2.6 Integrated Defence Staff (IDS) was created on October 1, 2001 as a sequel to the decision by the Group of Ministers based on Kargil Committee Report. The staff of HQ IDS is provided from three Services, MEA, DRDO, Armed Forces HQ (AFHQ) Civil Services and DoD. IDS is presently functioning as staff in the advisory mode to the Chairman COSC, and is headed by Chief of Integrated Defence Staff to Chairman COSC (CISC).

One of the primary objectives of HQ IDS is to promote jointness within the Services. Jointness is aimed at obtaining optimal operational and cost effectiveness in the current and envisaged future geopolitical environment.

2.7 **Jointness within the Services:** One of the primary objectives of HQ IDS is to promote jointness within the Services. Jointness is aimed at obtaining optimal operational and cost effectiveness in the current and envisaged future geopolitical environment. It will also enable the services to operate seamlessly with common understanding of missions and joint strategies to accomplish them. This would entail bringing about transformation and reforms within the armed forces. The vertical and horizontal aspects of integration have been identified and are being put into place in an organized and logical manner through the establishment of inter-service committees, functioning in and with HQ IDS.

2.8 HQ IDS has achieved a number of milestones within a short span in promoting the concept of jointness within the services.

2.9 **Defence Planning Process:** The Defence Planning Process is being strengthened as part of the follow up to the Group of Minister's Report on Security. As a first step, Draft National Security Strategy has been prepared and forwarded to National Security Adviser.

2.10 **Joint Doctrines:** Joint Doctrine for Defence Forces and Joint Amphibious Warfare Doctrine have already been released whereas the Joint Special Forces Doctrine, Joint Psychological Operations Doctrine, Joint Sub-conventional Warfare Doctrine and Joint Space Doctrine are in advance stages of preparation.

2.11 **Defence Space Vision (DSV) 2020:** HQ IDS has been nominated as the tri Service single window for interaction in space by all agencies including external ones. An Integrated Space Cell has been established to co-ordinate space issues and formulate a Draft Space Doctrine.

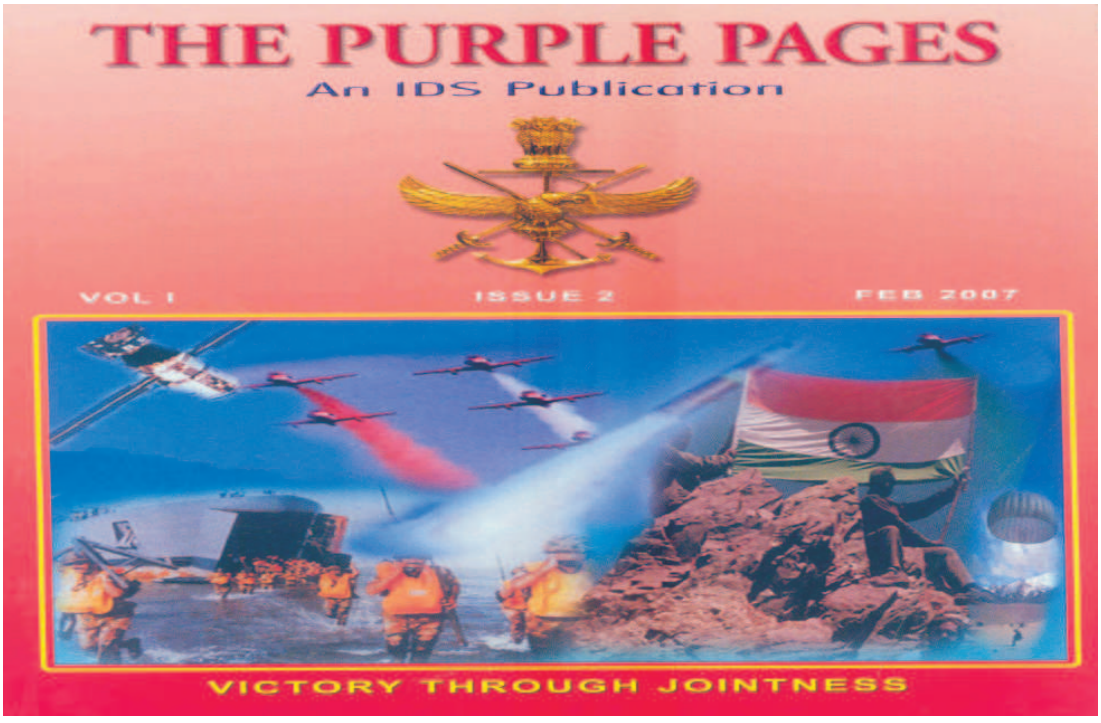
2.12 **Long Term Integrated Perspective Plan (LTIPP):** A LTIPP focusing on the Joint Conventional Edge, capabilities to be achieved, aspects of commonality of equipment; inter-Service prioritization and indigenization has been prepared to cover the 11th, 12th and 13th Plan periods.

2.13 **Integration between DRDO and Services:** HQ IDS has carried out analysis of DRDO's 11th Plan and a sincere effort to synchronise it with the Services 11th Defence Plan has been made.

2.14 **Joint Intelligence Assessments:** With the establishment of the Defence Intelligence Agency, integration of service intelligence agencies and a common assessment of strategic intelligence inputs is now available to defence planners.

2.15 **Joint Exercises:** A number of joint exercises with other countries have been conducted by HQ IDS. The latest, AMPHEX 07, was a major tri service exercise undertaken to validate the Joint Amphibious Doctrine.

2.16 **Think Tank Organisation:** Centre for Joint Warfare Studies (CENJOWS) was inaugurated on August 27, 2007. The main objectives of CENJOWS, which will function under HQ IDS, are conduct of studies and research work in Joint War-fighting, organisation of orientation courses/ capsules for various Ministries/ Agencies connected with HQ IDS/ Services and promotion of Jointmanship amongst Services, Ministries and Intelligence Agencies involved in National Security.



2.17 **Promoting Jointness:** To promote jointness at all levels within the Services HQ IDS has launched 'The Purple Pages', its bi-annual magazine on jointness. The magazine aims at providing a forum for all members of the services and the strategic community to share their views on the existing jointness and also propose options for the way ahead.

SERVICES HEADQUARTERS

2.18 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.

2.19 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

The three Chiefs on Army Day

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. To facilitate the work of the Chiefs of Staff Committee, a number of sub-committees have been established.

2.20 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 April 1, 2007 onwards is given in Appendix-II to this report.

DEFENCE (FINANCE)

2.21 Finance Division in the Ministry of Defence deals with all matters having financial implications. It is fully integrated with the Ministry of Defence and performs an advisory role.

2.22 To achieve greater efficiency in administration, expeditious disposal and transparency, Ministry of Defence exercises financial powers in consultation with the Finance Division as per the procedure laid down in the Defence Procurement Procedure 2006 and Defence Procurement Manual 2006. The Defence Procurement Procedure deals with capital acquisitions and Defence Procurement Manual deals with revenue procurements.

2.23 E-Procurements is one of the Thrust Areas approved by the Prime Minister for the year 2007. Accordingly, steps have been taken to enhance the scope of e-procurement in DRDO. This

Raksha Mantri and Raksha Rajya Mantri at CDA Conference

would facilitate tender inquiries being sent electronically to a bigger than usual set of vendors and improve competition/ transparency as well as cut down delays. Pilot projects for procurement of common user items have been taken up in five administrative units and designated officers have been entrusted with digital signatures.

2.24 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 2005-06 and 2006-07, as also the Revised Estimates for 2007-08 and Budget Estimates for 2008-09 are given in the Table No. 2.1 and charts at the end of this chapter.

2.25 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.

The Armed Forces Tribunal Act, 2007 has been notified on 28th December, 2007. Necessary follow up action is being taken on priority to set up the Principal Bench of the Armed Forces Tribunal in New Delhi.

Establishment of Armed Forces Tribunal

2.26 Armed Forces Tribunal Bill, 2005 was introduced in the Rajya Sabha in September 2005. The Standing Committee of Parliament on Defence examined the Bill and gave its recommendations in May 2006. The Ministry considered the recommendations and moved certain amendments in the Rajya Sabha in December 2007. Both the Houses have passed the Bill in the Winter Session of the Parliament in December 2007. The Armed Forces Tribunal Act, 2007 has been notified on 28th December 2007. Necessary follow up action is being taken on priority to set up the Principal Bench of the Armed Forces Tribunal in New Delhi.

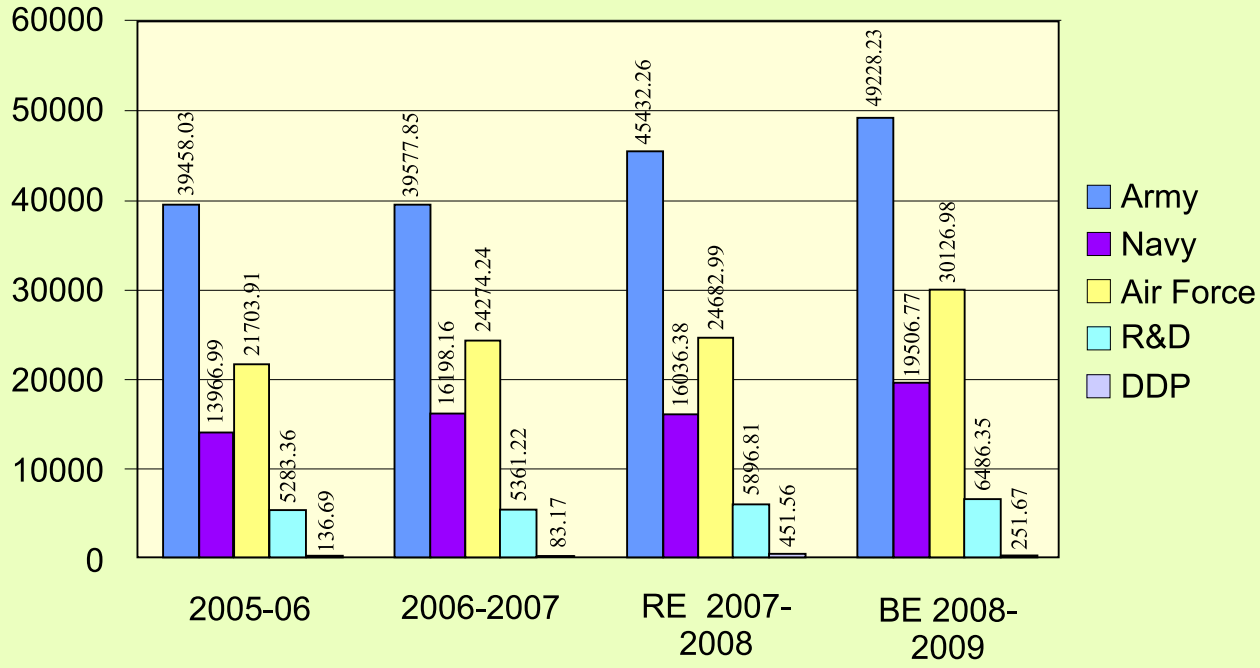
Table 2.1
Service/ Department-wise Break-up of Defence Expenditure

(Rs. in crore)

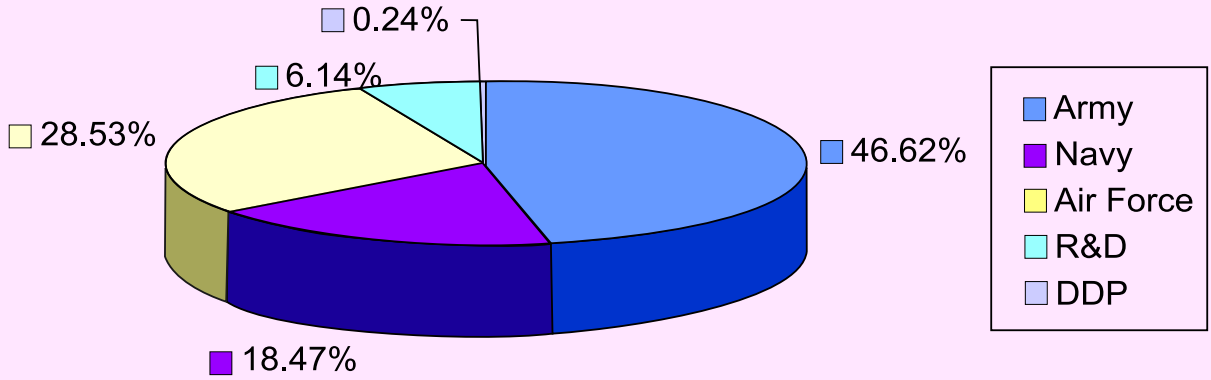
Service/ Department		2005-06	2006-07	RE 2007-08	BE 2008-09
Army		39458.03	39577.85	45432.26	49228.23
Navy		13966.99	16198.16	16036.38	19506.77
Air Force		21703.91	24274.24	24682.99	30126.98
DDP	DGOF	-208.35	-252.70	87.59	(-)171.65
	DGQA	345.04	335.87	363.97	423.32
	Total	136.69	83.17	451.56	251.67
DR&D		5283.36	5361.22	5896.81	6486.35
Total		80548.98	85494.64	92500.00	105600.00

Service/Department-wise Break up of Defence Expenditure

(Rs. in Crore)

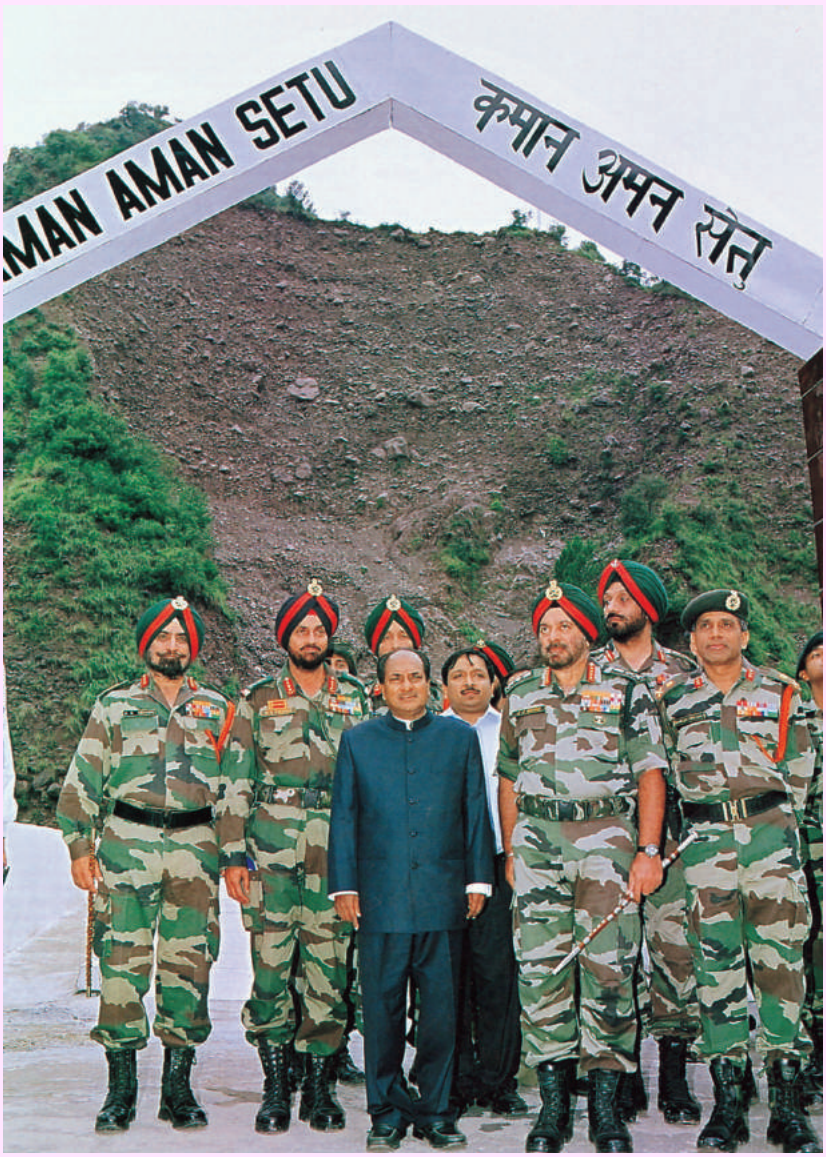


Service/Department-wise Expenditure as a Percentage of Total Defence Expenditure 2008-09 (BE)



3

INDIAN ARMY



Raksha Mantri and senior officers of the Indian Army at Kaman Aman Setu near Uri in J&K

The Indian Army is well equipped with modern technologies/equipment to increase their combat capabilities.

3.1 The Indian Army is the world's second largest army in terms of military personnel. It is a voluntary service. The army has rich combat experience in diverse terrains, due to India's diverse geography and also has a distinguished history of serving in United Nations Peace keeping Operations. Through its large, sustained troop commitments; India has come in for much praise for taking part in difficult UN Peacekeeping Operations for prolonged periods.

3.2 The basic responsibility of the Army is to safeguard the territorial integrity of the nation against external aggression. Due to country's long borders encompassing different geographical and climatic conditions such as desert terrain on the west, snow-covered mountains in the north and thick rainfed mountainous jungles in the east, the Army has to constantly prepare itself for diverse challenges. In addition, the Army is often required to assist the civil administration during internal security disturbances and in the maintenance of law and order, in organising relief operations during natural calamities like floods, earthquakes and cyclones and in the maintenance of essential services. Demands on the Army have increased manifold due to continuous deployment of its forces in counter insurgency operations in Jammu & Kashmir and the North East parts of the country. To achieve these objectives, the Army has to be constantly modernised, suitably structured, equipped and trained.

Modernisation and upgradation of Army is a continuous process to keep the Armed Forces ready to meet any challenge of tomorrow.

MODERNISATION OF ARMY

3.3 Indian Army is one of the finest Armies in the world. Modernisation and upgradation of Army is a continuous process to keep the Armed Forces ready to meet any challenge of tomorrow. It is based on five year plans. Focus and core areas of modernisation has been on:-

(a) Improvement in Fire Power and increased Mobility.

(b) All Weather Battle Field Surveillance capability.

(c) Night Fighting capabilities.

(d) Enhance capability of Special Forces.

(e) Capability for Network Centric Warfare.

(f) NBC Protection.

Kvadrat Missile Firing

3.4 **Mechanised Forces:** Image Intensification (II) and Thermal Imaging (TI) Night Vision Devices and weapon sights are essential to enhance the ability of our Mechanised Forces to operate by night. Procurement of a range of night vision equipment for the T-72 and T-55 tanks as well as the integration of existing TI sight with other weapon system for Infantry Combat Vehicle (ICV) BMP-2 is being carried out on priority. Super Generation II Sight for tanks is also being procured. The mobility and navigational capabilities of T-72 tanks and ICV BMP-2 are being enhanced by upgradation of their Power Pack, GPS and Advanced Land Navigation Systems. To enhance efficiency and to make training more cost effective, BMP Driving Simulator has been contracted and scheme for Gunnery Simulators is at advanced stage of procurement.

3.5 **Artillery :** Acquisition of additional Unmanned Aerial Vehicles (UAVs) and Night Vision Surveillance Devices by Artillery will enhance the Surveillance and Target Acquisition capability. The main focus for the Artillery is to acquire heavy calibre Guns with enhanced ranges with better fire power mobility.

3.6 **Army Air Defence**

(a) **Air Target Imitator (ATI) Launcher:** ATI Launcher of Russian origin based on BM-13 vehicle was issued alongwith the Kvadrat equipment.

b) **Modification for carriage of SAM-7 Missiles by Civil Hired**

Transport (CHT): During mobilisatiion, SAM-6 missiles are required to be carried by 9 tonne CHTs. A modification kit has been fabricated with help of which, three SAM-6 missiles can be carried by a 9 tonne CHT/ALS vehicle.

3.7 **Army Aviation :** The capabilities of Army Aviation are being strengthened by replacing existing Utility Helicopters with higher capacity Helicopters and induction of Armed Helicopter for special operations as well as Tactical Battle Support Operations.

3.8 **Engineers:** Army is on the way to increase its mine-laying and breaching capabilities. Procurement of State-of-the-art Influence Mines has enhanced the stopping power of our minefields. Acquisition of various bridging expedients will enhance tactical mobility of Strike Formations in the battle. State-of-the-art Counter Improvised Explosive Device (IED) equipment has been inducted.

3.9 **Signals:** The Corps of Signals has taken a number of major strides in fielding the Information and Communication Technology (ICT) infrastructure and facilities that will enable transformation of Indian Army into a Network Enabled Force by 2009. The communication infrastructure has been enhanced by completion of two major projects. An Optical Fibre Cable (OFC) communication network has been established in strategic alliance with BSNL in the harsh terrain of Eastern sector. Another major achievement has been establishment of Army owned Mobile Cellular Communication System in Northern Sector. The system provides 24 x 7 voice connectivity to the brave soldiers operating in mountainous terrain.

3.10 **Infantry:** The combat potential of Infantry and Rashtriya Rifles is being comprehensively transformed through a quantum enhancement of surveillance, firepower, protection, communication and mobility requirements. In pursuit for modernisation, the Infantry Battalions are being provided state-of-the-art weapon systems of greater lethality, range and precision, thermal imaging devices, bullet and mine proof vehicles and secure radio communications.

TERRITORIAL ARMY

The Territorial Army (TA) is a voluntary, part time Army consisting of otherwise gainfully employed Indian citizens, who perform their duty by relieving the Regular Army of their static duties and to aid the civil authorities in dealing with natural calamities and maintenance of essential services.

3.11 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 a national emergency by relieving the Regular Army of their static duties and to aid the civil authorities in dealing with natural calamities and maintenance of essential services.

Healing Touch

3.12 **Home and Hearth Battalions (TA):** A few Home and Hearth Battalions have been raised in addition to one Ikhwan Battalion.

3.13 **Ecological Task Forces:** Two ecological task force units have been raised for Assam. These units are being funded by Ministry of Environment and Forests (MoEF). The Ecological Task Force is making significant contribution in checking the ecological degradation in the assigned project areas. The forestation task is undertaken by the ex-servicemen recruited in these units thus providing them an employment avenue.

RASHTRIYA RIFLES (RR)

3.14 Thaw in relations with our adversaries and continued cease fire on LoC has given a new dimension to the role of RR in J & K. Rashtriya Rifles has surpassed its past performance in countering the terrorist threat in the hinterland. RR's contribution in winning of hearts and minds has also been well recognised and applauded. Rashtriya Rifles remains the Counter Insurgency/ Counter Terrorism Arm of the Indian Army.

3.15 **Operational Performance:** Operational performance of Rashtriya Rifles has been exemplary. This has been possible due to high motivational level of troops, a good intelligence network and an excellent rapport with local population and civil administration.

3.16 A number of tours to include elders, women and children were organized to give an exposure to the insulated populace

of the state. The tours were to the distant parts of the country with an aim to highlight the progress made by locals in other states as also to foster a spirit of oneness with the rest of the country.

3.17 Health care of the locals has been a major concern of Rashtriya Rifles. Towards this end, at every Battalion Headquarters, the Regiment Medical Officer renders medical assistance and aid to villagers in their respective areas of responsibility. In addition, several medical-cum- vetenary camps have been conducted. The physically challenged persons have been gifted with wheel chairs, tri-cycles and some fitted with artificial limbs, in concert with the Artificial Limb Manufacturing Corporation, Kanpur.

COUNTER INSURGENCY OPERATIONS AND INTERNAL SECURITY SITUATIONS

3.18 The contours of our security challenges are numerous and varied. To the military complexities arising out of the problems of unsettled borders, the challenges of the proxy war in Jammu & Kashmir, the insurgency in the North East and the growing Naxal menace in Central India, the ever enlarging spectre of terrorism and numerous non-military threats to our security have also been added.

"Green Siachen – Clean Siachen"
Major plantation drive in the barren reaches of Nubra and Shyok valleys

3.19 **Jammu & Kashmir:** The ceasefire on the borders is holding out, with a few minor aberrations. Our resolve in upholding the ceasefire has not only helped to strengthen the ongoing peace initiative but has also given people along the Line of Control, the opportunity to re-establish their lives.

To the military complexities arising out of the problems of unsettled borders, the challenges of the proxy war in Jammu & Kashmir, the insurgency in the North East and the growing Naxal menace in Central India, the ever enlarging spectre of terrorism and numerous non-military threats to our security have also been added.

3.20 Intelligence assessments indicate continued existence of terrorist infrastructure and camps across the borders. Pakistan retains the ability to calibrate the intensity of the proxy war. A high level of vigil is being maintained on the borders so that infiltration from Pakistan Occupied Kashmir (POK) is minimized.

3.21 The security forces have been able to significantly curtail the freedom of action of terrorists in J&K. Violence levels, as a consequence, have reduced significantly. The strength of the terrorists as well as their potential, in terms of weapons and related infrastructure, has shown a perceptible decline.

3.22 Our strategy, which essentially emphasises the need for 'people centricity' in operations, is paying rich dividends. Our focus continues to be on the conduct of surgical operations based on hard intelligence while causing minimum inconvenience to the local populace. The Indian Army is committed to avoidance of public alienation while respecting human rights scrupulously.

3.23 Tourist traffic has been encouraging and the economy is showing definite signs of picking up. Revival of local bodies, public outrage against terrorist attacks on tourists, protests seeking better administration and governance, resistance by families against recruitment of terrorists, are positive indicators of normalcy returning to the State. The upswing in tourism and the successful management of the Amarnath Yatra (over three lakh devotees this year) are other visible indicators of normalcy. The local population is also coming forward to provide real time intelligence on terrorist activities, which in turn has led to the launch of successful operations and elimination of top terrorist leaders.

3.24 **North-East:** The multi dimensional approach adopted by the Government to address the insurgency problems in the North Eastern States has brought about a perceptible change in the overall security environment in the region. There has been a marked reduction in violence levels and the general situation in the North-East States is well under control. The people are increasingly expressing their desire for peace while resisting violence and extortions by the armed groups.

3.25 **Assam:** In Assam, operations by the Security Forces since the beginning of this year have dealt a severe blow to the ULFA. Major successes have been recorded in ULFA strongholds in Upper Assam and the Lohit district of ALP.

3.26 **Nagaland:** In Nagaland, the peace talks continue and the ceasefire with NSCN (IM) has been extended indefinitely while that with NSCN (K) has been extended upto April 28, 2008. Most of the violence in the State is on account of clashes between various factions of Under Ground (UG) groups. Efforts are on to confine the cadres to their camps and strengthen the Cease Fire Monitoring Mechanisms.

3.27 **Manipur:** In Manipur, operations have been carried out in the Samtal Salient to clear the area of Under Ground group influence. Concurrently, efforts are on to formalise Ceasefire Ground Rules with SOO groups under the aegis of the State Government and the Ministry of Home Affairs.

3.28 Security Forces have played a major role in creating sustained operational pressure on most of the terrorist groups in the North Eastern States. This has shaped the environment for effecting surrenders by the terrorists.

3.29 **Naxal Violence:** In so far as Naxal Violence is concerned, the Indian Army has been instrumental in strengthening police mechanisms across the States. We have extended advice and training in Counter Naxal Operations, Counter IED Operations, Training of Trainers, as also CRPF, PAC and IRP battalions. 85 Companies have already been trained while an additional 65 Companies will be trained by June 2008.

SITUATION ALONG THE LINE OF ACTUAL CONTROL (LAC)

3.30 The situation along the LAC remains peaceful. In an attempt to forge better ties with China, a policy of positive engagement is being followed.

3.31 The institutionalisation of Confidence Building Measures and the signing of an 'Agreement on Political Parameters and Guiding Principles for the Settlement of the India - China Boundary Question', have given added impetus to the process. Relations between the two nations have improved greatly over the past few years. The Annual Defence Dialogue seeks to take the process of military to military interaction even further. Consequent to the signing of 'MoU on Exchanges and Cooperation in the Field of Defence' signed during the visit of Hon'ble RM to China in May 2006, and the discussion during the visit of the COAS in May 2007, a need was felt by both the countries to finalise the interaction between the two Armed Forces. The first India-China annual Defence Dialogue was held on November 12, 2007 at Beijing, China. Annual Defence Dialogue for the year 2008 has been planned to be held in India. The major issues discussed during the meeting focused on enhancing interaction between the Armed Forces, Annual Programme of exchange of visits, joint military training/ exercise, participation in training courses, Sports & Adventure activities.

3.32 We continue to realistically analyse the growing economic and military capacities of China and the infrastructural developments in Tibet. Accordingly, we are constantly reviewing and upgrading our strategic and conventional postures so that our national security is not compromised.

India is one of the largest contributors to United Nations Peace Keeping Operations. So far, Indian Army has taken part in 43 Peace Keeping Missions with more than 90,000 troops all over the world.

3.33 We are committed to consolidation of our manpower and force structures so as to right size our force and give it the necessary punch in consonance with the dictates of the modern battlefield. The induction of long range artillery/ rocket and missile weapon systems with their precision capacities is a step in that direction.

INDIAN ARMY'S CONTRIBUTION TO UNITED NATIONS PEACE KEEPING OPERATIONS

3.34 India is one of the largest contributors to United Nations Peace Keeping Operations. Since its first commitment in Korea in 1950, Indian Army has participated in several most difficult UN peace keeping

Peace Keeping in Congo

operations and won the universal acclaim for their professional excellence. So far, Indian Army has taken part in 43 Peacekeeping Missions with more than 90,000 troops all over the world. Some of the countries are Congo, Cambodia, Somalia, Lebanon, Ethiopia and Sudan.

3.35 Towards the fulfillment of our commitment to the UN and the World peace, 123 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 won 1 Param Vir Chakra, 5 Maha Vir Chakra, 1 Kirti Chakra, 19 Vir Chakra, 3 Shaurya Chakra, 4 Yudh Seva Medal, 10 Sena Medal and 2 Vishisth Seva Medal for their exemplary courageous work in UN. Since last year, Indian Army has started deploying lady officers as Military Observers and Staff Officers apart from forming part of the Medical Units being deployed in UN Missions. Presently, Lady officers have been deployed in Congo, Golan Heights and Ethiopia and Eritrea.

ECOLOGY AND ENVIRONMENT

3.36 Indian Army has been quite active on Ecology and Environment front. The major achievements have been :-

(a) **Indian Army – ICICI Green Governance:** Under this programme the following activities were undertaken:-

(i) **Rain Water Harvesting**: Year-2007 is being celebrated as "Water Year". To contribute towards national efforts, 11 projects are under execution on Rain Water Harvesting in various Army Commands.

(ii) **Awareness Programmes:** In collaboration with WWF-India and Bombay Natural History Society, Environmental Awareness Programmes have been started in 38 Army, Military and Sainik Schools.

(b) **Grants-In-Aid Scheme**: Indian Army has been sanctioned six projects under Grants-In-Aid for Greening India Scheme by National Afforestations and Ecological Board, Ministry of Environment & Forests. The plantation activities under this scheme are in progress in various Commands.

(c) **Honrary Wildlife Wardens:** Ministry of Environment and Forest has nominated Formation Commanders deployed in J & K and North-East states as Honrary Wildlife Wardens. They will help in anti-poaching and checking of illegal trade in wildlife. This step will go a long way in conservation of Wildlife.

(d) **Environmental Awards**: The efforts of formations and units of Indian Army have been recognised at National level in field of environment by bagging following awards :-

(i) **Indira Gandhi Paryavaran Puraskar**: The Garhwal Regimental Centre was awarded prestigious Indira Gandhi Paryavaran Puraskar (IGPP) by

MOEF on June 5, 2007 for outstanding contribution in environment preservation in Lansdowne.

(ii) **Green Governance Award by Bombay Natural History Society**:

(aa) **3 Infantry Division:** For conservation of fauna in High Altitudes of Ladakh Sector.

(ab) **Mechanised Infantry Regt Centre, Ahmednagar :** For conservation of flora in Ahmednagar.

MAJOR SPORTING PERFORMANCES

3.37 **Organization of Eighth Military World Games:** The eighth 'Military World Games' was conducted at Hyderabad and Mumbai from October 14 to 22, 2007.

3.38 **Singapore International Half Marathon Championship August 2007**: The Indian team comprising of five Army Sports Institute (ASI) athletes bagged the trophy for the second consecutive time, winning five of the top six positions, including the first three.

AWARDS

3.39 **Arjuna Award:** Naib Subedar Vijay Kumar of Army Shooting Node, Mhow was conferred with 'Arjuna Award' for the year 2006-07 in shooting.

3.40 Subedar Vikas Kumar represented India in 15th Asian Games at Doha and won the Gold Medal as part of the Indian Kabaddi team.

Military World Games 2007

3.41 **Tenzing Norgay National Adventure Award-2006**: Tenzing Norgay National Adventure Award for the year 2006 has been conferred on Subedar Palden Giachho, Shaurya Chakra of DOGRA Scouts for his splendid achievements in the field of Mountaineering.

3.42 **New Infrastructure of Shooting Node:** New infrastructure project of Army Marksmanship Unit (AMU) at Mhow with state-of-the-art shooting facilities was completed and inaugurated on July 31, 2007.

3.43 **Inclusion of Fencing under Mission Olympics:** Fencing has been included as the 11th sporting discipline under Mission Olympics and 7th at Army Sports Institute (ASI), Pune.

4

INDIAN NAVY

A Delhi Class Destroyer launching Surface to Surface Missiles

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, 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, 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 in our region. To achieve its tasks the Indian Navy is enhancing its capabilities, cooperation and interoperability with regional and extra regional navies.

NEW PROJECTS/ INDUCTIONS

4.2 INS Jalashwa (ex USS Trenton) acquired from US(Navy) was commissioned at Norfolk(USA) on June 22, 2007. Subsequently, on completion of trials, the ship commenced her passage to India on August 2, 2007. The ship reached Visakhapatnam on September 9, 2007. She adds a new dimension to the Indian Navy's operational prowess and provides flexibility of use for

A Seaking Helicopter firing a Missile

a large variety of roles including Disaster Relief during natural calamities. The ship is the first Landing Platform Dock (LPD) in the Indian Navy.

MAJOR EXERCISES

4.3 **Tropex 07 :** A theatre level exercise, Tropex 07, was conducted during the year. This included highly successful live weapon firings, including surface to air and surface to surface missiles and the testing of new operational concepts. The exercise also witnessed participation from the Indian Army, Indian Air Force and Indian Coast Guard.

4.4 **DGX 07 :** Defence of Gujarat Exercise (DGX 07) is an annual exercise conducted on the Western Seaboard, off the Gujarat coast. This year the exercise was conducted from November 13 to 23, 2007. All concepts of Defence of Gujarat and the Offshore Development Area were emulated during the Exercise.

4.5 **TACEX :** A Tactical Exercise (TACEX) cum Amphibious Exercise involving units of Eastern Naval Command and Andaman and Nicobar Command was conducted in the Andaman Sea from October 10 to 16, 2007. The amphibious phase witnessed landing of Indian Army troops at Kamorta and Kardip by naval ships.

4.6 **Exercise Tatraksha XXI :** To check our preparedness against infiltration through land and sea boundaries, a joint exercise by the Army with participation of Navy, Coast Guard, Indian Air Force, BSF, State police and Customs was conducted from April 10 to 13, 2007 in the Gulf of Kachch.

An LST Landing Troops Ashore

OVERSEAS OPERATIONS

4.7 **Overseas Deployments (OSD):** Overseas Deployments are undertaken by ships of the Indian Navy in support of the country's foreign policy. Such missions are for Flag showing, for fostering better relations with friendly foreign countries and for enhancing foreign cooperation. Important Overseas Deployments undertaken in 2007 included deployments to the Persian Gulf, North Arabian Sea, Mediterranean Sea, Red Sea, South China Sea and North West Pacific Ocean.

Naval ships and aircraft continued their vigil for security of areas of strategic interest and for prevention of smuggling of arms and illegal movement of cargo.

OVERSEAS SURVEYS

4.8 **INS Sarvekshak :** In pursuance of hydrographic co-operation INS Sarvekshak was on overseas deployment for hydrographic survey in Mauritius for about one and half months. The Charts of Agalega Island, Port Louis harbour and its approaches were handed over to the Prime Minister of Mauritius by the Chief of the Naval Staff at Port Louis.

4.9 **INS Nirdeshak:** INS Nirdeshak was on deployment to Maldives from November 13 to December 19, 2007, for undertaking survey tasks.

4.10 **Lokayan 07 :** Indian Sail training ship INS Tarangini had set sail on January 10, 2007, for a ten-month odyssey, named 'Lokayan 07'. The voyage took the ship to 23 ports spread over 16 countries. In addition to providing training to naval cadets, 18 trainee officers from 15 foreign countries, 16 Assistant

IN Sail Training Ship - Tarangini

Commandants of the Indian Coast Guard and two cadets from the Rashtriya Indian Military College were embarked during various legs of the voyage. The ship entered Kochi on completion of the voyage on October 29, 2007.

4.11 **EEZ Surveillance of Maldives :** EEZ Surveillance off Maldives was carried out from April 17 to May 22, 2007 by a Dornier aircraft from Indian Naval Air Squadron (INAS) 550.

OPERATIONAL TURN AROUND (OTR)

4.12 Naval ships and aircraft continued their vigil for security of areas of strategic interest and for prevention of smuggling of arms and illegal movement of cargo. The naval ships and aircraft have undertook Operational Turn Around (OTR) at various ports for replenishment of fuel, rations and stores.

4.13 INS Sharda was deployed from September 3 to 10, 2007 for 'Presence cum Surveillance Mission' in Maldivian EEZ with OTR at Malé. The ship transported three COTs radars to the Maldivian authorities and also stores for Maldivian Coast Guard Ship Huravee (ex INS Tillanchang).

4.14 INS Sarvekshak whilst deployed off Mauritius (from March 10 to April 12, 2007) for survey tasks, undertook Operational Turn Around at Port Louis for replenishment.

EXERCISES WITH FOREIGN NAVIES

4.15 In continuation with the policy of enhancing co-operation with foreign navies a series of exercises have been conducted during the year, the details of which are enumerated in the succeeding paragraphs.

4.16 **PASSEX :** PASSEX have been carried out with various navies when an opportunity was available.

4.17 **IN – RNO Bilateral exercise 'Thamer-al-Thaiyab':** Oman-India Maritime bilateral exercise 'Thammer-Al-

IN and RNO ships engaged in High Speed Manoeuvres

Tayyib 2007' was held off the Western Seaboard from March 26 to 30, 2007. IN Ships Betwa and Prabal along with IN Dornier aircraft participated from Indian side while Royal Navy of Oman was represented by 'Al Muazzar' (Qahir Class Corvette) and 'Al Batnah' (Patrol Vessel).

4.18 **IN - RSN Bilateral Exercise 'SIMBEX 07':** Singapore-India Maritime Bilateral Exercise, SIMBEX 07, was the first exercise conducted during the overseas deployment of Eastern Fleet ships to South China Sea and North Pacific in early 2007. The exercise was conducted in two phases, the first phase in Andaman Sea from March 18 to 21, 2007 and the second phase in South China Sea from March 25 to 28, 2007. IN ships Rana, Ranjit and Kuthar represented Indian Navy, while RSN ships Valour, Gallant, Sea Dragon, Submarine Chieftain, F 16 and MPA Fokker F 50 participated in the exercise.

4.19 **MALABAR 07-1:** Indo-US combined exercise Malabar 07-1 was held off Okinawa from April 6 to 11, 2007. IN ships Mysore, Rana, Ranjit, Jyoti and Kuthar participated in the exercise. The US Navy fielded six Destroyers, one nuclear submarine, shore based fighters (F 16) and P3C Orion aircraft. On completion of the exercise IN ships Mysore, Jyoti and Kuthar visited Yokosuka, Japan from April 12 to 16, 2007.

4.20 **TRILATEX**: A Trilateral Exercise involving units from Indian Navy, US Navy and Japanese Maritime Self Defense Force was held off Tokyo on April 16, 2007. IN ships Mysore, Jyoti and Kuthar participated in the exercise. Two ships each from US Navy and JMSDF along with shore based aircraft took part in the exercise.

4.21 **WPNS SEA EXERCISE (WMSX):** 17 Ships from Australia, China,

WPNS Sea Exercise in progress

France, India, Japan , Malaysia, New Zealand, Singapore and USA participated in the 2nd WMSX conducted in the Singapore Straits and South China Sea, from May 19 to 20, 2007.

4.22 **INDRA 07 :** Indo-Russian exercise INDRA 07 was held off Vladivostock from April 24 to 27, 2007. IN ships Mysore, Rana, Ranjit, Kuthar and Jyoti participated in the exercise. The Russian Navy was represented by two Udaloy class destroyers, one tug, one submarine and shore based aircraft.

4.23 **MALABAR 07-2 :** Malabar 07-2, a multilateral exercise involving the navies of India, USA, Japan, Australia and Singapore was conducted in Bay of Bengal from September 4 to 9, 2007. About 25 ships, 150 aircraft and 20,000 personnel participated in the exercise. The exercise witnessed for the first time participation by three Carrier Strike Groups; two from USN (Nimitz and Kitty Hawk) and one from Indian Navy (Viraat).

4.24 **VARUNA 2007:** 'VARUNA 07' with the French Navy was conducted in the Gulf of Aden, from September 15 to 17, 2007. The French units - La Motte Picquet (Frigate) with Lynx, Cdt Blasion (Corvette), one Atlantique, Two PUMA helicopters (from the Army), Six Mirages and fifteen Commandoes participated in the exercise. The Indian side witnessed participation of INS Beas, Rajput, Jyoti and sixteen MARCOS. The highlight of the exercise was the first ever combined Horn of Africa patrol by IN and FN ships, which was undertaken from September 18 to 22, 2007.

4.25 **SALVEX 07**: Indo-US Salvage Exercise, SALVEX 07 was conducted off Goa from October 9 to 19, 2007. INS Nireekshak and USNS Salvor participated in the exercise involving combined diving and salvage operations.

IN and USN ships during Combat Manoeuvres- Malabar 07

4.26 **India - Thailand Coordinated Patrol (INDOTHAI CORPAT):** INDOTHAI CORPAT are conducted biannually as per MOU signed between Indian Navy and Royal Thailand Navy (RTN). The fourth cycle of INDOTHAI CORPAT was conducted from April 2 to 8, 2007 and the closing ceremony was held at Port Blair on April 7, 2007. The fifth cycle of CORPAT was conducted from October 31 to November 7, 2007 with debrief at Phuket on November 6, 2007. IN Ship Trinkat and one IN Dornier participated in the exercises.

4.27 **India - Indonesia Coordinated Patrol (INDINDOCORPAT):** INDINDO CORPAT are conducted biannually as per MOU signed between IN and RTN. The ninth cycle of INDINDO CORPAT was conducted from March 5 to 24, 2007 and the tenth cycle from October 3 to 24, 2007.

4.28 **4th INDOTHAI Joint Working Group (JWG) Meeting:** The meetings of Indian Navy and Royal Thailand Navy (IN-RTN) are held once every year, alternately at Delhi and Bangkok. The Fourth Indo-Thai Joint Working Group Meeting for Establishment of Order at Sea was held from August 27 to 30, 2007 at New Delhi.

4.29 **KONKAN 2007:** KONKAN 07 'Table-Top Exercise (TTEX)' was conducted from October 7 to 20, 2007, Portsmouth, UK. The game was codenamed 'Op Bold Centurion'. It was a multi-threat war game based on North African geographical settings with fictional countries. The aim of the exercise was to consolidate understanding of the Commander's Estimate Process (CEP). The settings were based on crisis response planning procedures in a 'Humanitarian Assistance (HA)' kind of scenario under the UN mandate.

COMMISSIONING AND DECOMMISSIONING OF IN SHIPS

4.30 INS Shardul, Landing Ship Tank (Large) was commissioned at Naval Base, Karwar

INS Mysore with Multinational Forces

on January 4, 2007. INS Mithun, INS Mahe, INS Porbandar, INS Shakti, INS Udaygiri and INS Pondicherry were decommissioned during the year.

INS Shardul, Landing Ship Tank (Large) was commissioned at Naval Base, Karwar on January 4, 2007.

TRAINING

4.31 **Deepest Saturation Dive :** The Diving Support Vessel Nireekshak undertook the deepest ever saturation dive to a depth of 218 meters on March 30, 2007. One officer and five sailors undertook the dive, decompression for which commenced on March 30, 2007 and the divers finally surfaced safely on April 7, 2007.

4.32 **Training of Foreign Personnel/ Foreign Training Delegations:** INS Krishna proceeded on a sea training mission to Sri Lanka and Male from September 21 to October 3, 2007. The sortie was aimed at training personnel from the Sri Lankan Navy and the Maldivian Coast Guard. 42 cadets/ midshipmen from the Sri Lankan Navy and five cadets from the Maldivian Coast Guard were trained onboard, at sea, in General Navigation, Bridgemanship and Seamanship evolutions. The trainees were also imparted training in Damage Control and Fire Fighting as well as causality evacuation.

4.33 **Tri Services Publicity Drive at Alapuzha :** A Tri Services Image Projection Campaign was organized at Alapuzha on October 16, 2007, followed by a special Naval recruitment drive on October 17 and 18, 2007. Later a special Operational Display was undertaken and this included helibatics, SAR demonstration, slithering operations by marine commandos, followed by a flypast by Naval Aircraft. Naval ships, which were anchored off the beach, were illuminated after sunset. Static displays were also put up at the venue. The response from the public was overwhelming.

INS Sutlej was deployed in the Sir Creek area from January 10 to February 25, 2007, for undertaking Joint Survey of the creek area along with Pakistan Naval Ship Behr Paima.

ADVENTURE AND SPORTS

4.34 **XXVI Indian Antarctica Expedition:** One officer and one sailor took part in the XXVI Indian Antarctica Expedition.

4.35 **Commercial Diving Course:** The Indian Navy has been conducting a diving course at Diving School at Kochi since 1997 to train civilian divers, in addition to military divers. This effort of the Navy has helped in saving foreign exchange and attaining self reliance in the field of commercial diving.

ACHIEVEMENTS OF NAVAL SPORTSMEN

4.36 A list of the personnel who have done the Navy proud by winning medals at various National/ International events is given in Table 4.1.

MISCELLANEOUS

4.37 **Joint Survey of Sir Creek and Adjoining Areas:** INS Sutlej was deployed in the Sir Creek area from January 10 to February 25, 2007, for undertaking

Table 4.1

	Name	Rank	Event	Event
1.	AL Lakra	CPOPT I	Boxing	➢ Bronze Medal - 53rd National Championship, Hyderabad, March 2007. ● Gold Medal – 33rd National Games, Guwahati and 54th National Championship, Delhi · ● Represented country in the King's Cup Thailand in March 2007.
2.	M Shinoj	CPO PTI	Gymnastics	➢ 33rd National Games, Guwahati, February 2007. ➢ 47th Sr. National Gymnastics Championship at Allahabad in March 2007. ➢ Gold Medal, Two Bronze Medals all round Best Gymnast.
3	Raja Roy	PO		➢ Two Silver Medals in 33rd National Games held at Guw Sr National Aerobics Gymnastics Championship at Rajkot in March 2007 and won the Gold Medal in Aerobic in Trio and Group event. ahati ➢ Three Gold and one Bronze in 47th Sr. National Gymnastics Championship at Allahabad in March 2007.
	S Vinay Kumar	PO		One Bronze Medal in 47th Sr. National Gymnastics Champion-ship at Allahabad in March 2007.
5	Arvind Sharma	PO		
6	S Satyajit Singh	POME		Sr National Aerobics Gymnastics Championship at Rajkot in March 2007 and won the Gold Medal in Aerobic in Trio and Group event.
7	Raja Parmar	POR (TEL)		
8	● PT Raghunath ● Sanjeev Rajput ● Omkar Singh	MCME II CPO QA3 PO UC3 PO QA3	Shooting	Selected for Asian Shooting Championship scheduled at Kuwait in December 2007.

Joint Survey of the creek area along with Pakistan Naval Ship Behr Paima. The joint survey now provides a 'Common Map' for resolving the maritime boundary issue in the West. This is a significant milestone in maritime boundary resolution and efforts towards enhancing the CBMs.

4.38 **Docking of Submarine on Ship Lift :** A milestone has been achieved recently with the first ever docking of a submarine on the ship lift at Karwar. The docking of the Submarine is considered special because it has been undertaken on keel blocks unlike arrangements used in other yards.

The first edition of Bay of Bengal Pilot was released on March 19, 2007 which is an important navigational publication providing vital navigation safety information to the mariners about Bay of Bengal.

4.39 **Bay of Bengal Pilot:** The first edition of Bay of Bengal Pilot was released on March 19, 2007. The document is an important navigational publication providing vital navigation safety information to the mariners about Bay of Bengal.

4.40 **Indo-UK Hydrographic Cooperation:** Bilateral discussions with a high level delegation of the United Kingdom Hydrographic Office at National Hydrographic Office, Dehradun on February 5, 2007 has led to renewal of the existing bilateral arrangement for exchange of data and products. Now UKHO is a valued distributor for Indian Electronic Navigation Charts (ENCs).

5

INDIAN AIR FORCE

SU-30 MKI in flight

The past 75 years have been an eventful journey for the Indian Air Force (IAF) – from a flight of 'Wapitis' in 1932, to the fourth largest, professionally acclaimed, strategic Air Force responsible for guarding Nation's vital interests. From 1948 to Kargil, the IAF has always fielded winning capabilities. IAF's professional and prompt operations in peace time, at home and abroad and in peacekeeping, have earned many accolades.

5.1 In recent years, IAF has enhanced cooperation with Air Forces of other countries and exercised with some of the best, to hone skills, assimilate 'best practices' and strengthen ties of friendship all over the World. Today, the IAF has formal cooperation with six nations and exchanges with many others. There are IAF teams and missions in 10 countries and four widely appreciated UN missions in Congo and Sudan. To remain competitive and credible, it is imperative that the IAF imbibe modern technologies to achieve long-reach, precision, networked and space-enabled force capabilities. The changing global environment, Regional military capabilities and vital national interests, necessitate a transformational modernization.

INDUCTION AND ACQUISITIONS

5.2 **Hawk AJT :** The manufacture of HAWK AJT aircraft has commenced in UK. Four aircraft have been delivered by December 2007 and the deliveries of remaining aircraft will be completed by February 2008. The Hindustan Aeronautics Ltd. (HAL) license-built HAWK AJT will be delivered by May 2010.

5.3 **Aircraft for Special Operations (C-130 J) :** The IAF is in the process of procuring C-130 J aircraft for special operations.

Advanced Jet Trainer HAWK MK 132 inducted in Indian Air Force

5.4 **Advanced Light Helicopter (ALH) :** Procurement of ALHs from HAL as a replacement to its Chetak/ Cheetah fleet as a utility helicopter is in progress.

5.5 **VVIP Helicopter Replacement:** To replace the ageing VIP helicopters as well as to increase the strength to meet the operational and security requirement for VVIP operations, a case for global RFP was floated for procurement of VVIP helicopters.

5.6 **Su-30 MKI :** The state-of-art Su-30 MKI aircraft have been inducted in IAF.

5.7 **Multi Role Medium Range Combat Aircraft (MMRCA) :** As a long term strategy, IAF is planning to reduce the varied types of fighter aircraft that it has on its inventory. This would result in better fleet management. IAF is in the process of acquiring Medium Multi Role Combat Aircraft.

5.8 **Fifth Generation Fighter Aircraft:** An Inter Government Agreement (IGA) has been signed with the Russian Government on October 17, 2007 for joint development of 'Fifth Generation Fighter Aircraft' by HAL and Russians (SDB).

5.9 **AWACS :** The airborne warning and control system (AWACS) are being procured from Israel to meet the long felt need of the IAF.

5.10 **Additional DO-228 Aircraft Induction :** Considering the increased training requirement of growing transport fleet and the aircraft utility as a short haul communication platform, additional DO-228 aircraft are being procured from HAL.

5.11 **Induction of MLH :** The IAF is in the process of acquiring Medium Lift Helicopters from Russia.

5.12 **Modularisation of Load :** The transport fleet of the IAF intends to mechanize and modularize the load for air transportation. Under the scheme, IAF proposes to acquire indigenous containers and pallets.

UPGRADES AND INDIGENISATION

5.13 **Fleet Upgrades :** In an attempt to keep pace with rapid development in aviation technology, the mainstay aircraft of transport fleet viz. AN-32 and IL-76/78 aircraft, are planned for composite avionic and communication equipment upgrade.

5.14 **Aircraft Upgrade :** MiG-27 aircraft and Mi-17 helicopters are being upgraded by HAL in order to optimise their utilization.

FLIGHT SAFETY

5.15 **Accident Statistics:** The accident rate of the IAF has shown a steady decline from 1.48 per 10,000 hours in 1971-72 to 0.34 in 2006-07. The rate has further gone down to 0.31 per 10,000 hours in the current financial year (from April 1, 2007 to November 21, 2007). This feat has been achieved by instituting various proactive measures by the IAF to avoid/ minimize accidents, combined with a whole hearted and synergic effort by its personnel.

5.16 **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 inhouse as well as external (like

Bombay Natural History Society etc.) have resulted in bringing down bird hit accidents from three in 1971-72 to nil in 2006-07.

The accident rate of the IAF has shown a steady decline from 1.48 per 10,000 hours in 1971-72 to 0.34 in 2006-07.

5.17 **Vermiculture :** In order to scientifically dispose off the garbage at the Air Force Stations and thus manage bird activity, IAF launched a Zero – Garbage Scheme for its bases. A team formed by DG (I&S) has suggested modalities for its implementation. Under this scheme, the garbage is segregated at source into bio-degradable and non-degradable garbage. The biodegradable garbage is then taken to the Vermiculture site, where it is converted into eco-friendly vermin compost with the help of worms. The non degradable garbage is disposed off at a place determined by the local municipality. This scheme has been implemented at all major Air Force Stations and it has made the environment cleaner and reduced the bird activity.

5.18 **Solid Waste Management:** Effective management of solid waste at IAF flying stations as a part of anti bird measures is under progress. In 2001, IAF initiated a bird survey. The Solid Waste Management Scheme was conceptualized and was envisaged to be completed in two years (2003-2004) with 100% central assistance. An amount of Rs 99.35 crores had been earmarked towards the same. At present the project has been completed and commissioned and functioning successfully at two airbases i.e. Sirsa and Jodhpur.

5.19 **Conduct of IFSCON:** International Flight Safety Conference-2007 (IFSCON-07) was conducted in October, 2007 with professionals from 31 countries as well as Indian stake holders attending it. The conference gave an opportunity to interact with aviation experts from countries across the globe with an aim to derive maximum benefit for the cause of aviation safety in the IAF. IFSCON -07, apart from giving significant impetus to aviation safety in India, also contributed to fostering mutually beneficial cooperation amongst the participating nations and enhanced the country's international image.

TRAINING AND EXERCISES

5.20 **Ex Indradhanush with UK :** IAF participated in Exercise Indradhanush during June/ July 2007 at RAFB Waddington. Primarily a fighter exercise, the IAF contingent consisted of six Su-30 and one IL 78 MkI aircraft. The Indian elements (comprising one IL -78 and two SU-30 MKI) were also included in the static display and were declared as the best display in the show. Exercise Indradhanush was the first joint exercise of IAF in UK.

5.21 **Ex Indra 07 in Russia :** IAF along with the Indian Army conducted a Joint Airborne Exercise with the Russian Airborne Forces from September 11-20, 2007. The exercise was code named Exercise Indra 07. In addition to ferry of equipment and troops for the exercise, IL-76 aircraft for the first time airdropped Indian paratroopers over Russian soil in a combat manoeuvre. The

Ex Indradhanush: Su-30 with RAF Fighters

exercise was a sequel to Exercise Indra 05 which was held in India in 2005 along with the visiting Russian contingent. The theme of the exercise was based on common enemy i.e. terrorism.

5.22 **Training of Foreign Personnel in India:** The training of personnel of friendly foreign countries in the IAF is done in co-ordination with MEA as part of International Technical and Educational Cooperation Programme. A total of 158 foreign personnel have been trained in IAF establishment during 2006-07. A total of 129 vacancies had been allotted for training of foreign personnel for the year 2007-08 out of which 25 personnel have completed their training.

5.23 **IAF Training Teams Abroad :** The IAF also has four training teams in Botswana, Mauritius, Namibia and Zambia. The presence of these training teams has enabled the defence forces of these countries to become increasingly self-reliant.

The training of personnel of friendly foreign countries in the IAF is done in co-ordination with MEA as part of International Technical and Educational Cooperation Programme.

IMPROVED MANPOWER INDUCTION AND PUBLICITY STEPS

5.24 **Short Service Commission in Flying Branch for Men and Women :** The Short Service Commission Scheme for flying branch has been revised to include both men and women. Graduates or B.E. (in any discipline, having passed Maths and Physics at 10+2 level) are permitted to apply till the age of 23 years (as on commencement of training). The revised scheme is effective from January, 2008 with 14 years as term of their engagement.

5.25 **Fast Track Selection (FTS) :** Fast Track Selection (FTS) for

Engineering graduates, for January 2008 course, was conducted at 14 IAF Stations in the month of August/ September, 2007.

5.26 **Image Projection of Armed Forces:**

(a) IAF participated in "Swasraya Bharath – 2007" at Kochi from October 9 to 15, 2007 showcasing Technical Displays (Indigenization) and Career Publicity Stalls (Officers and Airmen).

(b) IAF participated in Tri-Services Publicity Image Projection drive at Allapuzha, Kerala on October 16 and 17, 2007. A good number of prospective candidates visited the IAF Publicity Stall.

(c) As a part of Induction Publicity in North Eastern region IAF image projection campaigns were held at Imphal, Agartala and Kohima on December 19, 21 and 24, 2007 respectively.

5.27 **Summer Training of NIT Students:** In our continuing efforts to target better quality intake and talent from premier educational institutes, a special drive was launched to conduct summer training for 8 weeks for the NIT (National Institute of Technology) students at IAF BRDs all across the country. 51 Engineering students from 11 NITs participated in summer training camp held from May 16 to July 9, 2007.

5.28 **Formation of 'SADBHAVNA' Cells:** Administrative help cell named "Sadbhavna" formed during the current year at all AF Stations, as a step to improve quality of life of air warriors, provides administrative assistance at a single point to an air warrior who arrives at his new unit on being posted out. This cell helps the air warriors in settling down at a new place expeditiously and also coordinates his arrivals/ clearance formalities.

5.29 **International Society for Aerospace Medicine Conference :** ISAM, the 47th International Society for Aerospace Medicine Conference was held during October 30 to November 2, 2007 at Institute of Aviation Medicine (IAM) Bangalore. 46 scientific papers and two orations were presented by medical officers of all the three services and civilian doctors.

5.30 **ISO Certification :** As a recognition to maintenance of highest standard ISO 9001:2001 certification has been awarded to the Air Force Central Medical Establishment, Air Force Group Insurance Society, AF Bal Bharati School and AF Golden Jubilee Institute during the year.

5.31 **Canberra :** On May 31, 2007 at AF Station Agra, the IAF bade Adieu to Canberra bomber at an impressive and touching ceremony. The bomber retired after completing 50 years of glorious service with the IAF.

5.32 **Platinum Jubilee Parade :** The IAF celebrated its platinum jubilee year by organizing a number of events all over the country. Para drop display by 75 sky divers,

release of commemorative postage stamp and coins, aerobatic display by Surya Kiran and Sarang (helicopter) team were the highlights of the spectacular parade reviewed by the Chief of Air Staff on October 8, 2007 at Air Force Station Hindon.

5.33 **Air Force Platinum Jubilee Tattoo :** Air Force Platinum Jubilee Tattoo was held on March 17 to 18, 2007 with bands from Sri Lanka, Singapore, Thailand, US and the three Services participating in the event. A road show for the public was also held at the India Gate on March 17 and 18, 2007.

5.34 **Round the World Expedition :** As a part of the Platinum Jubilee Celebration the IAF organized 'Round the World Microlight Expedition'. The Microlight was piloted by Wg Cdr R Monga and Wg Cdr Anil Kumar. It covered a distance of 40,497 kms in 80 days flying over 19 countries, including China and Pakistan. The duo established a new world record by traveling around the world in 80 days, adding a new feather in the IAF cap.

5.35 **Fleet Review :** After a gap of 31 years, the third Fleet Review of the IAF by His Excellency President of India

Round the World Microlight Expedition

was carried out on March 7, 2007 at AF Station Chandigarah. During the Fleet Review, the President's Colours/ Standards awarded to various squadrons/ units of the IAF were paraded and flying and static display of various types of aircraft in the IAF inventory was also conducted.

MODERNISATION OF SECURITY INFRASTRUCTURE

5.36 **Modernisation of Security Infrastructure :** Following security equipment have already been inducted/ planned to be inducted in order to beef up security measures of AF Stations.-

(a) **X-Ray Baggage Inspection System (XBIS):** 26 XBIS have been procured and are being extensively utilized for scanning the baggage of passengers transiting through service aircraft.

(b) **Night Vision Devices (NVDs) :** A total of 173 NVDs have been procured and are in use at Stations for security duties. Procurement of additional 900 NVDs is in final stages.

(c) **Interactive Fire Arm Training Simulator (IFATS):** Twelve IFATS have already been procured and installed at Stations, enhancing the marksmanship of Air Warriors. Fifteen IFATS are under procurement. Additional 50 IFATS have been planned to be procured during 11th and 12th five year plans.

(d) **Smart Power Fence:** Procurement of smart power fence for four AF bases in J&K sector is in the final stage.

(e) **Motorola Communication Equipment:** 900 Motorola communication equipment have recently been procured and distributed among AF Stations for enhancing security measures.

6

COAST GUARD

'IN STEP'- Coast Guard Republic Day Contingent

The Indian Coast Guard has a force level of 43 ships, 45 aircraft and helicopters, 18 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.

ORGANISATION

6.3 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 i.e. 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 Districts.

DUTIES AND FUNCTIONS

6.4 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.

EXISTING FORCE LEVEL

Advanced Offshore Patrol vessel 'Sankalp', Pollution Control Vessel 'Samudra Prahari' and Advanced Offshore Patrol Vessel 'Samrat', are the new incumbents to be brought into the Coast Guard force.

6.5 The Indian Coast Guard has a force level of 43 ships, 45 aircraft and helicopters, 18 boats/ craft and 23 non-commissioned boats/ craft in its fleet to carry out regular surveillance of the Maritime Zones of India and the areas of interest. One Advanced Offshore Patrol vessel 'Sankalp', constructed by M/s Goa Shipyard Limited (GSL), Goa is also being commissioned. The other new incumbents to be brought into the Coast Guard force include - one Pollution Control Vessel – 'Samudra Prahari' and one Advanced Offshore Patrol Vessel – 'Samrat', launched on March 21, 2007 and July 2, 2007 respectively.

OPERATIONS AND EXERCISES

6.6 The Indian Coast Guard carried out the following exercises during the year 2007:-

(a) **Sagar Manthan IV:** A national level pollution response exercise was conducted from April 9 to 10, 2007 off Sikka, Gulf of Kutchch.

(b) **Operation Prakshepan:** Indian Coast Guard Ship Habbah Khatun was tasked off Chennai to sanitise the danger area of fishing and shipping traffic view launch of Polar Satellite Launch Vehicle C-8 from SDSC SHAR on April 23, 2007.

(c) **Search & Rescue Exercise (SAREX-07):** National level Maritime Search and Rescue Exercise was conducted off Port Blair on November 15 and 16, 2007 to assess the capabilities of Indian Coast Guard to respond to SAR incident at sea. National Maritime Search and Rescue(NMSAR) board members actively participated in the exercise and resources from other NMSAR agencies were also utilized to ensure a synergized response to the simulated situation.

(d) **Joint Exercise with OMAN:** Indian Coast Guard Ship Varuna, with integral helicopter and Savitribai Phule, departed Porbandar on April 14, 2007 for overseas deployment to Oman. The ships visited Oman (Muscat) from April 16 to 19, 2007. A joint exercise was conducted off Muscat between Indian Coast Guard and Royal Oman Police Coast Guard on April 18, 2007

(e) **SAHAYOG Kaijin-VIII:** Indian Coast Guard Ship Sagar sailed from Port Blair on May 5, 2007 for overseas deployment to Vietnam, Japan and Philippines from May 11 to June 12, 2007 for Japan Coast Guard Sea Review and Combined Exercises.

(f) **IMDEX-07:** Coast Guard Ship Sangram sailed from Port Blair on May 11, 2007 for overseas deployment

ICGS Samar at Port Louis, Mauritius during Joint exercise with Mauritius Coast Guard

to Singapore for participation in the International Maritime Defence Exhibition (IMDEX Asia-2007) at Singapore from May 14 to 19 May, 2007.

(g) **ICGS Samar:** Coast Guard Ship Samar sailed from Mumbai on August 10, 2007 for overseas deployment to Mauritius, Madagascar and Seychelles from August 21 to September 4, 2007.

(h) **ICGS Sangram:** Coast Guard ship Sangram, with integral helicopter, sailed from Port Blair on November 25, 2007 for overseas deployment to Republic of Korea for joint exercise with Korea Coast Guard from December 10 to 14, 2007 to have interaction on Coast Guard-centric subjects with law enforcement agencies of Hongkong and Singapore enroute.

Coast Guard ships and aircraft undertake various Search and Rescue missions and were instrumental in saving 185 lives at sea.

6.7 **Operational Achievements:** ICG 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 Zone is regularly kept under vigil to keep the poachers at bay. The achievements of Coast Guard are shown in Table 6.1.

Table 6.1

Sl. No.	Achievements	Since (January 1981)	In the past one year
(a)	Contraband seized	503.104 cr	Nil
(b)	Poachers apprehended	925 Boats 9220 crew	21 Boats 238 crew
(c)	Smugglers apprehended	106 vessels 715 crew	Nil Nil
(d)	Search and Rescue(SAR) missions	1110	99
(e)	Search and Rescue Sorties (Ship + aircraft)	1111+1063	80+69
(f)	Lives Saved	4049	185

6.8 **Space Capsule Recovery Experiment:** The Space Capsule Recovery Experiment (SRE) is a national project and a prelude to the Indian 'Man on Moon' mission – 'Chandrayan'. The SRE project was commenced by Indian Space Research Organization (ISRO) in the year 2003 and the Indian Coast

Keeping a sharp vigil at sea - Training at grass root level

Guard has provided all assistance to ISRO since commencement of the project. The SRE was launched on January 10, 2007 and after spending 12 days in space, the module splashed down 70 nautical miles off Sriharikota coast. The Coast Guard launched an operation code named 'Antriksh' on January 21, 2007 to recover the SRE module from the Bay of Bengal with a team of 21 officials/ scientists from ISRO and other organisations.

6.9 **CG Aviation Silver Jubilee:** The Coast Guard celebrated the Silver Jubilee of its Aviation Arm on May 22, 2007. Raksha Mantri was the Chief Guest. He reviewed a spectacular parade and congratulated all the Officers and Men on the occasion.

7

DEFENCE PRODUCTION

Weapon Locating Radar manufactured by BEL

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 8 Defence Public Sector Undertakings and 39 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.

7.2 The following are the major organizations 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

7.3 Defence equipment today is technology intensive with high levels of quality. The Directorates General of Quality Assurance and Aeronautical Quality Assurance, and the Directorate of Standardisation have been set up to ensure these quality levels.

7.4 With the introduction of the new Defence Procurement Procedure 2006, Government has stipulated a 30% offset for contracts exceeding Rs. 300 crore. The vendors concerned will have to source goods or services to this extent from Indian defence industry. This would give the industry a significant opportunity to improve exports as well as manufacturing capabilities.

7.5 The Defence Exhibition Organisation has regularly been organizing two major international events "Defexpo" and "Aero India" since 1996. The Defexpo is

a biennial event in which a large number of manufacturers, participating countries and businessmen take part; its focus is on land and naval systems. Aero India, on the other hand, is for the aviation sector and aerospace. Over the years, both events have secured considerable international recognition and have also grown significantly in terms of the number of participants and the area occupied.

ORDNANCE FACTORIES

7.6 The Ordnance Factories Organization is the largest and oldest departmentally run production organization 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.

7.7 The Ordnance Factories Organization is a fine blend of old and state-of-the-art factories. The first Ordnance Factory was established in 1801 at Cossipore, near Kolkata. There are 39 Ordnance Factories, geographically distributed all over the country at 24 different locations. Ordnance factory, Nalanda and ordnance factory, Korwa are in project stage.

7.8 **Organization Structure:** The Ordnance Factory Board has a Chairman and 9 functional Members. Out of these, five members head operating divisions and four Members are for Staff functions. The operating divisions are based on the main products/ or group of products. The five operating divisions are:

- Ammunition and Explosives (A&E)
- Armoured Vehicles (AV)
- Materials and Components (M&C)
- Ordnance Equipment Group of Factories (OEF)
- Weapons, Vehicles and Equipment (WV&E)

The staff functions are:

- Personnel
- Finance
- Planning and Material Management
- Project and Engineering and Technical Services.

Government has constituted a special Board, with representation from the Ministry of Defence, Army and Defence Research and Development Organization (DRDO) for providing appropriate input on resource planning, upgrading technology of products and efficient functioning of OFB.

7.9 In addition, the Government has constituted a special Board, with representation from the Ministry of Defence, Army and Defence Research and Development Organization (DRDO) for providing appropriate input on resource planning, upgrading technology of products and efficient functioning of OFB.

7.10 **Human Resources:** Ordnance Factories have a large pool of qualified and experienced personnel. Total strength of personnel in ordnance factories is

1,11,841 as on April 1, 2007. National Academy of Defence Production (NADP) Nagpur, a premier training institute caters to the training need of Gr. 'A' officers, 8 Ordnance Factories Institutes of Learning (OFIOL) take care of the training need of Gr.'B' officers and staff. All the 39 Ordnance Factories have training institutes for training industrial employees and trade apprentices.

7.11 **Product Profile:** 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 and Rocket Launchers.

Ammunition Items: Ammunitions for all the above weapon systems, Rockets, Missile Warheads, Mortar Bombs, Pyro Technique (Smoke, Illuminating, Signal), Grenades and Bombs 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 and Clothing Items, Floats for Light Assault Bridges.

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

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

RURM at Heavy Vehicles Factory, Avadi alongwith DRDO officials and Arjun MBT team.

7.12 **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.

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.

7.13 **Highlights:** 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) **Award for Excellence:** Ammunition Factory, Khadki (AFK) and Ordnance Factory, Dehu Road (OFDR) were selected for Raksha Mantri's "Best Performing Factory" Award and the category "Division/ Factory Awards" for the year 2004-05 and 2005-06 respectively.

(iii) **Machine Tool Prototype Factory, Ambernath (MPF):** MPF has developed "KAVACH" MOD-II through in-house R&D. The product has passed Factory Acceptance Test conducted by Indian Navy between May 16 and 18, 2007.

(iv) **Ordnance Factory, Medak (OFPM):** The first NBC Recce Vehicle against the Limited Series Production (LSP) has been successfully manufactured within one year by OFPM and handed over to the Director/ DLJ on September 12, 2007. Further order for 7 NBC Recce Vehicles has been received. OFPM will start to manufacture these vehicles within 12 months after receipt of BPC from DRDO.

(v) **Ordnance Parachute Factory, Kanpur (OPF):** OPF successfully manufactured Parachute system for Pilot less Target Aircraft Nishant with support of ADRDE, Agra during the month of May, 2007.

SHELL 155 MM HE M1 A4 ERFB-BT

7.14 **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 conforming to ISO-9001:2000 standards. All the 52 laboratories in 29 Ordnance Factories are accredited to National Accreditation Board of Laboratories (NABL) and conform to ISO/IEC 17025 new standards. Three tier audit is being conducted to measure performance quality level.

7.15 **In-House Research and Development Activities:** 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. Some of the notable products developed during current year through in-house R&D are:

(i) 155 mm HEER Ammunition

(ii) 105 mm HEER (Base Bleed) Ammunition

(iii) Electronic upgradation of 155 mm Gun system

(iv) Bomb 81 mm HE LRM

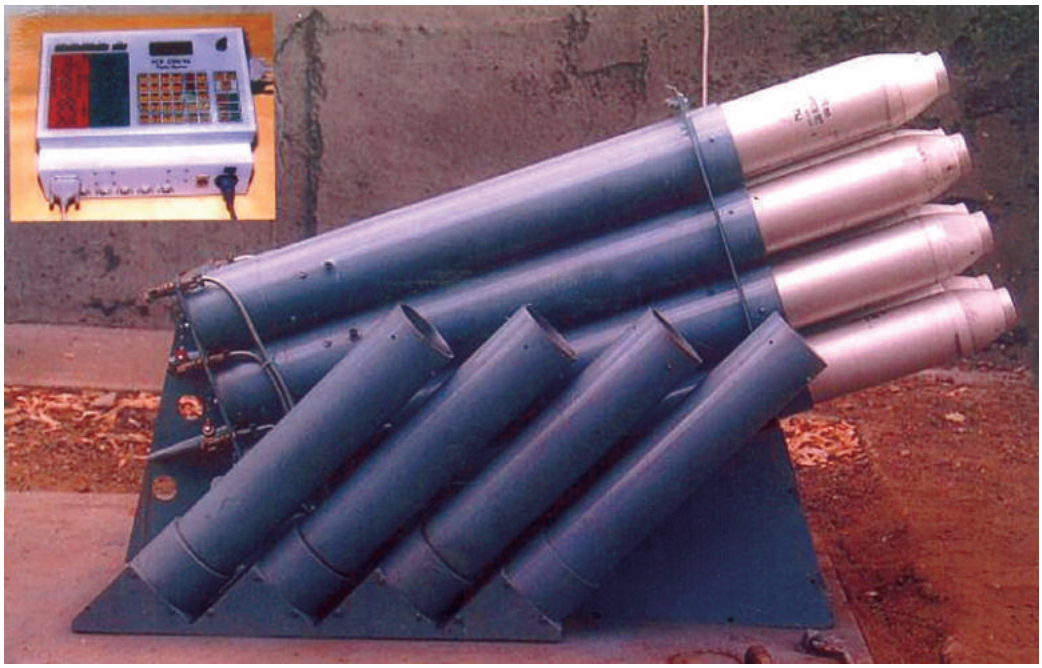
Further, some of the notable products that are being developed either in synergy with advance technology provider or through in-house R&D or by import of technology are :

(i) 120 mm LRM MK-II

(ii) 84 mm Rocket Launcher

(iii) 155 mm 52 Calibre Gun

(iv) Various types of power cartridges



Kavach with FCP

(v) Mine Anti tank Hollow Charge with influence Fuze MK-II.

7.16 **Modernisation:** Modernisation 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 keeping the following objectives in view :

- Technology Upgradation
- Improved productivity and greater flexibility
- Improved Quality Standards
- Reduction in cost
- Manpower optimization
- Minimising response time for changing over of product mix.

A capital investment of Rs.358 crores is planned in the year 2007-08 and investment of Rs.2364 crores has been planned in XI plan period.

HINDUSTAN AERONAUTICS LIMITED (HAL)

7.17 Hindustan Aeronautics Limited (HAL), was formed on October 1, 1964 through amalgamation of Hindustan Aircraft Pvt. Ltd. and Aeronautics India Limited. HAL was created with the objective to manufacture and overhaul of aircraft, aero-engines and rotables mainly to meet the requirement of the Defence Services and Coast Guard and to become a global player in the aerospace Industry. The Company has played a major role in the Defence aviation of India through Design, Manufacture and Overhaul of Fighters, Trainers, Helicopters, Transport Aircraft, Engines, Avionics and System Equipment.

7.18 HAL is now ranked 34th in the list of world's top 100 defence companies. HAL continues its growth with a sales turnover of Rs.7783.61 crore including exports of Rs.270.51 crore during the financial year 2006-07.

7.19 The Company has nineteen Production Divisions for manufacture and overhaul of aircraft, helicopters, engines and accessories/ avionics. Nine R&D centers have been established to give a thrust to research and development. Proven design capabilities exist in the field of fixed wing aircraft, helicopters, accessories/ avionics and small gas turbines and engine test beds.

7.20 **Products and Activities:** HAL's product track record consists of 11 types of aircraft from in-house R&D and 14 types by licence. Indigenously designed aircraft in the current production range are:

- Advanced Light Helicopter (ALH)
- Intermediate Jet Trainer(IJT)
- Light Combat Aircraft(LCA)

7.21 SU-30MKI fighter aircraft, Jaguar, Hawk, Dornier (DO-228), Cheetah/ Chetak helicopters are being produced under licence. Engines and accessories/ avionics for aircraft/ helicopters are also produced at the Engine and Accessories Divisions.

7.22 Design and development of Light Combat Helicopter (LCH) was launched

in 2006 and is slated for productionisation in 2010. HAL will also participate in the design and development of Multi-role Transport aircraft (MTA) and Fifth Generation Fighter Aircraft.

7.23 Aircraft/ Helicopter upgrades are undertaken to enhance the performance of the machines, to improve maintainability and to overcome obsolescence. Upgrades on MiG-21BIS, Jaguar, MiG-27M, Sea Harrier, DO-228, Avro have been carried out. Cheetah and Chetak helicopters have been upgraded with modern engine and avionics to meet high altitude payload capacity and reliability.

7.24 HAL is a major partner for the Space programmes of ISRO. It manufactures structures and assemblies for the launch vehicles and satellites at the dedicated Aerospace Division in Bangalore. It has also diversified into the fields of Industrial and Marine Gas Turbine business and Real-time software business.

HAL is a major partner for the Space programmes of ISRO. It manufactures structures and assemblies for the launch vehicles and satellites at the dedicated Aerospace Division in Bangalore.

7.25 **Financial Performance:** The Company is paying dividend consistently and the highest dividend of Rs.285.42 crore (including dividend tax of Rs. 35.42 crore) was paid for the year 2006-07. The dividend paid during the last 3 years has been 83.16% for 2004-05, 166.39% in 2005-06 and 207.47% in 2006-07 on the Paid Up Capital of Rs.120.50 crore.

7.26 **Significant achievements:**

(i) The company has designed and developed Light Combat Helicopter.

(ii) Cheetal helicopters for IAF were supplied during 2006-07. Additional SU-30MKI aircraft for IAF were also supplied.

(iii) **LCA:** Two aircraft (3rd Prototype Vehicle and the 1st Limited Series Production aircraft) joined the flight test phase during the year. Production of first Limited Series Aircraft was completed in March 2007. These two aircraft joining the flight testing phase (in addition to the four aircraft undergoing flight tests) will accelerate the process of certification.

(iv) **ALH:** Integration of OBIGGS (On-Board Inert Gas Generating System) was completed.

(v) **IJT:** Flight Envelope was extended to the maximum altitude of 9 Km; Hot weather trials were completed successfully.

(vi) Facilities for assembly of structures for GSLV Mk.III was established at Aerospace Division. GSLV Mk.III is a Geo-synchronous Satellite Launch Vehicle with a core diameter of 4m, length 42 m and heat shield diameter of 5 m.

(vii) Repair facilities for AL-31FP engine have been established at Koraput with transfer of technology (ToT) from Russia

(viii) HAL was accorded the status of "Navaratna" Company in June 2007.

(ix) Weaponisation programme on the helicopter achieved a major breakthrough with the first flight of

ALH powered by Shakti engine (with higher power compared to TM333-2B2 engine) conducted in August 2007. Flight testing with the new engine has been carried out successfully upto 6 Km altitude.

(x) Utility version of the Integrated Architecture Display System (IADS) was also integrated and certified.

(xi) **Jaguar Upgrade:** Final Operation Clearance was achieved after successful flight testing of the additional systems integrated on the aircraft for new production. The additional systems include Autopilot, VOR/ ILS, Hands on Stick & Throttle system (HOTAS), Laser Designator Pod (LDP), Solid State Flight Data Recorder, etc.

(xii) **Engine for Hawk aircraft:** The first Adour Mk.871 engine of Phase-1 production was completed at Engine Division, Bangalore. The engine was tested successfully on the Jaguar engine test bed converted with indigenous effort to accommodate the Mk.871 engine for the Hawk. This multi-engine test bed can now be used to test three variants of Adour engines (Mk. 804 & Mk.811 of Jaguar and Mk.871 of Hawk) with changeover from one type to the other within 3 hours.

(xiii) **Participation in Space Programme:** Geo Synchronous Launch Vehicle Mark-II (GSLV Mk-II) was launched with INSAT 4CR satellite successfully by ISRO on September 2007. HAL contributed to the successful launch by delivering the fully integrated L-40 Strap-on boosters and structures for both the launch vehicle and the satellite.

7.27 **Exports:** HAL has achieved an exports of Rs.270.51 crore for the financial year 2006-07. Value of export orders booked during the year up to November 2007 is Rs.263.32 crore.

7.28 **Indigenisation:** During the year (upto November 30, 2007) the indigenization content in sale was 74.2% against the target of 72%.

7.29 **Awards:** HAL was conferred with "Raksha Mantri's Awards for Excellence on February 14, 2007 in the following categories:

For the year 2004-05	
Institutional Awards	Best Performance in Exports
Division/ Factory Awards	Aircraft Division, Nasik (Among DPSUs)
Group/ Individual Awards	Import Substitution for ARDC, Bangalore
For the year 2005-06	
Institutional Awards	Excellence in Best Performance in Exports
Division/Factory Awards	Transport Aircraft Division, Kanpur (Among DPSUs)
Group/Individual Awards	Design Effort award for AURDC, Nasik

BHARAT ELECTRONICS LIMITED (BEL)

7.30 Bharat Electronics Limited (BEL) is the leading professional electronics company in the country engaged in the design, development and manufacture of sophisticated state-of-the-art electronics equipment/ components for the use of defence services, para-military organizations and other infrastructure providers in the telecom sector. BEL has also played a

significant role in the Civilian 'Professional Electronics' sector of the country particularly for the Ministry of Information and Broadcasting by supplying bulk of its infrastructure requirements for Radio and TV Broadcasting, like Studio Equipment, Transmitters, Satellite Uplinks, OB Vans etc.

7.31 With its 9 production units and 31 manufacturing divisions spread across 7 states, the company's focus on Research and Development to generate business using the 'state-of-the-art' manufacturing and testing facilities, has been well recognized.

7.32 **Significant achievements:**

(i) BEL has been accorded "NAVRATNA" status company in 2007. The company has been rated in the "Excellent" category continuously for the last 8 years by the Department of Public Enterprises (DPE).

(ii) In the area of Quality Assurance; BEL has adopted the Total Quality Management (TQM) approach. A Corporate Quality Group – Total Organizational Quality Enhancement (TORQUE) has been set up to oversee all activities relating to enhancement of quality in the company. All the manufacturing Divisions of the Company have acquired ISO 9000 certification.

(iii) The company has also adopted the Business Excellence Model as laid down by the CII-EXIM Bank Excellence Award criteria. Five of the Unit/ SBUs have got recognition for their strong commitment towards the Total Quality Management principles. The company has set internal targets for coverage of all the Units and SBUs under the Excellence Model by 2006-07.

(iv) BEL is currently working on the following new technology areas:

- Frequency Hopping Radios
- Encryption
- Software Defined Radio
- Mobile Satellite Terminals
- C^4I Systems
- Phased Array Radars
- Airport Surveillance Radars
- New Generation Sonars
- Electro-Optical Fire Control Systems

(v) BEL is continuously upgrading its technologies and introducing new products, every year, in its efforts to be the leader in professional electronics. Some of the major areas of diversification are as under:-

BEL has been accorded "NAVRATNA" status company in 2007. It has been rated in the "Excellent" category continuously for the last 8 years by the Department of Public Enterprises (DPE).

(a) Satellite Based Systems Solution (e-Governance, Telemedicine, Distance Education, EDUSAT, POLNET)

(b) Solar Photo Voltaic Systems

(c) Smart Card Based Systems (Access Control,

MNIC, Security and Regulatory Applications)

(d) X-Ray Baggage and Cargo Inspection System

(e) Under Carriage Vehicle Inspection and Vehicle Authentication System

(f) Compact Vacuum Interrupters

(g) Set Top Box

(h) C^4I System (SHAKTI, SANJAY)

(i) Simputer

BEML LIMITED
(Formerly Bharat Earth Movers Ltd.)

7.33 BEML LIMITED was established in May 1964. The Company came out with a follow-on public issue during June-July 2007 with 49 lakh shares and raised capital to the tune of Rs.526 crore. With this, the Government of India holding has come down from 61.23% to 54.03%. The rest of the equity is held by Financial Institutions, Mutual Funds, Foreign Institutional Investors, Private Corporate Bodies and Indian public including employees of BEML.

7.34 BEML is engaged in design, manufacturing, sales and after-sales-service of wide range of construction and mining equipment, defence products and rail and metro products. In addition, the company also provides total e-engineering solutions in certain specialized areas such as automotive, aeronautics etc. The newly formed trading division of the company deals in non-company products for Indian and overseas customers. BEML's manufacturing units are located at Bangalore, Kolar Gold Fields (KGF) and Mysore. These units are accredited with ISO 9001-2000. All the production units of BEML are well equipped with latest manufacturing facilities and well trained and skilled manpower.

7.35 Bangalore complex is being developed as a manufacturing base for Metro coaches with state-of-the-art infrastructure. BEML also has an R&D Center providing technology support in terms of product up-gradation, design and development of new products, technology absorption and adaptation and standardization and innovation to meet specific customer requirements.

7.36 BEML's products are sold and serviced with spare parts backup, through its large marketing network comprising often regional offices located across the nation. To assist these Regional Offices, 16 District Offices have also been established.

7.37 **Global Operations:**

(i) BEML's products are also exported to the countries across the world particularly in Middle East, North and South Africa and Latin America.

(ii) BEML (Malaysia) - Branch Office cum International warehouse was opened at Johar Baru State, Malaysia on October 24, 2007 for covering Far East countries including Australia.

(iii) BEML Brazil Participacoes Ltda was registered at Victoria State, Brazil for marketing BEML range of Construction and Mining equipment in Brazil and other Latin American countries.

7.38 **Contract mining Joint Venture:** In order to tap the vast market potential in contract mining segment, BEML has entered into a JV with M/s Midwest Granite, Hyderabad and M/s SMJ, Malaysia. BEML's first contract mining project at Manganese Ore India Ltd. is at final stages of completion.

7.39 **Significant achievements:**

(i) Company has achieved the highest ever turnover of Rs. 2601.79 crore during the financial year 2006-07, registering a growth of around 18% over the previous year. The company also achieved an all time high exports of Rs.110.73 crore during the year.

(ii) Company's profit before tax stood at Rs.316.04 crore, an all time high profit level due to outstanding performance in all the spheres of its operations and effective management of resources and paid highest ever dividend of 120% to its shareholders for the year 2006-07.

(iii) The company for the second year in a row achieved 'Excellent' MoU rating for the year 2006-07.

(iv) BEML received orders worth Rs.1144 crore from Delhi Metro Rail Corporation (DMRC) for supply of 156 numbers, standard gauge Metro Cars. The Company also received orders from the Ministry of Railways for 250 numbers of coaches valued at Rs. 93.28 crore and for 81 numbers of AC EMUs valued at Rs.65.79 crore.

(v) BEML also received 'AAA' rating from ICRA based on credit worthiness of the company.

(vi) BEML has been conferred with Two-Star Export House status by DGFT.

BEML has achieved the highest ever turnover of Rs. 2601.79 crore during the financial year 2006-07, registering a growth of around 18% over the previous year.

MAZAGON DOCK LIMITED (MDL)

7.40 Mazagon Dock Limited (MDL) was taken over by Government of India as a Public Sector Undertaking in 1960. It has developed indigenous design capabilities and expanded its product range to include destroyers, frigates, missile boats, corvettes, submarines and patrol vessels for the defence sector and merchant vessels and dredgers for the civil sector. It is the only shipyard in the country to have built submarines, a feat achieved by very few companies worldwide. Fabrication of Offshore Platforms and allied activities for Oil Exploration and general Heavy Engineering jobs are also carried out.

7.41 **Significant achievements**

(i) Three Stealth Frigates of P 17 and two missile destroyers of P-15A are under construction at present. The first ship of P-15A Project was launched on March 30, 2006.

(ii) On the civil front, the construction of Cutter Suction Dredger for Dredging Corporation of India (DCIL) is in progress.

(iii) The Contract for construction of six Scorpene Class Submarines of French design in MDL was signed on October 6, 2005 as also the collaboration agreement

with M/s ARMARIS, France.

(iv) 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 and also seven Offshore Patrol Vessels to the Coast Guard.

MDL has also built and delivered Cargo Ships, Passenger Ships, Supply Vessels, Multipurpose Support Vessels, Water Tankers and various type of small craft like Tugs, Dredgers, Fishing, Travellers Bergs for various customers in India as well as abroad.

(v) MDL has also built and delivered Cargo Ships, Passenger Ships, Supply Vessels, Multipurpose Support Vessels, Water Tankers and various type of small craft like Tugs, Dredgers, Fishing, Travellers Bergs for various customers in India as well as abroad.

(vi) The company has been accredited with ISO 9001-2000 Certificate.

(vii) In the Offshore business, MDL has fabricated and delivered 65 Well Head Platforms, three Process Platform, two Jack up Rigs and Coated 903 Kms and laid 586 Kms of sub-sea pipelines for ONGCL.

GOA SHIPYARD LIMITED, GOA

7.42 Goa Shipyard Limited (GSL) is one of the leading Shipyards, building medium-sized sophisticated vessels for Indian Navy and Indian Coast Guard and others. The Shipyard was accorded schedule 'B' status in January, 1997. The Government of India has confirmed the status of Mini Ratna, Category-I in March, 2007.

7.43 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), Survey Vessels (SV), 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, 181 vessels have been built.

7.44 Diversifications: GSL has diversified into supply of stern gear equipment in collaboration with M/s Wartsila LIPS Defence, France. GSL has also diversified into constructing Damage Control Simulator(DCS) for Indian Navy at INS Shivaji, Lonavala and Survival at Sea Training Facility Unit(SSTF) for Oil and Natural Gas Commission(ONGC). The proposals in progress for construction of Fire Fighting Training Unit (FFTU) and Water Survival Training Facility(WSTF) for Indian Navy. GSL has embarked on a major exercise of diversification into building Glass Reinforced Plastic (GRP) boats to cater for orders from Ministry of Home Affairs and Customs and Central Excise. GSL is also venturing into building Shore Based Test Facility(SBTF) for aviations specialization.

7.45 **Significant achievements:**

(i) It has been conferred Hon'ble Raksha Mantri's award for 'Best Performing Shipyard' for the year 2005-06.

(ii) GSL has been awarded 'Enterprise Excellence Award' by Institute of Industrial Engineering for the year 2005-06.

(iii) The Company has been rated 'Excellent' in its MOU performance for the year 2006-07 by Department of Public Enterprises(DPE).

(iv) GSL has secured order for supplying Stern Gear Systems to Anti Submarine Warfare Corvetts (ASWC) and Air Defence Ship (ADS) competing against private industry.

(v) GSL has achieved the highest value of production in 2006-07 since its inception.

(vi) 100% computerization has been achieved in day-to-day activities making the company virtually a paperless office.

(vii) The GSL has delivered 5-Fast Patrol Vessels in the last two years for Indian Coast Guard, each one of them 5-6 months ahead of contractual delivery schedule. Build period for Fast Patrol and Offshore Patrol type vessels has substantially been brought down by 22- 41%.

(viii) The company has issued bonus shares twice in the ratio of 1:2.

The GSL has delivered 5-Fast Patrol Vessels in the last two years for Indian Coast Guard, each one of them 5-6 months ahead of contractual delivery schedule.

7.46 **Modernisation:** An ambitious modernisation programme at a cost of Rs.691.00 crore is in hand. It is expected to enhance the present capacity of the yard by three times. M/s Royal Haskoning, Netherlands, a world-class consultant has been appointed as consultant for GSL modernisation. The modernisation package includes inter alia, a ship lift system with transfer area, fully serviced repair berths, modern outfit shops, GRP facility, dedicated jetties and quays with sophisticated material handling facilities.

GARDEN REACH SHIPBUILDERS AND ENGINEERS LIMITED, (GRSE)

7.47 Garden Reach Shipbuilders and Engineers Limited (GRSE), a leading Shipbuilding Yard and manufacturer of high value technology complex engineering items was taken over by the Government of India on April 1, 1960. It is among the few shipyards in the world with its own engineering and engine manufacturing divisions. The Mini Ratna Status Category-I was granted to GRSE on September 5, 2006. The Shipyard has a vast range of products such as Frigates, Corvettes waterjet FACs, ASW Corvettes and Hovercraft. GRSE has also vast range of technical expertise and experience built up over the last 125 years.

7.48 **Significant achievements:**

(i) The Company has paid a dividend of Rs. 24.77 crore in the financial year

2006-07, the largest dividend paid till date.

(ii) The Company laid keel of Waterjet Fast Attach Crafts and ASW Corvette on August 29, 2007 and September 27, 2007 respectively. The first ship of the series of Water Jet Fast Attack Crafts was launched on November 23, 2007 and second ship of the series of Water Jet Fast Attack Crafts was launched on November 28, 2007.

GRSE has taken over the Raja Bagan Dockyard of M/s CIWTC, Kolkata on July 1, 2006 making it the biggest Defence Shipyard in India with substantial growth potential.

(iii) INS Kesari (Landing Ship Tank – Large) is in very advanced stage of construction. Construction of INS Airavat (Landing Ship Tank – Large) is also progressing satisfactorily.

(iv) The Company has taken over the Raja Bagan Dockyard of M/s CIWTC, Kolkata on July 1, 2006 making it the biggest Defence Shipyard in India with substantial growth potential.

BHARAT DYNAMICS LIMITED(BDL)

7.49 Bharat Dynamics Limited was established in 1970 for manufacture of Guided missiles. It is among a few strategic industries in the world and possesses the capability to produce state-of-the-art missiles. The company has three units at Kanchanbagh (Hyderabad), Bhanur (Medak) and Vizag. Besides producing indigenously developed P-II missile systems, BDL is engaged in the production of Konkurs – M and Invar (3UBK-20) missiles in collaboration with Russia. In-House developed CMDS (Counter Measure Dispensing System) has been accepted by Indian Air Force and placed order on BDL to meet the requirement for Jaguar Aircraft. Flight trials of CMDS developed for DARIN-II Aircraft were successfully conducted in November 2007. BDL is working in close association with DRDO for Technology absorption/ assimilation and extending support by providing missile sub systems/ integrated missiles for conducting various trials of missiles like AKASH, NAG, Article K-15, AGNI VARIANTS (A1, A2 AND A3). The company has ventured into productionising under water weapons such as Light Advanced Torpedo, C-303 Decoy Launching System and in concurrent Engineering mode in allocation with NSTL is developing Heavy Weight Torpedo and Light Weight UAVs.

7.50 **Improvement Programmes:** BDL implements regularly various improvements in manufacturing process, by introducing new machines and technologies and also the state-of-the-art inspection/ test procedures. Efficiency in the process has been increased by way of computerization. Introduction of DNC networking resulted in shorter cycle times in manufacturing. CAD/ CAM center made fully operational and as a result of this CDO of BDL is extending the support to DRDO for preparing the documentation of AGNI, K-15, Heavy Weight Torpedo and C-303 decoy Launching System etc.

7.51 **Significant achievements:**

(i) Consequent to the successful flight trials on Jaguar Aircraft, BDL bagged

substantial order of Counter Measure Dispensing Systems (CMDS) from Indian Air Force.

(ii) BDL has conducted an experiment of Milan warhead against bunker during September 2007.

(iii) BDL has assimilated the technology of AKASH weapon system and production facilities has been set up.

(iv) The company absorbed and assimilated technology of NAG weapon system. Development trials have been completed and user trials are planned in 2008.

(v) Drill and Practice Torpedoes have been produced and qualification tests have been completed.

(vi) BDL produced pre series components/ sub assemblies for C-303 Launcher Assembly and dispatched to OEM for qualification for validation. These items will be assembled as a part of on Job training.

(vii) Development of Propellants: HEMRL and BDL are concurrently developing propellants required for 3 km Missiles being developed by BDL and for Milan 2. Proto type samples have been tested and found O.K.

(viii) NSTL Visakapatnam is developing an Indigenous High Speed Heavy Weight Torpedo and desires to productionise this Torpedo under concurrent engineering mode in association with Bharat Dynamics Limited. An MOU has been signed with NSTL.

This year MIDHANI achieved a growth rate of around 110% by doubling the sales turnover in just four years.

MISHRA DHATU NIGAM LIMITED, HYDERABAD

7.52 Mishra Dhatu Nigam Limited (MIDHANI) was incorporated as a Public Sector Undertaking in 1973 to achieve self-reliance in areas of Superalloys, Titanium alloys and Special Purpose Steels required for strategic sectors like Aeronautics, Space, Armaments, Atomic Energy, Navy. Special products like Molybdenum wires and plates, Titanium and Stainless Steel tubes, alloys for electrical and electronic application like Soft Magnetic alloys. Controlled expansion alloys and Resistance alloys are also in the product range of MIDHANI.

7.53 The year 2006-07 is a landmark year where MIDHANI achieved a growth rate of around 110% by doubling the sales turnover in just four years, thereby demonstrating MIDHANI's inherent skills and capabilities. 'Excellent' MoU rating for the overall performance in 2006-07 for the fourth year in succession has been achieved.

7.54 **Significant achievements:**

(i) Highest Sales turn over of Rs.192.51 crore surpassing all past records of the Company since inception. This represents 25% increase over the turnover of previous year 2005-06.

(ii) Record booking of fresh orders to the tune of around Rs.500 crore.

(iii) Getting a largest single order for supply of Welding Electrodes and Flux from ATVP amounting to Rs.156.27 crores covering supplies over 5 years.

(iv) Three-fold increase in a period of three years in Gross Margin by earning a sum of Rs.37.69 crore during the year; and registering a growth rate of around 84% over the previous year.

(v) Achieving Profit Before Tax (PBT) of Rs.35.59 crore thus registering an increase of around 93% over the previous year.

(vi) Achieving Profit After Tax of Rs.23.19 crore, signifying an increase of around 93% over the previous year.

(vii) Continued to be Dividend-paying Company for the 4th year in succession.

7.55 The major equipments envisaged for setting up in the Modernisation and Up-gradation programme along-with estimated costs would be 10T VAR furnace at Rs.25 crore; up-gradation of 1500 T Forge Press at Rs.5 crore; 6.5 T and 600 Kg Vacuum Induction Melting (VIM) Furnace at Rs.30 crore and Rs.15 crore respectively; Electric Arc Furnace (VOD) at Rs.15 crore; Construction of Melt Shop-III and Electrode conditioning Shop at Rs.9 crore. These are in addition to Rs.31 crore being funded by MIDHANI from its internal resources for various other auxiliary equipment and funding of Rs.25 crore by HAL towards setting up of facilities for dedicated use by it for their programmes. DRDO funding will include equipments for Kaveri Engine Project like Plasma Welding Machine, Water Jet Cutting Machine, Reheating Furnace for Forge Shop and HT Shops and certain quality control equipment.

SALES OF ORDNANCE FACTORIES AND DEFENCE PSUs

7.56 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 342.46 crore during the year 2007-08 (upto December, 2007).

INDIGENISATION

7.57 **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.

7.58 In May 2001, the Defence Industry sector, which was hitherto reserved for

Table 7.1

Year	Ordnance Factories	Public sector undertakings	(Rupees in crore)
	Total sales	Total Sales	Grand Total
2005-06	6891.68	13025.07	19916.75
2006-07	6197.35	15849.3	22046.65
2007-08 **Upto Nov 07**	3050.80	6382.3	9433.1

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

7.59 A Standing Committee has been constituted in the Department of Defence Production to consider all applications, for grant of Industrial Licence for the manufacture of arms and armaments, received from DIPP and to communicate the recommendation of the Ministry of Defence. The Committee also considers all matters relating to Private Production of Defence equipment viz. applications for self-certification, permission for export of products manufactured under licence as well as cases for cancellation of licence due to breach of licensing conditions or security provisions etc. DIPP has, so far, issued 73 Letters of Intents (LOIs)/ Industrial Licences (ILs) to private sector companies for manufacture of a wide range of defence equipment.

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OTHER ORGANISATIONS IN DEPARTMENT OF DEFENCE PRODUCTION

DIRECTORATE GENERAL OF QUALITY ASSURANCE

7.60 Directorate General of Quality Assurance (DGQA) is an Inter-Service Organisation. DGQA is responsible for Quality Assurance of all defence stores and equipment, both imported as well as indigenous 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.

7.61 **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 Equipment procured indigenously or ex-import.

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

(c) Render technical advice to Service Headquarters and promote Standardization.

(d) Investigation of Defects and rendering advice on remedial measures.

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

(f) Issue of DGQA Approvals/ Assignment List and Cataloguing of Defence Stores.

(g) Provide technical guidance in formulation of General Staff Qualitative Requirement (GSQR), association during Trial Evaluation, Development etc, extension of shelf life and post production services of Defence stores.

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.

7.62 **Achievements:**

(a) **Quality Assurance of Stores:** The value of stores quality assured during the last three years is given below :-

YEAR	VALUE OF STORES (IN CRORE)
2005-2006	16,397.14
2006-2007	18,473.24
2007 -2008 (till November 30, 2007)	7,854.48

(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)

7.63 The Directorate General Aeronautical Quality Assurance (DGAQA) is the Regulatory authority for Quality Assurance and final acceptance of military aircraft, its accessories and other aeronautical stores. DGAQA has got new logo during the current year. The theme is achieving flight safety through Quality Assurance.

7.64 The organization is steered by a Director General and other Technical officers from diverse spectrum of disciplines and having rich, proven experience in Quality Assurance Management who are committed to vision and mission of the organization.

7.65 DGAQA functions from its HQs at New Delhi and a network of 34 Field Establishments/ Detachments covering a large number of work centers spread across India.

7.66 **Important Policy Decisions/ Initiatives Taken:** 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 and Ammunition factory Kirkeee has been transferred to respective ordnance factories. With this 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. This will now form the major activities of DGAQA as a part of supervisory inspection

DIRECTORATE OF STANDARDISATION

7.67 Directorate of Standardisation was constituted in 1962 with the objective to control item proliferation within Defence Services. To give greater thrust to the Standardisation activity, nine Standardisation Cells have been set up at the Nodal Stations in the country.

7.68 The objective is sought to be achieved through: -

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

(b) Codification of Defence Inventory.

(c) Entry Control.

7.69 The following Committees monitor the Standardisation and Codification activities:-

(a) **Standardisation Committee**: It is headed by SA to RM. It is an Apex Body, which lays down overall Standardisation Policy Guidelines.

(b) **Committee of Chairmen Standardisation Sub- Committee (CCSSC):** It is headed by Additional Secretary (Defence Production). It guides standardisation activities through 13 Sub-Committees.

(c) **Defence Equipment Codification Committee (DECC):** It is headed by Joint Secretary (Supplies). It guides and monitors codification activities.

7.70 **Significant Achievements:**

(a) **Standardisation:** Target set for the year 2007-08 is 900 for standard documents against which 574 have been prepared till December 31, 2007.

(b) **Codification:** Target for the year 2007-08 is 20,685 against which **13,215** items have been codified till December 31, 2007.

(c) **Updation:** The target for the year 2007-08 is 4,807 against which 3,241 items have been updated till December 31, 2007.

DIRECTORATE OF PLANNING AND CO-ORDINATION

7.71 The Directorate of Planning and Coordination was set up in 1964 with the

primary objective of preparing overall plans for the production of defence equipment in the country. It functions as an attached office to the Department of Defence Production and provides technical support to various wings of the Department. It is the nodal point 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 ship building projects and offsets in defence procurement.

7.72 The Directorate coordinates within the Department of Defence Production, the interaction with the Integrated Defence Staff Headquarters, regarding categorization of the Capital Acquisition Plans of the three Services, Defence Procurement Board and Defence R&D Board. The Directorate serves as the secretariat for the Defence Production Board.

7.73 The Directorate is responsible for monitoring and implementation of major projects of the Ordnance Factories like the Main Battle Tank Arjun and T-90 (BHISHMA), product improvement of various artillery guns and armourd vehicles and augmentation of overhauling capacity of tanks. Major Research and Development and indigenization programmes of armament are other key activities of the Directorate.

7.74 The Directorate also functions as the secretariat for the Defence Offset Facilitation Agency (DOFA). It supports the Export wing of the Department during deliberations with various bilateral Defence Policy Groups and Joint Working Groups with other countries for International Cooperation in Defence Production.

DEFENCE EXHIBITION ORGANISATION

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

7.76 Standing Defence Exhibition: To conduct distinguished visitors, foreign dignitaries, delegates and purchase missions, DEO maintains throughout the year, Standing 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.

7.77 **India International Trade Fair (IITF):** Defence Pavilion participates in IITF held every year in Pragati Maidan, New Delhi during November14-27. Products manufactured/ developed by the DPSUs, the OFB and the DRDO are displayed at the pavilion during IITF. In addition, the Armed Forces, DGQA, DGAQA, the Coast Guard and the Armed Forces Recruitment Agencies participate in the exhibition.

7.78 A theme based exhibition – 'Defenders of the Dawn', highlighting multifaceted activities undertaken by the

Armed Forces to bring about overall development of Eastern and North-Eastern States, was organised by the Armed Forces at Defence Pavilion as part of IITF'07.

7.79 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

(i) **Aero India:** The sixth edition of Aero India, 2007 received an overwhelming response from the world leading industries in the field of civil and military aviation. More than 500 exhibitors including 300 foreign participants from 33 countries exhibited their products, innovations and services at the exposition. More than 100 aircraft including 48 commercial aircraft presented by USA, Russia, UK, Canada, Sweden, Austria and France participated in the show.

(ii) **Defexpo India:** Conceived as a complementary exposition to Aero India, Defexpo India was launched in 1999. Defexpo India 2008, the fifth in its series, was organised from February 16 to 19, 2008 in Pragati Maidan, New Delhi. The Defexpo India has received good response from the exhibitors – both Indian and international.

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

7.80 **International Exhibitions abroad:** To provide a flip to export efforts, DEO organises "India Pavilion" in defence exhibitions abroad to

INVESTMENT

(Rs. in Crore)

Name of PSUs	2004-05		2005-06		2006-07	
	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	-	36.87	-	36.87	-
MDL	199.20	-	199.20	-	199.20	-
GRSE	123.84	-	123.84	-	123.84	-
GSL	19.40	-	29.10	-	29.10	-
BDL	115.00	-	115.00	-	115.00	-
MIDHANI	137.34	-	137.34	-	137.34	-
TOTAL	**832.15**	**-**	**841.85**	**-**	**841.85**	**-**

develop market for defence products being manufactured by the DPSUs/ OFB. This is part of the attempt to promote 'Made in India' brand in the field of defence products. For the financial year 2007-08, Indian Pavilions were set up at Latin America Aero and Defence (LAAD**)**, Defence Systems and Equipment International (DSE) and Defence and Security exhibitions

WORKING RESULTS
VALUE OF PRODUCTION AND SALES

(Rs in Crore)

Name of the PSUs	2004-2005		2005-2006		2006-07	
	Value of Production	Value of Sales	Value of Production	Value of Sales	Value of Production	Value of Sales
HAL	4984.55	4533.80	5916.62	5341.50	9201.88	7783.61
BEL	3234.97	3212.09	3449.74	3535.99	4012.76	3952.70
BEML	1885.95	1856.01	2179.57	2205.84	2590.75	2601.79
MDL	540.63	99.54	518.37	164.29	1872.24	18.65
GRSE	470.28	881.41	662.18	985.99	641.66	713.74
GSL	141.83	83.49	249.78	106.96	267.07	152.79
BDL	465.79	450.98	534.28	531.53	385.84	433.51
MIDHANI	141.67	131.27	177.60	152.97	223.88	192.51
TOTAL	**11865.67**	**11248.59**	**13688.14**	**13025.07**	**19196.08**	**15849.30**

WORKING RESULTS OF OFB
VALUE OF PRODUCTION AND SALES

(Rs in Crore)

2004-2005		2005-2006		2006-2007	
Value of Production	Value of Sales	Value of Production	Value of Sales	Value of Production	Value of Sales
8332.00	**6186.65**	**8811.59**	**6891.68**	**8282.72**	**6197.35**

Profit After Tax

(Rs. in crore)

Name of the PSUs	2005-06	2006-07
HAL	771.14	1148.76
BEL	582.01	383.01
BEML	186.93	204.93
MDL	60.10	168.08
GRSE	65.53	120.14
GSL	11.50	40.69
BDL	73.49	32.74
MIDHANI	12.03	23.19
TOTAL	**1762.73**	**2121.54**

8

DEFENCE RESEARCH AND DEVELOPMENT

Multi-Barrel Rocket Launcher—PINAKA

Defence Research & Development Organisation (DRDO) 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 reckon within the country. It has grown multi-dimensionally and emerged as a strong and mature organisation with a vast network of 50 laboratories spread across the country. Supported by a large pool of committed manpower and with an established high-tech research and development, production eco-system, DRDO has to its credit today a wide range of strategically significant defence equipment and technologies, which are in use by the Armed Forces.

8.2 The first decade up to 1970s was a phase of providing planning and advisory services and of learning by doing and setting up science laboratories. It was also a phase of meeting short-term requirements of the users to maintain, substitute or improve the imported defence equipment. Initially, DRDO was engaged in the development of small arms and ammunitions. Subsequently, in the second decade during 1970-80, it started work in reverse engineering and started gaining know-how of system engineering. Many infrastructure and facility projects got into action during this period.

8.3 During 1980s, thrust was given to major programmes like development of guided missiles, electronic warfare systems, aircrafts, communication systems, radars, sonars, etc. These programmes gave a new impetus to multiple design and technology centres, which resulted in productionisation of weapon systems during 1990s. The Department of Defence Research and Development came into existence in 1980. It has mission to design, develop and lead to production of state-of-the-art weapon systems, platforms and allied equipment and also to provide combat support for meeting the current requirements of the Armed Forces. The 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. It has vision to promote the corporate strength and to make the country independent of foreign technologies in critical sphere and also to act as a reservoir of expertise in most sensitive scientific and technological domains. DRDO plays 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 for development of state-of-the-art weapon systems by the defence industries. The Organisation also advises the Government to make technical assessments of international security threats and the military capabilities of both current and potential adversaries.

8.4 Today after 50 years of its existence, DRDO is one of the finest models of R&D organisations in the whole world.

ORGANISATIONAL STRUCTURE

8.5 The Department of Defence Research & Development is headed by the Secretary to the Government of India, who is also Scientific Adviser to Raksha Mantri (SA to RM). The Secretary is assisted by the Chief Controllers 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). The Organisation has two tier systems, viz. the Technical and Corporate Hqrs at New Delhi; and laboratories/establishments, regional centers, field stations, etc. located at different stations all over the country.

8.6 **DRDO Headquarters :** DRDO Hqrs, under the Department of Defence Research & Development, is organized in two different types of Hqrs Directorates. Technical Directorates include Directorates of Aeronautics; Armaments; Naval Systems; 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. These Directorates act as 'single window' to facilitate laboratories and establishments, functioning under them, in obtaining approvals of new projects from the Government, facilitate in monitoring and review of ongoing projects and also to co-ordinate with other laboratories and directorates. 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 also act as Technical Directors to render services to their respective Chiefs. Corporate Directorates, like 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 assist laboratories in improvement of their infrastructure, creation of new facilities, induction of manpower, answering Parliament Questions, coordinating with other ministries/departments, etc. and also in getting Government approvals for taking up projects in their respective areas. Recruitment and Assessment Centre (RAC) and Personnel Assessment Centre (PEACE); undertake fresh recruitments and assessment on periodic basis for the promotions of scientists and technical staff for all laboratories & Hqrs of DRDO under Defence Research Development Service

(DRDS) and Defence Research Technical Cadre (DRTC), respectively.

8.7 **DRDO Laboratories/ Establishments:** DRDO executes various programmes/ projects through a network of fifty laboratories/establishments, field stations, regional centres of military airworthiness, etc. located all over the country. These are engaged in R&D activities in the field of aeronautics, armaments, missiles, combat vehicles, advanced computing & networking, electronic warfare, life sciences, advanced materials, composites and underwater sensors/weapons and warship technology. DRDO has two societies, namely Aeronautical Development Agency (ADA) and Society for Integrated Technology Applications & Research (SITAR). ADA was set up in 1983 at Bangalore and 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), earlier an establishment of DRDO, attained status of Deemed University in 2005. The Institute organizes courses on vide spectrum of technologies including regular long and short term courses for newly recruited scientists and Post Graduate Programmes to meet defence requirements in general and weapon systems in particular. These are also administered and funded by the DRDO. 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 (HRD)

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. Through various mechanisms like optimization of cadre structure, incentive schemes, enhancement of capabilities by implementation of DRDO training policy, enhanced promotional opportunities and exit interviews, the organisation has endeavoured to ensure optimum utilization of human resource, apart from attracting and retaining young talent.

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 interview, scholarship schemes through Aeronautic Research and Development Board (ARDB) and Ph.D. scholars under Registration of Student with Scholastic Aptitude (ROSSA).

8.10 **Manpower Strength :** DRDO is a project based organization and follows a very dynamic system of manpower planning. Authorized Regular Establishment (RE) is reviewed after every two years to meet the contingent requirements on account

of workload and new projects undertaken by the laboratories. At present the total manpower strength is about 28,600, which includes about 7,120 scientists from engineering, science and Services, 12,750 technical staff and 8,730 Admin & Allied from various cadres.

8.11 **Knowledge and Skills Upgradation:** To cater to the present and futuristic requirements of scientific and technical know-how for its projects, through upgradation and multi-skilling of technical knowledge, technical and managerial and soft skill Training Programmes/Courses have been organized. Under Research & Training scheme, a total of 89 personnel have been sponsored to undergo M.E/M. Tech. courses in various disciplines at IITs, IISc and other engineering institutions of repute. Additionally, provision for studying MS, M.Tech and Ph.D. courses at DIAT, DU have been made available. Similarly, under the Continuing Education Programme (CEP), 134 courses have been organised in different disciplines for various categories. DRDO has three training institutes namely, Defence Institute of Advanced Technology (DIAT), at Pune to meet the orientation training programme of new scientists and technological excellence in the field of defence technologies; Institute of Technology Management (ITM) at Mussoorie to meet advanced managerial training requirements for the scientists and personnel of DRTC to develop the abilities to manage and understand the technology management; and DRDO training institute at Defence Laboratory, Jodhpur to conduct training needs for DRTC and Administrative and Allied Cadre.

DRDO undertakes mission mode projects involving deliverables for the Services, technology development projects to develop technology demonstrators, science and technology projects for emerging technologies and infrastructure projects for setting up infrastructure facilities.

PROJECTS MONITORING AND REVIEW MECHANISM

8.12 DRDO undertakes mission mode projects involving deliverables for the Services, technology development projects to develop technology demonstrators, science and technology projects for emerging technologies and infrastructure projects for setting up infrastructure facilities. To execute these projects, DRDO interacts with Defence Public Sector Undertakings, R&D laboratories, private entrepreneurs, etc for availing the best talent and expertise in the country. To complete the projects "concurrent engineering" approach has been adopted in technology intensive projects to minimize time lag between development and productionisation of the systems. DRDO involves users and production agencies from the very beginning to cut short the delays and to bring synergy among developing agencies, R&D laboratories, users and production agencies.

8.13 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 health 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", having representation from the Services, DRDO laboratories and in some cases from academic institutions and other national research laboratories. These Boards periodically monitor and review the programmes and help in early detection of bottlenecks and suggest their mid-course corrective actions as deemed fit.

The Programme envisaged the design and development of missile systems, Prithvi, Trishul, Akash and Nag. In addition, development of Dhanush, Agni, BrahMos and Astra series of missiles have also been taken up.

PROGRAMMES AND PROJECTS

8.14 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 the state-of-the-art weapon systems and technologies. A number of systems and equipment have been developed, productionised and inducted into the Services during the past. These are broadly categorized into major disciplines, like missiles, aero-systems, electronic systems, combat vehicles, armaments, naval systems, advanced materials, and life sciences. Progress of some of the leading programmes and projects during the current financial year is given in succeeding paragraphs.

8.15 **Missile Programmes:** Integrated Guided Missile Development Programme (IGMDP) was sanctioned in 1983 for design, development and productionisation of different types of state-of-the-art missiles to provide self-reliance in this field of high technology. The Programme envisaged the design and development of missile systems, Prithvi, Trishul, Akash and Nag. In addition, development of Dhanush, Agni, BrahMos and Astra series of missiles have also been taken up. The status of various missiles is as under:

(a) **Prithvi Missile:** Surface-to-surface missile, Prithvi, a tactical battlefield missile, has two versions of ranges 150 km and 250 km with about 1 tonne and 500 kg payloads, respectively. Both versions have been inducted into Armed Forces.

(b) **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 and Agni-II has been bridged. Agni–I has been inducted in to Services. Training launch of Agni-I has been successfully carried out on October 5, 2007.

Modified Prithvi Missile

(c) **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.

(d) **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 April 12, 2007.

(e) **Dhanush Missile:** It is a Naval version of Prithvi missile with a range of 250 km and a payload of about 500 Kg. It can carry both conventional as well as non-conventional warheads. Weaponisation of INS Subhadra has been completed. Acceptance test firing from INS Subhadra was undertaken successfully on March 30, 2007 by the Naval team. All mission objectives including extended range of 350 Km were met.

(f) **Akash Missile :** Medium range (25 Km), surface-to-air missile, Akash has multiple target handling capacity

with digitally coded command guidance system. Akash weapon system elements have been realized. Mobility trials of Akash weapon system and User training has also been completed. Performance trial of one group and two guided weapon battery testing has been completed as Phase-I of User trials. T-72 based Battery Level Radar, Battery Control Center and Akash self-propelled launcher have been realized, integrated and functional tests have been completed.

On December 6, 2007, DRDO took a significant step towards developing a Ballistic Missile Defence, when an endo-atmospheric interceptor missile killed "hostile" missile off the Orissa coast. With this milestone, India has joined the elite club of USA, Russia and Israel.

(g) **Nag Missile:** Nag is a third generation anti-tank missile with "top-attack" and "fire and forget" capability. One flight test in operational configuration has been undertaken successfully. Nag Tandem warhead User trial has been completed. Phase-I of User trial has also been completed. Post flight analysis has been completed and action points are being implemented.

(h) **BrahMos Supersonic Cruise Missile:** BrahMos (a Joint Venture with Russia) is the best in the family of cruise missiles. It has supersonic speed with a range of 290 km and high level of performance. Development of the missile started in July 1999. After completing the development, fourteen flight tests have been carried out including the combat firing, with 100%

BrahMos Supersonic Cruise Missile on display

success rate from land and sea against ship and land targets. The flight tests also demonstrated the indigenously developed Fire Control System. Indian Navy has inducted the system in their ships.

The first batch of land version of BrahMos missile systems including advanced Fire Control System, Launch Complex, and Mobile Command Post have already been handed over to the Army. Development of air version and its interface with different types of aircrafts is in progress.

(i) **Astra Missile:** Astra is a beyond visual range, air-to-air missile being indigenously designed and developed to engage and destroy highly manoeuvering supersonic aerial targets. Four numbers of seekers have been tested. Ground resonance test of missile was also undertaken. New Telemetry Housing design has been completed. Astra mini integration rig acceptance test procedure has been completed. Inspection of KAM 500 system (data acquisition system) for Captive flight test with Aircraft has been completed.

(j) **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. Strategic test of two proof motor has been completed successfully.

On December 6, 2007, DRDO took a significant step towards developing a Ballistic Missile Defence**,** when an endo-atmospheric interceptor missile killed "hostile" missile off the Orissa coast. With this milestone, India has joined the elite club of USA, Russia and Israel.

8.16 **Aeronautical Systems:**

(a) **Light Combat Aircraft (LCA), Tejas:** The multi-role fighter aircraft, Tejas, designed and developed by Aeronautical Development Agency, Bangalore, is in advanced stage of flight-testing. So far, LCA has completed more than 820 flights using six prototype aircrafts. Sea and Hot weather trials have also been successfully completed. The LCA Programme achieved the most significant milestone, when it successfully test fired the Close Combat Missile R-73. This historic event marked the beginning of weaponisation. LCA Prototype Vehicle (PV-1) created another milestone as it made a successful first flight with two 800 Ltrs Drop Tanks under the wing stations.

(b) **Light Combat Aircraft (LCA) for Navy:** It is a spin-off of the LCA, Tejas aircraft. This project was sanctioned in 2003 with about 40% funding by the Indian Navy, and the aircraft is expected to roll out by 2010. This Navy-version aircraft will be specific to aircraft carriers, and will be having modified landing gears and four

degrees drop-down of the aircraft nose

(c) **Kaveri Engine for LCA :** Gas Turbine Research Establishment (GTRE), Bangalore, to meet the requirements of the indigenous LCA aircraft, is developing Kaveri engine. Design and development of the engine components and sub-systems has been completed, and the Core Engine (Kabini) has also been tested on the High Altitude Test Bed in Russia.

(d) **Kaveri Engine for Naval Ship:** Kaveri Marine Gas Turbine (KMGT) is a spin-off of the Kaveri Engine project, which has been tested at the Naval facilities at Vizag. After a successful Phase-I stage, Phase-II project for higher output power is being worked upon.

(e) **Aircraft Arrester Barrier System (AABS):** It has been developed to progressively replace the earlier imported and life-expired systems at IAF bases across the country. As on date, eight IAF bases are already having indigenous 20-ton AABS; another three bases will have these indigenous AABS by the first half of 2008.

(f) **Recovery Parachute System for Space Recovery Experiment (SRE):** DRDO has successfully designed and developed Parachute system and Floatation system for conduct of Space Capsule Recovery Experiment undertaken by ISRO as a part of PSLV Programme. This was a significant experiment conducted to establish re-entry technology in country and gain confidence in Reusable Launch Vehicle (RLV).

(g) **Heavy Drop Platform (P-7) System for IL-76 Aircraft:** Combat equipment can be delivered during war on desired location using heavy dropping systems. Para dropping of equipment is resorted to deliver the combat equipment in minimum possible time to inaccessible and hostile locations. Project for development of Heavy Drop System (P-7) has been taken up using which combat loads up to 7 tons can be delivered.

(h) **Combat Free Fall System:** The System comprising manoeuverable gliding parachute safety devices, protective clothing, communication, navigation and life support system have been successfully developed. This system is capable to withstand the harsh conditions of free fall from 30,000 ft.

(i) **Cheetal (Re-engined Cheetah):** Re-engined Cheetah helicopter, installed with TMM 333-2M2 engine has been qualified and certified by CEMILAC. This helicopter's high altitude performance has been validated by its landing on the mountain peak of *Saser Kangri* (23,200 feet altitude) of Ladakh region. This became a historic event in the Indian aviation.

(j) **TARANG 1B:** It is an upgraded version of TARANG with higher sensitivity. LRUs namely Switched Filter Assembly, Signal Processing

Unit, CCU, 2-18 GHz Antenna with Radome have been cleared for flight trials. Flight trials on MiG-27, Jaguar have been completed. Three systems were cleared for development flight trials on MI-25, IL-76 and AN-32. Installation study on Jaguar-TS has been completed.

(k) **Remotely Piloted Vehicle (RPV), Nishant:** The airborne vehicle, designed and developed for surveillance, reconnaissance and real-time engagement of artillery fire, laser-designators and electronic intelligence is under production for the Indian Army. The UAV has an all-up-weight of 375 Kg. Army has placed an order for supply of twelve air vehicles and three ground systems. Out of this four air vehicle and one ground system are to be delivered by April 2008 for confirmatory trials. Integration of all four air vehicles are in progress. The ground systems are also progressing well.

(l) **Certification of New Aviation Fuel:** ONGC has produced a new aviation fuel made out of natural gas instead of crude petroleum. After extensive testing of this fuel by Center for Military Airworthiness and Certification (CEMILAC), the fuel has been approved for use in civil and military aircrafts. This makes CEMILAC the first agency in the world to certify aviation fuel made from natural gas. Incidentally, this fuel is also cheaper than the regular version fuel made from crude oil.

(m) **Upgrade of MIG 27 Aircraft:** DRDO along with Hindustan Aeronautics Limited (HAL) undertook the task of upgradation of avionics of MIG-27 aircraft of IAF. Line Replaceable Units (LRUs') like Core Avionics Computer (CAC) and Backup Core Avionics Computer (BCAC), Laser Designation Pod (LDP), Photo Recee Pods, Multi Functional Displays (MFDs), etc have been integrated. Initial Operational Clearance of the aircraft has already been completed.

(n) **Radar Warning Receiver (RWR):** DRDO has designed and developed a new generation state-of-the-art RWR for SU-30MKI. This RWR (R-118) is the simplest and most essential component of any Electronic Warfare (EW) suite and is used to detect an imminent threat by way of identifying the type of waves emitted by the hostile radar, which may be airborne, ship-borne and/ or ground-based. DRDO has already delivered 50 such RWRs to the IAF and another 40 to HAL for installation in the SU-30 MK-I aircraft presently under production.

8.17 **Electronic Systems:**

(a) **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 communication and radar signals. The system has successfully participated in the various exercises conducted by Army in recent times.

(b) **Com Segment:** Out of 3 Communication Control Blocks, two Communication Control Center Blocks had been productionised and delivered by BEL to the users after successful demonstration & User trials. The third block will be delivered by April 2008. Total cost of 3 Blocks is more than Rs. 450 Crore.

(c) **Non-Com Segment:** The Factory Acceptance Trials and limited user trials have been completed and the first block of two deliverable blocks has been delivered. The complete user trials are being conducted by Army. The 2nd block will be delivered in April 2008. The total cost of two blocks is about Rs. 500 Crore.

(d) **Integrated Electronic Warfare Programme for Navy, Sangraha:** The systems have been successfully installed, tested and inducted in the designated platforms by Indian Navy. Users have placed repeat orders on BEL for more such systems. The total order value is above Rs.700 Crore. The project has been completed successfully and all systems delivered to Indian Navy.

(e) **Low Level Light-weight Radar, Bharani:** This is a battery powered compact radar which provides 2D surveillance solution for Army Air Defence weapon systems, mainly in mountainous terrain against hostile aerial targets, like Unmanned Aerial Vehicles (UAVs), Remotely Piloted Vehicles (RPVs), helicopters and fixed wing aircraft flying at low and medium altitudes. It acts as an early warning system to air defence weapon system. The user trials showed very good results.

(f) **Weapon Locating Radar (WLR):** This Radar is based on the proven Rajendra radar technology. Its primary roles are location of enemy guns, mortars and rocket launchers and own fire direction. The system has been developed as a joint collaboration between DRDO and Bharat Electronics Limited. The Phase-I User trials have been carried out.

(g) **3D-Central Acquisition Radar (3D-CAR):** It has provided excellent detection and tracking of targets in group mode testing of Akash missile.

(h) **Revathi Radar for Navy & Rohini Radar for IAF:** These radars are being realized in collaboration with BEL. These are 3-D medium range for surveillance role. Air Force and Navy have already placed an order of total 7 Radars and 2 Radars respectively at a total cost of about Rs.360 Crore.

(i) **Samvahak:** It is a Battalion level Command Information and Decision Support System (CIDSS) to collect, collage, process and disseminate

information between commanders of various formation. The Phase-I of programme has been successfully completed and Phase-II is being launched.

(j) **Artillery Combat Command Control System (ACCCS):** An order worth Rs.1241 Crore has been placed on BEL for equipping the entire Field Army. The system is based on technology developed by two DRDO laboratories i.e. LRDE/CAIR.

(k) **Electro Optical Fibre Control System for Naval Ships (EON-51):** The system comprises three Electro Optical system (Thermal Imager, CCD Camera, Laser Range Finder) and capable to provide, search, track and fire control solution. The system was installed on INS Kirch for sea evaluation trials, which has recently been completed successfully.

8.18 **Combat Vehicles and Engineering:**

(a) **Main Battle Tank (MBT), Arjun**: Heavy Vehicles Factory at Avadi is fully geared-up to manufacture Arjun tanks to the requirements of Army. As on date 14 tanks have been issued to Army.

(b) **Combat Improved Ajeya (CIA):** Army has placed indents on Heavy Vehicles Factory, Avadi, in two phases, for manufacture and supply of 692 numbers of tanks with Explosive Reactive Armour for enhanced protection, accurate Global Positioning System (GPS) for Navigation of the tank, reconfigured Smoke Grenade Discharger (SGD) & IFDSS.

(c) **Armoured Ambulance:** After the development of ambulance, Indian Army has placed an indent for manufacture of 50 numbers on Ordnance Factory, Medak and these are under production. The first production model of Armoured Ambulance vehicle has been extensively validated by User at Rajasthan desert and subjected to amphibious trials.

(d) **Bridge Layer Tank (BLT) T-72:** Production of 12 numbers of BLT T-72 is under progress at HVF, Avadi. Six numbers have been handed over to Army and the balance is likely to be completed by the first half of 2008.

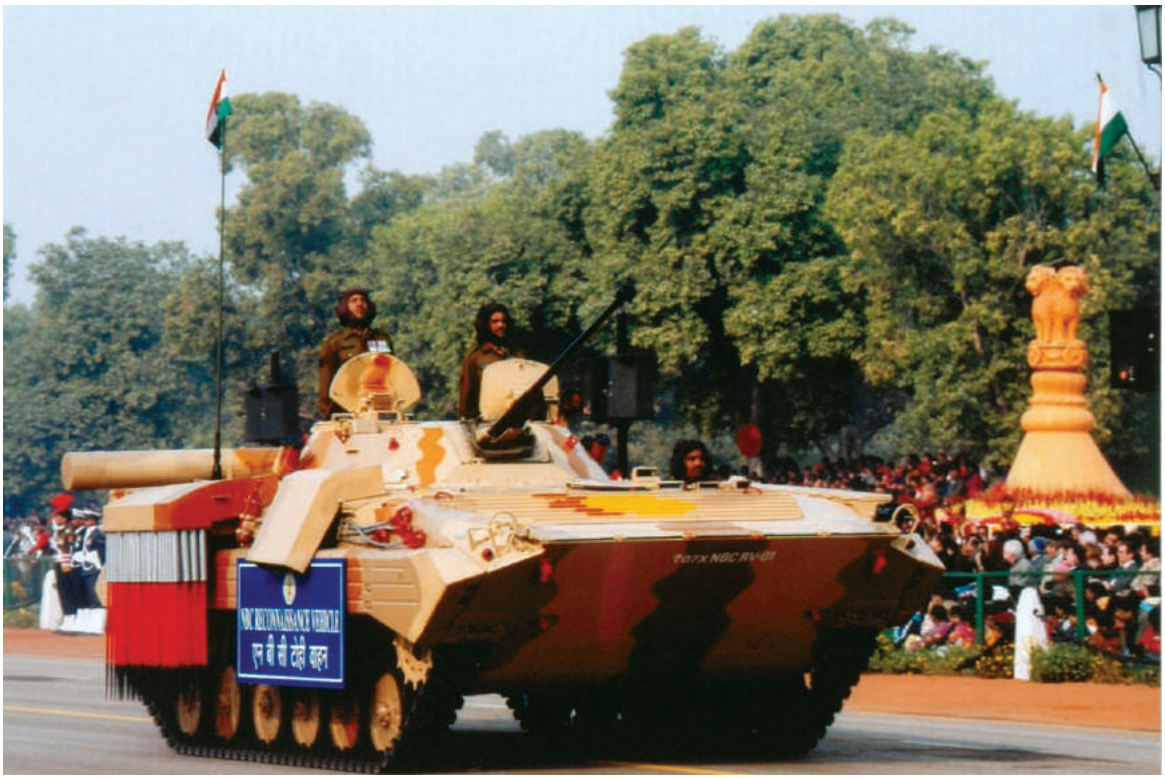
(e) **Infantry Combat Vehicle (ICV), Abhay:** The multi-disciplinary, multi-laboratory, Technology Demonstration Programme for development of Infantry Combat Vehicle (ICV) Abhay, has been successfully completed during the year having realized two prototypes. The successful development programme has imparted a boost to the self-reliance in defence technology. The technologies developed under this programme, such as fire control system, composite armour, hydro-pneumatic suspension and host of other automotive and armament sub-systems can be adopted for futuristic ICV and light tracked vehicle projects.

(f) **Armoured Engineering Reconnaissance Vehicle (AERV):** AERV is an all terrain, all weather tracked vehicle based engineer reconnaissance platform, capable of acquiring accurate data for a variety of combat engineering tasks such as bridging breaching and track construction. The vehicle is equipped with state-of-the-art instrument systems that enable terrestrial and under water survey in hatch-down condition. The Army has placed an order for sixteen vehicles. OFP, Medak and Bharat Electronics Limited are the production agencies. Delivery of eight vehicles against the first limited series production order placed by the Army has been completed during the year.

(g) **Armoured Amphibious Dozer (AAD):** AAD is a tracked vehicle based equipment, designed to carry out earth moving tasks under combat environment to enhance mobility of the forces. The Army has placed an order for six vehicles.

(h) **NBC Recce Vehicle:** The NBC Reconnaissance Vehicle based on a tracked chassis has been developed for conducting survey of radiological and chemical contaminated areas. Army has already placed an order for eight vehicles.

(i) **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.



NBC Recce Vehicle

First system on Tank based simulator has been realized and technical trials have been completed successfully. The second prototype of CMF has been realized and an in-house trial has been carried out successfully.

(j) **Experimental Tank :** DRDO, with the experience gained on development of MBT Arjun and Modernization of Ajeya tank, embarked upon the task of designing a new Hybrid tank called "Experimental Tank". The tank features the automotive systems of Ajeya and the Weapon system of MBT Arjun. One Pilot vehicle was already integrated to prove the concept and limited evaluation was carried out in the desert terrain. Based on the satisfactory results, this project was sanctioned to develop two vehicles.

(k) **Launcher Vehicle for Akash Missile:** Three T-72 based Radar, Command Centre and Missile Launcher vehicles viz. BLR III, BCC III and ASPL III has been realized. Limited mobility trials has been conducted at Combat Vehicles Research & Development Establishment (CVRDE)/ HVF test tracks. System integration for BLR III and BCC III has been carried out by Bharat Electronics, Bangalore and for ASPL III by Tata Power Consultancy Ltd, Bangalore. Functionality test of Akash vehicles were carried out at Kolar, Bangalore in May 2007. Subsequently, the vehicles have undergone Mobility trials at Pokhran in June-July 2007.

(l) **Nag Missile Carrier (NAMICA):** Namica PP-1 and PP-2 vehicles were made ready for User trials. PP-1 has undergone Phase I User trial in July 2007. Both PP1 and PP2 will be undergoing Missile firing trials against the target to complete the Phase II User trials.

(m) **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 for all tactical/ technical fire control functions was sanctioned to CVRDE with a project cost of Rs 7 Crore. The vehicle was fabricated at Ordnance Factory, Medak and subsequently positioned at BEL, Bangalore for integration of ACCCS equipment under Project 'Shakti'. The vehicle is integrated with Automatic Fire Detection and Suppression System, Automatic NBC protection system, Remote Controlled Weapon System for 7.62 m/c gun for air defence deterrent role with hatch closed mode and an air-conditioning system

(n) **Unmanned Ground Vehicle (UGV):** A lead project to develop UGVs for combat applications have been taken up by DRDO. These remotely controlled and semi autonomous vehicles can be employed for various tasks such as reconnaissance, surveillance,

mine field laying/ breaching under hazardous battlefield environment as well as for counter terrorism operations.

(o) **Rotary Engine Development:** A 55-hp rotary engine (Wankel engine) suitable for Unmanned Aerial Vehicles (UAV) applications have been realized by DRDO.

Bullet proof vehicles and Vajra Riot Control Vehicles are in extensive use by paramilitary forces and various state police organizations. So far 304 bulletproof vehicles and 439 riot control vehicles have been delivered to these organizations

(p) **National Centre for Automotive Testing (NCAT):** The NCAT of Vehicles Research & Development Establishment (VRDE), a laboratory of DRDO, comprising of test tracks and modern indoor testing facilities, is a one stop solution for testing of wheeled and tracked vehicles for their compliance to national and international automotive standards. The test facilities were extensively utilised for testing and evaluation of Defence as well as commercial vehicles. Rs. 10.54 Crore was deposited in Government treasury as revenue receipt during the financial year 2006-07, from commercial vehicles testing. The facilities in the center are regularly being upgraded to meet the testing requirements as per new standards being introduced.

(q) **Bullet Proof Vehicles and Vajra Riot Control Vehicles:** These vehicles designed and developed by VRDE are in extensive use by paramilitary forces and various state police organizations. So far 304 bulletproof vehicles and 439 riot control vehicles have been delivered to these organizations. These vehicles have had a positive social impact in ensuring peace and law and order through-out the country by aiding effective internal security operations and law enforcement tasks. Based on Memorandum of Understanding (MoU) concluded with Tata Motors Ltd, the technology transfer to Industry, in respect of these vehicles have been carried out for further production and marketing.

(r) **Short Span Bridging System**: The 5m bridge system has been realized and is ready for trial.

(s) **Integrated Field Shelter for NBC Protection:** The shelter system has been successfully inducted in the Armed Forces. A production order for 101 numbers of Integrated Field Shelter for NBC Protection is being placed directly by the Indian Army on production agency.

(t) **Automated Mobile Platform for Multipurpose Pay Loads:** The first phase of User trials of Automated Mobile Platform for Multipurpose Payloads have been completed recently.

(u) **Prithvi Weapon System**: A total 31 numbers of P-II Launchers have been handed over to the Users (Army and Air Force).

(v) **PJ-10 Weapon Launch System**: Four Mobile Autonomous Launcher has been delivered to the Army. Universal Vertical Ship Launcher Module 8 has been realised and installation on the warship is in progress. Army has placed an order for BrahMos Weapon Complex.

(w) **Akash Weapon Launch System:** User trials were successfully completed at Pokhran in November 2007.

(x) **Mobile Hydro Pneumatic Launcher Nishant UAV**: Mobile Hydro Pneumatic launcher Nishant UAV has been accepted for introduction into Services. Limited Series Production order for 3 sets of ground systems with 12 UAVs has been issued.

(y) **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.

8.19 **Armaments:**

(a) **Multi Barrel Rocket System (MBRS), Pinaka:** The system comprises launcher, loader-cum-replenishment vehicle and command post with fire control computer mounted on Kolos Tatra 8 x 8 (high mobility vehicle). The system is characterized by "Shoot and Scoot" capability with high rate of fire. It can fire a salvo of 12 rockets in 40 seconds. It is an area saturation weapon with a maximum range of 37.5 km and it is much superior to comparable systems available in the world. The system has achieved an accuracy of 1.2% of range well within the GSQR parameter. Indent for 4080 PF and 672 RHE rockets placed on Ordnance Factory Board (OFB) by Army at a cost of Rs. 767.28 crores. Indent for 40 numbers of Launchers, 16 Command Post Vehicles placed on Larson & Toubro and TPCL at a cost of Rs. 344 Crore. Indent for related ground system equipment (116 vehicles) placed on Bharat Earth Movers Limited (BEML) at a cost of Rs. 118 Crore, totaling to Rs. 1300 Crore. Full fledged production of rockets is in full-swing and being monitored at appropriate level.

(b) **Under Barrel Grenade Launcher (UBGL):** DRDO has developed a UBGL compatible with 5.56 mm INSAS and AK-47 rifles. User trials have been completed and Troop trials at three terrains have also been conducted successfully. Para Military Forces have placed an indent for 100 numbers of UBGL on OFB.

(c) **Influence Mine Mk-II :** State-of-the-art Influence Mine Mk-I to provide a full width attack to immobilize a present day battle tank was already

developed by the DRDO. The intelligent antitank mine incorporating active Influence Fuze Mk-II is India's answer to ever-increasing threat posed by the adversary's battle tanks. The design and development of Mk-II version of this mine with higher intelligence has been completed. Though sophisticated in design, the mine is simple for handling operations and remains user-friendly. User trials were carried out successfully last year and performance was found satisfactory meeting all user requirements. All Transfer of Technology (ToT) documents have been completed. The Army has placed an indent for 20,000 numbers of mines at a cost of Rs. 96.76 Crore. DRDO is in ToT stage with private firms to help OFB for supply of critical items.

(d) **Modern Sub Machine Carbine (MSMC)**: Development of MSMC, which is a part of INSAS family, was taken up by DRDO. Various aspects like functioning, accuracy, penetration etc. were demonstrated to the users. Penetration on 24 layers of Kelvar at 50 m was achieved as per GSQR. The store has undergone successful troop trials at various locations.

Sixty four types of escape aid and power cartridges have been developed for variety of aircrafts used by the IAF and Navy.

(e) **Multimode Hand Grenade:** Hand grenade has been developed which uses preformed cylindrical mild steel fragments to achieve uniform distribution. Success rate of more than 95% achieved as required by users. Troops trials have been successfully conducted. Army has asked for another lot of 50 grenades for confirmation trials at Infantry School, Mhow. Multimode Hand Grenade will be replacing the existing 36M grenades shortly.

(f) **Bund Blasting Device (BBD):** Reduction of a high bund is a critical activity in an opposed crossing across a water obstacle/ river/ canal/ ditch – cum-bridge, within a tactical timeframe available for launching a suitable bridge to ensure mobility of mechanized army. With a view to hasten the process of forward movement of Army, DRDO has successfully developed a man portable device called BBD.

(g) **Canopy Severance System (CSS):** The In-flight Egress System (IES) of CSS for LCA Trainer was assembled in the canopy frame and conducted the Seat ejection trials at Martine Baker Company, LONDON, UK. The first trial was conducted on May 30, 2007 and the second trial was conducted on July 4, 2007. Both the trials were successful.

(h) **Power Cartridges:** Sixty four types of escape aid and power cartridges have been developed for variety of aircrafts used by the IAF and Navy. In view of the extremely high degree of reliability, low installed life and small quantity requirements at a time, the Users insist on production and supply of power cartridges by ARDE itself. ARDE has supplied more than 2405

numbers of life saving cartridges of different types costing Rs.98.5 lakh.

(i) **Bi-Modular Charge System (BMCS):** DRDO has developed Bi-Modular Charge System (BMCS) for 155 mm Bofors Howitzer Gun which is in service with the Indian Army.

8.20 **Naval Systems:**

(a) **Submarine Sonar, USHUS:** It is an integrated submarine sonar system designed and developed for the EKM Class Submarines. It essentially consists of five sub-systems viz., Passive Surveillance Sonar, Active Sonar, Intercept Sonar, Underwater Communication System and Obstacle Avoidance Sonar. Navy has already ordered four USHUS systems from Bharat Electronics. As on date, 3 Vessels are fitted with the system.

(b) **Helicopter Fire Control System (HFCS):** This system has been developed and delivered to HAL, Bangalore to incorporate in the Naval Light Helicopter. The approximate cost of indigenous HFCS system is Rupees 40 Lakh as against Rs 3 Crore for an imported system.

(c) **Torpedo Defence System, Maareech:** It aimed at development of an `Advanced Torpedo Defense system' (ATDS) for surface ships. The scope of the project is to design and develop a complete package of defence against vintage as well as modern torpedoes. Complete system has been installed and made operational onboard INS Dunagiri.

(d) **Inertial Sensor Package:** Ukraine Free Gyro is identified as alternate source and packages are developed and integrated tested in torpedo Fibre Optic gyro based packages with built in algorithms and Kalman filtering are developed from 2 sources and were functionally evaluated. Ukraine gyro sensor package was developed and proved in trials. This project has been completed successfully.

(e) **Processor Based Advanced Exercise Mine (PBAEM):** DRDO has developed Advanced Exercise Mine Deployable from ships and submarines of the Indian Navy and to record the acoustic/ magnetic/ pressure influence data of ships and submarines for exploitation of sea mines during combat, mine sweeping and mine hunting exercises. The first system of Advanced Exercise Mine was handed over by DRDO to Commanding-in-Chief of the Eastern Naval Command on August 16, 2007. The following products were accepted for induction into Service after successful sea and test bed trials for installation on board new construction warships by Indian Navy and as retrofits in the 'in-service' Naval Vessels.

- Acoustic Enclosure/ Hood
- Composite Systems for RCS reduction
- Acoustic silencer
- Composite Systems for Noise reduction
- Diesel Engine IRSS (Infrared Signature suppression devices)

- Two stage mounting system for vibration isolation

These items were formally handed over by DRDO to Chief of Material on October 31, 2007.

8.21 **Advanced Materials:**

(a) **Development of Paint Composition for Application Under Immersed Condition:** A thixotropic paint composition to avoid spillage during application under immersed condition has been developed and evaluated. A device for application of paints has also been developed.

(b) **Ceramics**: A piezocomposite linear array of length 160mm and width 34mm has been developed which will act as a projector array for Sonar.

(c) **Environmental Survey Vehicle (ESV):** It has been designed & developed based on SORs of Indian Navy. This vehicle was handed over by DRDO to the Vice Chief of Naval Staff on October 1, 2007. ESV is equipped with various nuclear instruments for measurement of radioactivity in air, water, soil and other environmental matrices. It can detect alpha, beta & gamma radiations as well as meteorological and navigation parameters. Installed generator set and air-conditioner facilitates sustained operation for long hours.

(d) **Modernization of NBC Protection System of BMP-2 & 2K:** Modernization of NBC Protection system of BMP-2 & 2K has been completed successfully. The modernized system has sensors to detect atomic explosion, chemical warfare agents and has the capability to activate the NBC protection system automatically and measure the radiation level. The special lining material in the form of NBC pads was being imported and fitted in BMP2 & 2K by Ordnance Factory, Medak. Under modernization programme, the GSQR based prototype NBC pads have been developed with 20% improved shielding factors against INR and Fallout Radiation with respect to existing Russian pads.

(e) **NBC Permeable Suit Mk-IV:** DRDO has developed NBC Permeable Suit Mk-IV, a new generation NBC protective suit based on state-of-the-art technology of activated spherical carbon beads, sandwiched between fabric layers, providing very high adsorption capacity leading to much higher protection levels in comparison to earlier version of NBC Permeable Suit Mk- I. Following the concept of normal garment and reusability, this suit can withstand 3 wash cycles under specified conditions without losing functional performance. It has high air permeability 50cc/cm^2/s at 10mm water head pressure and is water & oil repellent with flame retardant properties. This suit consists of a Jacket (smock) with hood and trousers designed in small, medium, large and extra-large sizes to cater entire population of services. It provides protection for more than 24 hours

(breakthrough time is more than 24 hrs) in contaminated environment. Army has already accorded GS clearance and the technology has been transferred to Ordnance Factory and Trade.

(f) **Development of Naval Steels DMR-249B:** Based on naval steel technology developed by DRDO, Indian Navy is in the process of placing bulk orders on Steel Authority of India Limited (SAIL) for supply of DMR-249B steel plates for construction of the very first aircraft carrier being built in India. Large quantities of DMR-249A steel have already been delivered to shipyards through SAIL for construction of the same aircraft carrier.

(g) **Light Weight Ceramic Faced Composite Armour Panels for Advanced Light Helicopter:** Composite armour panels has been designed and developed for Advanced Light Helicopter (Army Variant) as per requirement of Hindustan Aeronautics Ltd (Helicopter Division), Bangalore. These are kevlar epoxy composite laminates bonded with alumina ceramic cylindrical pellets with the help of epoxy structural adhesive and provide protection to aircrews and critical parts of helicopter against 12.7mm API bullet hits.

(h) **Fiber and Textiles Technologies:** DRDO has developed Silver-Incorporated Coloured Antimicrobial Fibres. Without using undesirable dyestuff and chemicals, the colours as well as antimicrobial properties have been imparted to these textile grade acrylic fibres. It is done through silver nanoparticles in such a way that these properties become inherent part of fibres. The process involves conversion of a composite solution of polyacrylonitrile containing silver nanoparticles, synthesized *in-situ*, into fibres using solution spinning technique. The so formed fibres have in-built silver nanoparticles in size ranging from 20-120nm with various geometries such as spheres, hexagons and rods. Coloured fibres with colours ranging from red to blue could be prepared by varying the silver concentration, aggregate size and process. The antibacterial property of the fibre is as high as 94.3% against *Escherichia coli*.

(i) **Investment Casting Technology for Critical Aero-Engine Parts:** DRDO has contributed to the development of Directional Solidification (DS) of columnar grained and single crystal castings of very complex geometry which has been applied to super alloy aerofoil castings of Kaveri engine and also to integral rotor wheels with fine grained hub for jet fuel starter of Tejas, the Light Combat Aircraft (LCA) as well as land based gas turbine blades for BHEL and NTPC. Two engine sets of these parts have gone through extensive type certification successfully and were delivered to the country's indigenous engine development programme. Defence Metallurgical Research Laboratory (DMRL), the laboratory of DRDO, has secured

several US patents on this development work, which include third generation super alloys, equipment design for directional solidification and a special strategy for precision casting of thin walled aerofoil having complex cooling air passages. The broad developmental effort has now culminated into setting up an Enabling Technology Center, a stand-alone foundry for investment casting, at DMRL.

A new Directorate for Technology Acquisition (DTA) has been created which identifies the critical technologies that are required to be established within the country.

8.22 **Life Sciences Systems/ Products:**

(a) **High Altitude Pulmonary Oedema (HAPO) Bag:** HAPO is a hazard associated with rapid ascent to altitude higher than 2700 m. To provide emergency treatment to soldiers affected by HAPO operating at high altitudes, DRDO has developed a HAPO bag.

(b) **Combat Free Fall Oxygen System and Protective Clothing:** It has been developed for paratroopers consists of pre-breather console, portable bailout oxygen system, demand oxygen regulator and oxygen mask, helmet, jumpsuit, gloves, boots, goggles, jack-knife.

(c) **Anti Freeze Container:** A field trial on the evaluation of anti freeze container was carried out. The field trial gave encouraging results as various fruits, vegetables and liquid foods, i.e., packaged juices and milk could be prevented from freezing for a period of 3 days and later on to an indefinite period with periodic usage of chemical heating sachets within the container.

(d) **Audio-Visual Situation Reaction Test:** Fifty six audio-Visual clippings were developed for the assessment of factors/ OLQ's after analyzing the opinion of Psychologists posted in various Service Selection Boards.

(e) **Hyperbaric Chamber for Naval Divers:** DRDO has designed and fabricated two Hyperbaric chambers, both capable of operating at 5 bar (6ATA) pressure. The monoplace chamber that can accommodate one person is a mobile chamber intended to transfer divers/ patients from remote locations under hyperbaric conditions to the multiplace chamber that can be used for 2 to 5 subjects/ patients. During 2007, the system was named as 'Samudrasutra' and handed over to INHS, Asvini, Mumbai.

(f) **Multivitamin Herbal Beverage:** Multivitamin Herbal Beverage and DRDO Herbal technology was transferred to Victory Corporate Services & Private Limited in 2007 for use by Services and Civilians.

8.23 **Technology Acquisition:** A new Directorate for Technology Acquisition (DTA) has been created. This Directorate studies the S&T Roadmaps

of DRDO and the three Services and identifies the critical technologies that are required to be established within the country. The identified technologies are subsequently categorized and strategies are evolved for establishing the technologies in the country by one of the following routes:-

The value of production orders placed on DRDO developed systems stands at over Rs. 30,000 Crore till date.

i) In-house development in DRDO.

ii) Joint development through National S&T labs and academia.

iii) Joint development through International Collaboration.

iv) Acquisition of Matured Technologies through offset obligations.

Integral to this objective, Director Technology Acquisition represents DRDO in the Defence Offset Facilitation Agency (DOFA) of MoD in identifying the technology areas where offset obligations can be successfully utilised.

8.24 **Self-Reliance :** DRDO has till date developed a number of systems and products, of which a large number have been productionised. The value of production orders placed on DRDO developed systems stands at over Rs. 30,000 Crore till date. This is out of a total R&D cost of about Rs.12,000 Crore. Of this, approximately Rs.12,500 Crore of production has been executed and the systems inducted.

8.25 **Interaction with Industries and Technology Transfer:** During the year, DRDO has transferred several dual-use technologies to Industry for commercial exploitation. Some of the important ones are Integrated NBC Protection System, NBC Filtration System, Digester for on-board treatment of human waste, Bio-Digester for High Altitude Areas, Multi-Vitamin Herbal beverages from Seabuckthorn, Herbal Tea, Drug Cartridge for Autoject Injectors, Attracticide, Roachline, Roachtox.

8.26 **Participation in National and International Exhibitions:** DRDO has been projecting its products and technologies in important domestic and international exhibitions. During the year, DRDO exhibited its strength in Aeroindia 2007, Indian Science Congress and IITF 2007 among other domestic exhibitions. Latin America Aero Defence 2007 at Rio-De-Janeiro and Defence Systems and Equipment International 2007 at London provided DRDO an opportunity to showcase its technology in the international audience.

8.27 **Foreign Collaboration:** Presently, DRDO has MOU/ Agreements with many countries for collaboration in the field of defence technologies. The major foreign partners of DRDO are Russia, USA, France, Israel, Germany, UK, Singapore, Kazakhstan and Kyrgyzstan. The areas where DRDO is having foreign collaboration are: missile technologies, avionics and aircraft technologies, microwaves, laser systems, new materials, nano-materials, stealth,

hypersonic and naval systems. While all collaborations with foreign countries are made under the overall supervision of the Ministry of Defence, DRDO has Joint Working Groups for collaboration with its major foreign partners. The annual meetings of three such groups, viz., Indo-US Joint Technology Group, Indo-Russian R&D Sub-Group and Indo-Israel Managing Committee, are being organized regularly. Many new countries are coming forward to enter into joint development and collaborative R&D. Information Exchange Annexe (IEA) in the areas of (i) Cold Region Science & Technology; (ii) Naval Materials; (iii) Aeronautical Materials was signed with USA. Implementation agreements have been signed with Singapore for joint R&D project in Laser technology and Light Weight Towed Array technology.

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

8.29 **Aeronautical R&D Board (AR&DB):** The AR&DB was established in February 1971. The Board is currently funding 51 projects with a ceiling of Rs 5 Crore per year in upstream area of Aeronautics R&D at 19 academic and research institutions in the country.

8.30 **Armament Research Board (ARMREB):** The ARMREB was instituted in March 1997 to promote basic research among research and academic institutions across the country with annual budgetary allocation of Rs 1.5 Crore. Till date, 84 projects have been sanctioned to 35 leading academic institutions and other research organizations in the areas of high energy materials, sensors, ballistics and aerodynamics, combustion and detonics, smart and nano materials, modeling/ simulation and other fields related to armaments. Out of these, 56 projects have been completed and remaining 28 are ongoing.

8.31 **Naval Research Board (NRB):** The NRB continued to support the basic research applicable to naval/ marine technologies. Since its inception in August 1996, 131 projects at a total cost of Rs 37.15 Crore have been accorded to the academic/ research institutions and academics of repute. During the year 19 projects have been sanctioned at a cost of Rs 10.20 crore. This includes establishme ydrodynamics" at IIT Madras and IIT Kharagpur at a cost of Rs 4.50 Crore and Rs 2.55 Crore respectively.

8.32 **Life Sciences Research Board (LSRB):** The LSRB has been sponsoring research and development projects to various research institutes in the country for expanding and deepening the knowledge base of life sciences. So far a total of 27 projects have been recommended for funding during the year. Four patents have been filed and one is under process. Some of the projects supported by LSRB are pertaining to evaluation of natural products

for improving human performance, bio-defence, bio-fuel, life support system, nutrition, food processing hill agro-technology, etc.

8.33 **Centres of Excellence:** DRDO obtained the Government approval in 2005 to establish Centres of Excellence (CE) 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 would 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.

(i) Science and Synthesis of High Energy Materials for use as Explosives and Propellants at University of Hyderabad, Hyderabad.

(ii) DRDO-BU CE in Life Sciences at Bharathiar University (BU), Coimbatore.

(iii) Centre for Millimeter Wave and Semiconductor Devices and Systems at University of Calcutta, Kolkata.

8.34 **Contracts for Acquisition of Research Services (CARS):** DRDO has introduced an instrument known as Contract for Acquisition of Research Services (CARS) for the procurement of research services from academic institutions. Using this instrument a laboratory can seek the expertise and access the facilities of academic institutions. Under this scheme a laboratory is authorized to award a project worth Rs. 10 lakh to an individual or institution. DRDO laboratories are spending nearly Rs. 8 crores per year under CARS.

EXTRAMURAL RESEARCH/ INTELLECTUAL PROPERTY RIGHTS

8.35 **Extramural Research (ER):** DRDO nurtures basic research activities through its ER scheme, that provides impetus to technology development. The objective is to harness intellectual resources and scientific expertise available in the academic institutions and other research laboratories for the short/ long term programme of DRDO. A wide spectrum of technologies ranging from nano-scale molecular engineering to interdisciplinary flight R&D are focused under this research scheme. So far, 64 new projects with an aggregate value of about 14 Crore have been sanctioned while the ongoing activities have been funded to an extent of about 110 Crore covering 240 projects. The major technological areas that derive benefits from the ongoing research projects cover metallic and non-metallic materials, aircraft and missiles, electronics and communication, bio-medical sciences, etc. These grants also provide for Memorandum of Understanding (MOU) or Memorandum of Collaboration (MOC) with IITs, IISc and other institutions of higher learning on strategically important research programme of interest to DRDO. Additionally, ad-hoc grants are also offered by DRDO to organize and conduct conferences and seminars on

research themes of current and futuristic applications that result in catalyzing scientific and technological innovations. So far 158 conferences of international and national repute covering a grant of 1.29 Crore have been granted. A new concept of "Directed Research" has been initiated through which Research at Academic Institutions is initiated based on the LTIPP and S&T Road Map evolved by DRDO jointly with IDS and other three Services.

8.36 **Intellectual Property Right (IPR):** The wealth of new knowledge created through the high end research activities of DRDO is selectively given protection through filing of IPR applications for products/ processes. One hundred and two IPR applications (including 14 in foreign countries) have been filed so far in the fields of materials, electronics, bio-medical sciences and food technology. So far 66 patents (including 7 in foreign countries) have been granted and in addition 1 copyright and 3 designs have also been registered in India. To promote IPR familiarity among the DRDO scientists, 8 awareness programmes/ workshops/ patent-clinics have been held in different laboratories.

AWARD

8.37 Shri M Natarajan, SA to RM received prestigious CV Raman Birth Centenary Award from Hon'ble Prime Minister of India on January 3, 2008 during the Inaugural Function of the Annual Session of the Indian Science Congress at Andhra University, Visakhapatnam. The award carries a Gold Medal and is presented to honour a Distinguished Scientist of the Country every year.

9

INTER-SERVICE ORGANISATIONS

Married Accommodation for Airmen, SULUR

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 (ISOs) function directly under Ministry of Defence :-

i) Military Engineer Service
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

MES provides infrastructural support and works services to the Army, Navy, Air Force, Defence Research and Development Organisation, Directorate General of Quality Assurance, Ordnance Factories, Coast Guard and Kendriya Vidyalaya Sangathan.

MILITARY ENGINEER SERVICES

9.2 Military Engineer Services (MES) is the largest Government construction agency in the country with an annual workload in excess of Rs. 7,500 crore. It provides infrastructural support and works services to the Army, Navy, Air Force, Defence Research and Development Organisation, Directorate General of Quality Assurance, Ordnance Factories, Coast Guard and Kendriya Vidyalaya Sangathan.

9.3 The MES functions under the overall control of an Engineer-in-Chief who is the adviser to the Ministry of Defence and the three Services on infrastructure development and construction. It has expertise in a wide spectrum of civil works, ranging from conventional buildings and factories to sophisticated complex laboratories, marine works, jetties, dockyards, wharves, workshops, slipways, airfields, roads and utility services. MES not only constructs infrastructure, but provides continuous civil, electrical and mechanical maintenance support for the constructed infrastructural facilities in the Cantonments and military stations.

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

(a) **4th World Military Games:** 14 works amounting to Rs. 84 crore involving creation of sports infrastructure at Hyderabad/ Golconda for the 4th Military World Games held from October 14-21, 2007 were completed well ahead of time. These included the construction of Handball/ Volleyball Stadia/ development of football venues/ firing range/ boxing rings etc.

(b) **Jammu War Memorial:** A war memorial to immortalize the sacrifices of martyrs of J&K is being constructed at Bahu Wali Rakh. The monument called 'Balidan Stambh' will provide vibrant linkage between soldiers and people of J & K and will thus promote national integration. The cost of the project is Rs 10.74 crore.

(c) **AERO India 2007:** The Sixth International Aerospace Exposition, Aero India 2007, a biennial event, was held at Bangalore from February 7-11, 2007. Works amounting to Rs. 11.03 crore were executed by the MES well ahead of the show.

(d) **DWP 2007:** The new Defence Work Procedure 2007 (DWP 2007) was promulgated on June 21, 2007. It is a progressive document with many new features, which will help in the speedy planning and execution of defence infrastructural works.

The new Defence Work Procedure 2007 (DWP 2007) was promulgated on June 21, 2007 which will help in the speedy planning and execution of defence infrastructural works.

(e) **Water Year :** Year 2007 has been declared as the Water Year by Government of India. The following measures have been taken by the MES in this regard:-

(i) Mass awareness programme being conducted through holding of workshops/ seminars.

(ii) Campaign through display of posters highlighting importance of conservation of water by all users have been launched at all stations.

(iii) Guidelines have been issued to resort to rainwater harvesting, sewage treatment and recycling of water.

9.5 **Married Accommodation Project (MAP):** The Government stands committed for providing married accommodation for Defence service personnel. Presently, Phase-I of the Married Accommodation Project under which construction of 58391 Dwelling Units at an estimated cost of Rs. 5329.30 crores is under implementation. Construction activities are in progress with 6311 dwelling units having been completed so far.

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 a 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 adviser 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. The 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.

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9.7 **Important policy decisions taken during the year:**

Extending Medical facilities to the needy

(a) **Streamlining of recruitment procedure:** Recruitment rules for grant of Short Service Commission for AMC to doctors from the open market have now been relaxed. Selection of doctors will continue to be based on interview followed by medical examination.

(b) **Extension of Short Service Commission:** With a view to better utilization of expertise of Short Service Commission officers, Government have accepted the proposal of extending the maximum tenure of Short Service Commission from the existing 10 years to 14 years. These officers will also be entitled to promotion to the rank of Lt Col during the extended tenure.

9.8 **Armed Forces Medical College (AFMC) Admission 2007:** 130 (105 boys & 25 girls) were admitted to the college. In addition 5 sponsored candidates from the following countries were also admitted:-

(a)	Nepal	-	02
(b)	Bhutan	-	02
(c)	Afghanistan	-	01

159 Medical officers were granted Short Service Commission through open market during the current year.

9.9 **Advance Course:** A total of 147 officers have been selected for undergoing advance course for Post Graduate Qualification in various specialties from Pune and other universities.

9.10 **Training Courses Abroad:** 64 officers including Medical, Dental and MNS officers have been detailed for various training courses abroad this year.

9.11 **United Nations Missions :** A total of 39 Medical officers, 27 specialist officers, 5 Dental officers, 17 MNS officers and 224 PBORs are deployed at the following United Nations Missions abroad :-

a) Congo (MONUC)

b) Sudan (UNMIS)

c) Ethiopia – Eritrea (UNMEE)

d) Lebanon

e) Israel

9.12 **Humanitarian Assistance :** Medical supplies worth Rs 55 lakh were airlifted to Bangladesh in November last after the country was struck by a severe cyclone.

9.13 **Aid to Civil Authorities :** The AFMS provided Emergency medical aid during the floods that devastated the states of Bihar, Maharashtra and Gujarat. The AFMS provided prompt and definitive support during the outbreak of Chikungunya fever in Kerala.

9.14 **Modernisation of Hospitals:** Modernisation of hospitals by way of induction of the latest medical equipments is an ongoing process. During the year 2006-07, total expenditure under Capital and Revenue Heads for procurement of medical equipments, drugs and consumables etc. was Rs.93 crore and Rs.343.50 crore respectively.

DIRECTORATE GENERAL DEFENCE ESTATES (DGDE)

9.15 The Directorate General Defence Estates, New Delhi, performs an advisory role to the Ministry of Defence on all

matters of lands (acquisition, hiring & management) and Cantonments. The Directorate General monitors the functioning of five Principal Directorates, DE at Jammu, Chandigarh, Kolkata, Lucknow, Pune and one Directorate, DE at Jaipur. Each Principal Directorate/ Directorate has a number of field offices, such as office of the Defence Estates Officer, Asstt. D.E.O. and Cantonment Boards. These field offices are entrusted with the day to day management of Defence lands and Cantonment Boards across the length and breadth of the country.

9.16 The Ministry of Defence owns around 17 lakh acres of land throughout the country, which are managed by the three Services and other Organisations like Ordnance Factories Board, DRDO, DGQA, CGDA etc. The Army has the maximum of the land holdings under its control and management i.e. 13.79 lakh acres followed by Air Force 1.51 lakh acres and Navy 0.37 lakh acres. The Defence Estates Organisation manages around 0.68 lakh acres of land. The defence land inside the notified Cantonments is approximately two lakh acres and the remaining around 15 lakh acre lies outside the Cantonments.

The Directorate General Defence Estates performs an advisory role to the Ministry of Defence on all matters of lands (acquisition, hiring & management) and Cantonments.

9.17 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). The field offices are being equipped with necessary hardware infrastructure to support this venture.

9.18 In the on-going process of acquisition of land for the three Services, an amount of Rs. 154.81 crore has been allotted by the Ministry of Defence for acquisition of land for the year 2007-08 and Rs. 67.9197 crore has been allotted for rental compensation.

9.19 The Defence Estates Department has the prime responsibility of hiring of residential accommodation for the Armed Forces and hiring/ requisitioning of land. During the current year, special emphasis has been given to the work relating to payment of revised rental compensations for hired/ requisitioned lands occupied by Security Forces in J&K.

9.20 Directorate General Defence Estates is also responsible on behalf of the Ministry of Defence to control, monitor and supervise the Civic Administration in Cantonments. There are 62 Cantonments in India. These are located in 19 States including National Capital Territory of Delhi. The normal composition of Cantonment Boards comprises of elected representatives besides ex-officio and nominated members. Parity has been provided between elected and non-elected members in the Cantonments Act, 2006. The Station Commander is the President of the Cantonment Board. All the 62 Cantonments are varied at present. Elections to the Cantonment Boards will be

held in accordance with provisions of the Cantonments Act, 2006 and Cantonment Electoral Rules, 2007.

9.21 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 by way of grant-in-aid to a certain extent to balance the budgets of some of the Cantonment Boards, which are financially deficit. During 2006-07 Rs. 35.07 crore has been allocated as ordinary Grant-in-aid to Cantonment Boards.

9.22 A milestone was achieved towards "computerization of Defence Land Records" when Raksha Rajya Mantri released Military Land Register (MLR) software on October 22, 2007 in the Raksha Sampada Bhawan, Delhi Cantonment (HQrs of Defence Estates Organisation). In the ongoing computerization of Defence Lands, this was an important step to modernize the defence lands administration and to provide easy and efficient access to defence land records to various users in the Ministry of Defence. The digitization of land records will enable quick retrieval of documents and information related to estates matters and will also facilitate protection of Government interests in various title suits pertaining to ownership and occupation of defence lands.

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

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

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

9.24 The functions of the CAO's Office are carried out by the following six Divisions, as indicated:-

(a) **Administration Division:** The Division provides administrative cover to about 12,000 civilian personnel employed in the Army Headquarters and 26 Inter-Services 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 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 organisations, Cadre Review/ Restructuring of AFHQ civilian cadres, work related to Pay Commission and review of Peace Establishment (PE) of AFHQ/ ISOs.

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

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

The Directorate of Public Relations is the nodal agency for the dissemination of information to the media and the public about the important events, achievements and major policy decisions of the Ministry, Armed Forces and Inter-Service Organisations under the Ministry of Defence.

9.25 **Training, Coordination and Welfare Division:** The training requirements of civilian personnel posted in the Service Headquarters and in the Inter-Services Organisations are looked after by Defence HQ Training Institute (DHTI) functioning under the aegis of CAO. During the year, the DHTI has conducted 56 courses, imparting training to approximately 1,082 Civilian and Service Personnel.

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

DIRECTORATE OF PUBLIC RELATIONS (DPR)

9.27 The Directorate of Public Relations is the nodal agency for the dissemination of information to the media and the public about the important events, 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 and services so as to ensure adequate publicity in the print and the electronic media.

9.28 The Directorate conducted Defence Correspondents' Course for the media persons to enhance their knowledge about defence matters. Thirty one journalists from print and electronic media from all over the country attended the course.

9.29 The Directorate is responsible for bringing out a fortnightly journal, *Sainik Samachar* for the Armed Forces in 13

languages (Assamese, Bengali, English, Gorkhali, Hindi, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telegu and Urdu).

9.30 The Broadcasting Section of the Directorate coordinates *'Sainikon Ke Liye', a* 40 minute programme that is broadcast daily on All India Radio for the Armed Forces personnel. The Directorate's Photo Section provides photographs of defence related events to the print media.

9.31 The issue of the much awaited Request for Proposal (RFP) in August for the purchase 126 MMRCA fighter jets for the IAF was the highlight of the media coverage arranged by the Directorate. Later in November, adequate publicity was accorded to the arrival of the first two Hawk AJTs in Indian skies from Britain as they flew in to their base in Bidar, Karnataka. The successful launch of Agni – III missile by the DRDO in April, which catapulted India into the league of nations with IRBM capability, was a major achievement publicised in the media. The successful testing of Brahmos missile land version, handing over of Brahmos Mobile launcher to the Army and the user trial of Agni-A1 missile by the Strategic Forces Command were the other major success stories highlighted by the DPR.

Army Purchase Organisation is entrusted with the responsibility of the procurement and timely supply of dry food rations for the consumption of Defence Forces.

9.32 Other significant events covered by the Directorate include the signing of an agreement on the Joint Development of the 5th Generation fighter Jet during the Defence Minister's Moscow visit, first Indo-German High Defence Committee meeting, President's Fleet Review of the IAF, Aero-India 2007, Silver Jubilee of the Coast Guard Aviation, IAF participation in Indo-UK Joint Air Exercise INDRADHANUSH – 07 and International Air Show at Wellington, UK, Indian Navy's hosting of the 5-nation Malabar 2007 exercises off Andamans.

ARMY PURCHASE ORGANISATION

9.33 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. The indented quantities are procured specially during the flush season when availability is high and prices are low. During the year, Rs. 893 crore was provided to the Army Headquarters for procurement of these items.

SERVICES SPORTS CONTROL BOARD (SSCB)

9.34 **Services Championships :** Services Sports Control Board (SSCB) conducts and co-ordinates various sports activities in the three Services. A total of four teams (Army Red, Army Green, Indian Navy and Air Force) participate in 19 Services Championships conducted under the aegis of SSCB.

9.35 **Best Services Sportsman:** Based on the laid down criteria, one of the sportsman from the three Services is adjudged as the "Best Services Sportsman" for the year. Subedar Vikas Kumar of JAT Regiment Centre, an International Kabaddi player, was adjudged as the best sportsman of the year 2006-07.

9.36 **National Championships :** SSCB is affiliated to 29 National Sports Federations. Out of the 6 National Championships held during the period April, 2007 to December 31, 2007 Services have won three and secured second position in the remaining three events.

9.37 **4th CISM Military World Games 2007:** Indian Armed Forces were entrusted the responsibility of hosting the prestigious 4th CISM Military World Games at Hyderabad and Mumbai from October 14-

Sky Divers display the Tricolour, "National Flag" during the Opening Ceremony of the 4th CISM Military World Games at Hyderabad

21, 2007. 4782 sportsmen and 897 officials from 102 countries participated in these Games. Competitions were held in 13 disciplines as follows :-

a) Hyderabad:

i) Military Pentathlon
ii) Judo
iii) Boxing
iv) Wrestling
v) Volleyball
vi) Football
vii) Handball
viii) Swimming
ix) Shooting
x) Parachuting
xi) Athletics

b) Mumbai:

i) Sailing
ii) Triathlon

9.38 The Services sportsmen performed reasonably well winning a total of 10 medals including 2 gold, 1 silver and 7 bronze. It was for the first time that India won a gold medal at these games.

ARMED FORCES FILM & PHOTO DIVISION (AFFPD)

9.39 The Armed Forces Film & Photo Division (AFFPD) is an Inter-Service Organisation of the Ministry of Defence, 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 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.

9.40 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. At present, the AFFPD have 50 films on its production schedule, out of which 14 films have been completed. All the films are being produced in Hindi and English version. A documentary film promoting use of Hindi as official language is also under production.

9.41 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

9.42 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 47 years and has established a name for itself as a centre of excellence on matters pertaining to national security and strategic studies. It has evolved into an institution that seeks to comprehend and interpret the dynamics of India's security strategy in a world of transition. The institution endeavours to provide an academic and professional setting that is conducive to higher learning and mental stimulation.

9.43 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-Politics of India, Economy, Science, Technology, International Security Environment, Global Issues, India's Strategic/ Immediate Neighbourhood and Military Dimensions of National Security. The NDC Course is now recognised by the Madras University for award of M.Phil in Defence and strategic studies, subject to the fulfilment of prescribed conditions.

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.

SCHOOL OF FOREIGN LANGUAGES (SFL)

9.44 The School of Foreign Languages 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 and Interpretership Courses. The languages taught on regular basis at the SFL are Arabic, Bahasa Indonesia, Burmese, Chinese, French, German, Persian, Pushto, Russian, Spanish, Sinhala, Tibetan, Japanese, Thai, Malay, Hebrew and Vietnamese.

The School of Foreign Languages imparts training in foreign languages to personnel of the three Services.

9.45 The School of Foreign Languages is the controlling Organisation for other Defence Institutions where foreign languages are taught namely National Defence Academy, Khadakwasla and Army Education Corps Training Centre and College, Pachmarhi. It conducts examinations and issues diplomas 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 language, Nepali, at various Service units all over the country.

9.46 During the year, a total of 1445 students were enrolled at SFL for various courses.

HISTORY DIVISION

9.47 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 of India, Stories of Heroism, etc. The operations conducted by the Indian Peace Keeping Force in various countries have been compiled in the volumes, History of Indian Armed

Force in UN Operations in Congo, the Indian Troops in Korea 1953-58, Operation Shanti and Terrific Responsibility (The Battle for Peace in Indo-China). Some of the publications have been brought out by the Division in bilingual versions.

History Division functions as the record and reference office of the Ministry of Defence and the Indian Armed Forces.

9.48 Presently, the Division is compiling the third volume of the Stories of Heroism and a book on the War Memorials of the Indian Army. The History Division also functions as the record and reference office of the Ministry of Defence and the Indian Armed Forces. It receives operational records and miscellaneous records pertaining to military matters from the Ministry of Defence, Service HQs and various Units on a regular basis for preservation and use. During the year, about 3300 operational records, mostly of classified nature were received. More than 400 service officers and scholars from India and abroad visited the Division to consult records in connection with their research assignments pertaining to military history.

9.49 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 Services 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 (CDM)

9.50 The College of Defence Management is a tri-service category "A"

Valedictory Function at CDM

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.

CDM is entrusted with the responsibility of instilling contemporary management thoughts, concepts and practices in the senior leadership of the Armed Forces.

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

9.52 The following courses are conducted by CDM, Secunderabad:-

(a) **Higher Defence Management Course (HDMC):** This is a 44 week duration course and is attended by 90 officers of the rank of Colonel/ Lieutenant Colonel and equivalent.

(b) **Senior Defence Management Course (SDMC):** This is a six week duration course and is attended by 33 officers of the rank of Brigadier/ Colonel and equivalent.

(c) **Defence Management Seminar (DMS):** This is of two week duration and is attended by 20 officers of the rank of Major General and equivalent.

(d) **Assignment Oriented Management Training (AOMT):** CDM conducts four AOMT workshops of one week duration on Project Management, Financial Management, Operational Research and Systems Analysis and a workshop on Quantitative Aids to Decision Making of two week duration for middle level officers.

DEFENCE SERVICES STAFF COLLEGE (DSSC)

9.53 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

9.54 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 1800 books, subscribed to 129 Journals/ Periodicals and 23 Newspapers.

10

RECRUITMENT AND TRAINING

If you have it in you, we're Looking for you

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

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

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 TGC.

(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 Regular 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 the UPSC entries, the commissioned officers are also recruited into the Army through the following Non-UPSC entries:-

(a) **University Entry Scheme (UES):** Final/ pre-final year engineering degree course students in the notified engineering disciplines are eligible to apply for Permanent Commission in the Technical Arms of the Army as Commissioned Officers under the UES. Eligible candidates are selected through a campus interview by the Screening Teams deputed by the Army Headquarters. These candidates are required to appear before SSB and Medical Board. Successful candidates undergo one year pre-commission training at the Indian Military Academy (IMA), Dehradun. Cadets through this entry are also entitled to 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. Cadets 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 avenue for recruitment to eligible technical graduates/ post graduates into 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 of 70% aggregate marks in Physics, Chemistry and Mathematics are eligible to apply for commission under the 10+2 (TES). On being successful in the SSB and being declared fit by the Medical Board, they undergo one year basic military training at IMA, Dehradun and thereafter undergo three years engineering degree course in respective streams before getting Permanent Commission. On being commissioned, they are further put through one year of specialized training for the Arm/ Service into which they had been commissioned.

(e) **Women's Special Entry Scheme Officers (WSES-O):** Eligible women candidates are recruited into the Army as Short Service Commissioned Officers through the (WSES-O). Commission is granted in Corps of Electronics and Mechanical Engineers, Engineers, Signals, Army Education

Corps, Military Intelligence Corps, Judge Advocate General's Branch and Army Air Defence. Women are offered Short Service Commission in three streams viz. Non Technical, Technical and Specialist for a period of ten years, extendable by additional four years purely on voluntary basis. The widows of Service personnel who meet the laid down eligibility criteria are eligible for relaxation of age by four years and 5% seats are reserved for them. However, this entry is being terminated and is being termed as Short Service Commission (Women-Technical/ Non Technical) with revised eligibility criteria, terms and conditions. The duration of training has been raised to approximately 11 months (49 weeks) in order to have gender parity with the Short Service Commissioned male officers. The first batch will be inducted in April 2008. The applicants for Non Technical and specialist streams would be required to apply through the UPSC. The applicants for Non Technical and Specialist streams after qualifying in written examination would come up for SSB interview as is being done for Short Service Commissioned male officers. However, widows of Service personnel are exempted from written examinations and would need to apply directly to Additional Directorate General (Recruiting). Additionally, 20% of allotted seats from Non Technical stream have been reserved for NCC 'C' certificate holder women candidates with minimum 'B' grade and 50% aggregate marks in graduation examination. The applications will be routed through NCC Directorate at State level to Recruiting Directorate, Integrated Headquarters of Ministry of Defence (Army), as applicable for male officers.

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) **Service Entries:** Recruitment of Personnel Below Officer Rank (PBOR) into officer cadre is done through Service Selection Boards in the following entries:-

(i) **Army Cadet College (ACC) Entry:** The eligible Other Ranks (OR) in age group of 20-27 years and minimum two years of service, having 10+2 pass qualification, can apply for Regular Commission. After qualifying in written examination conducted by the 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/ OR 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. The rules for substantive promotion and acting promotion are the same as for regular officers. These officers are employed in units as sub unit commanders/ Quarter Masters and on various Extra Regimental Employment appointments up to the rank of Major. They retire at the age of 57 years after serving for a period of about 20-25 years as officers. The scheme not only improves the career prospects of the existing PBOR but also helps in making up the deficiency of the support cadre officers in the Army to some extent.

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

10.4 **Intake:** Intake of candidates for pre commission training as officers during the year (till October 2007) is tabulated below:-

			Inducted
(1)	NDA	Army	218
		Air Force	73
		Navy	43
		Total	334
(2)	IMA	IMA (Direct Entry)	389
		ACC	121
		SCO	35
		PC (SL)	34
		Total	579
(3)	OTA	WSES (O)	187
		SSC (NT)	263
		NCC	67
		JAG	-
		Total	517
(4)	Tech Entries	UES	114
		SSC (Tech)	10
		10+2 TES	173
		TGC	76
		Total	**373**
Grand Total			1803

10.5 **Recruitment of Personnel Below Officer 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 Centers which carry out recruitment through rallies in their respective areas of jurisdiction.

All recruitment for PBOR is being carried out through open rally system facilitating direct contact of candidates with recruiting organization and making the system more transparent, open and candidate friendly.

10.6 The application system for recruitment of Personnel Below Officer Rank (PBOR) has been discontinued. All recruitment is being carried out through open rally system. This facilitates direct contact of candidates with recruiting organization and makes the system more transparent, open and candidate friendly. The recruitment of PBOR commences with the preliminary screening of aspiring candidates at rally site followed by document checking, physical fitness tests, physical measurements and medical examination followed by a written examination for the medically fit candidates. Successful candidates selected based on merit are dispatched to respective Training Centers for training.

10.7 Some of the important decisions taken in the recent past/ major developments in the area of recruitment of PBOR in the Army are given in the following paras:-

(a) **Development of Computer Model for Manpower Management of PBOR:** To refine and streamline the existing manpower planning system, a computer model has been developed in-house. The model facilitates release of recruitment vacancies, analysis & review of manpower state and assists in making midcourse corrections. This will help to ensure that surpluses/ deficiencies in manpower holdings are minimised.

(b) **Recruitment of Married Candidates Below the age of 21 Years:** With effect from April 1, 2007, no married candidate below the age of 21 years is eligible for enrollment into the Indian Army.

(c) **Incentive for Enrolment in Various Categories:** Bonus marks are now awarded as fixed number of marks to Son of War Widow/ Son of Widow/Son of Ex-serviceman/Son of Serviceman, Sportsmen, NCC 'A', 'B' and 'C' Certificate Holders and candidates having **0+** Level Computer Certificate issued by the DOEACC Society for Soldier Clerks/ Store Keeper Technical. The allotment of fixed marks to various categories is also applicable to the Centralised Categories like Recruit Religious Teachers, Havildar Education, JCO Catering and Surveyor Auto Cartographer.

(d) **Direct Enrolment of Meritorious Sportsmen in the Rank of Naib Subedar/ Havildar into the Army:**

A maximum of two percent vacancies have been set aside for enrolment of meritorious sportsmen into the Army in the rank of Naib Subedar/ Havildar.

(e) **Recruitment of Religious Teachers For Gorkha Regiments:** With a view to have Religious Teachers in the Gorkha Regiments who are familiar with religious customs, rituals and language spoken, it has been decided to recruit only Gorkha Religious Teachers into these Regiments.

10.8 **Image Projection :** As part of image projection, motivation lectures are regularly organized by the recruiting officials in schools, colleges, NCC Camps and other Institutes in their area of jurisdiction to attract talented youth to join Indian Army as Officers and PBOR.

10.9 **Recruitment for PBOR is made through recruiting rallies only:** Before the conduct of rallies wide publicity is organized through electronic/ print media highlighting that recruitment is free, fair and based on merit only. The potential candidates are cautioned against the influence of touts who operate outside the ambit of Recruiting Organisation to cheat the gullible public.

INDIAN NAVY

10.10 **Recruitment of Officers :** 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 shortlisted at Integrated Headquarters of the Ministry of Defence (Navy) [IHQ of MoD (Navy)]. The shortlisted candidates are then sent for SSB interviews. 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:-

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

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

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

(iv) **Education Branch:** Permanent Commis-sion and Short Service Commission schemes exist for this branch.

(v) **10+2 (Tech) Scheme:** The Scheme is a Permanent Commission entry for commission into 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 into the Electrical and Engineering branches of the Navy.

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.

(vi) **University Entry Scheme (UES):** The UES has been re-launched w.e.f August 2005 course as a Short Service Commission Scheme. 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.

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

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

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

10.11 **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

dispatched 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 into the Navy is carried after the process of a written examination, physical fitness test and medical examination.

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

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

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

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

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

(e) Non Matric Recruit (NMR), for recruitment of Sailors (Safaiwala)

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

INDIAN AIR FORCE

10.13 The policy for selection of officers into Indian Air Force is all India based. It is strictly on the basis of merit. It 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:** Recruitment of Commissioned Officers into 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 Air Force.

RECRUITMENT OF OFFICERS INTO INDIAN AIR FORCE

10.15 UPSC entries for Indian Air Force is confined to Flying Branch only. Recruitment through Service Selection Boards/ Air Force Selection Boards is made for the branches of Flying (Pilot), Aeronautical Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology.

10.16 **Aeronautical Engineering Course (AEC):** Aeronautical Engineering Course envisages recruitment of qualified technical graduates through the Air Force Selection Boards (AFSBs), to attend training at Air Force Academy, Hyderabad followed by Air Force Technical College (AFTC), Bangalore. On successful completion of training at the AFTC, they are inducted into Electronics and Mechanical streams of the Technical Branch.

10.17 **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.

10.18 **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 into the Technical Branch and personnel from Non-technical trades are inducted in the Ground Duty Branches.

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

10.19 **Recruitment of Women Officers:** Eligible women are recruited as Short Service Commissioned Officers into the branches of Flying, Aeronautical; Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology.

10.20 **Recruitment through National Cadet Corps (NCC):** University graduates possessing NCC 'C' Certificate with minimum 'B' grading and 50% marks in graduation are inducted into the Navy and Air Force as Regular Commissioned Officers and as Short Service Commissioned Officers

Table 10.2

S.No.	Branch	Entry made through	Number of Cadets
(a)	Flying Branch	National Defence Academy Air Force Academy Combined	138
		Defence Service Examination	40
		Air Force Academy Direct Entry (National Cadet Corps)	08
		Air Force Academy Direct Entry(Airmen)	Nil
		Short Service Commission(Women) Flying (Pilot)	11
		University Entry Schedule	30
(b)	Technical Branch	Aeronautical Engineering Course	89
		Service Entry Commission	Nil
		Short Service Commission(Women) Technical	30
		Short Service Commission (Men) Technical	05
(c)	Ground Duty Branch	Ground Duty Officers Course	54
		Service Entry Commission	03
		Short Service Commission (Women)	45
		Short Service Commission (Men)	26

into the Army. These graduates are exempted from appearing in the Combined Defence Service Examination conducted by the Union Public Service Commission and are selected through the Service Selection Boards.

The selection of suitable candidates for enrolment in the Indian Air Force is carried out through a centralized selection system on all India basis.

10.21 **Officers Selection:** Intake of cadets for officers from January 1, 2007 to December 31, 2007 is detailed in Table 10.2.

RECRUITMENT OF AIRMEN

10.22 The selection of suitable candidates for enrolment into the Indian Air Force is carried out through a centralized selection system on an all India basis. Recruitment of airmen into the Air Force 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 are held periodically on an all India basis, Recruitment Rallies are also conducted in different parts of the country. These Rallies cover the remote/ low response/ border/ insurgency affected areas and island territories so as to provide opportunities to eligible candidates belonging to these places and also maintain healthy demographic representation. During the year, a total of 3 Scheduled Tests and 19 Recruitment Rallies have been conducted and a total of 5501 Personnel Below Officer Rank (PBOR) have been enrolled.

Outstanding subordinate officers upto the age of 40 years are inducted as Assistant Commandant into General Duty and Technical branch as per the selection procedure.

COAST GUARD

10.23 **Recruitment of Officers:** Officers are recruited into the Coast Guard biannually. The vacancies for Assistant Commandant in Coast Guard are advertised in Employment News and all leading newspapers in the month of December and June. Relaxation of age is admissible for SC/ ST and OBC candidates as per existing Government orders. The officers are recruited into the following mainstreams:-

(a) **General Duty:** Male/ Female with bachelor's degree with mathematics and physics as subjects upto 12th standard under 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/Navigator):** Male/ female with bachelor's degree in mathematics and physics as subjects during graduation and between age group of 19-27 years are eligible to apply for officers in General Duty (Pilot/Navigator) stream.

(c) **General Duty (Pilot):** Male/ female who have passed class 12th or equivalent and in possession of 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 General Duty (Pilot) stream.

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

10.24 **Induction of PBOR as 'Officer':** Outstanding subordinate officers upto the age of 40 years are inducted as Assistant Commandant into General Duty and Technical branch as per the selection procedure.

10.25 **Recruitment of PBOR in Coast Guard:** The PBOR are recruited into Coast Guard bi-annually. The vacancies for PBOR in Coast Guard are advertised in Employment News and all leading newspapers in the month of December and June. Relaxation of age is admissible for SC/ ST and OBC candidates as per existing Government orders. The PBOR are recruited into the following mainstreams:-

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

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

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

10.26 **Training of Officers:**

(a) The basic training of officers of all branches is conducted at Naval Academy, Goa

(b) On completion of their basic training, the under trainee officers are then attached to various Naval/ Air Force/ Coast Guard establishments/ Coast Guard ships for professional training. The duration of the training varies from branch to branch.

(c) Meritorious and outstanding officers are deputed for specialised courses in India and abroad for specialization and higher courses as per schedule.

(d) Meritorious and outstanding technical Officers are deputed for M.Tech courses in India including the Indian Institutes of Technology (IIT).

10.27 **Training of PBOR:**

(a) The basic training for all PBOR is conducted at INS Chilka.

(b) On completion of their basic training, the under trainee PBORs are then attached to Naval/ Coast Guard establishments and ships for professional training. The duration of the training varies from branch to branch.

(c) **Specialised Coast Guard Training**: Specialised training like Search and Rescue (SAR), Pollution Control,

Maritime Law Enforcement etc. are also imparted to both officers and Other Ranks. At present, Coast Guard specific training is being conducted at Coast Guard Training Centre, Kochi.

TRAINING FOR DEFENCE SERVICES

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

SAINIK SCHOOLS

10.29 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 22 Sainik Schools located in various parts of the country. Sainik Schools at Punglwa & Kodagu became the youngest members of the Sainik Schools family by becoming operational in the academic session 2007-08.

10.30 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).

Students getting acquainted to a BMP

10.31 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.

10.32 Admission to class XI on the basis of class X Board examination results was introduced in Sainik Schools from the academic session 2006-07 in order to achieve optimum utilization of available infrastructure and to provide a more competitive environment to the aspiring cadets.

10.33 Sainik Schools are wholly residential schools run on public school lines. All the Sainik Schools are also members of the All India Public Schools Conference. They offer a common curriculum and are affiliated to the Central Board of Secondary Education, New Delhi and follow the 10+2 pattern of education.

10.34 The schools impart instructions in English medium although knowledge of English is not a pre-requisite for admission. The schools offer only science stream at the plus-two level, enabling candidates to appear for the NDA entrance examination.

RASHTRIYA MILITARY SCHOOLS

10.35 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 into 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 (NDA)

10.36 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 institution in the world to impart combined training to officer cadets of the Armed Forces.

10.37 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 into the Armed Forces.

RASHTRIYA INDIAN MILITARY COLLEGE (RIMC)

10.38 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.

10.39 Selection for RIMC is through a written examination cum viva voce conducted through the State Governments. Seats for respective States are reserved based on population. The intake into the

RIMC is biannual, in January and July. The maximum strength of RIMC is 250. The intake is at Class VIII for boys in the age groups 11 to 13 years. The college runs classes in science stream on 10+2 CBSE pattern.

INDIAN MILITARY ACADEMY (IMA), DEHRADUN

10.40 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.

10.41 The various modes of entry into IMA are :-

(a) On graduation from NDA.

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

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

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

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

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

Training on 30 MM AGL Grenade Launcher

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

OFFICER TRAINING ACADEMY (OTA), CHENNAI

10.43 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.

Around 100 lady officers 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.

10.44 With the entry of women officers into 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.

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.

10.45 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

10.46 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.

(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.

(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 Group, in cooperation with air and other arms and services, as also in training and administration of a sub unit in peace and war.

(d) **Formation Commanders Orientation Programme (FCOP):** The aim of the programme is to prepare potential divisional commanders for command of their formations.

JUNIOR LEADERS WING (JLW), BELGAUM

10.47 The Junior Leaders Wing 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.

10.48 Junior Leaders Academy 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 Senior NCOs of all arms and services with a view to making them more effective.

JUNIOR LEADERS ACADEMY (JLA), RAMGARH

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

HIGH ALTITUDE WARFARE SCHOOL (HAWS), GULMARG

10.50 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.

COUNTER INSURGENCY & JUNGLE WARFARE SCHOOL (CIJW), VEIRANGTE

10.51 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

10.52 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

10.53 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

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

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

SCHOOL OF ARTILLERY, DEOLALI

10.56 The School of Artillery, Deolali imparts technical training to Officers, JCOs and NCOs on artillery weapons and systems including training of pilots for Air Observation Post duties. Besides, the review of doctrines, study and trials of artillery equipment, both Indian and foreign, is also carried out.

10.57 Apart from a large number of Officers, JCOs and NCOs of the Indian Army, the school has also trained several officers and personnel from friendly foreign countries during the year.

ARMY AIR DEFENCE COLLEGE, GOPALPUR

The Army Air Defence College trains personnel of Air Defence Artillery, other arms and armed forces personnel of friendly foreign countries in Air Defence related subjects.

10.58 The Army Air Defence College (AADC) earlier functioned as a wing of School of Artillery, Deolali till October, 1989, when it was moved to Gopalpur before separation of Air Defence Artillery from the main branch of Artillery. The college trains personnel of Air Defence Artillery, other arms and armed forces personnel of friendly foreign countries in Air Defence related subjects.

10.59 The AADC conducts a number of courses. Some of the courses are Long Gunnery Staff Course (Officers), Young Officers Course, Electronic Warfare Course, Senior Command Air Defence Course, Long Gunnery Staff Course, Junior Commissioned Officer/ Non Commissioned Officer, Technical Instructors Fire Control Course, Aircraft Recognition Course, Unit Instructors and Crew Based Training and Automated Data Processing Course.

ARMY SERVICE CORPS (ASC) CENTRE AND COLLEGE, BANGALORE

10.60 Army Service Corps Centre (South) and Army School of Mechanical Transport were merged with ASC Centre

Mortar Shoot in Progress

at Bangalore to establish Army Service Corps Centre and College at Bangalore on May 1, 1999. It is a premier training institute imparting basic and advanced training in multifarious disciplines viz logistics management, transport management, catering, automated data processing etc to Officers, Junior Commissioned Officers, Other Ranks and recruits of Army Service Corps as well as other arms and services.

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

ARMY EDUCATION CORPS TRAINING COLLEGE AND CENTRE, PACHMARHI

10.62 The AEC Training College & Centre, Pachmarhi 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.

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

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

10.65 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

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

REMOUNT AND VETERINARY CORPS CENTRE AND SCHOOL, MEERUT

10.67 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.

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

The total strength of students being trained is 250.

ARMY SPORTS INSTITUTE (ASI), PUNE

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

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 and to provide training in management and tactics at senior, middle and supervisory levels.

ARMY SCHOOL OF PHYSICAL TRAINING, PUNE

10.69 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

10.70 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

10.71 The College of Military Engineering at Pune is a premier technical institution conducting training for personnel of the Corps of Engineers, other Arms and Services, Navy, Air Force, Para Military Forces, Police and Civilians. Besides, personnel from friendly foreign countries are also trained. CME is affiliated to Jawaharlal Nehru University (JNU) for the award of B.Tech and M. Tech degrees. All India Council for

Technical Education (AICTE) also recognizes the graduate and postgraduate courses run by the CME. The College trains on average 1500 officers and 800 PBORs every year.

MILITARY COLLEGE OF ELECTRONICS AND MECHANICAL ENGINEERING (MCEME), SECUNDERABAD

10.72 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.

10.73 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.

10.74 Computer Based Training Packages (CBTs) 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

10.75 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

10.76 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 (MINTSD), PUNE

10.77 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

10.78 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

10.79 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.

Training on Simulators

ARMOURED CORPS CENTRE AND SCHOOL, AHMEDNAGAR

10.80 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.

Under Special Aid Programme, personnel from developing countries get training in service institutions either free of cost or at subsidized rates.

FOREIGN TRAINING

10.81 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.

10.82 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

Pension Adalat

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 formulates various policies and programmes for the welfare and resettlement of Ex-servicemen (ESM) in the country. The Department has two Divisions viz. the Resettlement Division and the Pension Division and is assisted by two Inter Service Organisations, Kendriya Sainik Board (KSB) and Directorate General of Resettlement (DGR). While the KSB, which is headed by Raksha Mantri as ex-officio President of the Board, lays down general policies 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 has also five Director Resettlement Zones (DRZs) one in each of the five Army Commands.

11.2 The KSB/ Directorate General of Resettlement are assisted in their task by 32 Rajya Sainik Boards (RSBs) 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 organization of RSBs while the remaining 50% is borne by the respective State Governments. Welfare and resettlement of ESM is the joint responsibility of the Central Government as well as the State Governments.

11.3 The 27th meeting of the Kendriya Sainik Board was held under the Chairmanship of Raksha Mantri in New Delhi on May 19, 2007. The meeting was inaugurated by the Hon'ble Prime Minister and was attended by the representatives including Chief Ministers, Governors and Cabinet Ministers of several States. The year 2007 having been declared as the 'Year of Placement of Ex-servicemen', the Hon'ble Prime Minister also called upon the Department to put in vigorous efforts for re-employment of ESM during the year. The target of 40,000 placements set for the Department for the calendar year 2007 has been achieved. During this period placements of around 44,000 ESM have been made in the Non-Government Sector alone.

RESETTLEMENT

11.4 The primary thrust of the Department of Ex-servicemen Welfare is the emphasis on dignified resettlement and rehabilitation of ESM. Nearly 60,000 of armed forces

personnel retire or are released from active service every year, most of them being in the comparatively younger age bracket of 35 to 45 years. These personnel constitute a very valuable, disciplined, well-trained and dedicated talent pool for the nation which has to be utilized for nation building. This is sought to be achieved through the following modalities:-

Nearly 60,000 of 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.

(a) Seeking suitable employment for the ex-servicemen as also imparting necessary training, to prepare them to take on the new assignment/ jobs.

(b) Constant endeavour to provide employment opportunities in government/ semi government/ public sector organizations.

(c) Pro-active action to facilitate re-employment of the ESM in the private sector.

(d) Providing jobs through schemes for self-employment

(e) Assist in entrepreneurial ventures.

TRAINING PROGRAMMES

11.5 **Officers' Training:** The Directorate General of Resettlement organizes Resettlement Training Programmes ranging from vocational courses of three months' duration to degree/ diploma courses via distant learning programme, of up to one year duration. The courses are conducted in multifarious fields. Management courses of six months' duration for officers are being conducted at premier institutes such as IIMs, MDI, XLRI etc, which have proved to be immensely useful to the officers in getting good corporate placements. In addition, some special courses on 'Training of Trainers', 'Disaster Management' and 'Supply Chain Management' have also been introduced for the officers.

DGR organizes Resettlement Training Programmes ranging from vocational courses of three months' duration to degree/ diploma courses, via distant learning programme, of up to one year duration.

11.6 For officers of the rank of Brigadier and above, Independent Directors' Course at MDI Gurgaon, Bombay Chartered Accountants Society (BCAS), Mumbai and ASSOCHAM at Delhi have been introduced. These will help placements of ESM as Directors on the Boards of various PSUs**.** So far 189 senior officers have been trained in this course.

11.7 **Junior Commissioned Officers (JCOs)/ Other Ranks (ORs) Equivalent Training:** Resettlement Training Programmes for Junior Commissioned Officers/ Other Ranks and their equivalent from other Services are conducted in diversified fields for a duration of up to six months in government, semi-government and private institutes spread all over the country. For the year 2007-08, 24 week management Courses in

renowned management institutes have also been introduced for Person Below Officers Rank (PBOR) to improve their employment opportunities, resulting in positive response and good placements.

The Ex-servicemen Training scheme is primarily meant for those ESM who could not avail the facility of resettlement training while in service and is extended to the widow/ one dependent of an ESM, irrespective of whether his death is attributable to military service or not.

11.8 **Ex-Servicemen (ESM) Training:** The scheme is primarily meant for those ESM who could not avail the facility of resettlement training while in service and is extended to the widow/ one dependent of an ESM, irrespective of whether his death is attributable to military service or not.

11.9 The details of personnel imparted training in various fields during the last two years are given in Table 11.1.

Table 11.1

SCHEME	2006-07	2007-08 (up to Dec 07)
Officers' Training	1345	1362
PBOR Training	7379	10527
Ex-servicemen Training	279	349

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.

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 Nationalised 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 the DGR: A proactive approach is being adopted by the DGR, through seminars and direct interaction, to sensitize the employers to the potential of hiring ESM. Many industries and corporate houses have been approached through their business associations like ASSOCHAM to employ ESM.

DGR sensitizes the employers to the potential of hiring ESM through seminars and direct interaction. Many industries and corporate houses have been approached through their business associations like ASSOCHAM to employ ESM.

ESM. The major placements done are as under:-

(a) **Security Agencies:** The DGR empanels/ sponsors ESM run private security agencies for providing security guards to various CPSUs and industries in the private sector. The scheme offers good self-employment opportunities to retired officers and adequate employment opportunity to ex-PBORs in a field where they have sufficient expertise. Some States have set up ESM Corporations, which are providing security services. The Department of Public Enterprises (DPE) has issued instructions to all CPSUs to get security personnel through ESM security agencies on the panel of DGR or from State Ex-servicemen Corporations (ESM Corporations), in states where they exist. Through this scheme, around 2000 ESM security agencies have been empanelled and over 1,90,000 ESM have gained employment. The RBI has also issued instructions that the security of the treasury chests of all Banks in the country be entrusted to DGR sponsored ESM Security Agencies, if the banks do not have their own security setup or state police security is not in place.

(b) **Officer's Employment:** During the year, a total number of 705 officers were registered with the DGR for employment assistance. 3239 officers have been sponsored for various employment opportunities. To spread awareness about potential in ex-defence personnel, seminars were organized in association with the ITFT at Shimla on April 11, 2007 and in collaboration with ASSOCHAM at Chennai on July 11, 2007. Two interactive sessions with corporate sector, were also organized on August 2, 2007 and October 12, 2007 at New Delhi.

(c) **Placement of JCOs/ ORs**: The details of ex-servicemen, who have been provided employment through Directorate General Resettlement (DGR) and Zila Sainik Welfare Officers in the States during the last five years is detailed in Table 11.2.

Table 11.2

	2003	2004	2005	2006	2007
Central Government	5503	5459	4999	2436	3255
State Government	3092	2517	2000	607	3937
Private Sector	3064	2963	2937	1014	2979
Security Agencies	9543	10939	12110	14000	33153

SCHEMES FOR SELF-EMPLOYMENT

11.13 Government has formulated several Self-employment ventures for rehabilitation and resettlement of Ex-servicemen and their families. The details of these schemes and the achievement in the year 2007 are given in the following paragraphs.

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 figures

relating to registration and allotment of Army Surplus vehicles is given in Table 11.3.

Table 11.3

Year	Number of Applications Registered with DGR	Number of Allotment of Vehicles by MGO Branch	Remarks
2006	695	1893	Allotment of vehicles was more than the ESM registered as waitlisted ESM of the previous years were also issued vehicles.
2007	1082	933	The number of registrants with DGR increased as a result of wide publicity. However, due to reduction in availability of surplus vehicles, the allotment figures have reduced as compared to the previous year

11.15 **Coal Transportation Scheme**: This scheme is in existence for the last 27 years. In 2007, seven ESM Coal Companies were sponsored to the Coal India Limited against firm demand benefiting 371 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 Company resources, which translated in accommodating more number of widows and achieving higher satisfaction level. 143 widows/ disabled Ex-Servicemen availed of the benefit of the scheme in the year 2007.

11.17 **Allotment of Oil Product Agencies:** 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 which comprise of wartime/ peace time widows and disabled soldiers. In 2007, 631 Eligibility Certificates (Sponsorship Certificates) were issued by DGR mainly for LPG distributorship.

11.18 **Allotment of BPCL GHAR Outlets**: M/s Bharat Petroleum Corporation Ltd. has evolved the concept of 'GHAR' having all facilities required by truckers under one roof, while they engage themselves in refueling activities. The scheme started in the year 2007. During the year 2007 names of 600 ESM (O**)** were forwarded against 53 GHAR outlets in 14 states.

11.19 **Mother Dairy Milk Booths and Fruit & Vegetable (Safal) shops**: This is a reliable and remunerative self-employment scheme for ESM. The details of ESM sponsored and qualified for selection during the year are given in Table 11.4.

Table 11.4

Sl. No.	Type of Booth	ESM/ Dependants sponsored	ESM/ Dependants qualified for selection
1.	Mother Dairy Milk Booths	488	172
2.	Safal Fruit & Vegetable Shops	423	176

11.20 **Management of CNG Station by ESM (Officers) in NCR**: Majority of the CNG stations in National Capital Region

are being managed by ESM (officers). During the year, names of 17 ESM (Officers) were forwarded of whom 4 ESM (officers) were selected.

The Entrepreneur schemes SEMFEX-II and SEMFEX-III comprise ventures in rural areas in agriculture, industry and service sectors.

11.21 **Kidzee Franchisee**: In a bid to increase self-employment opportunities for ESM and their dependents, DGR succeeded in establishing a tie up with Zee Interactive Learning Systems Ltd, for extending their Kidzee Pre-Nursery Play School Franchisee to ESM/ Dependents at concessional rates. During the year, two dependents of ESM (officers) have been accorded Kidzee Franchisee.

11.22 **Entrepreneur Schemes**: The schemes in operation at present are SEMFEX-II and SEMFEX-III comprising of ventures in rural areas in agriculture, industry and service sectors. The lending institutions are Nationalised Banks, Cooperative Banks, Regional/ Rural Banks etc. Subsidy of 25% - 30% is available for these schemes. Application for loan is submitted by ex-servicemen directly to the Bank through concerned Zila Sainik Boards.

(i) **SEMFEX-II Scheme:** The Scheme was started in 1988 with the assistance of National Bank for Agriculture and Rural Development (NABARD) for funding the entrepreneurship in agriculture, industry and service sectors in rural areas. The agro/ food processing units can be set up both in rural and urban areas under the Scheme. Subsidy upto 25% of project cost is provided. Since inception, 7580 ex-Servicemen have been sanctioned loans amounting to Rs. 5706 lakhs and during the current year, 111 ex-Servicemen have been provided loans amounting to Rs.282 lakhs. The scheme was very popular in the initial years. However, over the years, lesser number of ESM are opting for this scheme due to strict banking norms. DGR, in consultation with NABARD, is initiating measures to make it more attractive to the ESM.

(ii) **SEMFEX-III Scheme:** The Scheme was started in 1992 with the assistance of Khadi and Village Industries Commission (KVIC) for setting up of textile, village, cottage, tiny and small scale industries in rural areas. Loan upto Rs. 25 lakhs and subsidy upto 30% is provided under the scheme. Since inception, 980 ex-Servicemen have been provided loans amounting to Rs. 901 lakhs. In the current year, 8 ex-Servicemen have been sanctioned loans amounting to Rs. 20 lakhs. As the scheme has not been attracting many ESM, DGR, in consultation with KVIC, is initiating measures to make it a viable entrepreneurship option for the ESM. The major problem for the ESM is to provide matching finances which entails mortgaging land/ property which the ESM are apprehensive about.

11.23 **Herbal and Medicinal Plants:** ESM are being educated, motivated and encouraged to involve themselves in herbal farming wherever it is more remunerative. "Safed Musli" used in various pharmaceutical formulations is being cultivated in 2 hectares at four locations by the ESM. "Stevia" (alternative for sugar) cultivation has also been undertaken and the crop has been planted in 1 hectare at three locations. A programme for cultivation of Jatropha and Pongamia which are bio-diesel crops, is being formulated to involve ESM in cultivation of these crops utilizing wastelands.

PUBLICITY

11.24 Wide publicity of policies and schemes is done by means of publications of periodicals and magazines like Sainik Punarvas News Fliers, Brochures, Leaflets, articles in Sainik Samachar and Baatcheet. The print and electronic media is also used for the purpose. Various other forums provided by Command Headquarters, RSBs and Sainik Sammelans are also being utilized for publicity purpose.

11.25 The DGR had put up a stall at the Aero India 2007 at Yellahanka Air Force Station, Bangalore held from January 9 to 28, 2007 on the theme of 'Access to Excellence in Human Resource'.

11.26 A film on Armed Forces Flag Day, in English and Hindi, was telecast on the National Channel of Doordarshan on December 6 & 7, 2007. The activities of DGR and KSB have also been publicized through CD-ROMs sent down to ZSBs and Unit level.

WELFARE

11.27 **Kendriya Sainik Board (KSB)**: The Kendriya Sainik Board (KSB), 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, scholarships to ex-servicemen's orphans are also provided.

The KSB provides financial assistance 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.

11.28 **Armed Forces Flag Day Fund:** A concerned effort was made this year and as a result Rs. 48 Lakh has already been collected so far against the total annual collection of Rs. 52 Lakh last year.

Donations are still coming and total collection is expected to go beyond last year's achievement.

11.29 **PM Scholarship Scheme:** "Prime Minister's Merit Scholarship Scheme" was announced on August 15, 2006. 3904 scholarships were granted to eligible candidates in the first academic year i.e. 2006-07. The aim of PM Scholarship Scheme is to encourage the wards of widows and ex-servicemen to take up higher technical and professional education. A total number of 4000 scholarships are available for wards of widows/ ex-servicemen. Rs. 18,000/- per annum to a girl student and Rs. 15,000/- to a boy student is provided for the entire duration of the course.

11.30 **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 poor and needy ex-servicemen for various purposes viz. medical treatment, daughter's marriage, house repair and education of children and monthly financial assistance upto a period of two years to old and infirm ex-servicemen and widows of ex-servicemen living in penury. Details of assistance provided from the RMDF in last two years are given in Table 11.5.

Table 11.5

Sl. No.	Financial Year	Budget Allotted	Financial Assistance Provided	No of cases
1	2006-07	Rs 1,25,98,246/-	Rs 1,59,32,800/-	1180
2	2007-08	Rs 3,75,00,000/-	Rs 3,57,91,850/-	2386 (Till 31 December 2007)

PENSION TO ARMED FORCES PERSONNEL

11.31 Pension to an estimated 21.93 lakh defence pensioners is disbursed through all branches of the 27 Public Sector Banks, 4 Private Sector Banks viz. HDFC Bank, ICICI Bank, UTI Bank and IDBI Bank, 640 Treasuries, 61 Defence Pension Disbursing Offices (DPDOs), 2 Post Offices, 5 Pay and Accounts Offices (PAOs) spread all over the country. For the Armed Forces pensioners residing in Nepal, disbursement of pension is done through 3 Pension Payment Offices (PPOs).

11.32 The annual expenditure on Defence pension is given in Table 11.6.

Table 11.6

Sl. No.	Year	Rs. (In crores)
(i)	2007-08 (Revised Estimate)	15, 244.00
(ii)	2008-09 (Budget Estimate)	16, 744.00

RETIRING/ SERVICE PENSION

Pension to an estimated 21.93 lakh defence pensioners is disbursed through all branches of the 27 Public Sector Banks, 4 Private Sector Banks, 640 Treasuries, 61 Defence Pension Disbursing Offices, 2 Post Offices, 5 Pay and Accounts Offices spread all over the country.

11.33 In the case of Commissioned Officers the retiring/ service pension is calculated at 50% of the average reckonable emoluments drawn during the last 10 months. For Personnel

Below Officer Rank (PBOR), it is calculated with reference to the maximum of the scale of pay of the rank and group held for 10 months preceding retirement. Retiring pension is subject to a minimum of Rs.1913/- per month after merger of 50% Dearness Pension with effect from April 1, 2004 and maximum of upto 50% of the highest pay applicable to Armed Forces personnel. For pre-January 1, 1996 retirees, pension is not less than 50% of the minimum pay (maximum in the case of PBOR) in the revised scale of pay introduced with effect from January 1, 1996 of the rank/ group held by the pensioner at the time of retirement.

11.34 **Weightage:** The Armed Forces personnel retire at a young age to keep our Armed Forces young and fit. They are given benefit of weightage in qualifying service for the purpose of computing service pension to compensate for truncated career. In the case of Commissioned Officers, the minimum period of qualifying service required to earn retiring pension is 20 years. They are given benefit of weightage ranging between 3 to 9 years, depending on the rank.

ESM are given benefit of weightage in qualifying service for the purpose of computing service pension to compensate for truncated career

11.35 The minimum period of qualifying service for PBOR to earn retiring pension is 15 years. Earlier they were given a uniform weightage of 5 years across the board. With effect from January 1, 2006, however, weightage of 10, 8 and 6 years for the ranks of Sepoy, Naik and Havildar respectively is given subject to a maximum qualifying service of 30 years. In case a pensioner is already getting pension for more than 30 years Qualifying service, with the existing weightage of 5 years, he continues getting that and there will be no enhancement of weightage in his case. However, Junior Commissioned Officers (JCOs) continue to get uniform weightage of 5 years. The benefit is given only in respect of service pension/ element.

COMMUTATION OF PENSION

11.36 Armed forces personnel are permitted higher commutation of their pension at the rate of 43% for officers and 45% for PBORs as compared to 40% for civilians.

DISABILITY PENSION

11.37 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. On invalidment from service on or after January 1, 1996 on account of causes attributable to or aggravated by military service, the extent of disability or functional incapacity is determined at 50%, if the disability is less than 50%, 75%, if it is between 50% and 75% and 100% if it is between 76% and 100%.

11.38 Disability pension consists of two elements viz., service element and disability element. Service element is related to the length of service rendered by the individual at the time of invalidment plus weightage

appropriate to the rank/ group. The rate of disability element for 100% disability is Rs.2600/- p.m. for Commissioned Officers (COs), Rs.1900/- p.m. for Junior Commissioned Officers (JCOs) and Rs.1550/- p.m. for Other Ranks (ORs) for 100% proportionately reduced for lower percentage.

11.39 Where an individual suffering from a disability, assessed at 20% or more for life, is retained in service despite disability, he is paid a lump-sum compensation in lieu of disability element equal to the capitalized value of disability element on the basis of disability actually assessed (and not the disability computable on invalidment). The rates for calculating capitalized value are the same as above. Once such compensation has been paid; there is no further entitlement on this account at the time of retirement.

WAR INJURY PENSION

11.40 War injury pension is granted to the personnel who sustain injury or disability for the supreme sacrifice made by the Armed force personnel during war or war like situation or action against extremists, anti-social elements etc. It consists of service element and war injury element. Service element is equal to retiring/ service pension to which he/ she would have been entitled to on the basis of his/ her pay on the date of invalidment but counting service upto the date on which he/ she would have retired in that rank in the normal course including weightage as admissible. War injury element is payable equal to reckonable emoluments last drawn for 100% disablement. However, the aggregate of service element and war injury element does not exceed last pay drawn.

11.41 In case of retention despite war injury, the individual has an option either to draw lump-sum compensation in lieu of war injury element foregoing war injury element of pension or to draw war injury element at the time of retirement/ discharge. Those who opt for lump-sum compensation in lieu of war injury element of pension, are paid an amount equal to the capitalized value of war injury element on the basis of disability actually assessed (and not the disability computable in case of invalidment) @ Rs.5200/- p.m. for COs, Rs.3800/- p.m. for JCOs and Rs.3100/- p.m. for ORs for 100 % disability to be reduced proportionately for lower percentage of disability. Once the compensation for war injury element has been paid, there is no further entitlement on account of such disability.

11.42 Emergency Commissioned Officers (ECOs), Short Service Regular Commissioned Officers (SSRCOs) and Short Service Commisisoned Officers (SSCOs), i.e. non-regular officers have been brought at par with regular commissioned officers in the matter of grant of disability pension w.e.f. August 30, 2006.

CONSTANT ATTENDANCE ALLOWANCE

11.43 On the recommendation of the Medical Board, personnel with 100% disability are paid Constant Attendance Allowance at the rate of Rs. 600/- per month.

ORDINARY FAMILY PENSION

11.44 Ordinary Family pension is admissible to families of Armed Forces personnel who die during service for causes neither attributable to nor aggravated by service, or after discharge/ retirement with pension, at a uniform rate of 30% of reckonable emoluments last drawn subject to a minimum of Rs.1913/- per month with effect from April 1, 2004. With effect from January 1, 1998, ordinary family pension is admissible to dependant parents, widowed/ divorced daughters and unmarried daughters beyond 25 years of age till remarriage who fulfill the prescribed eligibility criteria.

SPECIAL FAMILY PENSION

11.45 In case of the death of a Service personnel occurred on account of causes attributable to or aggravated by military service, the family is paid special family pension at the rate of 60% of reckonable emoluments drawn by the deceased subject to a minimum of Rs. 2550/- per month. Widows who got remarried on or after January 1, 1996 continue to get special family pension subject to certain conditions.

LIBERALISED FAMILY PENSION

11.46 Family of an Armed Forces personnel who has died in war or war like operations, counter insurgency operations, action against terrorists, extremists, etc. is granted Liberalised Family Pension at the rate equal to reckonable emoluments last drawn by the deceased personnel. If the personnel is not survived by widow, but is survived by children, all children together are eligible to liberalized family pension at the rate equal to 60% of reckonable emoluments last drawn by the deceased. LFP is paid to the senior most eligible child till he/ she attains the age of 25 years or upto the date of his/ her marriage whichever is earlier and thereafter the LFP is passed on to the next eligible child.

11.47 W.e.f. January 1, 1996, in case the eligible child is physically or mentally handicapped and unable to earn livelihood, Liberalised Family Pension is admissible for life. Widowed/ divorced daughters have been included in the definition of family for the purpose of Liberalised Family Pension. In case of their remarriage, they become disentitled to the pension.

11.48 Where an officer dies as a bachelor or as a widower without children, dependent pension is admissible to parents without reference to their pecuniary circumstances at the rate of 75% of the LFP for both parents and at the rate of 60% for a single parent if they were largely dependent on the deceased officers for support and pecuniary need.

INVALID PENSION

11.49 Invalid Pension is admissible where an individual is invalided out of Military service with a disability neither attributable to nor aggravated by military service, in case the service actually rendered is 10 years or more. Invalid gratuity is paid when the service rendered is less than 10 years. Invalid Pension is equal to the service element of disability pension that would have been admissible in case the causes were attributable to or aggravated by military service and invalid gratuity is equal to half a month's reckonable emoluments for each six monthly period of qualifying service.

DOUBLE FAMILY PENSION

11.50 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.

In the case of re-employed pensioners, with effect from July 27, 2001, family pension accrued from civil side has been allowed in addition to the family pension admissible from military side.

EX-GRATIA AWARDS IN CASES OF DEATH OF CADETS (DIRECT)

11.51 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) An 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 benefit with effect from August 1, 1997.

EX-GRATIA AWARDS IN CASES OF DISBALITY OF CADETS (DIRECT)

11.52 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:

(a) Monthly ex-gratia of Rs.1275/- per month.

(b) An 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%.

11.53 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.

REDRESSAL OF GRIEVANCES OF DEFENCE PENSIONERS

11.54 Effective redressal of the grievances of the Defence pensioners has been the constant endeavour of Government to strengthen the mechanism for prompt disposal. In this regard, following steps have been taken:-

(i) Action has been taken by the agencies concerned with pension sanction and disbursement viz. Service HQrs, Record Offices, Pension Sanctioning Authority and Pension Disbursement Agencies to computerise the records. Pension sanctioning at Principal Controller of Defence Accounts (PCDA(P) is fully computerised.

(ii) PCDA(P) has placed the relevant orders and instructions relating to pension on their web site (www.pcdapension.nic.in) which also provides a calculator so that the pensioner could find out correct entitlement.

(iii) Regular Defence Pension Adalats are organized in different parts of the country to redress the grievances of the Armed forces pensioners near to place of their residence/ work. In addition, mini pension Adalats are held by the Defence Pension Disbursing Offices (DPDOs).

(iv) A single window system has been introduced in DPDOs to facilitate hassle free and prompt release of first payment cheques on any working day after retirement.

A single window system has been introduced in DPDOs to facilitate hassle free and prompt release of first payment cheques on any working day after retirement.

(v) Endorsements of family pension in PPO of pre-1989 retirees, numbering about 2 lakh were pending. A special drive has been launched for joint notification of family pension in these cases.

(vi) Role of Medical Adviser (Pension) has been dispensed with for adjudicating disability pension claims. The recommendations of the Medical Boards, as approved by the prescribed authorities would be treated as final.

(vii) In March 2006, orders have been issued to exempt the NRI pensioners/ family pensioners settled abroad from personal appearance at the time of first drawal of pension/ family pension provided the Indian Embassy/ Mission abroad issues an identification certificate to that effect.

(viii) In August 2006, it has been decided to bring ECOs/ SSCOs at par with Regular Commissioned Officers for grant of service element for the entire length of service for the purpose of disability pension.

(ix) In February 2006, orders were issued to the effect that the Defence pensioners can get pension through joint bank account opened with his spouse.

RECENT IMPROVEMENTS

11.55 (i) Age bar of 25 years in the case of unmarried/ widowed/ divorced daughters has been removed for continued grant of family pension.

(ii) The procedure for grant of family pension to the handicapped child for life has been simplified and the Service Medical Officers now below the rank of Brigadier or equivalent have been authorized to issue handicap certificate, in addition to Civil Medical Officer.

12

COOPERATION BETWEEN THE ARMED FORCES AND CIVIL AUTHORITIES

Medical Camp in civil aid

Apart from the main responsibility of defending the borders of the country, the Armed Forces render timely assistance to civil authorities for the maintenance of law and order, essential services and in rescue and relief operations during natural calamities.

12.1 Apart from the main responsibility of defending the borders of the country, the Armed Forces render timely assistance to civil authorities for the maintenance of law and order and/ or essential services as also in rescue and relief operations during natural calamities. The details of assistance provided by the Armed Forces during the period are given in the succeeding paragraphs.

ARMY

12.2 **Outbreak of Disease in Kerala:** In order to arrest the outbreak of Dengue and Chikunguniya (Diseases) in Kerala during June 2007, health teams from the Army were deployed for carrying out extensive fogging and spray of anti-larval pesticides at Amburi, Patnamthitta, Kollam and Thalachira. A Research Team comprising of an Entomologist, Virologist and Epidemiologist was also deployed for investigation and advice. Medicines weighing 650 Kgs and pesticides and insecticides (approximately 800 kilograms) were also dispatched to Thiruvananthapuram.

Flood Relief Operation by Army

12.3 **Flood Relief - 2007:** During the monsoon season of 2007, rescue and relief aid has been provided to a number of flood affected areas in Rajasthan, Gujarat, Karnataka, Andhra Pradesh, West Bengal, Assam, Uttar Pradesh, Himachal Pradesh and Bihar. A total of 60 columns and 50 engineer task forces were deployed in flood affected areas.

A total of 60 columns and 50 engineer task forces were deployed in flood affected areas.

12.4 **Construction of Bridge at Dalkhola (NH-34):** Due to collapse of RCC bridge on NH-34 (connecting Siliguri to Kolkata), the traffic was disrupted on the Highway. Army launched 62 meter Bridge Assault Floating Heavy (BAFH) on September 6, 2007 restoring the traffic on the Highway.

12.5 **Rescue Operations at Chandigarh:** On June 10, 2007, a shed at the grain market in Chandigarh collapsed and approximately 60 persons were trapped underneath. An Engineer Regiment was called for the rescue operations. The task force guided all the persons trapped beneath a hanging roof to safety. One person trapped under the collapsed roof for three hours was also rescued after cutting the RCC slab.

INDIAN NAVY

12.6 Defence – Civil cooperation is an integral part of the duties of the uniformed personnel and the Indian Navy lays great importance to this aspect.

Diagnosing the future

12.7 **Medical Camps:**

(i) A voluntary blood donation camp was organized at INHS Nivarini on June 9, 2007. 136 volunteer service personnel donated 48,650 ML which was handed over to Red Cross Society Bhubaneswar.

Three Medical teams from Kochi, one each to Kottayam, Idukki and Ernakulam districts augmented the efforts of the state government health authorities against the Chikunguniya outbreak.

(ii) Medical camps were organized at Parikud village and Kadmat, Amini and Kiltan in the year.

12.8 **Medical Aid:** Units of the Southern Naval Command responded promptly to all SAR and requests for aid from civil authorities. A few of the significant events were as follows:

(i) A medical team from INHS Sanjivani at Kochi was airlifted by two Dorniers to Calicut on April 5, 2007 for providing humanitarian aid on the outbreak of a major fire in the city.

(ii) Three Medical teams from Kochi, one each to Kottayam, Idukki and Ernakulam districts were dispatched on June 10, 2007 to augment the efforts of the state government health authorities against the Chikunguniya outbreak.

12.9 **Search and Rescue (SAR) Missions at Sea:** Following SAR missions were undertaken by the Indian Navy to save lives at sea in the year 2007:

Search & Rescue Operation by a Naval team

(i) An SAR mission to search for survivors of MV Den Den, grounded off New Mangalore was undertaken by a Seaking 42B helicopter of INAS 336 on June 24, 2007.

(ii) A Chetak helicopter carried out a SAR mission for a sinking Merchant vessel near fairway buoy off Kochi on July 1, 2007.

(iii) A Chetak helicopter was launched for MV Crystal Ace, a Philippines registered ship in position 090 50' N 0760 05' E on July 5, 2007, to pick up a patient suffering from Epitaxis and was evacuated to INS Garuda at Kochi.

(iv) INS Matanga recovered the dead body of Capt De'Silva, the Master of the vessel, Krishna – II, which ran aground off Kanhoji Angre Island. He was reportedly left behind when the crew abandoned the vessel.

(v) The Chetak aircraft ex Hansa (Goa) provided SAR assistance for flood relief operations at Nargund in Karnataka during the floods in September 2007.

12.10 **Disaster Relief Operations:** Following disaster relief missions were undertaken by the Indian Navy in the year:

(i) A team, comprising three officers and 17 sailors, from INS Valsura responded to a request from the civil administration at Jamnagar for assistance in the flash floods in Jamnagar district. The team rescued 33 people, mainly women and children in Jodia and Bhadra villages

Rescue Operation by IAF

on July 1 & 2, 2007. On August 8 & 9, 2007, a team rescued 52 persons at Ghasi Ni Khadki village and 13 persons at Nageshwar village of Jamnagar district.

12.11 Clearance Diving Unit (Goa) conducted rescue operations during floods at Ponda and Dudhsagar.

AIR FORCE

12.12 **Airlift Tasks:** The tasks of fly-pasts, logistics support and casualty evacuations were executed efficiently/ expeditiously, important ones being Republic Day Celebrations 2007, PM's Rally, Military World Games 2007 and Delhi Half Marathon 2007. In all these instances the efforts of the Indian Air Force were well appreciated by the national and international community.

The helicopter fleet flew 580 hours in 530 sorties, airlifted 497 tonnes of relief material and evacuated 1067 persons in Flood Relief Operations.

12.13 **Flood Relief Operations:** The helicopter fleet of the IAF rose to the occasion whenever the need arose to provide succour to the countrymen during floods that affected the nation during the year. During the monsoon season, the helicopter fleet flew 580 hours in 530 sorties, airlifted 497 tonnes of relief material and evacuated 1067 persons. All tasks were conducted efficiently.

13

NATIONAL CADET CORPS

Hon'ble Prime Minister presenting the PM Banner at PM's Rally

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.

NATIONAL CADET CORPS

13.1 The National Cadet Corps (NCC) was established under the NCC Act, 1948. It has completed 59 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 lakh. The wing-wise distribution of the cadet strength is as under: -

(a) Army Wing - 965161

(b) Air Wing - 66452

(c) Naval Wing - 65850

(d) Girls Wing - 187935

The aim of institutional training is to expose the youth to a regimental way of life and inculcate in them the values of discipline, personality development and orderliness.

The NCC's presence extends to 607 districts of the country covering 8514 schools and 5255 colleges.

TRAINING OF NCC CADETS

13.3 **Institutional Training :** Institutional training covers basic military training in Army, Navy and Air Wing subjects including exposure to camp life. The aim of this training is to expose the youth to a regimental way of life and to inculcate in them the values of discipline, personality development and orderliness.

13.4 **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 lakh attend at least one camp per year. Approximately 900 such camps are conducted in a training year.

(b) **National Integration Camps (NIC):** A total of 37 NICs were scheduled in the training year 2007-08. A total of 24,408 cadets from all States and Union Territories are to participate in these NICs in the current training

year. In addition, Special NICs have been scheduled/conducted at the following places: -

(i) **Special NIC Leh :** A special NIC was conducted at Leh from July 20 to 31, 2007 wherein a total of 200 cadets from all parts of the country participated.

(ii) **Special NIC Nagrota :** A special NIC was conducted at Nagrota (J&K) from October 4 to 15, 2007 wherein a total of 310 cadets from all parts of the country participated.

(iii) **Special NIC Kohima :** A special NIC in the North East was conducted at Kohima from November 27 to December 6, 2007 with the participation of 300 cadets from all parts of the country.

(iv) **Special NIC Port Blair :** Special NIC Port Blair (Andaman & Nicobar Island) was held from February 12-23, 2008.

(v) **Special NIC Kakinada:** A Special NIC was conducted at Kakinada from October 20 to 31, 2007, wherein a total of 500 cadets and 18 Associated NCC Officers (ANOs) from all parts of the country participated.

(c) **Vayu Sainik Camp (VSC):** Every year an All India Vayu Sainik Camp for Air Wing Senior Division (SD)/ Senior Wing (SW) cadets is organised for a period of 12 days. This year the camp was conducted at Jakkur Airfield (Bangalore) from October 8 to 19, 2007, with a strength of 420 SD and 180 SW cadets.

NCC Cadets presenting cultural programme at PM's Rally

(d) **Nau Sainik Camp (NSC):** This camp is also organized once a year for 12 days. This year the camp was conducted at Visakhapatnam from October 8 to 19, 2007. 420 SD cadets and 170 SW cadets from all 17 State NCC Directorates participated in this camp.

(e) **Thal Sainik Camps (TSC):** Two concurrent TSCs are conducted at Republic Day Parade ground, Delhi Cantt every year, one for SD/ JD boys and one for SW/ JW girls. 640 boy and 640 girl cadets take part in these camps. This year the camps were conducted from September 27 to October 5, 2007.

(f) **Leadership Camps:** These camps are conducted on an All India basis. There are four Advance Leadership Camps (ALC) for SD/ JD boys & SW girls. Besides, three Basic Leadership Camps, for SD boys, SW/ JW girls are organised.

During the year 440 officers and 20,000 cadets were attached to the regular army units. This includes women officers and 560 SW 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 the spirit of adventure. Four of these camps are held at Gwalior in Madhya Pradesh and another four camps at Neyyar Dam near Trivandrum in Kerala. 1080 boy and girl cadets attended these camps from May to November, 2007.

(h) **Republic Day Camp 2008:** Republic Day Camp-2008 was conducted from January 1 to 29, 2008 at Delhi. The Camp was attended by almost 1900 cadets from all over India, besides cadets of friendly foreign countries with whom NCC have an ongoing Youth Exchange Programme. The camp was inaugurated by the Vice-President on January 7, 2008. As a regular feature, the Prime Minister's Rally was held on January 28, 2008 during the Camp. An interaction of selected cadets with the President was also organised at Rashtrapati Bhawan.

13.5 **Attachment training:** The NCC cadets derive first hand experience of immense value by attachment to the Armed Forces units. During the year, attachments scheduled/ conducted were as under: -

(a) 440 officers and 20,000 cadets were attached to the regular Army units. This includes women officers and 560 SW girl cadets.

(b) 120 cadets are attached to Indian Military Academy, Dehradun and 48 girls are attached to Officers Training Academy, Chennai. Both attachments are for a duration of two weeks each.

(c) 1000 girl cadets are attached with various Military Hospitals.

(d) 38 SD and 12 SW cadets of Air Wing were attached to Air Force Academy, Dundigal twice a year for 13 days each.

(e) Four cadets have flown 'solo' on Microlite/ Glider in the last one-year.

(f) **Naval Attachment – INS Mandovi:** Attachment training camp for 25 Naval Wing (SD) cadets is conducted at Naval Academy, INS Mandovi, and Goa for duration of 12 days every year.

13.6 **Gliding and Microlite Flying:** Microlite/ Gliding facilities are provided at 47 NCC Air squadrons. The NCC Air squadrons have carried out 10,939 launches during the year 2007. Microlite flying is being conducted in NCC as an adventure activity with a view to give air experience to the Air Wing NCC cadets (SD). A total of 7,559 hours of microlite flying was undertaken during the year.

13.7 **Sea training:** NCC cadets of the Naval wing, during their sea training and attachment, are imparted intensive training in various Naval subjects.

13.8 **Foreign Cruise :** The following foreign cruises were conducted during the year: -

(a) **Coast Guard Cruise:**

i) Three Naval SD cadets took part in cruise to Japan, Vietnam and Philippines from April 28 to July 20, 2007.

ii) Three Naval SD cadets proceeded to Republic of Korea in November - December 2007.

Adventure activity - Parasailing

(b) **Naval Cruise:**

i) Twenty Naval SD cadets sailed to designated foreign ports on board Indian naval ships.

ii) Eight cadets sailed to Massawa, Salalah and Alexandria from August 27 to October 8, 2007.

ADVENTURE TRAINING

13.9 **Mountaineering Courses:** NCC nominates 300 boy and girl cadets from all NCC Directorates to attend various courses at Nehru Institute of Mountaineering, Uttarkashi, Himalayan Mountaineering Institute, Darjeeling and Directorate of Mountaineering and Allied Sports, Manali every year. For the year 2007-2008, 300 cadets were nominated for various courses.

13.10 **Mountaineering Expeditions:** NCC has been conducting two mountaineering expeditions every year; one for the Senior Division boy cadets and the other for Senior Wing girl cadets. This year the boys' team undertook an expedition to Kalanag Peak (6083 M) in May/ July 2007 and the girls' team successfully scaled the Rudugaira Peak (6016 M) in September/ October 2007.

13.11 **Trekking expedition:** A total of 10 trekking expeditions were conducted during the year with the participation of 1,000 cadets per trek. The much-publicised trek called 'Valley of Flower Trek' with strength of 500 SD cadets was also conducted.

13.12 **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 year, 13,000 cadets have been exposed to this activity. Five para sailing nodes have been estabilshed at Delhi, Kolkata, Bangalore, Sholapur and Kamptee to train the trainers.

13.13 **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, Agra.

13.14 **Slithering demonstration:** Ten SD and 10 SW cadets took part in the slithering demonstration during PM's Rally in January 2008.

13.15 **Desert camel Safari:** This adventure activity is conducted every year with 20 Indian cadets taking part in it. In addition, cadets from friendly foreign countries also participate in this event. It is conducted in the Jaisalmer district of Rajasthan.

13.16 **White Water Rafting:** White Water Rafting (WWR) node has been established at Raiwala (Haridwar). Equipment for white water rafting nodes in Punjab and West Bengal has been procured.

13.17 **Sailing Expedition:** 19 major water sailing expeditions were conducted during the year with the participation of 568 SD boy and 122 SW girl cadets.

13.18 **Hot air ballooning:** Hot air ballooning node has been established in Bhopal. A large number of cadets have participated in the tethered flight.

YOUTH EXCHANGE PROGRAMME (YEP)

13.19 **Outgoing YEP Visits:** Eight outgoing YEP visits were undertaken

during the year as per details given in Table 13.1.

Table 13.1

Sl.No	Name of the Country	Strength of Officers and Cadets
(i)	Singapore (Air)	1+4
(ii)	Singapore (Navy)	1+6
(iii)	Russia	2+10
(iv)	Sri Lanka	1+6
(v)	Bhutan	2+10
(vi)	Maldives	1+3
(vii)	Singapore	2+10
(viii)	Vietnam	2+13

13.20 **Incoming YEP Visits :** The following incoming YEP visits by foreign delegations were undertaken during the year (2007-08) as per details given in Table 13.2.

Table 13.2

S.No.	Name of the Country	Strength of Officers and Cadets
(i)	Singapore NCC (Desert Safari)	2+10
(ii)	Bangladesh NCC (Yachting Regatta)	1+6
(iii)	10 foreign countries attending RDC 2008	10 HODs, 14 Officers and 85 cadets
(iv)	Singapore Air Wing	1+3

Wreath laying at Amar Jawan Jyoti, NCC Day 2007

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

13.21 NCC has adopted community development activities with the aim of imbibing among cadets selfless service to the community, dignity of labour, importance of self help, need to protect the environment and to assist weaker sections of the society in their upliftment. This is envisaged through programmes involving adult education, tree plantation, blood donation, visit to Old Age Homes, Blind Children Schools, Orphanages, slum clearance, village upliftment and various other social schemes. NCC cadets participate in the following community development activities:

NCC has adopted community development activities with the aim of imbibing among cadets selfless service to the community, dignity of labour, importance of self help, need to protect the environment and to assist weaker sections of the society in their upliftment.

(a) **Tree plantation :** NCC cadets plant saplings and maintain them in conjunction with the concerned State Department/ Colleges/ Schools and Villages. This year as part of NCC Day Celebration, all NCC units were tasked to plant a sapling by each cadet; thereby pledging to plant almost 1.3 million saplings.

(b) **Blood donation:** NCC cadets have been donating blood as voluntary service whenever needed by Hospital/ Red Cross. This year as part of NCC Day Celebrations "Blood Donation Drive" was conducted by all NCC State Directorates in various towns and villages from November 19 to 25, 2007.

(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 programme.

(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 and accidents. Over the years, NCC cadets have rendered outstanding service during floods, earthquakes, cyclones, and train accidents and provided the healing touch in riot-affected areas. The significant contribution by NCC is widely acclaimed by one and all.

(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 cadets participate actively in the AIDS/ HIV awareness programme and are working alongwith UNAIDS and DGAFMS in carrying out AIDS awareness programmes throughout the country. Recently NCC has joined hands with Youth Unite for Victory on Aids (YUVA) and organised a programme to spread awareness on HIV/ AIDS. As a precursor to "Train the Trainer", a nucleus has been created with selected officers and Whole Time Lady Officers (WTLOs) from all States Directorates.

(i) **Cancer Awareness Programme:** NCC Cadets actively participate in Cancer Awareness Programmes organised in various cities. Cancer Care India (CACI), an NGO and NCC have joined hands to launch Cancer Awareness Programmes (CAPS) throughout the country. So far 25 such CAPS have been conducted.

(j) **UNICEF, HRD & NCC Literacy Programme:** An MoU has been signed between NCC and UNICEF on July 21, 2007. NCC in collaboration with UNICEF has undertaken a programme to educate girls from rural areas. This programme has been started in MP, Rajasthan, Chattisgarh and Jharkhand.

Subroto Cup Winning Team with DGNCC

(k) **Pledge:** This year, a rally was held on November 25, 2007 in the lawns at India Gate where approximately 1500 cadets took a pledge on Anti Dowry and Anti Female Foeticide.

ACTIVITIES AT NATIONAL LEVEL

13.22 The NCC cadets also participated in the following activities conducted at the national level:

(a) **Jawahar Lal Nehru Hockey Cup Tournament:** Inter NCC State Directorate Hockey Tournament is conducted every year. These teams participate in the prestigious Jawaharlal Nehru Hockey Tournament, where they play against some of the best teams in the country and some foreign teams.

(b) **Subroto Cup Football Tournament :** NCC selects two NCC football teams, through the conduct of Inter NCC State Directorate competitions, every year. These two teams are fielded in the prestigious Subroto Cup Football Tournament every year where they participate in the junior category. This year North Eastern Region (NER) Directorate team created history by lifting the Subroto Cup.

(c) **All India GV Mavlankar Shooting Championship (AIGVMSC):** Firing being one of the core training activities of NCC, shooting discipline enjoys special place in NCC sporting activities. NCC conducts inter NCC State Directorate competition to select the NCC team which participates in the National Rifle Association of India (NRAI) events of All India GV Mavalankar Shooting Competition (AIGVMSC) and the prestigious National Shooting Championship Competition (NSCC), every year. This year NCC shooting team created a record by winning seven gold, four silver and four bronze medals at the XVIII AIGVMSC. In these competitions four NCC cadets also created two new meet records.

(d) **Special Achievement in Shooting:** Two cadets of NCC team have represented the country in the recently concluded Asian Shooting Championship at Kuwait and their performance was at par excellence with both winning medals as given in Table 13.3.

Table 13.3

(i) Cadet Lajja Gauswami	1 gold & 1 silver medal (Team event) 2 bronze medal (Individual event)
(ii) Cadet Akash Kumar Ravidas	1 bronze medal.

(e) **Special Achievement in Army Equestrian and Junior National Equestrian Championship :** Five cadets of NCC team have represented their Directorates in the

Army Equestrian and Junior National Championship held at ASC Centre Gaya winning medals as given in Table 13.4.

Table 13.4

(i) SUO Kapil Rajak	2 gold & 1 silver medal (Individual event)
(ii) UO Sweeta Shankre	1 silver & 1 bronze medal(Individual & team event)
(iii) Sgt Hemant Puraiya	1 bronze medal (Team event)
(iv) Cadet Sharda Pratap	1 bronze medal (Team event)
(v) Cadet Asit Roy	1 bronze medal (Team event)

(f) **All India NCC Yachting Regatta:** NCC Yachting Regatta in enterprise class boats is held every year in the month of January at INS Chilka and coordinated by Orissa Directorate. 48 SD and 48 SW cadets from all the State Directorates attend it.

TRAINING OF STAFF

13.23 There are two training Academies; one each at Gwalior and Kamptee where instructors are trained. The following courses were conducted for training of Associate NCC Officers (ANOs) and Permanent Instructors (PI) staff during the year:-

(a) **Refresher Course for ANOs:** 16 Courses are conducted every year at Officer Training Academy (OTA) Kamptee for 1135 ANOs.

(b) **Orientation Courses for PI Staff:** 26 Courses are conducted at OTA Kamptee for 2810 PI Staff every year.

(c) **Pre-Commission Courses:** Four Pre-Commission courses are conducted at OTA Kamptee for 500 ANOs.

(d) **Refresher Courses for Lady ANOs:** Four courses are conducted at OTA Gwalior for 110 lady ANOs. Two courses each are also conducted for Senior and Junior Wing Direct Entry NCC 'C' Certificate ANOs.

(e) **Pre-Commission Courses for Lady ANOs:** Two courses for Senior Wing and two Courses for Junior Wing are conducted for ANOs at OTA Gwalior.

(f) **Refresher Course for Naval ANOs:** Eight SD and 34 JD ANOs attended the Refresher Course in June 2007 at INS Circars Vizag.

(g) **Refresher Course for Naval PI Staff:** 25 Naval PI Staff attended Refresher Course at Seamanship School, Kochi during August-September 2007.

(h) **Pre-Commission Course for Naval ANOs:** 43 Naval SD/JD ANOs underwent Pre-Commission Training at Seamanship School, Kochi from July to September 2007.

(i) **Orientation Course for Air PI Staff:** 40 Air PI Staff undergo Orientation Course of 5 days duration at OTA Kamptee every year.

(j) **Civil Defence Management Courses:** A total of 30 Officers/ JCOs/ ANOs were detailed to attend various Courses conducted at National Civil Defence College (NCDC), Nagpur during the year.

The enrolment period of Senior Division/ Senior Wing cadets has been reduced from three to two years with provision of extension by one year and reduction of the maximum age for enrolment from 26 years to 24 years.

13.24 **Career Counselling for NCC Cadets:** The NCC has recently implemented a 'Career Counselling Programme' for NCC cadets. Service Officers, Whole Time Lady Officers (WTLOs) and Associate NCC Officers have been trained by professionals to give basic career counselling to cadets. These 'trainers' subsequently counsel (train) the cadets in the diverse Units/ Sub-Units of the NCC all over the country. Till date, four Career Counselling Cadres have been conducted in which, a total of 257 Officers have been trained and approximately 11,000 cadets counselled.

RESTRUCTURING OF NCC

13.25 The enrolment period of SD/ SW cadets has been reduced from three to two years with provision of extension by one year and reduction of the maximum age for enrolment in the SD/ SW from 26 yrs to 24 yrs in order to increase the coverage of NCC training for more cadets.

14

DEFENCE COOPERATON WITH FOREIGN COUNTRIES

Raksha Mantri's Visit to Moscow 2007

Defence Cooperation is also an important aspect of national security and strategy. It encompasses all activities undertaken by the Defence Forces to avoid hostilities, build and maintain trust, and to contribute conflict prevention and resolution.

14.1 India's large growing economy, strategic location and independent foreign policy have enhanced its value as an international partner. India has a long history of close friendship with several countries and is considered a leader of the developing countries. India has actively participated in several UN peacekeeping missions and is currently amongst the largest troop contributing nations to the UN Peace keeping operations.

14.2 Defence cooperation follows as well as builds good bilateral relations. Thus *Defence Cooperation* has now become a popular and dynamic terminology and a tool in the conduct of a country's foreign policy and security affairs. It is also an important aspect of national security and strategy. It encompasses all activities undertaken by the Defence Forces to avoid hostilities, build and maintain trust, and to contribute conflict prevention and resolution. India is now engaged in a wide range of defence cooperation activities with other friendly countries. The countries so engaged are spread over all continents, ranging from Chile and Brazil in the Far-West to Japan and Korea in the Far-East.

The MOU on defence cooperation signed during the visit of Raksha Mantri to China in May 2006 envisages regular and institutional contacts between armed forces and defence officials and experts of the two countries.

14.3 Our relations with China, our largest neighbour, are progressing well. The MOU on defence cooperation signed during the visit of Raksha Mantri in May 2006 envisages regular and institutional contacts between armed forces and defence officials and experts of the two countries. The then Chief of Army Staff General J.J. Singh visited China in May 2007. Indian Naval Ships visited the Qingdao port in China in April 2007 on a goodwill visit. The First Annual Dialogue was held from November 12-13, 2007 in Beijing, China. The first ever joint Army training exercise was held with China from December 19-27, 2007 in Kunming, China

14.4 Nepal is undergoing critical transition in its history. General Rookmangud Katawal, Nepalese Army Chief paid a visit to India in December 2007 during which President of India conferred the rank of Honorary General of Indian Army' on him.

Sino-Indian Joint Military Exercise "Hand-in-Hand"

14.5 Our defence relations with Sri Lanka in the fields of training and supplies have expanded. During the year, Mr Gotabaya Rajapaksa, Sri Lankan Defence Secretary visited India in May and September 2007.

14.6 India enjoys a special relationship with Bhutan based on the treaty of 1949. King of Bhutan visited India in February 2007 during which a revised Indo-Bhutan Treaty was signed.

14.7 India's relations with Maldives have always been cordial and close. India's security cooperation with Maldives, especially in the area of training, has been expanding. Defence Minister of Maldives visited India during January 2007.

14.8 India's security cooperation with Myanmar is important in the context of the Indian Insurgent Groups on the borders of our North Eastern States. Our relations with Myanmar continue to be close and friendly. Major visits during 2007 include that of Vice Admiral Soe Thane, C-in-C of Myanmar Navy in April 2007 and visit of Admiral Sureesh Mehta, CNS in May 2007 and a delegation led by Shri V.K Misra Secretary Defence (Finance) in April 2007.

14.9 Mauritius has a special significance for India due to historical, cultural and political reasons. India caters to major part of Mauritius's training and equipment requirements related to defence.

India-US Defence Policy Group is the apex body for discussions on bilateral defence cooperation which meets annually.

14.10 First Meeting of Indo-US Defence Joint Working Group was held in New Delhi on April 10, 2007. Indian delegation was led by

Director General (Acquisition) and US delegation was led by Mr. Richard Lawless, Deputy Under Secretary of Defence (Asian and Pacific Security Affairs), US Department of Defence. A Delegation led by Director General (Acquisition) visited USA to attend 4th India-US Defence Procurement and Production Group (DPPG) meeting from May 30-31, 2007. The 9th Meeting of the Joint Technology Group was held in Washington on April 10, 2007. 2nd Meeting of Defence Joint Working Group was held in USA on November 19, 2007. Besides this, 4th meeting of Indo-USA Senior Technology Security Group was held in New Delhi on November 27, 2007. Indian side was led by Special Secretary and US side was led by Ms Beth M Mc Cormick, Acting Director, Defence Technology Security Administration. A delegation visited USA to attend 8th Indo-US Military Cooperation Group (MCG) during December 11-13, 2007. The 9th Meeting of the India-US Defence Policy Group (DPG) was held in Washington on January 16-17, 2008. Indian delegation was led by Defence Secretary Shri Vijay Singh. DPG is the apex body for discussions on bilateral defence cooperation. The Group meets annually and four sub-groups - Military Cooperation Group (MCG), Joint Technology Group (JTG), Defence Production and Procurement Group (DPPG) and Senior Technology Security Group (STSG) - report to it. The 5th Meeting of the DPPG was also held in Washington on January 15-16, 2008.

14.11 Mr. Bill Jeffry, Permanent Under Secretary, Ministry of Defence, UK visited India for a meeting with Defence Secretary in April, 2007. A high level Defence delegation under the Chairmanship of Shri Vijay Singh, Defence Secretary visited Central Staff in London and New Logistics & Procurement Organization (Defence Equipment and Support Organization), Bristol from September 24- 26, 2007.

14.12 The 1st India Germany High Level Defence Committee meeting was held in New Delhi on April 20, 2007. Indian side was led by Defence Secretary and the German side was led by Dr. Peter Eickenboom, Federal State Secretary for Defence. Dr. Franz Josef Jung, German Defence Minister visited India during June 4-6, 2007, during which he called on Raksha Mantri on June 4, 2007. During the visit of German Chancellor Dr. Angela Merkel, an Agreement on Mutual Protection of Classified Information was signed between the two countries on October 30, 2007.

14.13 Following the signing of the Defence Cooperation Agreement with Germany a Ministry of Defence delegation visited Germany to attend 2nd India-Germany Defence Technical Sub-Group Meeting from September 26-28, 2007.

14.14 10th meeting of India France High Committee of Defence was held in New Delhi on December 17-18, 2007. Shri Vijay Singh, Defence Secretary, led the Indian side and Mr. Thierry Borja de Mozota, Ministerial Representative of French Defence Minister, led the French side.

14.15 India's ties with the Russian Federation are time tested and based on

French and Indian Naval Ships during a manoeuvre at Sea-Exercise Varuna 2007, at Gulf of Aden

continuity, trust and mutual understanding. There is a national consensus in both the countries on the need to preserve and strengthen the fundamentals of Indo-Russian relations. 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. Our cooperation with Russia today in the defence field is mutually beneficial and not restricted to buyer-seller relationship alone but includes joint research and development, training and service to service contacts. Raksha Mantri led a delegation to Moscow, Russia for attending the 7th session of the Indo-Russian Inter-governmental Commission on Military Technical Cooperation (IRIGC-MTC) held from October 17-18, 2007. During this visit, Raksha Mantri met with the Russian Defence Minister and the First Deputy Prime Minister of Russia. An Inter-governmental Agreement for cooperation in development and production of the Prospective Multi-Functional Fighter and the Protocol of the 7th IRIGC-MTC were signed on October 18, 2007. An agreement for development and production of Multi Role Transport Aircraft was signed during Prime Minister's visit to Russia on November 15, 2007. Defence Secretary visited Russia in May 2007 to review bilateral defence cooperation. The then Chief of Staff General J.J. Singh visited Russia in September 2007 to further promote ties between the Indian and Russian Armed Forces. General Valentin Sobolov, Secretary Council, Russian Federation called on the Defence Secretary on October 29, 2007. Chief of Russian Armed Forces also visited India during June, 2007. India-Russia Joint Naval

Exercises were held in the Sea of Japan on April 24-27, 2007. A Joint Exercise called INDRA-07 was conducted by the Indian and Russian Armies in Russia during September, 2007.

14.16 The 3rd India-Italy Joint Working Group (JWG) Meeting was held in New Delhi on January 29, 2007. The 6th India-Italy Joint Defence Committee (JDC) meeting was held in New Delhi on February 1, 2007.

14.17 Defence relations between India and Singapore have grown during the recent years. The year 2007 also saw enhanced interactions between India and Singapore in the field of Defence. Raksha Mantri visited Singapore from June 1-3, 2007 to participate in the 6th IISS "Shangri-La Dialogue" and addressed the second plenary session of the "Shangri-La Dialogue" on the topic entitled 'China and India : Building International Stability'. Raksha Mantri addressed the session on 'India's role in building international stability'. During his visit to Singapore, Raksha Mantri had separate bilateral meetings with Defence Ministers of Australia, Cambodia, France, Indonesia, Japan, Philippines and Singapore. He also met the Foreign Minister of Sri Lanka. Raksha Mantri also called on Prime Minister of Singapore, Deputy Prime Minister, Senior Minister and Minister Mentor of Singapore. A delegation led by Director General (Acquisition) visited Singapore for the first meeting of the Defence Procurement and System Development Working Group (DPSD-WG) from June 6-8, 2007. The two sides exchanged views on defence procurement and defence industrial cooperation. Mr. Chiang Chie Foo, Permanent Secretary (Def), Ministry of Defence, Singapore

Raksha Mantri laying a wreath in a ceremony at the Unknown Soldiers Memorial during his visit to Russia

led an 8 member delegation for the 4th India-Singapore Defence Policy Dialogue from October 9-10, 2007 at New Delhi. During this visit, a bilateral agreement for the conduct of joint military training and exercises between the Air Force of the two countries in India and its associated Protocols were signed. Mr.Chiang Chie Foo called on Raksha Mantri on October 10, 2007. Mr. Teo Chee Hean, Minister of Defence, Singapore led a delegation to India from October 14-18, 2007.

14.18 Defence relations with Malaysia have been cordial. The year 2007 witnessed the high level visit of Deputy Defence Minister of Malaysia H. E. Dato Hazi Zainal Abidin Bin Zin. He called on Raksha Mantri on August 21, 2007. A Protocol between India and Malaysia on the conduct of training of Royal Malaysian Air Force personnel by the Indian Air Force in India and in Malaysia was signed on December 5, 2007. Mr. Abu Bakar Bin Haji Abduallah, Secretary General, Ministry of Defence, Malaysia visited India to attend the 6th Malaysia-India Defence Cooperation meeting (MIDCOM) held on December 14, 2007 at New Delhi.

14.19 India-Vietnam relations have always been exceptionally friendly and cordial. Raksha Mantri visited Vietnam on December 17-18, 2007. The 3rd Indo-Vietnam Security Dialogue was held at New Delhi from November 28-29, 2007. General Nguven Huy Hieu, Deputy Minister of Defence of Vietnam led the

Raksha Mantri during Vietnam visit

delegation. Indian side was led by the Defence Secretary. The Vietnamese Deputy Minister of Defence called on Raksha Mantri on November 28, 2007.

14.20 India's relations with Republic of Korea (ROK) have been marked by friendship and cordiality. Defence Minister of Republic of Korea Mr. Kin Jang Soo visited India during May 28-31, 2007. The 3rd India-ROK Coast Guard Combined exercises were held in ROK from December 10-14, 2007. Director General Coast Guard visited ROK during the exercises to hold bilateral consultations with his counterpart.

14.21 India's ties with Japan in the field of defence have been evolving. Exchange of high level visits has been the highlight of India-Japan defence cooperation. Defence Secretary led a high level delegation to Japan from April 10-14, 2007 for the first India-Japan Defence Policy Dialogue. The visit also coincided with the first good-will Naval exercises between Indian and Japanese Navy off the Japanese coast. Chief of Army Staff also visited Japan during April, 2007. Mr. Takahide Kiwara, Sr. Vice Minister of Defence of Japan called on Raksha Mantri and Raksha Rajya Mantri during his visit to India on August 2-3, 2007. Ms. Yuri Koike, Minister of Defence, Japan called on Raksha Mantri on August 24, 2007.

14.22 India and Australia have enjoyed good relations as members of the Commonwealth. An Australian Defence Security delegation visited India from June 27-29, 2007 for discussions on the 'Arrangement in Protection of Classified Information between India and Australia'. Chief of Australian Armed Forces also visited India during June 2007. Defence Minister Dr. Brendan Nelson met Raksha Mantri and Service Chiefs during his visit to India from July 10-12, 2007. 'An Arrangement for Reciprocal Protection of Exchanged Classified Information of Defence Interest between India and Australia' was signed on July 11, 2007. Chief of Naval Staff, Australia Vice Admiral Russ E Shalders called on Defence Secretary on August 20, 2007.

14.23 India maintains cordial defence relation with Oman. The meeting of 2nd Oman-India Joint Military Cooperation Committee (JMCC) was held in Muscat from December 2-4, 2007. The Indian delegation was led by Defence Secretary and the Oman delegation was led by Mr. Mohamed Nasser Mohamed Al-Rasby, Under Secretary of the Ministry of Defence of the Sultanate of Oman. During the visit, Defence Secretary called on Minister Responsible for Defence Affairs, Chief of Staff-Sultans Armed Forces and the Secretary General of Ministry of Foreign Affairs of Oman.

14.24 Raksha Rajya Mantri led a 5 member delegation to Dubai during November 11-14, 2007 for Dubai Air Show.

14.25 Our bilateral relations with Mongolia have been very friendly and cordial. The Defence Minister of Mongolia, Mr. Mishing Sonompil was on an official

visit to India from February 5-12, 2007. Joint Military Exercise namely 'Nomadic Elephant' was conducted from August 27 to September 5, 2007 in Mongolia.

14.26 Defence Minister of Republic of Congo, Mr. Jacques Yvon Ndolou visited India from February 26 to March 3, 2007 with a six member delegation. He called on Raksha Mantri on February 26, 2007.

14.27 Defence Secretary led a defence delegation to Indonesia for the 1st meeting of the India-Indonesia Joint Defence Cooperation Committee (JDCC) held in Jakarta, Indonesia from June 11-14, 2007. The JDCC has been formed under the Agreement on India-Indonesia Defence Cooperation Activities signed in 2001, ratified by the Indonesian President in 2007. The 1st JDCC meeting discussed ways to enhance the existing defence cooperation between the two countries. Chief of Indonesian Army Gen Djoko Santoso visited India in February, 2007. Maj Gen Dadi Susanto, Director General of Defence Strategy, Indonesia led a 12-member delegation to India from December 16-19, 2007 as a follow up of the 1st Joint Defence Cooperation Committee (JDCC) meeting held in Jakarta in June 2007.

14.28 Our relations with Qatar have been friendly. Defence Secretary led delegation to Qatar from June 17-21, 2007.

14.29 Defence relations with Israel have been cordial and mutually beneficial. Mr. Yecheil Horev, Director of Security of

Relief supplies to Bangladesh

Defence Establishment and Senior Deputy Director General, Israel visited India in June 2007, Maj. Gen. (Retd.) Yosi Ben Hanan, Director SIBAT during July 23-25, 2007 and Chief of Staff of Israel Navy Vice Admiral David Ben Bashat during August 26-29, 2007 visited India. An Israeli delegation led by B.G. Pinchas Buchris, Director General Ministry of Defence, Israel visited India from December 30, 2007 to January 1, 2008 for participating in the 6th Meeting of the India-Israel Joint Working Group (JWG). Fifth round of Navy-to-Navy Staff talks were held in Tel Aviv in October 2007. Second Air Force Staff talks were held in New Delhi on January 15-16, 2007. Third round of Army to-Army Staff talks were conducted in India from November 26-29, 2007.

India is keen to improve bilateral relations and cooperation with like minded countries to quell threats to world peace.

14.30 Prime Minister visited Nigeria from October 15-16, 2007. Defence Secretary was also a member of the Indian delegation. During this visit, an MOU on Defence Cooperation with Nigeria was signed on October 15, 2007. A delegation led by Mr. Ali Bongo Ondimba, Senior Minister for National Defence of Gabon called on Raksha Mantri on November 5, 2007.

14.31 The Prime Minister of Cambodia visited India on 8th December 2007. During the visit, an Agreement on Defence Cooperation between India and Cambodia was signed.

14.32 The visit of Mr Juan Manuel Santos, Colombian Defence Minister during November 25-29, 2007, further enhanced India's warm and cordial relations with Colombia.

14.33 From the spectrum of countries and activities described here, it is evident that India is keen to improve bilateral relations and cooperation with like minded countries to quell threats to world peace.

15

CEREMONIAL AND OTHER ACTIVITIES

The contingent of 61 Cavalry at Rajpath in the Republic Day Parade

Ministry of Defence encourages and promotes academic and adventure activities through various 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.

IDSA undertakes research on policy issues in areas related to defence, foreign policy and conducts various seminars and courses on topical issues.

INSTITUTE FOR DEFENCE STUDIES AND ANALYSES (IDSA)

15.3 The Institute for Defence Studies and Analyses (IDSA) is an autonomous institution established in 1965. It undertakes research on policy relevant issues, primarily in areas related to defence, foreign policy and security. The research agenda 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.

15.4 In 2007, the Institute stepped up its research work. This resulted in the publication of books, journals, monographs and occasional papers. The publications included books: Sri Lanka; Search for Peace; Pakistan Occupied Kashmir; The Untold Story; West Asia in Turmoil Implications for Global Security and Asian Strategic Review.

15.5 As part of its new initiative, two new journals, the bi-annual "Journal of Defence Studies" and "CBW Magazine", a quarterly journal on chemical and biological weapons, were launched during the year. Hon'ble Vice President of India, Shri Hamid Ansari, released these two publications, handing over the first copies to the Raksha Mantri, Shri A.K. Antony.

15.6 A number of important seminars, round tables and dialogues with other think-tanks on issues of national and international importance were held through out the year. The highlight was the 9th Asian Security Conference (ASC) on "Security Dynamics

Raksha Mantri and External Affairs Minister at Institute of Defence Studies and Analyses

in Southeast Asia: Emerging Threats and Responses".

15.7 During the year, the Institute began a new initiative of holding periodic conferences focusing on South Asia. The first such conference was held on "Economic Cooperation for Security and Development in South Asia", in collaboration with the Indian Council for Research on International Economic Relations (ICRIER) in March 2007. IDSA also organized several lectures, round table discussions, workshops and bilateral interactions on topical issues such as "Emerging Strategic Environment in Asia", "North Korea, Iran and the Emerging Nuclear Order", "Facilitating Dialogue between India and Pakistan", "Sino-Indian Relations", "Indo-US Relations" and "Indo-US Civil Nuclear Cooperation".

15.8 The Institute also conducted several specialized training modules and refresher courses and workshops for senior civilian and military officers. These included Orientation Capsule for Senior Military Officers, IFS Probationers' Training Programme and Vertical Interaction Course for IPS Officers on "Strategic and Security Issues".

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.

The Institute train young men and women not only to climb mountain peaks but also create in them an urge to climb peaks of human endeavour.

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 2007 to November 30, 2007 are detailed in Table 15.1.

Army Mount Everest Expedition 2007

Table 15.1

Institute	Basic	Advanced	Adventure	MOI	S&R
HMI	05	03	02	-	-
NIM	05	03	05	01	01
JIM	03	02	-	03	-

15.15 The number of students trained in these courses are given in Table 15.2.

Table 15.2

Institute HMI/ NIM/ JIM	Basic	Advanced	Adventure	MOI	S&R
Number of students	809	220	389	52	39

15.16 HMI also conducted nine special Adventure and Rock Climbing Courses, in which 655 men and women were trained during the period.

15.17 NIM conducted nine special courses for various organizations in which 408 men and women were trained during the period.

15.18 JIM conducted 15 special Adventure courses in which 413 boys and girls participated.

15.19 JIM celebrated Silver Jubilee of the Institute on October 27, 2007 at Pahalgam. The occasion was graced by Shri A.K. Antony, Raksha Mantri and Shri Ghulam Nabi Azad, Chief Minister, J&K amongst other dignitaries.

CEREMONIALS, HONOURS AND AWARDS

15.20 The responsibility for the organisation of National Functions like the Republic Day Parade, the Beating Retreat Ceremony, Martyrs' Day and the Independence Day is entrusted to the Ministry of Defence. The Ministry also organises 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 2007-2008 are detailed in the following paragraphs.

Ministry of Defence organises various National Functions like the Republic Day Parade, the Beating Retreat Ceremony, Martyrs' Day and the Independence Day

INVESTITURE CEREMONY, 2007

15.21 The Defence Investiture Ceremony, 2007 was held at Rashtrapati Bhawan on March 21 and April 11, 2007. During the ceremony, Gallantry and Distinguished Service Awards presented by the President to the awardees are given in Table 15.3 and 15.4.

Table 15.3

Gallantry Awards		
Kirti Chakra	08	(7 posthumous)
Shaurya Chakra	47	(26 posthumous)

Table 15.4

Distinguished Service Awards	
Param Vishisht Seva Medal	27
Bar to Ati Vishisht Seva Medal	01
Ati Vishisht Seva Medal	50

15.22 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.

Floats depicting the completion of 75 years of IAF displayed at the Republic Day Parade-2008

INDEPENDENCE DAY CEREMONY, 2007

15.23 The Independence Day, 2007 marked the 60 years of India's Independence. The celebration of the Independence Day began with singing of patriotic songs in different Indian languages by school children's choir at Red Fort. The three Services and Delhi Police presented 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 the children and the NCC Cadets from Schools of Delhi 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.

15.24 The gallantry awards announced on the Independence Day 2007are given in Table 15.5.

Table 15.5

Award	Total	Posthumous
Ashok Chakra	03	03
Kirti Chakra	06	04
Shaurya Chakra	20	9
Bar to Sena Medal (G)	02	-
Sena Medal (G)	99	10
Nao Sena Medal (G)	04	-
Vayu Sena Medal (G)	06	-

VIJAY DIWAS

15.25 Vijay Diwas was celebrated on December 16, 2007. On this occasion, the Raksha Mantri laid a wreath at the Amar Jawan Jyoti at India Gate.

AMAR JAWAN JYOTI CEREMONY, 2008

15.26 The Prime Minister laid a wreath at the Amar Jawan Jyoti of India Gate in the

morning of January 26, 2008. Two minutes silence was observed for paying homage to those who laid down their lives in safeguarding the integrity of our nation.

REPUBLIC DAY CELEBRATIONS, 2008

15.27 The unfurling of the National Flag at the Rajpath marked the beginning to the Republic Day Parade. The President's Body Guards presented the National Salute followed by National Anthem played by the Service Bands and 21 gun salutes. The President of France His Excellency Mr. Nicolas Sarcozy was the Chief Guest on the occasion. In a brief Investiture Ceremony, the President of India presented four Ashok Chakra awards (three awards announced on August 15, 2007 and one award announced on January 26, 2008) posthumously to the next-of-kins of four soldiers who made the supreme sacrifice in the service of the nation.

15.28 Eighteen National Bravery Award winning children seated on elephants participated in the Parade. Tableaux of States/ UTs, Central Ministries and Departments and cultural items by school children were the other attractions of the parade. The tableaux and cultural items reflected the cultural diversity of the nation. The parade concluded with a motorcycle display by the Jawans of the Border Security Force followed by a Fly Past by Indian Air Force aircraft.

15.29 The gallantry and distinguished service awards announced on the Republic Day are given in Table 15.6.

BEATING RETREAT CEREMONY, 2008

15.30 The 'Beating Retreat' is a centuries old military tradition dating from the days when troops disengaged from battle at sunset. The Beating Retreat Ceremony

Raksha Mantri with the recipients of the National Bravery Award for children

Table 15.6

Award	Total	Posthumous
Ashok Chakra	01	01
Kirti Chakra	04	02
Shaurya Chakra	22	07
Bar to Sena Medal/ Nao Sena Medal/ Vayu Sena Medal (Gallantry)	02	-
Sena Medal/ Nao Sena Medal/ Vayu Sena Medal(Gallantry)	112	07
Param Vishisht Seva Medal	30	-
Bar to Ati Vishisht Seva Medal	03	-
Ati Vishisht Seva Medal	52	-
Yudh Seva Medal	01	-
Bar to Vishisht Seva Medal	03	-
Vishisht Seva Medal	127	02
Bar to Sena Medal (Devotion to duty)	04	-
Sena Medal/ Nao Sena Medal/ Vayu Sena Medal (Devotion to duty)	64	01

denotes departure of the troops assembled at Delhi for participating in the Republic Day Celebrations. The Ceremony was organized at Vijay Chowk on January 29, 2008. This brought the curtain down on the Republic Day festivities. Bands of the three Services participated in this ceremony. The conclusion of the ceremony coincided with illumination of the Rasthtrapati Bhavan, North Block, South Block, Parliament House and India Gate.

MARTYRS DAY CEREMONY, 2008

15.31 On January 30, 2008, the President laid wreath at Mahatma Gandhi's Samadhi at Rajghat. Floral tributes were also paid by the

Republic Day Parade

Vice President, the Prime Minister and other dignitaries. This was followed by observance of two minutes' silence at 1100 hours to pay homage to those who sacrificed their lives in India's struggle for freedom.

OFFICIAL LANGUAGE DIVISION

15.32 Compliance of the official language policy of the Union in the Ministry of Defence (Secretariat), various offices and defence undertakings, etc. under it, is primarily the responsibility of the Official Language Division of the Ministry of Defence. This work is accomplished through review of quarterly Hindi progress reports, meeting of Hindi Salahakar Samitis and departmental Official Language Implementation Committees, official language inspections of subordinate offices.

Official Language Division is responsible for implementing the Official Language Policy of the Government in the Ministry of Defence, its various offices and defence undertakings.

15.33 **Annual Programme:** During the period under report, efforts 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 increasing correspondence in Hindi, compliance of the provisions of 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, imparting training of Hindi stenography and Hindi typing to the officers/ staff of Ministry of Defence. The following steps were also taken to further increase the use of Hindi in official work:

(a) Hindi workshops were organized on a regular basis.

(b) Quarterly meetings of departmental Official Language Implementation Committee in the Ministry of Defence i.e. one for the Department of Defence, Department of Defence Research & Development and Department of Ex-Servicemen Welfare and the other for the Department of Defence Production were held regularly.

(c) Joint official language inspections of various Headquarters/ offices were conducted to assess the position of implementation of orders regarding official language Hindi.

15.34 **Translation Work:** The requirement pertaining to translation from Hindi to English and vice-versa of various Sections/ Divisions of Ministry of Defence was also successfully met by the Official Language Division. The translation material received in the Division included general orders, notifications, resolutions, cabinet notes, documents relating to Public Accounts Committee, Republic Day/ Independence Day celebrations, investiture ceremony, audit paras, Consultative Committee and Standing Committee on Defence, Annual Report, papers to be laid in the Parliament and VIP references.

15.35 **Hindi Training:** Keeping in view the targets fixed for imparting training to the staff in Hindi, Hindi stenography and Hindi typing, maximum number of officials were nominated to these courses.

15.36 **Meetings of Hindi Salahakar Samitis:** A meeting of the Hindi Salahakar Samiti of the Department of Defence Production under the chairmanship of Raksha Mantri was held on June 11, 2007.

15.37 **Hindi Pakhwara:** A Hindi Pakhwara was organized in the Ministry of Defence from September 14 to 28, 2007. During the Pakhwara, 11 competitions were organized in which 176 officers and employees participated. There is a provision of awarding cash prizes and gift items to the participants taking part in various competitions. Similar Hindi Pakhwaras were observed in the three Services HQrs, all Inter-Service Organisations, Defence Undertakings and defence offices located all over the country.

15.38 **Inspections of various Defence Organizations by the Committee of Parliament on Official Language:** The first Sub-Committee of the Committee of Parliament on Official Language carried out official language inspections of a number of offices under the Ministry of Defence. For this purpose, the Committee visited a number of defence offices located at Delhi, Sahibabad, Mumbai, Jammu, Srinagar, Bangalore, Mysore, Ooty, Ahmadnagar,

Table No. 15.7

Annual Statement showing the representation of the persons with disabilities in services in MoD (excluding Department of Defence Production) (As on January 1, 2007)

	No. of employees				
Group	**Total**	**In identified posts**	**Visually handicapped**	**Hearing handicapped**	**Orthopaedically handicapped**
Group A	12822	3465	1	2	37
Group B	19251	1978	7	5	88
Group C	152388	6585	109	149	927
Group D	107507	4579	250	299	622
Total	**291968**	**16607**	**367**	**455**	**1674**

Table No. 15.8

Annual Statement showing the representation of the persons with disabilities in services in Subordinate Offices under Department of Defence Production (As on January 1, 2007)

Group	No. of employees				
	Total	**In identified posts**	**Visually handicapped**	**Hearing handicapped**	**Orthopaedically handicapped**
Group A	2197	1	-	-	1
Group B	14397	124	1	-	48
Group C	79195	1859	73	116	643
Group D	29024	817	103	111	331
Total	**124813**	**2801**	**177**	**227**	**1023**

Hyderabad, Vishakhapattanam, Ahmedabad and Vadodara.

WELFARE OF PERSONS WITH DISABILITIES

15.39 The representation of persons with disabilities in Group 'A', 'B', 'C' and 'D' posts in Ministry of Defence (excluding Department of Defence Production) and in Subordinate Offices under Department of Defence Production is presented in Table No. 15.7 and Table No. 15.8

ARMED FORCES

15.40 Provisions enshrined under Section 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.

All combatant posts are exempted from the Section 33 and 47 of the Persons with Disabilities (Equal Opportunities Protection of Rights and Full Participation) Act 1995

DEFENCE RESEARCH AND DEVELOPMENT ORGANIZATION (DRDO)

15.41 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.

DEPARTMENT OF EX-SERVICEMEN WELFARE

15.42 **Medical Care and Rehabilitation:** A number of soldiers become disabled during action or due to accidents and other causes and are invalided out from service. These Ex-Servicemen (ESM) are provided special medical care and training to become self – reliant. The care and rehabilitation is undertaken in specialized institutions which are supported financially by Kendriya Sainik Board (KSB).

(a) **Supply of Motorised Tricycles to ESM Paraplegics:** KSB provides motorized tricycle to the disabled ESM, subject to disability of more than 50% or recommendation of medical authorities.

(b) **Tool Kit for ex-servicemen Technicians**: Out of Armed Forces Flag Day Fund, tool kits are provided.

(c) **Grant to War Memorial Hostels:** The War Memorial Hostels were constructed with a view to provide shelter to the children of war widows, war disabled, attributable and non-attributable cases. Each regimental centre was provided by KSB non-recurring grant for construction and furnishing of War Memorial Hostels (WMH). Recurring grants are provided to the WMH 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 have 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 Mary Technical Institute (QMTI):** The Queen Mary Technical Institute for Disabled is a non-Government Organisation registered as an educational trust with the Dy Commissioner, Pune. The Institute 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.

16

ACTIVITIES OF VIGILANCE UNITS

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 its various units

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, 6 gazetted officers (Group 'A') were given major penalty and 4 were given minor penalty. Seven complaints received from CVC were investigated and brought to a logical conclusion.

All Departments/ Organizations/ Units under Ministry of Defence observed Vigilance Awareness Week in the month of November 2007 with the intention of emphasizing the importance of enhanced security and spreading awareness about the harmful effects of corruption.

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.

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 2007 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):** Ordnance Factories being

primarily a production organization, there are certain areas like procurement and quality assurance, which are sensitive from vigilance point of view and are to be under constant watch. Vigilance activities are geared to track down the irregularities and malpractices and engender probity and transparency in the system. At Ordnance Factory Board, probity and transparency in public dealings are as sacrosanct as the Organisational Mission.

16.7 The present vigilance set up is headed by Chief Vigilance Officer. He is supported by 2 Directors and 3 Group Vigilance Officers (GVOs).

16.8 For effective vigilance administration, the vigilance department has identified certain sensitive areas in the working of the organization, which need continuous attention and watch. They include procurement of materials, procurement of plant and machinery, execution of civil works, inspection and quality assurance, recruitment, etc.

16.9 For more transparency in the system and competitive rates, instructions have been issued to Factories for fresh registration of contractors for civil and electrical works and review of the registration of existing contractors. The CVC instructions regarding posting of all open tender notices on the website is being implemented. As a pre-tender mechanism to break cartel, it is being suggested to black list firms forming cartel. A system is being put in place to eliminate nearly half the number of firms forming cartel on the criteria of past performance. Instructions have also been issued for periodic vigilance audit of the system of payment of bills of contractors and suppliers and cases regarding the need to make the specifications in Tender Enquiries more objective and comprehensive covering all quality and cost parameters, to obviate post-tender complications. Factories are advised to stop the practice of accepting rejected items on price reduction. In case of exigencies of production or valid technical and commercial considerations, Factory should have the prior approval of Member concerned before accepting such material.

As a preventive vigilance measure, DPSUs have prepared an agreed list of officers of doubtful integrity in consultation with CBI. A close watch is being kept on the activities of those officers whose names figure in the list.

16.10 The Central Vigilance Commission's directions are being implemented in order to check the corruption in consultation with Central Bureau of Investigation. Regular as well as surprise inspections were conducted during the course of which few cases have been detected. Accordingly, the Vigilance Wing of the Board has registered 15 cases for enquiry. CBI also registered three cases.

DEFENCE PUBLIC SECTOR UNDERTAKINGS

16.11 As a preventive vigilance measure, DPSUs have prepared an agreed list of officers of doubtful integrity in consultation with CBI. A close watch is being kept on

the activities of those officers whose names figure in the list.

16.12 **Hindustan Aeronautics Limited (HAL):** All the divisions of HAL had focused mainly on preventive vigilance tasks under a full time Chief Vigilance Officer.

16.13 Regular as well as surprise inspections were conducted. During the year, a total of 1087 inspections were conducted and 13 vigilance cases initiated. The department has received 3 complaints from CVC and 60 complaints from other sources. 38 complaints, including 3 from CVC, have been taken up for investigation. The Vigilance Wing of the Company has registered 35 cases for enquiry. CBI has also registered 5 cases.

16.14 A saving of approximately Rs. 32.22 lakhs has been made through direct/ indirect recoveries. On the recommendations of the department, proper tender procedures were adopted, which resulted in an increase of Rs 5.8 crore in revenue at Airport Service Centre – HAL Airport.

16.15 As a part of proactive preventive Vigilance activities, regular classes are being conducted in all the Divisions to bring awareness amongst the employees regarding various Government/ Company policies, CVC guidelines, Rules and Procedures. As part of punitive vigilance, a total of 33 cases have been disposed of.

16.16 Intensive examination of high value purchases, Civil Works and Contracts have been carried out and discrepancies, procedural irregularities have been highlighted and systems corrected.

16.17 **Bharat Electronics Limited (BEL):** The vigilance set up in BEL is headed by CVO and is reporting to CMD. The CVO is assisted by 18 Vigilance Committees. The Vigilance Wing of the Company has registered 4 cases for enquiry.

16.18 **BEML Limited:** It is ensured that the company adheres to the guidelines issued by CVC in various aspects of functioning viz. purchase, construction, recruitment etc. BEML Ltd. has scrutinized 210 purchase orders of different values from all the Divisions and advised Management in streamlining the procedures in a more appropriate and meaningful way. The vigilance Department conducts System Audit and Chief Technical Examiner (CTE) Type Inspection in all the Divisions on random/ selective basis in order to verify whether systems and procedures are adequate.

16.19 The Vigilance Wing of the Company has registered 4 cases for enquiry.

16.20 **Mazagon Dock Limited (MDL):** The Vigilance Department of the Company is seen as a facilitator to ensure transparency in the Company's policies. Out of the 4 signed complaints, one complaint was closed after investigation and others are being investigated.

16.21 The Vigilance Wing of the Company has registered 5 cases for enquiry.

16.22 **Goa Shipyard Limited (GSL):** The Vigilance set up in Goa Shipyard Ltd is headed by a full-time Chief Vigilance Officer who ensures that the directions of CVC are followed and reports on the activity

are reported to CVC every month. Vigilance Complaint Boxes installed at various places in the premises of the company are opened every Monday.

In compliance of the guidelines of the CVC, GSL has begun making extensive use of its website for procurement of goods and services in order to bring in transparency and has adopted the Electronic Cash System (ECS) for payments.

16.23 In compliance of the guidelines of the CVC, GSL has begun making extensive use of its website for procurement of goods and services in order to bring in transparency and has adopted the Electronic Cash System (ECS) for payments.

16.24 The Vigilance Wing of the Company has registered one case for enquiry. CBI also registered one case.

16.25 **Garden Reach Shipbuilders & Engineers Ltd. (GRSE):** In line with the directive given by CVC, vigilance activities in GRSE Ltd. are aimed at advising the management in creating transparent procedures in all matters pertaining to public dealings as well as expenditure from Company's exchequer. All the orders/ guidelines issued from CVC/ CTE are given wide publicity. By adhering to these guidelines the number of vigilance cases has been kept under check. Many system-improvement measures were introduced as part of preventive action.

16.26 The Vigilance Wing of the Company has registered 6 cases for enquiry.

16.27 **Bharat Dynamics Limited (BDL):** Effective measures have been taken to improve Vigilance Administration and quality of commercial decision-making. At the instance of Vigilance department, e-procurement was implemented for purchases of 4-ton vibrators, which resulted in net saving of about Rs.26 lakhs to BDL. A system improvement was suggested for blacklisting consultants, in-charge of third party inspection, based on their non-performance.

16.28 The Vigilance wing of the Company has registered 2 cases for enquiry.

16.29 **Mishra Dhatu Nigam Limited (Midhani):** During the year, effective measures were taken to improve vigilance administration in the Company. The guidelines issued by Central Vigilance Commission on various issues are implemented in its true spirit and perspective.

16.30 The Vigilance Wing of the Company has registered 2 cases for enquiry.

DEPARTMENT OF DEFENCE RESEARCH AND DEVELOPMENT

16.31 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 all levels.

- Sensitization programmes and seminars bringing to fore the importance of proper, effective and optimum management of public funds and public resources.
- Surprise 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

IAF's Women Officer during Rupublic 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

Women Officer Cadets undergoing unarmed combat training at Officers Training Academy, Chennai.

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.

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.

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.

All the Naval Commands undertake regular programmes to encourage young women to opt for a career in the Indian Navy.

INDIAN NAVY

17.5 The Indian Navy first inducted women officers in 1992. Since then several women officers are serving across various units in the Navy. These officers are assimilated into the mainstream and their promotion prospects, training as well as career progression are at par with their male counterparts.

17.6 All the Naval Commands undertake regular programmes to encourage young women to opt for a career in the Indian Navy. This includes visits to Indian Naval Ships and Establishments.

INDIAN AIR FORCE

17.7 Induction of women as Short Service Commission (SSC) officers in flying, technical and non-technical branches in the Indian Air Force also commenced in 1992 and has been continuing since then. As on December 31, 2007, there are 764 women officers (including Medical and Dental officers) serving in the IAF.

17.8 As of now, women officers (except Medical Branch) are not being granted Permanent Commission. However, Government has approved second extension of SSC tenure up to 14 years on merit to all these women officers.

INDIAN COAST GUARD

17.9 Women are recruited as officers in General

The Best foot forward - Indian Navy's Contingent at Republic Day Parade

Duty and General Duty (Pilot/ Navigator) branches. The selection process for women is similar to that of male candidates. The women officers are posted in non-sea going posts. The Women officers in Coast Guard have the option to serve till superannuation.

DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION

17.10 DRDO is sensitive to the need with regard to empowerment and welfare of its women employees. It is ensured that women employees are accorded equal opportunities for enhancement of their skills and knowledge, fulfillment of their potential. Their contribution towards advancement of the organizational objectives is appreciated and duly recognized by the management. 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.

17.11 Similarly, various welfare measures have also been undertaken for the women employees in the Organisation. Crèches have also been opened in various DRDO laboratories/ establishments located all over the country.

DEPARTMENT OF DEFENCE PRODUCTION

17.12 **Hindustan Aeronautics Limited (HAL):** The strength of women employees in HAL is 1804 as on September 30, 2007. A sizeable number of women employees are in Supervisory and Executive cadres. All women employees are provided with all statutory welfare amenities and equal opportunities for advancement of their career.

17.13 **Bharat Electronics Limited (BEL):** BEL employs 2532 women in all the

Units and Offices of BEL, since electronic assembly work calls for a high level of precision work and women are generally considered to be the best exponents for meeting such demands. BEL has provided a variety of facilities and benefits to women employees.

17.14 **BEML Limited:** The Company has constituted a Women Cell in all the Production Units including Corporate Office to redress the grievances of the women employees, in line with Supreme Court directives in this regard. The total strength of women employees and officers is 209 and 97 respectively as on March 31, 2007.

17.15 **Mazagaon Dock Limited (MDL)**: A Women Cell in MDL has been set up to deliberate on ways and means of promoting the growth and development of women employees in MDL. The company is committed to provide a safe, healthy and congenial work environment to its women employees.

MDL is committed to provide a safe, healthy and congenial work environment to its women employees.

17.16 The company provides Creche facilities for the children of women employees under the careful supervision of two lady doctors and one female attendant.

17.17 **Garden Reach Shipbuilders and Engineers Limited (GRSE):** The Company believes in equality of opportunity and treatment at work between men and women. 164 women employees are engaged in GRSE in different capacities. The Company has established a Complaints Committee with NGO as third party representative and has instituted a Complaint Processing Mechanism as per the guidelines of the Supreme Court.

17.18 Efforts have also been made to empower and educate women outside the Company in matters of health and personal hygiene. GRSE has taken the initiative to train two local women each from 44 villages of Murshidabad District in basic mid-wifery course. This initiative will serve the dual purpose of empowering local women socially and economically and make available the medical services and facilities hitherto unavailable in these villages.

17.19 Health camp for local women and children are organized periodically for improving awareness on issues of health and personal hygiene.

17.20 **Bharat Dynamics Limited (BDL):** There are 220 Women employees working in BDL, out of which 39 are executives and 181 are non-executives. The Company has amended its Standing Orders and CDA rules to include Sexual harassment of Women employees at work place as misconduct. A "Complaints Committee" headed by a senior woman officer has been constituted. Rest rooms and Creche facility for children of women employees are provided.

17.21 **Mishra Dhatu Nigam Limited (MIDHANI):** The company continued in providing necessary platform for women employees to realize their potential to take personal responsibility for performing the job with commitment and take pride in what they do and contribute to achieve the

organizational goals. MIDHANI is extending all facilities as per statutes for the welfare of women employees.

17.22 Women employees both Executives and Non-Executives are nominated for various in-house and external training programmes. They have also been encouraged and sponsored for being trained as Worker teachers by the Central Board for Workers Education. The strength of women employees is 44 as on March 31, 2007.

DEPARTMENT OF EX-SERVICEMEN WELFARE

17.23 Department of Ex-servicemen Welfare deals with the rehabilitation and welfare of about twenty lakh ex-servicemen, four lakh widows of former 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 woman officer in the Kendriya Sainik Board.

GENDER BUDGETING CELL IN THE MINISTRY OF DEFENCE

17.24 With a view to promote Gender Budgeting efforts, a Gender Budgeting Cell (GBC) has been set up in the Ministry of Defence. The specific programmes/ activities of the organizations which have been identified by the Gender Budgeting Cell to give effect to the Government's commitment to gender sensitivity are as follows:-

(A) National Cadet Corps:

i) Increase in the strength of Girl cadets

ii) Proposal for additional 2 lakh cadets

iii) Induction of additional "Whole Time Lady officers (WTLOs)" and "Girl Cadet Instructors(GCIs)"

iv) Increase in the Training/ Adventure activities for Girl cadets

v) Increase in the number of girl cadets for various attachments

vi) Training in Information Technology (IT) for Girl cadets

vii) Increased participation of Girl cadets in "Social Welfare Programmes".

(B) DG Armed Forces Medical Services:

(i) Mother and child Health care programme

(ii) Maternal Welfare programme

(iii) Skill/ Competence Development programme for women employees

(iv) Gender sensitization Programme

(v) Increased participation of women employees in Medical Research Programme.

(C) Defence Research & Development Organization

i) Benefits from the projects in the area of "Life Science"

ii) Increased participation of women employees for training/ courses

iii) Increased participation of women employees for higher studies

iv) Increased participation for Technical Seminars/ Conferences

17.25 With the implementation of the above mentioned programmes/ activities, it is expected that the needs of women welfare, development and empowerment would be suitably addressed.

MATTERS DEALT WITH BY THE DEPARTMENTS OF THE MINISTRY OF DEFENCE

A. DEPARTMENT OF DEFENCE

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 foodstuffs 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 :-

(a) surveillance of maritime zones against oil spills;

(b) 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;

(c) Central Coordinating Agency for Combating of Oil Pollution in the coastal and marine environment of various maritime zones;

(d) Implementation of National Contingency Plan for oil spill disaster; and

(e) 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

1. Ordnance Factory Board and Ordnance Factories.

2. Hindustan Aeronautics Limited.

3. Bharat Electronics Limited.

4. Mazagon Docks Limited.

5. Garden Reach Shipbuilders & Engineers Limited.

6. Goa Shipyard Limited.

7. Bharat Dynamics Limited.

8. Mishra Dhatu Nigam Limited.

9. Defence Quality Assurance Organizations including Directorate General of Quality Assurance and Directorate General of Aeronautical Quality Assurance.

10. Standardisation of defence equipment and stores including Directorate of Standardisation.

11. Bharat Earth Movers Limited.

12. Development of aeronautics industry and co-ordination among users other than those concerned with the Ministry of Civil Aviation and the Department of Space.

13. Indigenisation, development and production of defence equipment and participation of the private sector in the manufacture of defence equipment.

14. Defence exports and international cooperation in defence production.

C. DEPARTMENT OF DEFENCE RESEARCH & DEVELOPMENT

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

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 APRIL 1, 2007 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 Shekhar Dutt, SM
From August 1, 2005 to July 31, 2007

Shri Vijay Singh
From July 31(AN), 2007 onwards

SECRETARY DEFENCE PRODUCTION

Shri K.P. Singh
From November 2, 2005 to December 31, 2007

Shri Pradeep Kumar
From January 1(AN), 2008 onwards

SECRETARY EX-SERVICEMEN WELFARE

Shri Satyanarayana Dash
From December 31(AN), 2007 to March 3, 2008

SECRETARY (DR&D) AND SCIENTIFIC ADVISOR TO RAKSHA MANTRI

Shri M. Natarajan
From August 31, 2004 onwards

SECRETARY (DEFENCE FINANCE)/ FINANCIAL ADVISOR (DEFENCE SERVICES)

Shri V.K. Misra
Financial Advisor(Defence Services)
From November 8, 2005 to September 7, 2006

Secretary(Defence Finance) / Financial Advisor(Defence Services)
From September 7, 2006 to June 30, 2007

Smt. N.K. Narang
Financial Advisor (Defence Services)
From July 1, 2007 onwards

CHIEF OF ARMY STAFF

General J.J. Singh, PVSM, AVSM, VSM, ADC
From February 1, 2005 to September 30 (AN), 2007

General Deepak Kapoor, PVSM, AVSM, SM, VSM, ADC
From September 30 (AN), 2007 onwards

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. 4 of 2007: Union Government (Defence Services) Army and Ordnance Factories

II. MINISTRY OF DEFENCE

Para 2.1 Delay in execution/ renewal of lease

Abnormal delays ranging from 06 to 36 years in renewal of leases of Defence land occupied by Madras United Club at Chennai, Indian Oil Corporation (IOC) at Jabalpur, State Bank of India at Avadi, IOC and Hindustan Petroleum Corporation Ltd. at Belgaum resulted in non-recovery of substantial amount of rent and premium of several crore of rupees, and loss of interest thereon, which was yet to be assessed. Such delays on the part of the Ministry and the Director General Defence Estates in deciding the cases of extension of lease and revision of rental are inexplicable and require investigation.

Para 2.2 Excess procurement of Hand Held Thermal Imager

Ministry of Defence procured Hand Held Thermal Imager (HHTI) initially through a contract signed with a foreign vendor during the year 1999 as pointed out in Para 4.1 of Report No. 7A of 2001 (Kargil Report) of CAG of India. Thereafter, the Ministry/ Army HQ procured HHTI through different sources including Bharat Electronics Limited (BEL).

Based on the scales as approved by the Ministry, Army HQ assessed a total requirement of 4062 of HHTI inclusive of a reserve stock of 10 per cent which have been observed by Audit that Army HQ adopted an incorrect no. of Battalions while calculating the requirement and resulted in assessment and procurement of 56 HHTI in excess of authorization valuing Rs. 10.16 crore.

III. ARMY

Para 3.2 Extra expenditure in purchase of Post Fence Metal Angle

Unjustified delay in processing and finalisation of tender by the Director General Ordnance Services resulted in expiry of

validity of bids necessitating subsequent retendering. Consequently 56867 pieces of Post Fence Metal Angles had to be purchased at a higher price resulting in avoidable excess expenditure of Rs. 52.34 lakh.

Para 3.4 Non-crediting of revenue into Public Fund

In violation of Ministry's orders of January 2001 and diversion of revenue amounting to Rs. 1.28 crore realized by three Army units/ establishments from shops run on Government land/ buildings was irregularly deposited into their Regimental Fund instead of Government Account.

Para 3.5 Recoveries/ Savings at the instance of Audit

Based on audit observations, Army units and formations recovered or agreed to recover irregular/ overpayments amounting to Rs. 7.09 crore on account of double increments, field allowances, transport allowance, encashment of leave etc. etc.

IV. WORKS AND MILITARY ENGINEER SERVICES

Para 4.1 Under-recovery of electricity charges

Audit Scrutiny of bills in respect of recovery of electricity charges from the paying consumers in Jaipur and Jodhpur area revealed that six out of nine GEs did not recover the element of fixed charges from their paying consumers as levied by the Electricity Supplying Agencies in these areas. This led to under-recovery of Rs. 88.42 lakh for the period April 2001 to September 2005. On being pointed out by Audit, an amount of Rs. (4.58+0.27) 4.85 lakh have been recovered and balance is yet to be recovered.

Para 4.3 Irregular sanction of special works

In contravention of the prescribed procedure, Army HQrs sanctioned and constructed 76 garages for married officers at Pune and Chennai Stations in excess of authorization resulting in irregular expenditure of Rs. 67 lakh.

V. RESEARCH & DEVELOPMENT ORGANISATION

Para 5.1 Sanction and execution of unauthorized works by DRDO

DRDO is dedicated to the design and development leading to production of weapon systems and equipment in accordance with the needs projected by the three services and the grants

voted by the Parliament for them are intended to be utilized economically and effectively for achieving these objectives.

Audit observed two cases of utilization of the funds for unauthorized works, one by 'construction of a Convention Centre in New Delhi' at a cost of Rs. 6.40 crore and second 'repair and improvement to a Municipal road at Bangalore' spending Rs. 64.13 lakh.

VI. Border Roads Organisation

Para 6.1 Faulty planning in construction of two bypass roads

Standard Operating Procedure (SOP) issued by Director General Boarder Roads in October 1999 stipulated that the estimates submitted by the Chief Engineer of the Project for obtaining sanction for road works should invariably specify the availability or environment/ forest clearance details of land acquisition etc apart from other details of the project.

In violation of above procedure, two Chief Engineers obtained sanction of DGBR for construction of roads to by pass Dimapur and Batala towns without ensuring complete acquisition of land and prior clearance of Forest and Railway authorities. As a result, partially completed by pass roads constructed at a total cost of Rs. 11.75 crore (Rs 3.71 crore in respect of Dimapur and Rs. 8.04 crore in respect of Batala) remained non-operational since March 2005 due to land disputes and delay in construction of bridges.

Para 6.2 Irregular payment of counter insurgency allowance

In contravention of the orders of Ministry of Defence for payment of counter insurgency (CI) allowance with effect from April 1, 1993, Army Officers and Personnel Below Officers Rank posted to Border Roads Organisation were paid CI allowance aggregating to Rs 2.99 crore though they were not actually engaged in the counter insurgency operations.

VII. Ordnance Factory Organisation

Para 7.2 Excess consumption of yarn

Ordnance Clothing Factory Shahjahanpur consumed excess raw material to the extent of 35-38 per cent of the authorization in the manufacture of socks during 2003-05, entailing a loss of Rs. 1.96 crore. No Board of Enquiry was constituted to investigate the reasons for the excess consumption.

Para 7.5 Recoveries at the instance of Audit

On pointing out the omission to avail of rebate or exemption

from payment of energy tax, the Ordnance Factory Ambernath and Ammunition Factory Kirkee recovered Rs. 1.17 crore from the respective Electric supply agencies.

PERFORMANCE AUDIT

DEFENCE CAPITAL ACQUISITION (ARMY)

A sound defence acquisition system ensures acquisition of capabilities sought for by the Armed Forces to meet the threat perception within a stipulated time and at an optimal cost.

Performance audit of the capital acquisitions pertaining to the Army with main focus on procurement through import revealed the following:

The capital acquisition planning in the Army suffered from delays and low fulfillment. Approvals of both the Long and Medium term plans were abnormally delayed. Percentage fulfillment of last three medium term plans varied from 5 to 60 per cent in respect of various Arms and Services of the Army.

There was lack of effective coordination among the Services viz Army, Navy and Air Force in procurement of common items/ capabilities resulting in Army resorting to independent procurement of common systems instead of planning joint procurement to obtain best value for money, reduce tendering cost and minimize processing time.

The acquisition process suffered from a major drawback of inaccurate formulation of Qualitative requirements (QRs). In 50 per cent of the procurement cases test checked, specifications were changed after issue of tender/ request for proposal (RFP). Deficiencies in QRs hampered selection of the optimum product and achievement of economy in procurement.

The process of technical and trial evaluation did not demonstrate adequate objectivity and fair play. In 60 per cent of the cases, only a single vendor was qualified after trial evaluation. Time taken for trial evaluation was unduly long and the time taken for preparation of the trial evaluation report was longer than the trials.

Identification of vendors in most of the capital acquisitions was inadequate. The number of vendors who responded to the RFP were too few thus restricting the competitive process in Army procurements. There was no system of vendor rating of the prospective suppliers.

There were inordinate delays in procurement through Fast Track Procedure thus defeating the very purpose of adopting such procedure on the grounds of urgency.

Internal lead time for normal procurements was also too high as 60 per cent of the cases took more than three years to sign the contract.

The number of repeat order was considerably high. In 50 per cent of the cases examined, procurements were made by placing repeat orders on the vendors from whom the equipment were purchased earlier. Due to repeat orders, economies of scale or increased volume of procurement

could not be exploited to negotiate better terms

Multiple agencies with dispersed centres of accountability resulted in lack of coordination, diffused accountability and delay.

Ministry has introduced revised Defence Procurement procedures in 2005 and 2006 incorporating some improvements in the procurement policy such as laying down time limits for finalisation of procurements, impact of which remains to be seen.

(Chapter-I of Report No.4 of 2007 Army and Ordnance Factories (Performance Audit)

Recruitment and Training of Personnel Below Officers Rank in the Army

Personnel Below Officers Ranks (PBOR) constitute more than 90 per cent of the total strength of the Indian Army. For the Army to remain combat ready, it is vital to correctly assess the manpower requirement, recruit the right candidates in a timely manner and train them adequately for induction into appropriate Arms and Services. A performance audit of manpower management of PBOR with thrust on Other Ranks (ORs), i.e. excluding Junior Commissioned Officers and focus on manpower planning, recruitment and training revealed the · following:

Due to incorrect assessment of manpower there was a mismatch between the authorization and actual manpower held. The deficiency of the PBOR in Army consistently decreased from 6.88 per cent in 2001-02 to an excess of 2.41 per cent over authorization in 2005-06 involving an additional liability of Rs. 524 crore in 2004-06.

Excess release of vacancies impacted the quality of training since the Regimental Training Centres (RTC) had to train recruits in excess of their designed capacities to the extent of 122 to 314 per cent.

The manpower requirements of various Units and Establishments of Army were determined adopting vintage norms, which did not conform to the technological advancements and changed scenario.

The system of review of Establishments by the Army Standing Establishment Committee (ASEC) for optimization of manpower was woefully inadequate as two-third of the establishments due for review, were not reviewed by ASEC during 2001-06.

The incidence of relegation of recruits increased from nine per cent in 2001-02 to 22 % in 2005-06.

There was significant deficiency of critical infrastructure and essential training equipment such as firing ranges, parade grounds, gymnasium, simulators, tanks and other vehicles at RTC of six Arms and Services test checked in audit.

Inadequate co-ordination among the various authorities resulted in significant delays in commencement of Basic Military Training, Technical Trade Training and dispatch of recruits to Units after the completion of training.

(Chapter-II of Report No.4 of 2007 Army and Ordnance Factories (Performance Audit)

Management to Transport in the Army

Transport is the lifeline of the troops during peace time as well as during operations. Class 'B' vehicles constituting personnel carrying/ load carrying and specialist vehicles provide mobility and logistic support to the Army. A performance audit, focusing on management of Class 'B' vehicles revealed the following:

Modernization of transport fleet in the Army was slow, as restructuring of the fleet of 'B' vehicles initiated in 1971 had not been fully implemented till 2006. The delay resulted in Army carrying on with the vintage vehicles for nearly three decades that were not only fuel inefficient but also did not match the changed tactical requirements and weapons and equipment profile.

The system of review of establishments by Army Standing Establishment Committee to right-size their manpower, vehicles and equipment was inadequate as only 34 per cent of the establishments due for review were reviewed by ASEC during 2001-06.

The information maintained by MISO about vehicle authorization and holding by various Units and Establishments was incomplete and unreliable.

Procedural delays and involvement of multiple agencies delayed issue of authorized vehicles to Units up to 29 months.

Army Headquarters was holding vehicles much in excess of their authorization to the extent of nearly 400 per cent by inducting, hiring, and attaching vehicles from lower units/ formations.

About 32,000 unserviceable vehicles were lying in depots awaiting disposal, resulting in unnecessary inventory carrying cost and loss of disposal value due to prolonged storage.

Chapter-III of Report No.4 of 2007
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 2006 (Report No.5 of 2007) was presented in both Houses of Parliament on May 14, 2007. The report included 21 paragraphs. Some of the important audit findings included in the Report are indicated below:-

I. Delay in replacement of obsolete radars in Air Force stations

Based on requirement projected by IAF, the Ministry in March 2003 contracted for acquisition of radars with associated equipment and spares at an aggregated cost of Rs 585 crore with transfer of technology from the foreign vendor. Acquisition of these critical air surveillance radars to replace obsolete radars was considerably delayed. The acquisition process also deviated from the prescribed procedures. Further, ten radars costing Rs. 251 crore received by IAF between March 2005 and August 2006 remained uninstalled due to non-completion of works services. Consequently, IAF air bases continue to operate flights with obsolete radars.

(Paragraph 2.1)

II. Refurbishment and modernization of an aircraft

Ministry concluded a contract in July 2001 with Original Equipment Manufacturer for Mid Life Upgradation of five maritime reconnaissance aircraft of the Indian Navy at a cost of Rs. 673.42 crore to avoid replacement of the entire fleet. Audit examination revealed that Mid Life Update Programme did not progress as per schedule owing to delays in finalisation of contracts for certain avionics, weapon systems and customer supplied equipment. Two aircraft refurbished at a cost of Rs. 269.37 crore were delivered after a delay of 25 and 16 months respectively. These aircraft are without essential avionics and weapon systems seriously limiting their operational capabilities.

(Paragraph 2.2)

III. Training of Naval Pilots Abroad

Indian Navy failed to synchronise training of pilots abroad with the acquisition schedule of the newly acquired fighter aircraft. Over projection of the requirement of the pilots to be trained, abroad resulted in avoidable liability in foreign exchange. The delays in finalisation of the deal also resulted in avoidable extra expenditure of Rs. 4.62 crore.

(Paragraph 2.3)

IV. Procurement of mine scanning equipment

The Navy adopted non competitive process for inviting bids in the case of acquisition of mine scanning equipment costing Rs. 12.76 crore. This had resulted in acceptance of higher price with avoidable expenditure of Rs. 3.07 crore. The delay in the installation of equipment resulted in loss of extended guarantee costing Rs. 9.81 lakh and also 20 per cent service life of the equipment.

(Paragraph 2.4)

V. Avoidable expenditure on repair and overhaul facilities of Main Fuel Control Units of an Aircraft

IAF failed to get the repair and overhaul facilities for main fuel control unit of an aircraft set up in a BRD validated by the OEM within the validity period of the contract as the concerned BRD could not undertake a sample repair of MFCUs even with trained manpower. Repair facilities created at an investment of Rs. 5.57 crore thus remained unutilized even after seven years of being set up. As a result 37 MFCUs were offloaded to the OEM for repair and overhaul at a cost of Rs. 18.38 crore and Ministry had to conclude another contract with the OEM for fresh validation and correlation of the facilities at a cost of Rs. 9.20 crore, which was avoidable.

(Paragraph 2.5)

VI. Extra expenditure on irregular grant of an Allowance

Air HQ failed to adhere to the prescribed procedure for sanction of counter insurgency allowance and paid excess amount towards the allowance to all the IAF personnel posted in State 'T' (except one region) instead of identifying and paying the allowance to the personnel actually taking part in such operations as stipulated in the Government orders.

(Paragraph 3.1)

VII. Avoidable extra expenditure in procurement of spare aero-engines

Flaws in technical evaluation of aero-engines coupled with failure in adhering to provisioning norms by Air HQ and poor planning in procurement of spare aero-engines for a fuel refueller aircraft resulted in avoidable extra expenditure of Rs.6.90 crore on subsequent procurement.

(Paragraph 3.2)

VIII. Injudicious procurement of prime movers

Poor planning, lack of foresight in anticipating administrative problems and deficiency in the procurement process adopted by IAF led to procurement of prime movers without successful fabrication of trailers resulting in unproductive expenditure of Rs. 48.65 lakh on procurement of ten prime movers and wasteful expenditure of Rs. 4.37 lakh on account of unsuccessful fabrication of trailer proto type. Six years after the procurement, the prime movers have neither been disposed of nor put to any alternative use resulting in blocking of funds.

(Paragraph 3.3)

IX. Unnecessary procurement of NATO suits

Air HQ unauthorisedly imported NATO suits for eight years. Even after Ministry approved its introduction, Air HQ continued its procurement from the same foreign vendor without inviting competitive tenders although NATO suits was not a proprietary item. Failure to follow the basic provisioning norms also entailed an unnecessary procurement of NATO suits worth Rs. 3.21 crore.

(Paragraph 3.4)

X. Operation of an auditorium on commercial basis by IAF on prime defence land without sharing earnings with the Government

IAF permitted running of an auditorium as a commercial venture on prime defence land and no financial benefits were being passed on to the Government as per MoD instructions even though manpower and other resources are being diverted from IAF to run the facilities. While the Government has incurred a loss of revenue to the extent of Rs. 8.02 crore on account of non recovery of rent, it incurred unauthorized expenditure of Rs. 1.37 crore for creating a supernumerary establishment for the auditorium and loss on account of consumption of electricity, which was yet to be quantified.

(Paragraph 3.5)

XI. Extra expenditure in conclusion of repair contract

IAF sustained a loss of Rs. 1.52 crore owing to its failure to avail of higher rate of discount on account of conclusion of two separate contracts within a short time span of five months instead of clubbing the requirement for concluding a single contract.

(Paragraph 3.6)

XII. Non-utilisation of XBT Probes

Poor inventory management coupled with failure to assess effectiveness of the XBT

Probe held as War Reserve by the Indian Navy led to non-utilisation of 1925 XBT probes within their shelf life entailing an infructuous expenditure of Rs. 47.16 lakh.

(Paragraph 4.3)

XIII. Delay in Development of a Sonar System

A user driven staff project for indigenous development of Sonar system with a definite time-frame remained incomplete even after time overrun of over four years owing to improper planning, lack of co-ordination and poor monitoring of the execution of project. The delays led to upward revision of the project cost by Rs. 19.97 crore of which an expenditure of Rs. 9.94 crore was avoidable. Further, non-availability of contemporary technology to Indian Navy resulted in commissioning of four frontline warships without Sonar capability.

(Paragraph 5.1)

XIV. IT Audit of Air Force Central Accounts Office, New Delhi

IT audit of Air Force Central Accounts Office, New Delhi disclosed overpayment of Air Worthiness allowance of Rs. 8.20 crore to Airmen due to inadequate check codes.

(Paragraph 6.1)

XV. Audit of Integrated Pay Accounting and Disbursement System (IP ADS) in Naval Pay Office, Mumbai.

Officers and sailors borne on the complement of a Naval ship are not entitled to Hardlying Money (HLM) when they are required to stay ashore during the period of refit/ repair of the ship. Audit examination of the data of Integrated Pay Accounting And Disbursement System of the Naval Pay Office revealed that owing to failure of internal control, the officers and sailors borne on the complement of the ship continued to draw HLM even during the period a ship remained by shore for refit/ repair in contravention of the rule resulting in overpayment to the extent of Rs 1.77 crore.

(Paragraph 6.2)

Operation and maintenance of an aircraft fleet in the Indian Air Force

Aircraft "A" are medium tactical transport aircraft primarily used for transport of troops and cargo; para trooping; supply dropping and casualty evacuation. IAF contracted purchase of 118 such aircraft and inducted the same into squadron service between 1984 and 1991. Facilities for maintenance of airframes were created at BRD "X" and for aero-engines at BRD "Y". A performance audit of the aircraft fleet's operation and maintenance during the period 2001-06 was conducted. The audit focused on operational aspects such as achievement of flying tasks; assigned roles; serviceability targets and availability of operational manpower. Besides, with regard to aircraft maintenance the focus was on adequacy and efficient utilization of repair and maintenance facilities existing in the IAF for the aircraft.

The important audit findings are:

- The serviceability levels achieved by the aircraft fleet were low and the percentage of Aircraft on Ground

(AOG) was high indicating low efficiency of operation of the fleet. In comparison to the capacity of the aircraft, payloads carried were also low.

- Aircraft were predominantly used for routine and miscellaneous tasks at the expense of primary air maintenance and training tasks.
- Eight aircraft were modified for "VIP Role" without approval of government thereby diverting them from operational tasks. Further, the modification also lacked justification as a separate specialized communication squadron with adequate aircraft for use by VIPs already existed.
- Para trooping is one of the primary tasks of Aircraft 'A'. In the Para trooping School and in a training center set up to impart training, most of the courses showed shortfall in achievement of targeted output. Envisaged conversion courses for which six aircraft were provided to the School, were not held at all during the past five years.
- There were delays in conducting overhauls and repair both by the engine and airframe overhaul facilities.
- BRD 'Y' failed to complete a large number of allotted repair and overhaul tasks during the last 5 years due to shortage of spares which had resulted from delayed and inadequate provisioning. Consequently, 120 engines had to be sent abroad to the OEM for overhauls at a cost of Rs. 64.12 crore. Besides, several of the engines overhauled by this depot had to be prematurely withdrawn.
- Establishment of repair and overhaul facilities for airframes at BRD 'X' was considerably delayed and some facilities are still to be established. Further, a project for creating facilities for overhaul of turbo-generators at HAL, Koraput, approved in 2001, is yet to be completed as of October 2006.
- There were delays in completing second line servicing in a significant percentage of cases due to shortage of spares.
- Though, indigenisation of mandatory and non-complex spares at BRDs has made significant progress, commercial exploitation has been limited.
- Inability to obtain technology for life extensions of engines beyond 4000 hours would make IAF completely dependent for overhauls on the OEM in a few years.

Provisioning and procurement activities at HQ Maintenance Command (HQMC) and Depots

Provisioning and procurement together constitute the cornerstone of IAF's materials management system. Earlier, all provisioning and procurement activities of stores were centrally undertaken by Air HQ but in September 1995, Government accorded sanction for transfer of provisioning/ procurement activities of stores to HQMC and Depots in a phased manner. Audit examined provisioning and procurement activities undertaken by HQMC, three Base Repair Depots (BRDs) and three Equipment Depots (EDs) during 2001-2006.

Significant audit findings are:

- There was abnormal delay in implementation of the plan for decentralization of procurement activities to Maintenance Command and Depots. Even after more than a decade, half of the provisioning and procurement activities continue to be centrally controlled by Air HQ.
- Provisioning reviews conducted by HQMC for making procurements under delegated powers were delayed. HQMC failed to complete 70 per cent of the review work within the prescribed time schedule.
- Procurement from Government agencies was low and HQMC procured items from trade at the rates higher than those offered by the government agencies entailing avoidable expenditure of Rs. 2.33 crore.
- There was lack of competitiveness in the procurement process due to limited vendor base being maintained by HQMC and Depots.
- Indiscriminate changes in specification of clothing and general items of stores were made without reference and approval of the government. These changes resulted in reducing competition and avoidable extra expenditure and delay in procurement.
- Excessive local purchases of clothing and MT stores were undertaken indicating HQMC not able to provide the required items in time to the dependent IAF units/ formations.
- Poor level of demand satisfaction and large number of outstanding AOG demands and other demands for spares disclosed weakness in provisioning activities conducted by HQMC.
- Project for online management of material inventory started in 1995 suffered from time and cost over-runs and is yet to become fully functional.
- Devolution of provisioning and procurement responsibilities to HQMC was slow and halting and as such IAF was deprived of benefits envisaged from such devolution.

Management of Equipment in Naval Dockyards, Mumbai and Visakhapatnam

- Naval Dockyards, located at Mumbai and Vishakhapatnam, primarily undertake "refits" and repairs of naval ships and submarines. These Dockyards hold a large number and diverse range of equipment to conduct repairs and refits. Effective management of equipment thus has a critical bearing on the operations of these dockyards. A performance audit was conducted to study various aspects of the management of these equipment such as maintenance, operation and utilization, adequacy, replacement and augmentation of installed equipment in the dockyards. The period covered by this study is five years starting from 2001-02. The principal findings arising from the audit are given below:
- Funds provided for purchase of equipment were not fully utilized by the dockyards.

- Several old and obsolete equipments were awaiting replacement due to shortcomings in the planning and contracting of equipment replacement.
- There were delays in creating repair and maintenance facilities for newly acquired naval vessels.
- Maintenance of equipment in both the dockyards was reactive to breakdowns and defects. Breakdown repairs took considerable time to complete even where these were off-loaded to trade.
- The dockyards undertook procurement of spares only when repairs were on hand. These procurements, however, took considerable time to complete.
- Records of machine operation and use were either not maintained or inadequately kept. Consequently, performance of equipment could not be monitored effectively by the dockyard managers.

MINISTRY OF DEFENCE

Audit Report No.9 of 2007 (Performance Audit)

Bharat Earth Movers Limited

Performance of Engine Division

To meet the requirement of engines for the production of Earth Moving (EM) equipment, the Government accorded approval (1988) to establish manufacturing facilities of engines at the Mysore Complex of the Company. The first phase of the project was commissioned in April 1991 and the second phase (with establishment of Flexible Manufacture System) in March 1998. The project envisaged manufacture of 2400 engines in the sixth year of commencement of production. A performance audit of the Engine Division was carried out and the major audit findings were as below.

The Company fixed the annual production targets between 15 and 57 per cent of the installed capacity during 2000-01 to 2005-06. However, the Company could not achieve even these low targets as there were shortfall of 23 and 27 per cent in achieving these targets during 2003-04 and 2005-06 respectively.

The Company resorted to manufacture of EM equipment with engines of other make despite availability of in-house capacity. As a result, the Company could utilize only 14 to 42 per cent of the installed capacity for captive consumption during 2000-01 to 2005-06.

The Company could not recover even the material cost in nine out of twenty models of engines produced during 2005-06. The excess cost incurred by the Company worked out to Rs. 2.09 crore. The manufacturing cost was higher mainly due to high cost of raw material and components, under utilisation of installed capacity and low volume of production for captive consumption.

The diversification efforts (1998-99) made to manufacture and sell Company's engines for use in Diesel Generator sets were not successful resulting in loss of Rs. 2.49 crore besides accumulation of unsold stock valuing at Rs.3.14 crore as on March 31, 2006. Another diversification effort made (2004-05) to use the Company's engines in compressor application was also not successful as there was no demand for the

compressors made by the Company in the market.

(Chapter-III)

Hindustan Aeronautics Limited

Outsourcing activities

The Company had been outsourcing components, tools and assemblies since 1980, However, a major thrust to outsourcing was given from 2002-03 by formulating (April 2002/ March 2003) the procedures and systems for outsourcing. The Company had outsourced works amounting to Rs.625.61 crore which worked out to 3.72 per cent of the turnover of Rs.16795 crore during 2002-03 to 2005-06. A performance audit was taken up to review the outsourcing activities in the Company during the period 2001-02 to 2005-06.

The major audit findings were as below.

- Determination of available in-house capacity, which was vital for deciding quantum of outsourcing, was not realistic and uniform among divisions. In-house capacity was not properly utilized before resorting to outsourcing. The method adopted for working out savings from outsourcing was also not uniform.
- A systematic database of the items to be outsourced had not been developed.
- The vendors list was not updated regularly, mandatory documents during registration process were not obtained and orders were placed on unregistered vendors in certain cases.
- Developed vendors were not nurtured by placing continuous orders. Dependence on limited sources and non-development of alternative sources were also noticed.
- Placement of orders in excess of capacity of the vendors was noticed. Repeat orders were being placed on selected vendors in spite of poor performance.
- It was noticed that orders were split, repeat orders were placed without entering into any Long Term Agreement with vendors and adequate security was not taken for the raw material issued. There were also lacunae in the system of physical verification and reconciliation of material lying with vendors.

(Chapter-IV)

Audit Report No. 11 of 2007 (Regularity Audit)

Bharat Electronics Limited

Due to improper agreement with sub-contractor, the Company suffered loss of Rs.3.19 crore in addition to foregoing discount of Rs.1.04 crore due to nonavailment of the discounted price as per. agreement.

(Para 8.1.1)

Garden Reach Shipbuilders and Engineers Ltd.

The objective of constructing a pontoon was not achieved despite expenditure of Rs.5.32 crore.

(Para 8.2.1)