1

THE SECURITY ENVIRONMENT

Vigil at Siachen

India remains fully committed to maintain peace and stability with its neighbours in the region and in the global context through effective diplomacy, backed by credible military deterrence.

1.1 India has taken suitable steps to meet the challenges and opportunities arising out of its rapidly changing security environment. While our peace effort with Pakistan has maintained strategic stability in our west, developments in Nepal and Bangladesh during the course of the year have caused concern, mainly in the border regions with these countries. A concerted diplomatic effort with the two governments has brought about a degree of understanding and India continues to work together with all its neighbours in ensuring peace and stability in our region. The global situation has mirrored our regional position. Concerns regarding terrorism, including state sponsored terrorism, proliferation of weapons of mass destruction, trafficking of narcotics, small arms and human beings, and the increasing profile of non-state actors willing to use violence under the garb of religious fundamentalism to press ahead with their political agenda has increased in the year under review. The multiple terrorist bomb blasts in London and Delhi, the continuing instability in Iraq, the nuclear stalemate on the Korean Peninsula, and the unsatisfactory situation regarding the proliferation activities of the past have made Indian planners take into account these unsavoury aspects. The Indian Ocean Region has assumed enormous importance considering our energy requirements. The oil flow in this region is estimated at 15.5 million barrels per day through the Persian Gulf, 10.3 million barrels per day through the Malacca Straits and 3.3 million barrels per day through the Babel-Mandab (Gulf of Aden). This traffic raises security as well as environmental concerns. The Ministry of Defence has contributed to India's overall reaction to these growing challenges by keeping its armed forces at the highest levels of defence preparedness and the ability to react with swift counter measures.

1.2 Progress towards a truly multi-polar world, with India as one of the poles has been slow but steady. China's emergence during the year as a major importer and influencing factor in the volatile energy markets

India continues to keep its armed forces at the highest levels of defence preparedness with the ability to react swifty.

and as a country that is looking to park its excess capital in various projects across the globe, including in the US have made an initial impact, especially in the US. Our region is also influenced by such developments. The difficulties emerging in the enlargement and consolidation process of the European Union caused some set back in its effort at providing leadership in Europe. Russia's emergence as a major energy supplier and its willingness to protect its interests in its 'near abroad' have also impacted on the global security and strategic situation. The change of leadership in Palestine and Israel's increasing closeness to Egypt and Jordan were expected to reduce tensions in the Middle East. However, internal politics and instability in Israel, the inability of the former Palestinian regime to fully control its sub-structures and the growing tension between Syria and Lebanon have negated most of the positive developments in the region. The security situation in Iraq continues to be worrisome despite significant political steps taken such as the adoption of the Constitution and elections to Parliament conducted recently. The promise of the Gleneagles Summit to help the poorest of the poor, most located in

INS Beas patrolling high seas

The global community needs to focus more on the problems faced by the least developed countries, or else it will only add to global security and stability concerns.

Africa remains to be transmitted into effective results. Much of the year was turmoiled by the intransigence of the developed countries to reduce their huge agricultural subsidies. However, the 2005 year-end Hong Kong meeting of the WTO showed promise that the Doha Round of Talks may yet conclude with some forward movement. The global community needs to focus more on the problems faced by the least developed countries, or else it will only add to global security and stability concerns.

1.3 Economic growth and all-round development are an important component to India's overall security and stability. India enjoyed another year of handsome growth at over 7%. Trends in the second half of the year indicate that the country is likely to achieve a rate of 8% in 2005-06. Despite some initial concerns about a monsoon deficit and subsequent floods in the northern, western and southern parts of the country, agriculture has recorded significant growth to match India's good performance in the industrial sector and its double digit growth in the services sector. Social development in the areas of health, education, empowerment of women and transparency has made significant progress during the year. The Right to Information Act is being implemented and is a major revolutionary change in the accountability of India's public delivery systems. In the Ministry of Defence, a transparent and fair procurement procedure has been further strengthened in the form of Defence Procurement Procedure (DPP) 2005. Appreciation of India's emerging economic, political and military capabilities and its position as a responsible power, including in the areas of nuclear capability has led to a significant upscale of India's ties with the global community, including in the field of defence.

1.4 A significant feature of the year under review was the substantial up scaling of international cooperation in mitigating disasters, natural or man-made. The Asian tsunami havoc would have been far more painful for those affected had not the global and regional powers joined hands to reach relief, succour and rehabilitation to those in need in an efficient and timely fashion. The use of national defence forces and assets in a joint manner, on a massive scale has triggered new political and defence dimensions. India's role in quickly mobilizing its defence and civilian assets, not only for those affected in the country but also for the millions in nearby Sri Lanka, Maldives and other neighbours in

India's emerging economic, political and military capabilities and its position as a responsible power, including in the areas of nuclear capability has led to a significant upscale of India's ties with the global community, including in the field of defence.

Asia has catapulted the country to a leading seat in major global disaster relief initiatives. Such 'jointness' and global response to disasters was witnessed repeatedly through the year, most significantly after Hurricane Katrina in the United States and the horrifying earthquake in parts of Pakistan and India.

1.5 Intensive interaction took place between India and its major defence partners, including France, Israel, Russia, South Africa, UK and the USA. Significantly, Raksha Mantri Shri Pranab Mukherjee, visited both Russia and the USA during this period leading to new levels in our defence relations with the two strategic partners. The signing of agreements for the P-75 submarine contract in October 2005 and subsequent operationalisation of the project was a major achievement with France. The Hawk Advance Jet Trainer (AJT) project with the UK is proceeding smoothly and as per schedule. Projects under implementation with Israel are continuing and the two sides are looking at means to step up their defence partnership. In tune with its philosophy of maintaining and strengthening defence relationships

INS Aditya and INS Mysore with USS Chafee during Joint Exercise

Strategic defence dialogue has assumed a significant role in the defence partnership between India and a number of countries leading to greater joint partnership towards preparations for a globally coordinated initiative to fight against the menace of terrorism, proliferation, trafficking, piracy and the nefarious activities of non-state actors.

with international partners as part of India's contribution to global peace, security and strategic stability, the Ministry of Defence has significantly stepped up its defence ties with a wide range of countries across the globe. While concentrating on the immediate and neighbouring countries, as also countries in the Indian Ocean Region (IOR), the Ministry has also encouraged further development of our nascent ties with the countries of Africa, Latin America, Central Asia, Southeast Asia and Northeast Asia. During the course of the year Ministry of Defence signed five defence related agreements and Memorandum of Understandings (MOU), with its international partners, in addition to various working level documents, including Protocols negotiated and signed by the MOD and the three Services for holding joint exercises, training programmes, equipment supply, etc. Strategic defence dialogue has assumed a significant role in the defence partnership between India and a number of countries. Such exchanges have led to greater joint partnership towards preparations for a globally coordinated initiative to fight against the menace of terrorism, proliferation, trafficking, piracy and the nefarious activities of non-state actors. India's commitment to UN-led peacekeeping operations remains unwavering and we have expanded our role by agreeing to contribute troops towards the UN operations in the middle-east.

1.6 The process of attaining peace and stability with Pakistan has continued with the completion of the second round of the composite dialogue and the third round which has commenced. The ceasefire along the International Boundary (IB), the Line of Control (LOC) and the Actual Ground Position Line (AGPL) in Siachen in force since November 2003 has held for over two years, setting a new milestone in the process. The year saw significant progress in people to people oriented confidence building measures, such as the start of the Srinagar-Muzaffarabad bus service despite violent terrorist attacks against the service in the initial stages. A new service on the Amritsar-Lahore sector was also started subsequently. The Thar Express train service on the Monabao-Khokrapar sector started on February 18, 2006. In the wake of the earthquake in parts of Jammu and Kashmir, India and Pakistan cooperated to open crossing points

Vigilant Soldier at the International Borders

for movement of people and relief material over the LOC. On the technical side the agreement on pre-notification of missile tests close to the border signed during the External Affairs Minister's visit to Islamabad in October 2005 and the agreement between the two Coast Guards to establish a communication link in order to quickly mitigate issues concerning fishermen who stray across each other's maritime boundaries and to prevent smuggling activities, constitute building blocks in the process of confidence and trust building. On the Siachen issue, the Defence Secretaries of the two countries met in May 2005 and held frank and constructive discussions with a view to taking the process forward. During the visit of the External Affairs Minister, the two sides agreed to continue their discussions so as to arrive at a common understanding. India's peace and tranquillity effort with Pakistan on the border, has however failed to significantly alter the situation on the ground in the rest of Jammu and Kashmir. There has been some decrease in the number of infiltration attempts from across the border, mainly due to heightened vigilance on the part of our military forces deployed, the completion of fencing and lighting along the LOC and related measures. Attempts at infiltration continue and the infrastructure in Pakistan has not been dismantled.

The level of violence in Jammu and Kashmir, which is resonating in other parts of the country, such as the October-end serial bomb blasts in Delhi, continues to be a matter of utmost concern.

1.7 Developments in Afghanistan, where peace and security outside of the Kabul region remains elusive, are a matter of direct concern to India. The inability of the authorities on the ground to stem the growing trade in narcotics emanating out of this region and reportedly funding of terrorist activities, which impact directly on India, is also of serious concern. The admittance of Afghanistan in to the SAARC fold is acknowledgment of the reality that the country has always been a significant and vibrant member of this region. India's continuing commitment towards the rehabilitation and rebuilding of Afghanistan was forcefully enunciated by the Prime Minister Dr. Manmohan Singh, during his visit to Kabul. India has only a small role in defence cooperation with the completion of the supply of 300 vehicles to the Afghan Army. Some training measures to be availed of in India are also under discussion. India stands ready to do more to assist Afghanistan, including in the defence sector. In keeping with India's stated policy of assistance to neighbouring countries, India will limit the same to what the recipient is comfortable with. The Indian Border Roads Organisation (BRO) is building a 218 km road in Afghanistan from Zaranj to Delaram. Work on the project commenced in November 2004 and is planned for completion in three years.

India is closely monitoring the rise of Islamic fundamentalism as well as the increasing incidents of terrorism and political violence with its attendant repercussions on the security of India.

1.8 The security situation in Nepal has not taken a turn for the better despite the Nepalese Monarch's takeover in February 2005, apparently in order to check the growth of the Maoist movement in Nepal and the negative effect on trade and business due to misadministration. India's consistent position has been that the constitutional framework adopted in Nepal, consisting of the Monarch and a multiparty democracy should be strengthened. India's ties with the Royal Nepalese Army in areas such as defence training continue. The question of supply of lethal weapons to Nepal, which were halted after February 1, 2005, remains under constant review.

1.9 The rise of Islamic fundamentalism in Bangladesh as well as the increasing incidents of terrorism and political violence with its attendant repercussions on the

India continues to support a peaceful and negotiated settlement of the ethnic issue that meets the just aspirations of all communities of Sri Lanka.

security of India is being closely monitored. India's desire to have a stable, friendly and cooperative relationship with Bangladesh as well as our concerns have been articulated at the highest political level. Prime Minister Dr. Manmohan Singh held talks with the Bangladesh Prime Minister Begum Khaleda Zia on the sidelines of the SAARC Summit in Dhaka. Our Ministers of Petroleum and Natural Gas, External Affairs, Water Resources and Commerce and Industry have all travelled to Dhaka within the year, expressing our desire to address in concrete terms, issues of concern to Bangladesh and our own economic and energy interests in that country. A stable, prosperous, democratic and secular Bangladesh is as much in India's interest as it is in Bangladesh's own interest. The Bangladesh Government has been requested to seriously address our concerns on illegal migration and activities of Indian insurgent groups (IIGs), which impact significantly on our security scenario in those regions, which share a common border with Bangladesh.

1.10 Our existing close and friendly ties with Sri Lanka have been reinforced through close contacts and intimate dialogue with the new Government of Sri Lanka. India remains committed to the unity, sovereignty and territorial integrity of Sri Lanka. India continues to support a peaceful and negotiated settlement of the ethnic issue that meets the just aspirations of all communities. We have an abiding interest in the security of Sri Lanka. The ambivalent stand displayed by the leadership of the LTTE and its refusal to back a clear-cut peace and development formula does not contribute towards Sri Lanka's peace and security effort. It is India's hope that all sides will display the political maturity needed to bring about lasting peace and prosperity in Sri Lanka.

1.11 With frequent high level exchanges between the two countries, including the visit of the Chinese Premier Wen Jiabao to India in April 2005, the process of building mutual trust and understanding gained momentum and India-China relations diversified across a wide range of areas. The rapidly growing trade and economic exchanges between the two countries pointed towards the potential for mutually beneficial cooperation. The signing of the "Protocol on Modalities for the Implementation of Confidence Building Measures in the Military Field along the Line of Actual Control in the India-China Border Areas" has contributed to the

maintenance of peace and tranquillity in the border areas. Military exchanges maintained a positive momentum with the visit of the Chinese Chief of General Staff, several functional visits, training delegations and a joint naval exercise off Kochi. India sent observers to the China-Russia joint exercises in October 2005 at the invitation of China. While positive trends of India-China relations are encouraging, the two sides need to proactively address all outstanding issues, including the boundary question, through peaceful means. The agreement on political parameters and guiding principles for a settlement of the boundary question, signed during the Chinese Premier's visit and the on-going talks between the Special Representatives on the boundary question are important steps in that direction. China's military modernisation, with sustained double digit growth in its defence budget for over a decade, as also development of infrastructure in the India-China border areas, continues to be monitored. Close defence exchanges and nuclear and missile cooperation between China and Pakistan continue to elicit concern.

1.12 Our close relations with Bhutan were maintained during the year. The Crown Prince of Bhutan participated in a ten-month senior military-civil officials programme held in the National Defence College (NDC), New Delhi.

1.13 With Myanmar, military ties have been stepped up during the course of the year, to keep in tandem with our growing political and economic ties, including in the development of major infrastructure projects in that country. The Chief of Army Staff visited Myanmar towards end of the year and the Chief of Naval Staff in January 2006, which gave a further fillip to our defence relationship with the country. Myanmar's cooperation in combating Indian insurgent groups (IIGs) operating in its territory is useful in maintaining the security situation in the northeastern parts of the country where several insurgent groups operate and move rapidly towards neighbouring countries when counter insurgency operations are held by the Indian armed forces and local authorities.

1.14 At the regional level, India reiterated with renewed vigour, its commitment to the SAARC process. India's entry as an observer in the Shanghai Cooperation Organisation (SCO) shows its ability to integrate with its neighbourhood. India has also taken the lead in giving concrete shape to economic and social cooperation by its role in the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), a regional bridge between South Asia and Southeast Asia. We have pursued

purposefully dialogue and confidence building through cooperative security at the ASEAN Regional Forum (ARF).

INTERNAL THREAT TO SECURITY

1.15 India also continues to face internal threats from insurgencies fanned by ethnic and tribal chauvinists' desire to achieve autonomy, left wing radicalism and extremism motivated by prevailing socio-economic deprivation and communal conflict encouraged by religious fundamentalism and caste conflicts. In the year under review, the rise of left wing radicalism, and their use of increasingly sophisticated weapons, equipment and destructive capabilities have kept our armed forces engaged with their civil counterpart.

PEACEFUL USES OF NUCLEAR ENERGY

1.16 India has embarked on a deliberate mission to enlarge the scope of use of nuclear energy for peaceful purposes, including for generation of power. Driven by our energy needs, India entered into a dialogue with the United States and the Nuclear Suppliers Group (NSG) for unhindered access to nuclear technology and material for peaceful purposes like generation of electricity. The US Administration has

IAF Aircraft at Siachen

India is fully committed to the twin policies of no territorial ambition, and no export of ideology.

initiated steps to legally facilitate transfer of nuclear technology and material to India. Talks on this issue and steps needed to be taken in order to facilitate such transfers continue. India has also approached the NSG to relax its regime against such transfers to India. During the course of the year, talks were held with a number of countries, including Russia to make further progress in the matter.

CONCLUSION

1.17 India remains fully committed to maintaining peace and stability with its neighbours, in the region and in the global context too. This is sought to be achieved through a combination of defence preparedness, unilateral restraint, confidence building dialogue, and expanding bilateral and multilateral interaction. Effective diplomacy, backed by credible military power is India's preferred means to meet the multiple threats and growing challenges in the region and globally. The country's force postures remain defensive in orientation, while its nuclear policy is characterised by a commitment to no-first-use, moratorium on nuclear testing, minimum credible nuclear deterrent and rejection of entering into an arms race. India remains fully committed to the twin policies of (a) no territorial ambition, and (b) no export of ideology.

2

ORGANISATION AND FUNCTIONS OF THE MINISTRY OF DEFENCE

President with Naval Commanders

A new Department of Ex-Servicemen Welfare has been set up to give focussed attention to the welfare programmes for ex-sevicemen and their dependents.

HISTORICAL BACKGROUND

2.1 The Government of the East India Company, with Headquarters at Calcutta, created the Military Department in 1776. Its main function was to sift and record orders relating to Army, issued by various Departments of East India Company and to maintain a list of Army personnel.

2.2 After Charter Act of 1833 came into force, the Secretariat of Government of East India was reorganised into four Departments, of which Military Department was one. The Army in the Presidencies of Bengal, Bombay and Madras was unified in 1895. For administrative convenience, it was divided into four Commands viz. Punjab (including the North West Frontier), Bengal, Madras (including Burma) and Bombay (including Sind, Quetta and Aden).

2.3 Crown of England exercised the control over Indian Army through Secretary of State for India and Governor General-in-Council. Two Members, one supervising the administrative and financial matters of the Army and other (the Commander-in-Chief) responsible for Military operations, represented the affairs of the army in the Council. The Army Department was renamed as Defence Department in January 1938, which in turn became Ministry of Defence under a Cabinet Minister in independent India in August, 1947.

POST-INDEPENDENCE ORGANISATIONAL SET-UP AND FUNCTIONS

2.4 On August 15, 1947, each Service was placed under its own Commander-in-Chief. Under the Constitution, the Supreme Command of the Armed Forces vests in the President. In 1955, the title of Commander-in-Chief was abolished and the three Service Chiefs were designated 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.

The principal task of the Ministry is to obtain policy directions of the Government on all defence and security related matters and communicate them for implementation to the Services Headquarters, Inter Service Organistions, Production Establishments and Research & Development Organisations.

In November 1965, the Department of Defence Supplies was created for planning and execution of schemes for import substitution of requirements for defence purposes. 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. Further, the Department of Ex-Servicemen Welfare was created in 2004.

2.5 The Armed Forces are primarily responsible for ensuring the territorial integrity of the nation. The Ministry of Defence provides policy framework and wherewithal to the Armed Forces to discharge their responsibility.

DEPARTMENTS

2.6 The principal task of the Ministry is to obtain policy directions of the Government on all 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 also required to ensure effective implementation of the Government's policy directions and the execution of approved programmes within the allocated resources.

2.7 The Ministry of Defence now consists of four Departments, namely, Department of Defence, Department of Defence Production, Department of Defence Research and Development, and Department of Ex-Servicemen Welfare. 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. 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 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 also the Scientific Adviser to the Raksha Mantri. Its function is to advise the Government on scientific aspects of military equipment and logistics and the formulation of research, design and development plans for equipment required by the Services.

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

2.8 The Finance Division of the Ministry of Defence is headed by Financial Advisor (Defence Services) who exercises financial control over proposals involving expenditure from the Defence Budget and is responsible for internal audit and accounting of defence expenditure. In the latter tasks, he is assisted by the Controller General of Defence Accounts (CGDA). A list of subjects dealt with by the Departments in the Ministry of Defence is given in Appendix-I to this report.

2.9 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.

2.10 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 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.

2.11 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 Adviser (Defence Services) who held positions from April 1, 2005 onwards is given in Appendix-II to this report.

DEFENCE EXPENDITURE

2.12 The table No. 2.1 and the two charts in this chapter represent Service/ Department-wise break-up of Defence expenditure for the years 2003-04, 2004-05, Revised Estimates for 2005-06 and Budget Estimates for the year 2006-2007 and Service/ Department-wise expenditure as a percentage of total Defence expenditure 2006-07 (BE).

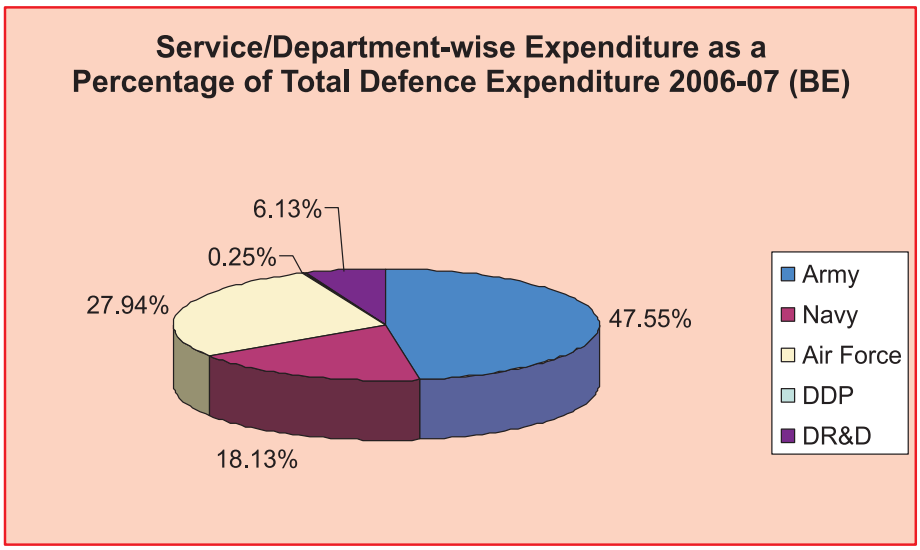
2.13 ***Observations of C&AG on the working of Ministry of Defence:*** Summary of the latest Comptroller & Auditor General (C&AG) Report on the working of the Ministry of Defence is given in Appendix-III to this report

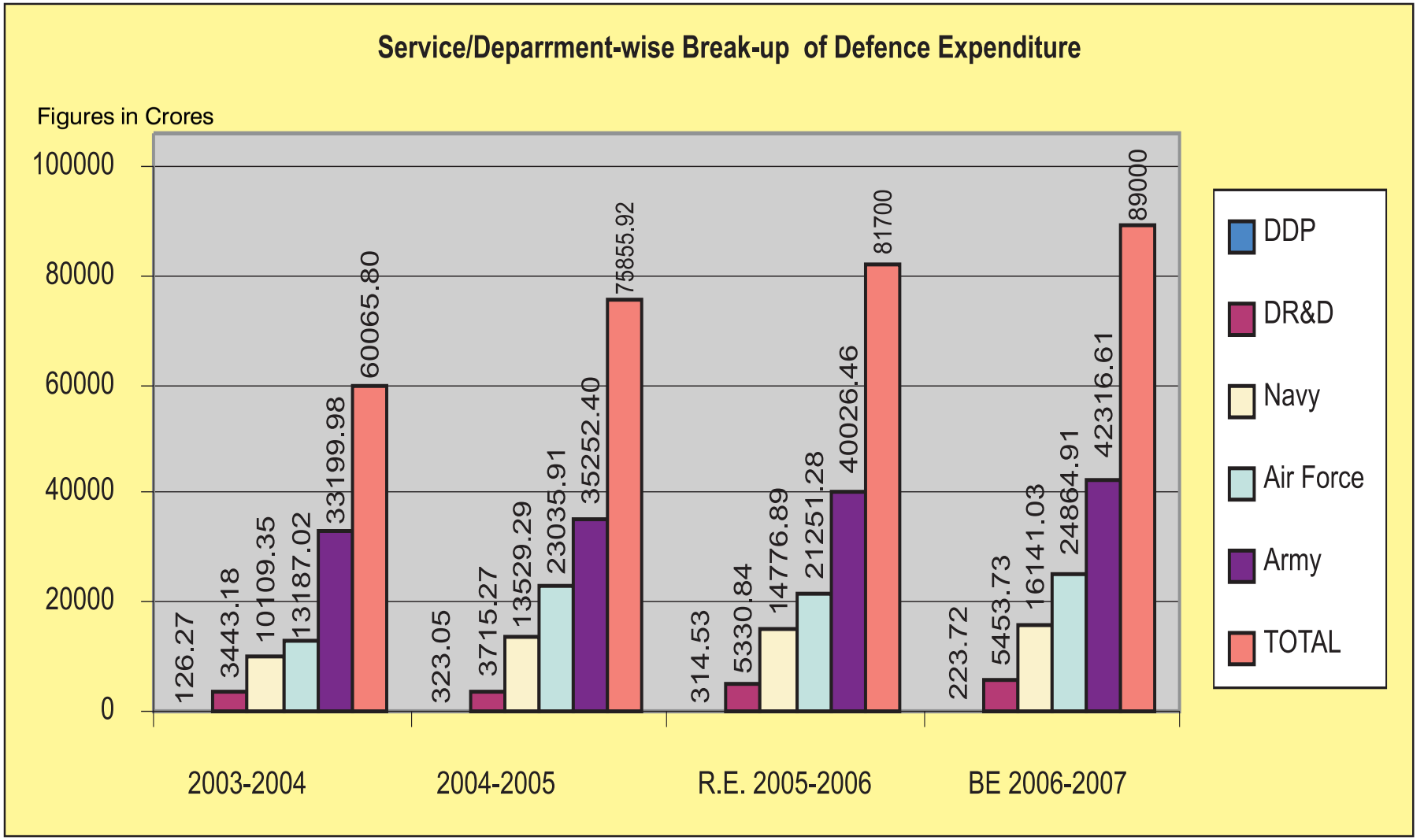
Table 2.1

Service/Department-Wise Break-Up of Defence Expenditure

(Rs. in crores)

Service/Deptt		***2003-2004***	***2004-2005***	***R.E. 2005-2006***	***BE 2006-2007***
Army		33199.98	35252.40	40026.46	42316.61
Navy		10109.35	13529.29	14776.89	16141.03
Air Force		13187.02	23035.91	21251.28	24864.91
DDP	***DGOF***	(-)210.58	(-)69.24	(-)67.67	(-) 196.78
	DGQA	336.85	392.29	382.20	420.50
	Total	***126.27***	***323.05***	***314.53***	***223.72***
DR&D		3443.18	3715.27	5330.84	5453.73
Total		***60065.80***	***75855.92***	***81700.00***	***89000.00***




Service/Deparrment-wise Break-up of Defence Expenditure
Figures in Crores
100000
80000
60000
40000
20000
0
126.27
3443.18
10109.35
13187.02
33199.98
60065.80
323.05
3715.27
13529.29
23035.91
35252.40
75855.92
314.53
5330.84
14776.89
21251.28
40026.46
81700
223.72
5453.73
16141.03
24864.91
42316.61
89000
2003-2004
2004-2005
R.E. 2005-2006
BE 2006-2007
DDP
DR&D
Navy
Air Force
Army
TOTAL

3

INDIAN ARMY

Army's Jawans on the move

During the year, continued efforts were made to modernise and upgrade weapons and weapon systems of the Army to prepare it to address the requirements of modern day warfare and enhance its combat capability.

3.1 The year saw a number of natural calamities in quick succession and it was once again the valiant soldiers who provided relief and rescued precious lives. The role of the Indian Army in international affairs continued with increasing participation in UN Peacekeeping missions in areas of intense conflict. In order to perform the varied tasks of national defence, aid to civil authorities, relief and rescue operations and that of UN Missions, a constant process of restructuring, equipping and training the force is also underway.

MODERNISATION OF ARMY

3.2 During the year, continued efforts were made to modernise and upgrade weapons and weapon systems of the Army to prepare it to address the requirements of modern day warfare and enhance its combat capability. Some of the notable efforts made towards this end are

Tanguska Air Defence Weapon System

indicated in the succeeding paragraphs.

3.3 Mechanised Forces: The night operation capability of mechanised forces has been enhanced by procurement of 'Thermal Imaging' and 'Image Intensifier' based sights. The induction of the T-90 tanks and Armoured Recovery Vehicles has given an added punch to the Indian Army. The mobility and navigational capabilities of the T-72 Tanks and Infantry Combat Vehicles are being enhanced by upgradation of their power pack, provision of Global Positioning System (GPS) and Advanced Land Navigation Systems (ALNS).

3.4 ***Artillery:*** Steps have also been initiated for procurement of the towed versions of Artillery Guns, Rockets and Rocket Launchers to enhance the fire power of the Artillery. In order to enhance the surveillance capability of the Army, various systems like Radars and Night Vision Devices are being procured.The Unmanned Aerial Vehicles (UAV) indigenously developed for general surveillance as well as of foreign origin for high altitude surveillance, to enhance early warning and surveillance capacity of the Army, are in the process of procurement.

3.5 Brahmos is a supersonic Cruise Missile being developed in a joint venture by a company formed by Department of Research & Development Organisation (India) and NPO Mashinostroyenia (Russian Federation). It is an all weather "fire and forget" missile capable of being launched from multiple platforms based on land, sea, sub-sea and air. Efforts are being made to acquire it for the Army.

3.6 Infantry: Steps are being taken for acquisition of weapons of adequate fire power, lethality, range and precision along with surveillance, sensing and secure communication to enhance the combat potential and counter-insurgency capabilities of the Infantry.

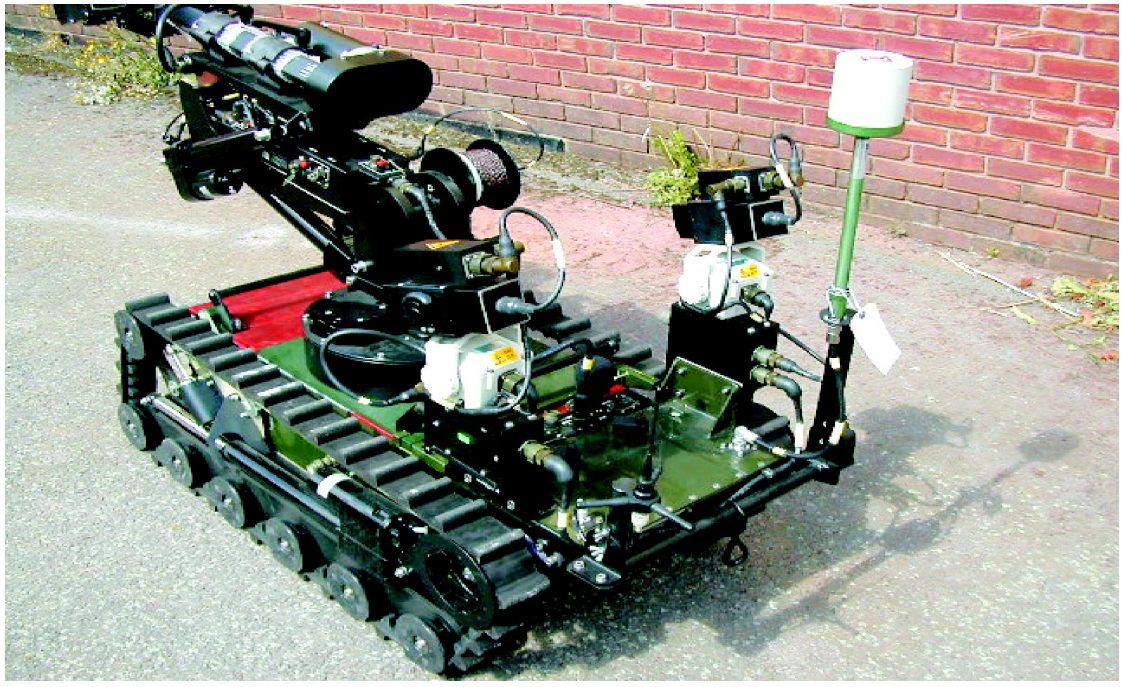
3.7 ***Signals:*** The Corps of Signals is guided by a vision to attain informatic ascendancy by developing infostructure, organisations and skills to cater for Network Centric War in the digitized battlefield of tomorrow. Besides, laying an extensive, nation-wide network, strategic broadband satellite network, the first of its kind connecting 22 locations has recently been commissioned. The project, named 'Mercury Flash' was inaugurated by the Hon'ble Raksha Mantri at Kolkata. A major initiative has been the completion of an Optical Fibre Cable (OFC) route, laid as part of a strategic alliance between the Army and the BSNL. Process is also underway to roll out

the first fully secure Enterprise Wide Messaging Network for the Indian Army.

3.8 ***Engineers:*** The fighting capabilities of the Army in Nuclear, Biological and Chemical (NBC) Warfare scenario have been enhanced through the procurement of various types of protective equipment. The protection against Improvised Explosive Devices (IED) is also being enhanced through procurement of a sophisticated range of counter IED equipment.

3.9 ***Army Air Defence:*** The surveillance capability of the Army Air Defence is being improved by inducting new radars. Necessary steps have also been initiated for the procurement of upgraded guns and missiles.

3.10 ***Army Aviation:*** The utility role of the Army Aviation has been enhanced by the acquisition of the Advanced Light Helicopter (ALH), which has been indigenously designed and developed by Hindustan Aeronautics Limited. Steps are also afoot to acquire an upgraded version of these Helicopters, fitted with a glass cockpit to enhance flight safety. Steps have been initiated to replace the ageing Cheetah/ Chetak Helicopters to tone up the reconnaissance capability.



Remotely Operated Vehicle (ROV)

MODERNISATION OF CENTRAL ORDNANCE DEPOTS (CODS)

3.11 There are seven Central Ordnance Depots located at Delhi Cantonment, Dehu Road, Cheokki,

Kanpur, Agra, Mumbai and Jabalpur. These Depots were set up in the pre-independence period. These are being modernized in a phased manner. Modernisation of Central Ordnance Depot, Kanpur at an approved project cost of Rs. 187 crore was started in April 2001. The project is at an advance stage of completion and covers state-of-the-art warehousing facilities with higher vertical space utilisation and automated material handling equipment like forkift trucks, mobile belt conveyors, hydraulic elevating cable etc. for loading/ unloading and retrieval/ stacking of stores. It also includes computerised inventory management and retrieval/ stacking of stores.

3.12 The detailed project report for the modernisation of Central Ordnance Depot at Agra and Jabalpur have been finalised.

MODERNISATION OF SECURITY AND FIRE PREVENTION SYSTEMS IN AMMUNITION DEPOTS

3.13 Army Ordinance Corps (AOC) has an inventory of 4.69 lakh items worth Rs. 50,000 crore which is managed by 152 Depots. The inventory management at present is partly manual and partly computerised. With a view to achieve complete Computerisation in Army Ordnance Corps (AOC) in three phases, Computerised Inventory Central Project (CICP) has been evolved. Automation of inventory will result into transparency and optimum utilisation of the inventory.

3.14 The remaining Ordnance Depots are to be computerised in Phase II for an estimated cost of Rs. 132.60 crore. Management Information System (MIS)/ Decision Support System (DSS) for Army Headquarter/ Ministry of Defence and intermediary Formation Headquarters will also be computerised and networked under Computerised Inventory Control Project (CICP) Phase II.

COUNTER INSURGENCY OPERATIONS

Jammu & Kashmir

3.15 The current phase of the proxy war in Jammu and Kashmir has shown a marked improvement, compared to the previous years. A combination of factors - both external and internal - have now led to the development of an opportunity to move decisively towards resolution of the conflict in the State.

3.16 The ceasefire on the borders with Pakistan is continuing with a few minor aberrations. India is actively encouraging local level flag meetings to resolve differences and diffuse tension along the border. This move has been instrumental in ensuring that the Indo-Pak peace process does

India is actively encouraging local level flag meetings to resolve differences and diffuse tension along the border. This move has been instrumental in ensuring that the Indo-Pak peace process does not get bogged down, due to inadvertent or malicious acts of wayward elements.

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3.17 There has been a discernible drop in infiltration since last year, with the assessed successful infiltration upto December 2005 coming down to 335. This reduction is because of counter measures adopted by the Army. The period during June - July 2005 witnessed an upsurge in infiltration attempts by terrorists, belying the claims by Pakistan of their efforts in curbing terrorism from their soil. Details regarding Counter Terrorist Operations in J&K are given in table 3.1.

Table 3.1

S.No	***Parameter***	***2004***	***2005***
(a)	Assessed Infiltration	349	335
(b)	Infiltration/ Exfiltration Bids Eliminated	79	61
(c)	Terrorists Killed in Eliminated Bids	140	180
(d)	Terrorists Killed per Bid	1.8	2.95
(e)	Top Terrorist Leaders Eliminated	76	79
(f)	Terrorists Killed by Army	885	876
(g)	Army Fatal Casualties	163	115
(h)	Attrition Rate	1:5.4	1:7.6

With this, the residual strength of the terrorists as well as their potential, in terms of weapons and related infrastructure has shown a decline, placing the terrorists on the backfoot.

3.18 There have been an increasing number of protests by civilians against violence perpetuated by terrorists, and people are now opposing any recruitment efforts by various terrorist tanzeems. The local population is also coming forward to provide real time intelligence inputs on terrorist activities, which has led to the launching of successful operations by the Security Forces and elimination of top terrorist leaders.

3.19 The Army's strategy of ***'Iron Fist in a Velvet Glove'*** is paying rich dividends, since it is focused on conduct of surgical and professional operations based on real time intelligence, which causes minimum inconvenience to the local populace. The Army remains particularly sensitive to allegations of Human Rights Violations, which are investigated in a fair and transparent manner.

NORTH-EAST

3.20 The overall situation in the North Eastern States has been improving steadily. A majority of the Under Ground Groups in this region have been marginalised and sustained operations by the Security Forces have forced a number of other groups to seek Ceasefire/ Suspension of Operations. This has resulted in various peace initiatives of the Government moving in the positive direction. Another significant development has been the emboldening of the masses, which is evident from the people publicly expressing their desire for peace, during public meetings/ gatherings.

3.21 ***Assam.:*** As a result of the sustained operational pressure maintained by the Army, National Democratic Front of Bodoland (NDFB) signed a '***Suspension of Operations***' Agreement on June 1, 2005. This event, alongwith the successful conduct of elections to the Bodoland Territorial Council, has ushered an era of peace and development in the Bodo dominated areas. Criticism of the United Libration Front of Assam (ULFA) by some of its front organisations is indicative of a very strong desire for peace amongst the population of Assam. ULFA has also formulated a '***Peace Consultative Group***' to negotiate with the Government of India on its behalf. The Security Forces, have effectively contributed in controlling the ethnic tension/ clashes in Karbi Anglong.

The local population is coming forward to provide real time intelligence inputs on terrorist activities, which has led to the launching of successful operations by the Security Forces and elimination of top terrorist leaders.

3.22 ***Nagaland:*** In Nagaland, relative peaceful situation exists. The Army and the Assam Rifles have managed the environment and conducted themselves in very patient, firm and mature manner to ensure that the '***Peace Process***' gradually moves forward. The most heartening manifestation of the ceasefire has been the visible enthusiasm amongst the Nagas to openly express their desire for peace.

3.23 ***Manipur:*** Sustained operations have been conducted in the three Southern districts of Manipur. The terrorists have suffered heavy attrition and huge quantity of arms and ammunition have been recovered from these areas. The blocking of National Highway (NH) - 39 by agitating Naga Student Unions of Manipur was, to some extent, offset by opening National Highway (NH) - 53, as an alternate route to Imphal. Operations were conducted on a war footing on National Highway (NH)- 53 and the highway was opened for traffic. Operations were also conducted astride National Highway

(NH) -150 in South Manipur, and the highway was opened for civil traffic after a gap of 16 years. The Security Forces have succeeded in weaning away from insurgency, a total of nine Kuki and Zomi Insurgent Groups, who subsequently agreed for an informal 'Suspension of Operations' Agreement with the Army.

3.24 ***Tripura:*** Due to sustained operational pressure of the Security Forces on the terrorists, 55 cadres of National Liberation Front of Tripura (Bishwamohan) [NLFT (B)] and 19 cadres of All Tripura Tigers Force (ATTF) surrendered in 2005. More NLFT (B) cadres are likely to surrender, which is indicative of discontentment and frustration among the ranks of the outfit. The overall situation in the State is peaceful.

3.25 ***Mizoram:*** The state continued to remain peaceful. A total of 195 cadres of Bru National Libration Front (BNLF) surrendered on July 25, 2005 pursuant to signing of 'Memorandum of Understanding' with the Group.

With concerted operations and relentless pressure of Rashtriya Rifles the terrorist organisations have lost their cohesion resulting in in-fighting amongst various groups.

3.26 ***Operation Sadbhavana in North East***: With a view to assuage any feeling of alienation which might crop up amongst the local inhabitants as a consequence of Army's counter insurgency operations, the Operation Sadbhavana have been extended to the North-Eastern region. Under this programme, small scale developmental and community projects have been undertaken by the Armed Forces for the benefit of the civilians in areas where the civil administration finds difficulty in implementing development programmes. For the year 2005-06, a sum of Rs. 7 crore has been earmarked for this programme.

DIRECTORATE GENERAL RASHTRIYA RIFLES

3.27 During the year, formations and units have remained fully committed to fighting the proxy war in Jammu and Kashmir. Due to pressure, the terrorist organisations have lost their cohesion ***resulting in in-fighting amongst various groups.*** Besides performing creditably in its assigned role, the troops of Rashtriya Rifles (RR) also played an excellent role in winning the heart and minds of people by undertaking a number of goodwill missions like assistance in health and education and carrying out relief and rescue operations during natural calamities.

3.28 The sanctioned strength of Rashtriya Rifles is 57 battalions. They have been deployed in the Northern Command after their raising. Rashtriya Rifles mandate has also been extended till March

31, 2007 by the Ministry of Defence. There is a continuous process in place to review the strength of the RR based on the threat perception by the security forces.

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

3.30 ***Goodwill Missions:*** Rashtriya Rifles troops have undertaken a number of goodwill missions in their respective areas to project the humane face of the Army. These include running of schools, rescuing of civilian population during natural calamities, organising sports and social gatherings between Army and locals. There has been an overwhelming response from the population for such programmes.

India is one of the largest contributors to United Nations Peace Keeping Operations. So far, India has taken part in 41 Peacekeeping Missions with more than 75,000 troops all over the world.

3.31 Rashtriya Rifles troops have undertaken a number of development works including construction of roads, water supply, educational institutes, model villages, dispensaries, children parks, community halls, shopping complexes, etc. under 'OP SADBHAVNA' in Jammu & Kashmir. A sum of Rs. 55.96 crores was allotted for 'Operation Sadbhavana" for the year 2005-06.

3.32 As part of people friendly civic action projects, medical and veterinary camps for general public of remote villages were organised every month. A team of specialist doctors to include Physicians, Ophthalmologists, Gynaecologists, Dentists and Veterinary doctors worked in close cooperation with Army doctors to make the medical camps a big success. The camp provided services of the Army and Civilian medical officers for immunization and family planning programme. In addition, laboratory facilities were offered.

PARTICIPATION IN UNITED NATIONS

PEACEKEEPING MISSIONS

3.33 Since the inception of UN in 1948, India has been participating in peacekeeping missions with troops in most difficult areas across the world. Presently, India is one of the largest contributors to United Nations Peace Keeping Operations. Since its first commitment in Korea in 1950, the Indian Army has participated in some of the most arduous UN peacekeeping operations and won universal acclaim for their professional excellence. So far, India has taken part in 41 Peacekeeping

Aerial Insertion of Indian troops into troubled areas in Eastern part of Congo (MONUC)

Missions with more than 75,000 troops deployed all over the world.

3.34 The Indian contribution to the UN Peacekeeping was only about 2300 troops till 2003/2004, and in 2005-2006 the contribution of the Indian Army has increased exponentially to 5849 personnel. As on December 31, 2005, India has a military contingent of 645 personnel at UNIFIL (UN Mission in Lebanon), 1531 personnel in UNMEE (UN Mission in Ethiopia and Eritrea) and 2855 personnel in MONUC (UN Mission in Democratic Republic of Congo) and 881 personnel in UNMISUD (UN Mission in Sudan). With the completion of deployment to Sudan, the Indian Army strength of troops to UN Missions would be over 8000. Besides, the Indian Army has also deployed 155 Staff Officers and Military Observers in different UN Missions. Since last one 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 we have deployed Lady officers in Congo, Burundi and Ethiopia and Eritrea.

3.35 ***Training Activities at the Centre for UN Peacekeeping (CUNPK):*** A total of 112 officers nominated for UN missions underwent the pre deployment orientation training at the CUNPK, New Delhi. In addition, 33 officers from friendly foreign countries also attended various training capsules at the centre.

3.36 The courses conducted by the CUNPK have been recognized by the United Nations Institute for Training

and Research (UNITAR), New York. The CUNPK course schedules are now being publicized internationally as UNITAR certificate courses through their website.

3.37 ***International Association of Peacekeeping Training Centres (IAPTC):*** The Centre for UN Peacekeeping (CUNPK) organised 11th Annual Conference of International Association of Peacekeeping Training Centres (IAPTC) from October 25 to 28, 2005 wherein 76 foreign delegates also participated.

INDO -US JOINT COMMAND POST EXERCISE

3.38 As part of the onging Indo-US Defence Cooperation, a South Asia Peacekeeping Operations, Command Post Exercise was co-hosted by India (CUNPK) with the US Army from July 14 to 23, 2005 at Hawaii, USA. India played a lead role in the exercise which was attended by officers from USA, India, Bangladesh, Nepal and Sri Lanka. The next Command Post Exercise would be held in India at CUNPK in the year 2007.

3.39 The contribution of the Indian Army in UN Peacekeeping Operations is highly appreciated by the International Community and the ever increasing demand of Indian Peacekeepers to bring peace all over the world is a validation of the fact. The Indian Army is not only known for its professionalism in the field but also for the humane face while carrying out humanitarian assistance.

ADVENTURE AND SPORTS

3.40 The Indian Army has a tradition of encouraging the spirit of adventure. It has played a pioneer role in adventure sports on land, air and water. The Army organised various important multifaceted adventure activities during 2005 as given in succeeding paras.

3.41 ***Land Based Adventure:***

(a) Army Women Everest Expedition 2005: An expedition team including six women officers from the Army, two women trainers from Special Frontier Force (SFF), two girls cadets for NCC, and 18 experienced Army climbers was flagged off on March 18, 2005 at New Delhi. Four members of the team ably guided by five male members, reached the summit on June 2, 2005 from Chinese side.

(b) GARH SCOUTS Mountaineering Cum Ski Expedition to Mt Trishul: The GARH SCOUTS Trishul Mountaineering cum Ski Expedition was conducted from May 18 to July 5, 2005. Team comprising of 4 Officers, 9

JCOs and 33 ORs participated in the expedition. The Peak was scaled from inside the Nanda Devi Biosphere in five groups between June 23 to 26, 2005. The expedition team also cleaned the mountain and brought back 250 Kgs of garbage left by earlier expeditions in the area.

(c) 7th Raid De Himalaya Car Rally: Six Army Teams participated in 7th Raid De Himalaya Car Rally conducted from September 30 to October 7, 2005. The rally was flagged off from Shimla on October 1, 2005 and moved to Manali, Kaza, Leh, Kargil before terminating at Srinagar on October 7, 2005. The Army teams have won the championship for the second consecutive year.

3.42 ***Aqua Adventure Activities:***

(a) 2nd National Rafting Championship: Three Army teams participated in the championship conducted from July 27 to 31, 2005 at Nimu (Leh). Out of these teams, Army Team 'A' secured 1st position and Army Team 'B' stood 2nd in overall events. The Army Team was selected to represent India in the World Rafting championship held at Ecuador, from October 2 to 16, 2005.

(b) Participation of Army Team in World Rafting Championship of Ecuador: Army Team consisting of 8 members (2 Officers, 6 ORs) participated in the World Rafting Championship held a Ecuador (South America) from October 12 to 16, 2005 and qualified at international level. In this event men from 23 nations and women from 13 nations participated.

3.43 ***Aero Adventure Activities:***

(a) Army K2K Paramotor Expedition: The expedition was conducted by PRTC Bangalore and sponsored by ITC Infotech and Food Division, was flagged off from Natha Top (J&K) on October 21, 2005. Five Paramotors took part in the expedition.

4

INDIAN NAVY

INS Kadamba

Indian Navy has commissioned two major projects - INS Zamorin and INS Kadamba. INS Zamorin would provide world class training to the Officer Cadets and INS Kadamba will be a state-of-the-art Naval Base for Indian Navy.

4.1 The year was of intense activity on all fronts for the Indian Navy. Many new projects and initiatives gained momentum during the year. The year witnessed commissioning of two major projects – INS Zamorin and INS Kadamba. Important initiatives were also taken in the field of human resource development, to ensure that the Indian Navy retains the cutting edge. On the operational front, ships, submarines and aircraft were extensively deployed for maritime security, relief operations and international cooperation.

INDUCTIONS AND DE-INDUCTIONS

4.2 INS Beas, a frigate, constructed indigenously at Garden Reach Shipbuilders and Engineers Limited (GRSE), Kolkata was commissioned on July 11, 2005 adding to the combat capability of the Indian Navy.

4.3 The three stealth frigates under construction at Mazagon Dock Limited (MDL), Mumbai have been launched and they are scheduled to be delivered from end 2008 onwards. A landmark event in the construction of first indigenous aircraft carrier was the cutting of steel on April 11, 2005. The aircraft carrier, which is being built at Cochin Shipyard Ltd. (CSL), is likely to be delivered by 2011 - 2012.

4.4 Contracts for the indigenous construction of six French Scorpene class submarines at Mazagon Dock Limited (MDL), Mumbai, under Transfer of Technology (ToT), were signed on October 6, 2005. The first submarine is scheduled for induction in 2012 and thereafter, the remaining five submarines at an interval of one year each.

4.5 During the year, six ships namely IN Ships TRV-71, Makar, Meen, Chapal, Chamak and Himgiri were decommissioned.

NEW PROJECTS

4.6 ***Commissioning of INS Zamorin:*** The Naval Academy at Ezhimala was christened as INS Zamorin, and its Base Depot Ship was commissioned on April 6, 2005. Once completed, the new Naval Academy would provide world class

Indian Navy has inducted a frigate 'INS Beas' constructed indigenously at GRSE, adding to its combat capability.

training to the Officer Cadets as well as training assistance to friendly foreign countries.

4.7 ***Commissioning of INS Kadamba:*** The Project Seabird was christened as INS Kadamba, and its Base Depot Ship was commissioned on May 31, 2005 by Raksha Mantri. It will be a state-of-the-art Naval Base for the Indian Navy.

4.8 ***President's Fleet Review -*** Hon'ble President of India reviewed the Naval Fleet in Eastern seaboard at anchorage, off Vishkhapatnam on February 12, 2006. A total of 58 ships, 2 submarines and 37 aircraft participated in the Review. Of these, 43 ships were on static display, while 9 ships and 2 submarines formed the mobile column. One merchant ship MV Dakshineshwar also participated in the Review. On this occasion, Operation Demo was also conducted showcasing the operational tasks undertaken by the various arms of the Indian Navy including operation of surface-to-surface misiles, anti-air and anti-submarine weapons. An aerobatics display by the 'Sagar Pawan' team of the Navy was also carried out. A postal stamp and a special publication on the Eastern Naval Command were also released on this occasion. President's Fleet Review was followed by presentation of the Colour to the Eastern Naval Command on February 13, 2006.

President during Naval Fleet Review

EXERCISES

4.9 ***TROPEX 05:*** The Indian Navy conducted the Annual Theatre Level Readiness Exercise - TROPEX 05 in April 2005. The exercise mobilised naval resources and involved active participation by the Army, Air Force and Coast Guard. During the exercise, weapon firings were carried out and various combat tactics were evaluated.

4.10 ***Operation Turn Around (OTR):*** 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. During long deployments, the naval ships and aircraft made Operational Turn Around (OTR) at various ports in foreign countries for replenishment of rations and stores. Important OTRs undertaken by naval ships during the year are highlighted below:-

(a) ***North Bay of Bengal:*** INS Sukanya was deployed in the North Bay of Bengal in January 2005 during which it entered Yangon harbour in Myanmar for OTR.

(b) ***Off Sri Lanka:*** IN Ships Sukanya, Kozhikode and Cuddalore called at Colombo for an OTR in May 2005.

(c) ***Southern Indian Ocean:*** A Task Force of the Western Fleet comprising IN Ships Delhi, Trishul, Ganga and Aditya were deployed in the South Indian Ocean. During the deployment, OTR for the ships was undertaken at Port Victoria in Seychelles, at Mombassa in Kenya, and at Moroni in Comoros Islands.

(d) ***Persian Gulf:*** INS Talwar was deployed in the Persian Gulf in June 2005. During the deployment, the ship undertook OTR at Al Manama (Bahrain) and Fujairah (UAE).

(e) ***South Arabian Sea***. INS Sharda was deployed in the South Arabian Sea in September 2005. During the deployment, the ship carried out OTR at Male, Maldives.

(f) ***North Arabian Sea***. INS Gomati was deployed in the North Arabian Sea in September 2005. During the deployment the ship undertook OTR at Muscat, Oman.

(g) ***Gulf of Oman and Persian Gulf:*** The Indian Navy ships Tir and Krishna were deployed in the Gulf of Oman and the Persian Gulf in September/ October 2005. During the deployment, the ships

undertook OTR at Abu Dhabi, (UAE).

(h) Gulf of Aden: The Indian Navy ships Viraat, Mysore, Talwar, Godavari and Jyoti were deployed in the Gulf of Aden in November 2005. INS Talwar made OTR at Salalah (Oman).

OVERSEAS DEPLOYMENT (OSD)

4.11 Overseas Deployments are carried out by the Indian Navy in support of country's foreign policy. Such missions are for Flag showing and to foster better relations with friendly foreign countries and to enhance defence cooperation. Important Overseas Deployment of Indian Navy's vessels were as follows:-

(i) Tarangini's Voyage to Europe – Op LOKAYAN 05: Indian Naval Sail Training Ship Tarangini, undertook a voyage to Europe from April 21, 2005 to November 8, 2005. The ship's voyage was code named Op LOKAYAN – 05. The ship visited 15 ports in 12 countries. Whilst in Europe, the ship participated in a series of Tall Ship events and races organised by the Sail Training International, United Kingdom in the North Sea in July/ August 2005. The ship performed creditably in the races. The ship along with INS Mumbai represented the Indian Navy in the 'International Fleet Review' and the 'International Festival of the Sea' at Portsmouth, United Kingdom from June 27, 2005 to July 3, 2005. INS Tarangini also participated in the Tall Ship events at Bremerhaven (Germany), Amsterdam (Netherlands) and Cagliari (Italy).

Indian Navy has institutionalized conduct of bilateral exercises with USA, Russia, France, Oman and Singapore, and joint patrols with Indonesia and Thailand.

(ii) The details of a few Overseas Deployments undertaken during the year are given in Table No. 4.1.

MISCELLANEOUS OPERATIONS

4.12 ***Indian Antarctic Expedition:*** A two member Naval Hydrographic Team participated in the XXIV Indian Antarctic Summer Expedition from December 2004 to March 2005. The team collected valuable hydrographic information for co-production of 11 charts with Russia. A three member Naval Hydrographic Team is scheduled to participate in the XXV Indian Antarctic Summer Expedition from December 2005 to March 2006.

4.13 ***Sethusamudram Ship Channel Project:*** Tuticorin Port Trust, the nodal agency for the Sethusamudram Ship Channel Project, approached the National Hydrographic Office, Dehradun for

Table 4.1

Ships	***Region/ Period***	***Ports Visited***	***Remarks***
Brahamputra Vinash	Persian Gulf/ February 2005	Abu Dhabi (UAE)	International Defence Exhibition 2005 (IDEX).
		Wudam Naval Base and Muscat (Oman),	Bilateral Exercise 'Thammer al Tayyib'.
Subhadra	South Indian Ocean/ Feb-Mar 2005	Port Victoria, Seychelles	Towed ex – Tarmugli to Seychelles for Transfer.
Rajput, Ranvijay, Gomati, Kora, Karmuk and Jyoti	South China Sea/ Feb – Mar 2005.	Singapore and Kuantan (Malaysia)	Joint Indian Navy and Republic of Singapore Navy Exercise SIMBEX 05.
Krishna, Tarangini	Srilanka, Sujata, Maldives/ March 2005	Colombo, Trincomalee and Male	OSD for Cadet training. 105 Srilankan cadets were also em barked onboard Tarangini.
Vela IN LCU-34	East/ SE Asia/ April – May 2005	Phuket, Thailand and Yangon, Myanmar	INS Vela embarked 08 Myanamarese Naval Officers for one day for giving a sea experience in the submarine.
Sharda	South Indian Ocean/ April – May 2005	Port Louis, Mauritius	For towing Mauritius Coast Guard Ship Guardian (Ex-SDB 61) from Port Louis to Mumbai for refit.
Mumbai	Red Sea, Mediterranean and Atlantic Oceans/ June – July 2005	Safaga (Egypt) Toulon (France) Portsmouth (UK) Taranto (Italy) Port Said (Egypt)	Participated in the International Fleet Review (IFR) at Portsmouth (UK).
Magar	SE Asia/ June 2005	Ho Chi Minh City, Vietnam	
Viraat, Rajput, Ranjit, Shakti and Khukri	SE Asia/ July – August 2005	Singapore, Port Kelang (Malaysia), Jakarta (Indonesia)	Eastern Fleet Deployment to South East Asia.
Delhi, Trishul, Ganga, and Aditya	South Indian Ocean/ May – June 2005	Moroni (Comoros) Durban, Cape Town (South Africa), Port Victoria (Seychelles), Port Louis (Mauritius), Reunion (France)	Western Fleet Deploy ment to South Indian Ocean.

the conduct of detailed Hydrographic tasks for the project. The tasks include establishment of chart datum and pre and post dredging bathymetric surveys. Tidal observations for the establishment of chart datum have been completed.

EXERCISES AND COOPERATION WITH FOREIGN NAVIES

4.14 The Indian Navy has taken a number of initiatives for meaningful cooperation with the navies of the region. Conduct of bilateral exercises has been institutionalized with USA, Russia, France, Oman and Singapore and joint patrols with Indonesia and Thailand. The details of the exercises conducted are elaborated as follows:

(i) ***Singapore - SIMBEX 2005:*** The Indian Navy - Republic of Singapore Navy (RSN) bilateral exercise 'SIMBEX 2005' was conducted in South China Sea from February 28 to March 2, 2005.

(ii) ***Oman - Exercise with Royal Navy of Oman:*** The joint Indian Navy - Royal Navy of Oman bilateral exercise codenamed 'Thammer al Tayyib 2005' was conducted in the Gulf of Oman from February 21 to 22, 2005.

(iii) ***France - Varuna 05/1 and Varuna 05/2:*** The Indo-French bilateral Naval exercise VARUNA 05/1 and Varuna 05/2 were conducted off Kochi from February 28 to March 7, 2005 and in the Red Sea in November 2005 respectively.

(iv) ***Indonesia - INDINDO CORPAT:*** The fifth coordinated patrol with the Indonesian Navy was conducted from September 1 to 30, 2005 along the International Maritime Boundary Line in the Andaman sea.

(v) ***Thailand - Indo-Thai CORPAT:*** The inaugural Indo-Thai coordinated patrol was conducted from September 15 to 23, 2005 along the International Maritime Boundary Line.

(vi) ***USA - Exercise MALABAR CY-05:*** The Eighth Indo-US bilateral naval exercise MALABAR CY-05 was conducted on the western seaboard from September 25 to October 4, 2005. This was the first time that Aircraft Carriers from the Indian and the US Navy operated together. Aviation Interoperability exercise between Sea Harrier and FA-18 aircraft, Air Defence Exercises, intermediate and advanced level anti-submarine exercises were conducted.

(vii) ***USA - SALVEX CY-05 :*** The Indo-US joint naval salvage exercise 'SALVEX CY-05' was conducted off Kochi from September 12 to 23, 2005. The

USS Nimitz (in background) doing combat manoeuvres with INS Viraat

exercise involved joint diving, salvage operations and underwater demolition exercises. Sea dives for salvage of an aircraft wreck off Kochi from a depth of 50 metres by joint IN-USN salvage team were also undertaken.

(viii) Sri Lanka - Special Forces Exercise: The maiden Indian Navy-Sri Lankan Navy Special Forces exercise was conducted at Tangalle (near Galle), Sri Lanka from September 16 to 30, 2005.

(ix) Russia - INDRA 2005: The second Indo-Russian exercise INDRA 2005 was conducted on the eastern seaboard from October 14 to 21, 2005. Intermediate and advanced level Anti Submarine War (ASW) exercises, Maritime Interdiction Operations (MIO), Compliant and Non-Compliant Boarding operations and firing on surface and aerial targets, were undertaken during the exercise.

4.15 ***International Maritime Boundary Line (IMBL) Meeting with Sri Lankan Navy:*** The eleventh bi-annual IMBL meeting between Indian Navy and Sri Lankan Navy was held on board INS Sukanya near the IMBL in Palk Bay on July 29, 2005.

Marine Commandos (MARCOS) airlifted by a naval Seaking Mk 42C helicopter and slithering down to board a ship on the high seas.

4.16 ***Transfer of INS Tarmugli to Seychelles:*** Continuing the policy of good and friendly relations, the Government of India transferred INS Tarmugli, a Fast Attack Craft (FAC) to the Seychelles Coast Guard (SCG) on February 21, 2005.

TRAINING

4.17 Training of personnel has always been a high priority for the Navy. The upcoming Naval Academy at Ezhimala is aimed at providing such training not only to our personnel, but also trainees from the friendly foreign countries.

4.18 ***Training of Foreign Personnel/ Foreign Training Delegations:*** During the year, 13 countries were allotted vacancies for training with Indian Navy under the Indian Technical and Economic Coopration(ITEC) programme of Ministry of External Affairs. A total of 201 officers and 130 sailors from friendly countries have undergone various training courses in India. Details are given in table No. 4.2.

Table 4.2

S.No.	Country	Officers	Sailors
1.	Sri Lanka	147	102
2.	Nigeria	4	-
3.	Bangladesh	10	7
4.	Malaysia	3	-
5.	Myanmar	2	-
6.	Mauritius	2	4
7.	Kenya	3	-
8.	Singapore	1	-
9.	Ghana	1	1
10.	Maldives	7	10
11.	Tanzania	1	-
12.	South Africa	20	1
13.	Seychelles	-	5

4.19 Eight high level training delegations also visited various training establishments during the year. Some significant ones are as follows:-

(i) Training delegation of Republic of Singapore Navy, visited Kochi from January 20 to 21, 2005.

(ii) A 32-member delegation of the Sultanate of Oman Command and Staff College comprising 10 Directing Staff, 20 student officers of Oman Command and Staff College along with Defence Attache (Delhi) and Defence Liaison Officer (Mumbai) visited INS Shivaji on April 27, 2005.

4.20 ***Deputation of IN Personnel for Courses Abroad:*** 45 naval personnel were deputed abroad for training courses from January to October 2005.

4.21 ***First Training Squadron:*** Training of cadets of the Indian Navy is undertaken onboard INS Tir and Krishna of First Training Squadron and the sail training ship INS Tarangini. During the current year, 186 cadets were trained on the ships of First Training Squadron. As part of training the cadets were exposed to sailing onboard INS Tarangini during Lokayan 05 and also visited Sri Lanka, Maldives, Seychelles, Oman and UAE.

4.22 ***Training of Civilian Personnel:*** Following initiatives were undertaken for training of civilian personnel:-

(i) ***Annual Training and Human Resource Conference:*** The Second Human Resource Development and Training Conference was held at Visakhapatnam on August 8 to 9, 2005, with a focus on training and development, industrial safety and physical fitness. The conference was attended by a cross section of civilian personnel and representatives from the recognised associations/ unions.

(ii) ***Training Abroad:*** In order to be able to maintain and repair, costly Naval assets procured from abroad, 89 civilians were

A Delhi class ship firing a tactical missile - Uran - at a target which is well beyond the horizon range

deputed for training to foreign countries.

ADVANCEMENT IN INFORMATION TECHNOLOGY

4.23 The Indian Navy embarked on a mission to harness the potentials of Information Technology (IT) to achieve seamless connectivity and secure communication exchange. This involves setting up of and integrating networks, applications and databases. The Navy is actively pursuing establishment of computer networks at major naval stations of Mumbai, Visakhapatnam and Kochi. Local Area Networks are also being set up on naval platforms afloat. The Navy has successfully implemented a Human Resource module at the Bureau of Sailors at Mumbai. This application provides a web-based access to users to get essential Human Resources related information. The application automates all functions of the Bureau like enrolment, transfers, promotions, release/ re-engagement, etc.

ADVENTURE AND SPORTS

4.24 Adventure and sports not only develop technical, managerial and administrative skills, but also contribute to higher levels of physical fitness, stamina, determination, agility, teamwork and

esprit de corps. Special emphasis has been given to participation in water-based sports, viz. yachting, rowing, kayaking, canoeing, swimming and water polo.

4.25 Five naval personnel have been trained in Sky Diving Instructor Course in Australia. The team thereafter conducted a joint Army Navy Sky Diving course at Deolali in November 2005.

4.26 ***Indian – Brazil – South Africa (IBSA) Sailing Regatta:*** The event was conducted for the first time at Simon's Town, South Africa from September 25, 2005 to October 1, 2005. Eleven naval personnel participated in the regatta and won gold/ silver in Laser, Bosun and Proton classes.

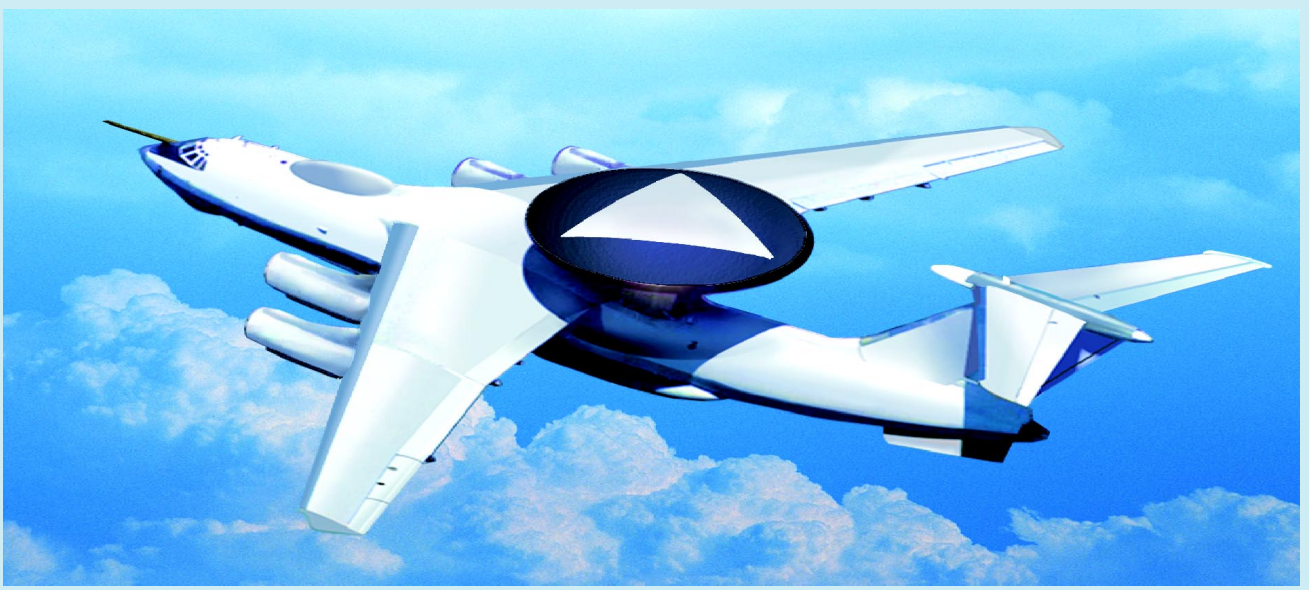
4.27 ***Achievements of Naval Sportsmen:*** The details of achievements of Naval Sportsmen are given in table no. 4.3.

Table 4.3

S.No.	***Name***	***Rank***	***Event***	***Achievement***
1.	Satendra Kumar	MCELR II	Asian Air Gun Shooting Championship at Bangkok September 12 to19, 2005.	Silver
2.	Manoj Kumar	POELP	Asian Air Gun Shooting Championship at Bangkok September 12 to19, 2005	Gold (Team Event)
3	Bishu Nag	MCPO II	Asian Air Gun Shooting Championship at Bangkok September 12 to 19 2005	Achieved minimum qualifying score (MQS) for Olympic 2008
4.	CPR Sudhir Kumar	CPO PT	Commonwealth Weightlifting championship at Australia October 6 to 9, 2005	Silver
5.	Suranjoy Singh	PO	World Boxing Championship at China	Representing

5

INDIAN AIR FORCE



IL-76 Based AWACS

The IAF strives to build up an effective capability with the induction of force multipliers and emphasis on its strategic thinking on core competencies, joint operations and asymmetric nature of modern warfare.

5.1 The primacy of Air Power will be a decisive factor in shaping the outcome of future conflicts. In line with this dictum, the Indian Air Force (IAF) has developed into a major 'Component of National Power', which can be applied quickly and decisively. The IAF has reoriented itself to a multi – role capability of platforms and equipment, along with multi – skill capability of personnel. The rapid economic growth of the country dictates the need to protect our security interests extending from the Persian Gulf to the Straits of Malacca. The IAF strives to build up an effective capability with the induction/planned induction of force multipliers like Flight Refueling Aircraft (FRA), Multi Role Combat Aircraft (MRCA), Air Borne Warning and Control System (AWACS), Unmanned Aerial Vehicles (UAV) and a credible Strategic Lift Capability. The IAF has laid emphasis on its strategic thinking on core competencies, joint operations and asymmetric nature of modern warfare. The IAF is one of the few air forces of the world which has efficiently operated the best Russian and Western equipment beyond their

Close up view of the awesome MIG –29

stated capabilities and functions. It has been at the fore front of any operation be it during peace time or conflict.

5.2 During peacetime, the Air Force has always been swift to respond to any call from the nation for disaster management or operations, both within the country and abroad.

FLEET IMPROVEMENT/ INDUCTION/ UPGRDATION

5.3. ***Embraer:*** The initial lot of Embraer aircraft was inducted in the IAF in September 2005. The remaining aircrafts have been inducted in December 2005.

5.4 ***MiG –21 Bison:*** MiG-21 Bison aircraft was upgraded to MiG-21-93 and inducted into service in 2002. During the year, two Squadrons have completed its re-equipment on to the Bison-aircraft. The aircraft saw action during a joint IAF-United States Air Force Exercise 'Cope India 2005' held in November 2005 and it came out with flying colours.

5.5 ***Unmanned Aerial Vehicle (UAV):*** The induction of UAV assets has been completed in June 2005 and the capabilities of the fleet has been enhanced manifold with the induction of special payloads and continued upgradation of software. The IAF has achieved self-reliance in the conduct of ground training. Inspection level servicing facilities are being set up at all UAV bases.

5.6 ***SU-30 MKI:*** After the initial induction of the Su-30 aircraft in 1997, their license production has commenced at Hindustan Aeronautics Limited (HAL) and the

A line up of MIG-21 Bison

The induction of the final version of Su-30 MKI aircraft in the IAF is a major step towards augmentation of India's defence capability and a milestone towards development and integration of the state-of-the-art equipment.

first license-manufactured Su-30 MKI was handed over to the IAF in November 2004. The aircraft has participated in joint exercises with the (USAF) United States Air Force successfully. The final version of Su-30 MKI aircraft was inducted in May-June 2005, which is a major step towards augmentation of India's defence capability and a milestone towards development and integration of state-of-the-art equipment from Russia, Western Countries and India.

5.7 ***Fighter Aircraft Upgrades:*** The Mig-27 aircraft are also being upgraded. The design and development work is being done by the Defence Avionics Research Establishment (DRDO), Bangalore and fleet modification will be completed by 2008. Similarly, Jaguar aircraft, purchased in the early 1980s are being upgraded by HAL and the development activity will be over in 2006. The MiG-29 aircraft fleet would also be upgraded to include Air-to-Air refuelling capability, an improved radar, new avionics and enhanced weapons capability. Avionics and related modifications are being carried out on Jaguar and Avro aircraft and UAVs. The induction of new additional twin-seater Jaguar aircraft has been completed and additional Mirage aircraft have also been inducted, with air-to air refuelling capability and advanced

Su-30

radars. Life extension programmes for the MiG-23 Trainer, MiG 27 and MiG -29 fighters, Mi-8 and Mi –17 helicopters and IL –76 transport aircraft are underway.

5.8. ***Medium Lift Helicopter Upgrade:*** A comprehensive avionics and armament upgrade package is being planned for the Medium Lift Helicopter fleet (Mi-8, Mi-17 and M-17 1V).

5.9 ***Upgradation of Air Combat Simulator:*** No. 1 Air Combat simulator Unit, was inducted into service in the mid 1990s. M/s HAL have been awarded a back to back contract for upgradation and the programme is in the final stages of implementation.

5.10.***Indigenisation:*** Indigenisation of critical spares is being carried out to improve self-reliance and transfer of technology. The IAF has developed adequate expertise to carry out the full spectrum of maintenance activities on weapon platforms. A number of software intensive testers required for operation of Su-30MKI aircraft are being developed indigenously. In addition, IAF has also developed and manufactured various types of ground equipment required for Operational Turn around Servicing (OPTRS) of aircraft with the help of local vendors.

WEAPON SYSTEMS

5.11 The IAF is in the process of acquiring state-of-the-art, Combined Automatic Direction Finder (CADF), to replace the earlier outdated system. It is a PC based system, capable of handling all the data and is likely to be inducted in 2006. To provide effective communication for Low Level Transportable Radars (LLTR), secure High Frequency sets (for point-to-point contact) with frequency hopping have been procured.

5.12 The planned induction of three Squadrons of Prithivi – II missiles had commenced in August 2001. The second Squadron was raised in October 2005 and induction of equipment would commence by February/ March 2006. Prithivi – II is a surface to surface missile capable of destroying targets to a maximum range of 250 Km, with a very high degree of accuracy.

5.13 From the beginning of the 10th plan, contracts for various Air Defence platforms and sensors have been signed. The important ones are Air Borne Warning & Control System (AWACS), Aerostat Based Radars, Low Level Light Weight Radars(LLLWR) and the Air Route and Surveillance Radar. Surface to Air missile systems are also being taken up for modernization.

5.14. Commissioning of IL – 76 based AWACS would boost the Air Defence capability of IAF and enhance the surveillance and monitoring of aerial vehicles/ aircraft, especially along the borders in Western and South Western sectors. Presently, the air space monitoring along the borders is being done through ground-based radars that have limitations of "Line of Sight". AWACS and Aerostats, being airborne, have the advantage of positively countering the limitations of "Line of Sight" and will provide extended air surveillance and early warning of enemy aerial vehicles/ aircraft intruding into our air space and alerting the ground based Air Defence Systems, besides guiding and controlling own Air Defence aircraft to intercept and destroy the enemy unmanned aerial vehicles/ aircraft. An indigenous project for automation of Air Force Command and Control infrastructure in the form of integrated Air Command and Control system (IACCS) has also been started. These would be inducted in December 2007.

AIRCRAFT ACQUISITION

5.15 A total of 17 New Jaguar Twin Seater aircraft have been inducted from HAL, Bangalore. A total number of 20 additional Jaguar Fighter aircraft, with upgraded avionics, are being inducted from 2006 onwards. The Jaguar Navigation and Weapon Aiming Sub System (NAVWASS)

Intermediate Jet Trainer (IJT)

aircraft upgradation has commenced in April 2005. To replace the existing Boeing aircraft which have completed their technical life of 20 years in 2003, a contract for three VVIP BBJ (737 – 700 IGW) aircraft was signed on October 27, 2005 and their delivery is scheduled during January – October 2008.

5.16 ***HAWK Advanced Jet Trainer (AJT):*** Hawk Advanced Jet Trainer (AJT) aircraft have been contracted for training of fighter pilots. A few aircraft are to be procured directly from the UK and the remaining would be made under license by HAL. Manufacture of the aircraft has commenced in UK and deliveries are planned from September 2007 to February 2008. The HAL license built aircraft will be delivered from March 2008 onwards.

5.17 ***Intermediate Jet Trainer (IJT):*** As phasing out of the existing Kiran Mk I/ Mk II training aircraft will commence in 2006, HAL is developing the IJT as a replacement aircraft. The prototype had its first flight in March 2003 and the first batch of limited series production aircraft would be delivered from 2008 onwards.

5.18 ***Armed Advanced Light Helicopter (ALH):*** It has been decided to procure the armed ALH, equipped with Air to Air Missiles, Air to Ground Missiles, front guns and rockets. Accordingly, HAL is carrying out the design and development for the ALH WSI (Weapon System Integration) and the armed version of the ALH.

5.19 ***Light Combat Aircraft (LCA):*** The indigenous LCA was meant to be a replacement for the ageing MiG-21 fleet and the first flight of the LCA was achieved on January 4, 2001. The Initial Operational Clearance (IOC) version is expected to be ready for induction in 2008-09. Steps are underway for procurement of aircraft initially in the IOC Standard of Preparation.

5.20 ***SARAS (Light Transport Aircraft):*** SARAS aircraft is being developed by National Aeronautical Laboratory and the first flight took place on May 29, 2004. Subject to successful development and compliance with the Air Staff Requirements (ASR), SARAS would be inducted to replace HS – 748 aircraft.

5.21 ***CHEETAL Helicopter:*** Due to increased air-maintenance task after Kargil, procurement of

Cheetal Helicopter

indigenously produced Cheetal helicopters (Cheetah re-engined with TM – 333 2B2 engine) is planned to augment the IAF fleet.

DEFENCE COOPERATION

5.22 A joint exercise 'Garuda-II' was conducted in France with the French Air Force in June 2005. France participated with the Mirage –2000 fighter aircraft and the IAF with six Sukhoi-30K and Air to Air refuelling Aircraft. This was the first time that IAF fighters extensively used the air refuellers for the ferry overseas and during the exercise.

The joint exercises 'Garuda-II' with French Air Force and 'Cope India – 2005' with the United States Air Force, were conducted in June and November 2005 respectively.

5.23 Another joint exercise "Cope India – 2005" was conducted with the United States Air Force (USAF) at Kalikunda Air Force Base in November 2005. The USAF participated with twelve F-16 C/D fighter aircraft while the IAF participated with Sukhoi – 30, Mirage-2000, MiG – 29. MiG – 27 and Bison aircraft.

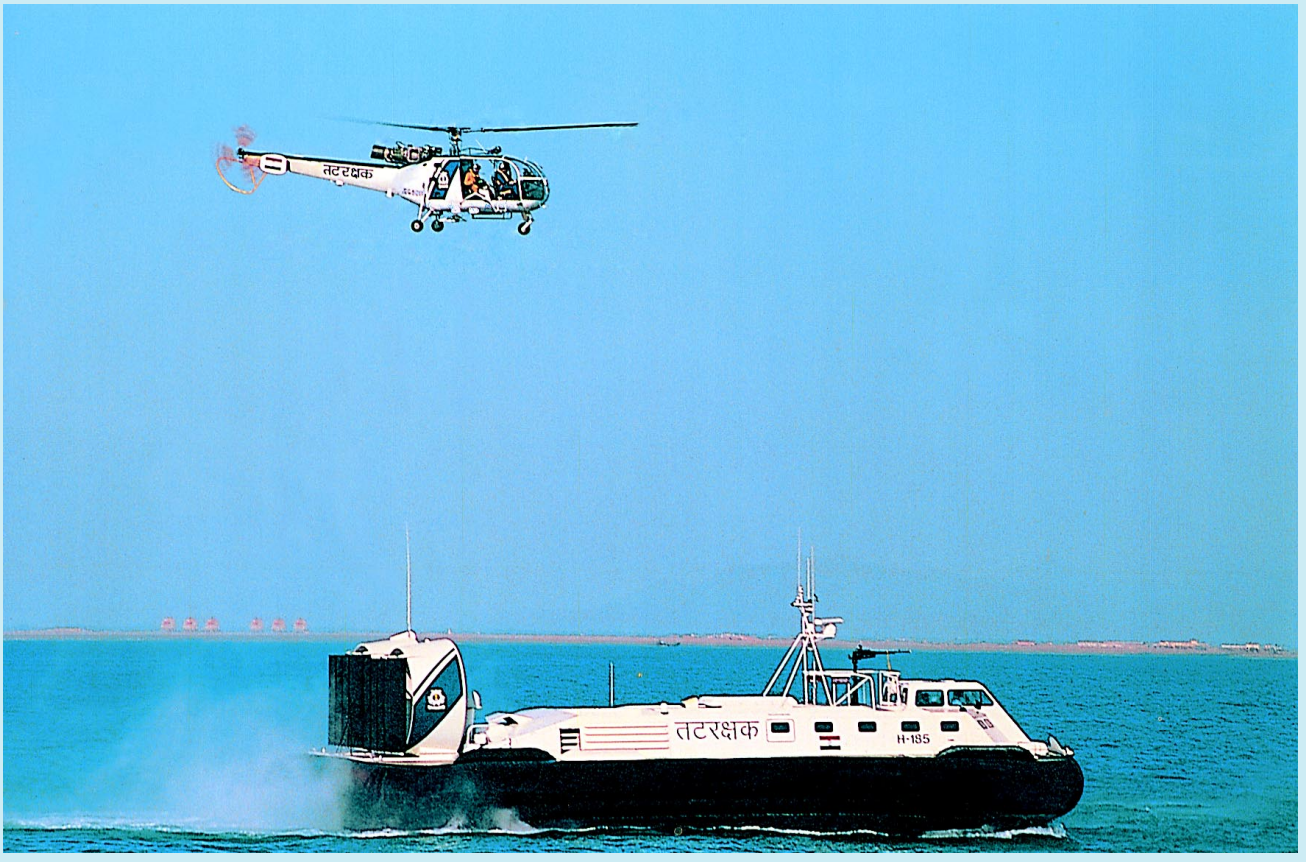
FLIGHT SAFETY

5.24 Concerted efforts have resulted in improvement in the overall flying environment and reduction in accidents/ incidents. Evolving a flight Safety strategy, identifying the weak areas and implementing necessary corrective measures have helped in achieving this improvement. An Expert Committee was constituted on December 30, 2004 under the chairmanship of Director General (Inspection & Safety) to identify the root causes of accident and prepare a comprehensive action plan to reduce losses. The report has been submitted to the Ministry by the Expert Committee on May 15, 2005. Some of the programmes introduced thereafter are (a) Flight Safety Awareness and Safety Audits, (b) Risk Management and (c) Increased Interaction with Director General of Aeronautical Quality Assurance and Hindustan Aeronautics Limited.

5.25 Due to various steps taken in the recent past the accident rate has dropped from 0.66 in 2004–05 to 0.44 in the current year till January 15, 2006. Persistent and continuous efforts are underway to improve the flight safety environment in the IAF.

6

COAST GUARD



Air-Sea Coordination : Coast Guard Hovercraft and Helicopter

The Coast Guard is responsible for surveillance of the Indian territorial waters and the Indian Exclusive Economic Zone to prevent poaching, smuggling and other illegal activities; to conduct search and rescue operations; to protect and preserve marine environment.

6.1 The Indian Coast Guard, youngest of the Armed Forces, came into existence with the enactment of Indian Coast Guard Act, 1978 on August 18, 1978. The Coast Guard has been entrusted with the responsibility for surveillance of the Indian territorial waters and the Indian Exclusive Economic Zone to prevent poaching, smuggling and other illegal activities; to conduct search and rescue operations; to protect and preserve marine environment.

ORGANISATION

6.2 The command and control of the Coast Guard lies with the Director General of Coast Guard, Headquartered at New Delhi. The organization has three Regional headquarters at Mumbai, Chennai and Port Blair. The three Regional Headquarters command the entire coastline of India, through 11 Coast Guard Districts and six Coast Guard stations. The Coast Guard also has two Air Stations at Daman and Chennai and four Air enclaves at Goa, Mumbai, Kolkata and Port Blair.

6.3 A new Coast Guard Station at Jakhau, was activated on November 24, 2004 and was formally commissioned on February 22, 2005.

DUTIES AND FUNCTIONS

6.4 The primary duties of the Coast Guard as enshrined in the Coast Guard Act include: -

(a) Safety and protection of the artificial islands and offshore installations;

(b) Providing protection to fishermen;

(c) Preservation and protection of maritime environment including maritime pollution and protection of endangered species;

(d) Assistance to customs and other authorities in anti smuggling operations;

(e) Enforcement of the Maritime Laws of India;

(f) Safety of life and property at sea;

A new Coast Guard Station at Jakhau has been commissioned on February 22, 2005.

(g) Other duties as and when prescribed by Government of India;

(h) Assistance to Indian Navy during war.

FORCE LEVEL

6.5 With the increase in maritime traffic and other offshore economic and scientific activities, the responsibilities of the Indian Coast Guard have been growing continuously. Today, it has a force level of 65 ships and crafts and 45 aircraft and helicopters.

6.6 One Fast Patrol Vessel, Kasturba Gandhi, and four Interceptor Crafts were inducted in the Coast Guard in 2005. A contract has been signed for the acquisition of one Advanced Offshore Patrol Vessel (AOPV) with M/s Goa Shipyard Limited, Goa in August 2005. The ship is likely to be delivered to the Coast Guard in August 2008. In addition, Government has approved the acquisition of three Offshore Patrol Vessels (OPVs) through indigenous construction at the Goa Shipyard Limited, Goa.

Coast Guard has a force level of 65 ships and crafts and 45 aircraft and helicopters.

RECRUITMENT AND TRAINING

6.7 The Coast Guard has the following types of entries for enrolled personnel:-

(a) Direct Entry Diploma Holder (3 years diploma)

(b) Navik (General Duty) (10th pass entry)

(c) Navik (Domestic Branch) (8th pass)

Their recruitment is through eight centres spread all over India. The candidates are selected for the available vacancies on the basis of written, medical and physical fitness tests. Relaxation of age and qualification is admissible for SC/ST and OBC as per existing Government orders.

6.8 The recruitment of officers into the Coast Guard is in two main streams - General Duty and Technical. Assistant Commandant (General Duty) has two sub branches i.e. General Service and General Duty (Pilot).

6.9 The selection for the post of officers is through a Selection Board. Based on the available vacancies, an advertisement is published in the leading newspapers and candidates are short-listed in a prescribed ratio for a preliminary screening test and a screening interview by a Preliminary Selection Board. The candidates short-listed by Preliminary Selection Board are

then subjected to various tests and interview by Final Selection Board at NOIDA in Uttar Pradesh. The candidates who opt for General Duty (Pilot) are subjected to additional test for Pilot Aptitude Battery Test by the Air Force Selection Board.

6.10 Women are also considered for a few selected appointments in the Coast Guard, mostly for shore-based non-operational units. The selection process for women candidates is similar to the male candidates.

6.11 The selected persons undergo training at various naval training schools. However, for on-board training, the trainees are deputed to Coast Guard ships. The General Duty branch officers undergo additional training at Coast Guard Training Centre, Kochi for specialised courses in Search and Rescue, Pollution Response, Port Operation, Fisheries and Maritime Law.

ACTIVITIES

6.12 The Indian Coast Guard ships and aircraft are always ready to provide assistance to the crew/ vessels in distress at sea and to assist the customs and other authorities in anti-smuggling operations. These activities of the Coast Guard are summarised in table 6.1.

Table 6.1

Sl. No.	***Activity***	***Since Jan 1981***	***In 2005 (January – December)***
(a)	Contraband seized	Rs.264.77 crores	
(b)	Poaching trawlers apprehended	873 boats 8887 crew	17 boats 117 crew
(c)	Smuggling vessels apprehended	103 boats 671 crew	—
(d)	Search and Rescue(SAR) Missions	926	54
(e)	Search and Rescue Sorties	1838	273
(f)	Lives Saved	3413	783

6.13 ***Repatriation of fishermen to Yangoon (Myanmar):*** ICGS Vivek carried 129 fishermen to Yangoon (Myanmar) for repatriation in

Coast Guard ship leaving harbour for routine patrol

Coast Guard Dornier on reconnaissance Mission

December 2005. These fishermen were apprehended, for offences of poaching, illegal fishing and illegal immigration in Andaman & Nicobar Islands.

6.14 ***Pollution Response:*** Preservation, protection, prevention and control of pollution in the Maritime Zones of India is one of the primary responsibilities of the Coast Guard. The Indian Coast Guard has established three Pollution Response Centres at Mumbai, Chennai and Port Blair with tier-2 (upto 10,000 tonnes) pollution response capability. During 2005, the Coast Guard ships and aircraft have successfully neutralised oil pollution off Goa on March 23, 2005 and off Mumbai High on July 27, 2005. In order to meet the increased marine environment threat, augmentation of the pollution response capabilities from tier-2 to tier-3 (i.e. above 10000 tonnes) is also being considered.

6.15 ***Lead Intelligence Agency:*** The Coast Guard has been entrusted with new responsibility of Lead Intelligence Agency for Coastal and Sea Borders with effect from September 2003. The Coast Guard has commenced this task by establishing its own intelligence organization in all Coast Guard district headquarters.

6.16 ***International Cooperation:*** A Memorandum of Undertaking was signed between Ministry of Defence of Government of India and Ministry of Defence of Government of Pakistan on October 3, 2005 for the

establishment of a communication link between the Indian Coast Guard and the Pakistan Maritime Security Agency (PMSA). With the establishment of this communication link, there will be quick exchange of information between the Coast Guard and the PMSA regarding violation of each other's EEZ; pollution incidents affecting the EEZ of both the nations; facilitation of maritime search and rescue operations in accordance with the national laws and applicable international conventions; natural disasters/ calamities affecting adjoining coastal area/sea etc.

7

DEFENCE PRODUCTION

Nag Missile producutionized by Bharat Dynamic Limited

Department of Defence Production continually strives to update and improve manufacturing capacity by developing and accessing new technology, and through joint ventures with the objective of achieving self-reliance.

7.1 The Department of Defence Production deals with the indigenisation, 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 for aircraft and helicopters, warships, submarines, heavy vehicles and earthmovers, missiles, a variety of electronic devices and components for the defence sector, and alloys and special purpose steel. Since Independence, the defence production sector has been developing steadily, with the objective of achieving self-reliance. Industries in this sector have been continually striving to update and improve their manufacturing capacity by developing and accessing new technology and through joint ventures with leading companies in different fields. They have also been focusing on commercialising new products developed from time to time by the defence research establishments and also on indigenising production as far as possible.

7.2 The following are the major organisations directly under the Department of Defence Production :

- Ordnance Factory Board
- Hindustan Aeronautics Limited
- Bharat Electronics Limited
- Bharat Earth Movers Limited
- Mazagon Dock Limited
- Goa Shipyard Limited
- Garden Reach Shipbuilders & Engineers Ltd
- 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 very technology intensive with high levels of quality. The Directorates General of Quality Assurance (DGQA) and Aeronautical Quality Assurance, and the Directorate of Standardisation have been set up to ensure the quality levels and there is a need to continually improve the standards and testing facilities.

7.4 With the introduction of the new Defence Procurement Procedure 2005, 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. By implementing the offset policy, India will be in a better position to integrate with the world economy, absorb better technologies and upgrade its capacity.

ORDNANCE FACTORIES

7.5 The Ordnance Factories organisation is the largest and oldest departmentally run production organisation in the country and 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- a role that has been successfully fulfilled over the years by continuous expansion of manufacturing base and upgradation of technology.

7.6 The Ordnance Factories organisation is a fine blend of some old and some state-of-the-art factories. There are 39 Ordnance Factories, geographically distributed all over the country at 24 different locations. The pre-independence factories had capacities for production of not only finished stores but also basic and intermediate materials. The factories set up after independence, however, have been outsourcing their requirements from small and medium industries.

7.7 ***Organisational Structure:*** The Ordnance Factory Board (OFB) has a Chairman and 9 functional Members. Out of these, five Members are heading operating divisions and four Members are responsible for Staff functions. The operating divisions, based on the main products or group of products, 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 as under:

- Finance
- Planning and Material Management
- Personnel
- Projects & Engineering and Technical Services.

7.8 In addition, the Government has constituted a Special Board, with representation from the Ministry of Defence, Army and Defence Research & Development Organisation for providing appropriate inputs on resource planning, upgrading technology of products & process and on various other critical issues, necessary for the efficient functioning of OFB.

7.9 ***Human Resources:*** Ordnance Factories have a large pool of qualified and experienced personnel. Total strength of ordnance factories as on July 2005 was 1,18,643. This includes 31,812 SC/ST employees and 7,665 women employees. There is a sharp focus on enhancing productivity and meeting the challenge of modernisation by re-orienting the existing skills of workmen envisaged through multi-skilling. Ordnance Factories have three-tier structure for addressing the training needs of the personnel. National Academy of Defence Production (NADP) Nagpur, a premier training institute, caters to the training need of Group 'A' officers; 8 Ordnance Factories Institutes of Learning (OF, IOL) take care of the training need of Group 'B' officers and staff. All the 39 Ordnance Factories have training institutes for training industrial employees and trade apprentices.

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

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

Ammunition Items - Ammunition 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 - Tanks, Infantry Combat Vehicles, Armoured Ambulance, Bullet Proof & Mine Proof Vehicles, Special Transport Vehicles and Variants.

Troop Comfort Items - Parachute for Army & Air Force, high altitude & combat clothing, tents of various

T-90 (Bishma)

types, uniforms & clothing items, floats for light assault bridges.

Opto Electronics - Optical instruments, Opto-electronic devices, fire control instruments for armoured vehicles, infantry and artillery systems.

Others - Special aluminium alloys for aviation and space industry, field cables.

7.11 ***Performance:*** The issues of Ordnance Factories have grown steadily over the years and recorded Rs. 6186.65 crore during 2004-05. In 2005-06, the issues of Ordnance Factories are expected to touch about Rs. 7355 crore.

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

7.13 Ordnance Factories produce a large variety of chemicals for industries in the civil sector. They also manufacture a wide range of textiles, leather goods and sporting arms and ammunition for the civil sector. During 2004-2005, items worth Rs 977.82 crore (15.8% of the total issues) were sold to non-defence customers.

Ordnance Factories have grown steadily over the years and recorded issues worth Rs. 6186.65 crore during 2004-05. In 2005-06, the issues of Ordnance Factories are expected to touch about Rs. 7355 crore.

7.14 Ordnance Factories are making vigorous marketing efforts to boost exports. These efforts include participation in International Exhibitions like Latin American Aero Space and Defence Exhibition, Brazil; DESI Exhibition, London; product promotion through advertisements in the Jane's Defence Weekly, Military Technology and interaction with visiting delegations from target countries, agents and customer's representatives, both in India and abroad. OFB has been able to retain its foothold in traditional markets like Nepal, Thailand, Malaysia, Germany, Belgium and Botswana. New avenues have opened in countries like Turkey, Swaziland, Switzerland, USA, Chile, Colombia, Surinam and Egypt. Some of the notable products exported during the year are 105 mm LFG ammunition, 84 mm ammunition, Brake parachute for Su –30 and 40 mm gun barrel assembly.

7.15 ***Highlights:*** The more important achievements of Ordnance Factories in the current financial year are:

(i) ***Ordnance Factory Project, Medak (OFPM) –*** OFPM has improved the effectiveness of Mine Protected Vehicle by mounting Remote Controlled Weapon Station (RCWS).

(ii) ***Ordnance Factory, Badmal (OFBL) –*** O.F. Badmal has successfully manufactured ***Cap Conducting Composition*** (Filled) for Primer Electric 1A. It has also productionised ***Detonating Fuze NR-3*** for Schilka Ammunition.

(iii) ***Small Arms Factory, Kanpur (SAF) –*** During Commanders Conference held at Infantry School Mhow, Ordnance Factories had demonstrated indigenously developed products.

(iv) ***Metal & Steel Factory, Ishapore (MSF) –*** MSF has completed a glorious century of service towards self-reliance of Defence Production on July 11, 2005. State-of-the-art ***Radial Forging*** machine was inaugurated at MSF by the Raksha Mantri.

(v) ***Ordnance Factory, Ambajhari (OFAJ) –*** OFAJ has optimised the aging cycle of 84 mm Cartridge Case that may result in estimated saving of Rs. 1.58 crore during 2005-2006.

(vi) ***Cost Reduction at Ordnance Factories –*** Process re-Engineering is practiced in Ordnance Factories on a continual basis to improve

productivity and reduce cost of production.

7.16 ***Quality Management :*** Implementation of Total Quality Management (TQM) concept has been given a major thrust in all the Ordnance Factories. All the 39 Ordnance Factories have switched over to Quality Management System conforming to ISO-9001: 2000 standards. Information Technology Division at Ordnance Factory Board, National Academy of Defence Production (NADP), Ambajhari, Nagpur and two hospitals at Kanpur and Ambajhari have also obtained ISO-9000 certification. All the 52 laboratories in 29 Ordnance Factories are accredited to National Accreditation Board for Laboratories (NABL) and conform to ISO/IEC 17025 new standards. The quality of product in Ordnance Factories is monitored through various mechanisms. These include adherence to pre-determined process schedule and quality plans, use of Statistical Process Control, Statistical Quality Control techniques, internal quality audits at regular interval and monthly interaction meetings at unit level.

7.17 OFB has introduced three-tier quality audit to assess the performance of various factories and identify the areas requiring performance enhancements against predetermined parameters.

7.18 With the intention to move towards self-certification, the responsibility of vendor development and inspection of input materials has been transferred to OFB from DGQA.

7.19 ***Self Certification in Ordnance Factories :*** The introduction of self-certification in Ordnance Factories not only eliminates the need for a third party intervention but also integrates three distinct roles i.e. responsibility, accountability and authority and, then Ordnance Factories themselves guarantee quality for their products. Presently, self-certification extends to seven fast moving clothing and general store items accounting for about 20% of the turnover of the Ordnance Equipment Group of factories. In addition, nine items each issued to Air Force and Navy are under self-certification.

7.20 ***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 conceptualisation to the development of prototype.

A capital investment of Rs. 1062 crore for procurement of plant and machinery with updated technology was made for Ordnance Factories in IXth plan. Further, investment of Rs.875 crore during the Xth plan period upto 2004-05 has been made and investment of Rs.346 crore is planned in 2005-06.

7.21 ***Modernisation:*** Modernisation of infrastructure is a continuous process in Ordnance Factories adopted to update the plants and machinery with the following objectives in view:

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

7.22 A capital investment of Rs. 1062 crore for procurement of plant and machinery with updated technology was made during IXth plan period. Further, investment of Rs.875 crore during the Xth plan period upto 2004-05 has been made and investment of Rs.346 crore is planned in 2005-06.

7.23 The Ordnance Factories are open to strategic alliances with major Defence Companies worldwide for co-production and co-development of high technology defence products.

7.24 ***Customer satisfaction:*** Teams from Ordnance Factories regularly visit depots and forward areas to understand the problems being faced by the users, understand their expectations from the product and to attend to customer complaints. Joint teams comprising of officers from OFB and DGQA also visit forward areas to get user feedback with a view to improve quality of products. 'User Interaction Meet' held once a year has been institutionalized.

7.25 ***Safety:*** The safety policy was structured to make safety standards more stringent and to inculcate safety consciousness among employees specially those working in accident prone and hazardous areas. The safety manuals and standing instructions are updated to supplement safety policies. A Disaster Management Plan has been formulated for contingency measures. Safety is paramount in the factories engaged in manufacturing and filling of explosives. A detailed drill and stipulations are in place to ensure a safe working environment. Safety committees functioning at factory, regional and corporate levels carry out safety audits of various factories on monthly, six monthly and yearly basis. The Regional Controllers of Safety and Controller of Safety closely monitor implementation of corrective actions on the deviations observed during these audit.

Advance Light Helicopter

DEFENCE PUBLIC SECTOR UNDERTAKINGS

Hindustan Aeronautics Limited (HAL)

7.26 Hindustan Aeronautics Limited was formed in 1964 with its Corporate Office at Bangalore. The Company has 16 production divisions and 9 R&D Centres located in six States. It is the largest Public sector undertaking under the Department of Defence Production. HAL's product range consists of aircraft, helicopters, aero-engines, accessories and avionics. It has diversified into manufacture of structures for aerospace launch vehicles & satellites and Industrial and Marine Gas turbine engines. HAL is a Memorandum of Understanding (MOU) signing company and has been declared as Mini-Ratna (Category 1) Company. The manpower of the Company as on December 31, 2005 was 29,098.

HAL's product range consists of aircraft, helicopters, aero-engines, accessories and avionics. During the year 2004-05, HAL achieved turnover of Rs.4534 crore and exports of Rs.150.05 crore. Exports during the current year up to December 2005 were of the order of Rs 105 crore (approx).

7.27 ***Capital Structure:*** The Authorised Capital is Rs.160 crore consisting of shares having face value of Rs.10 each. The Issued, Subscribed and Paid-up share capital remained at Rs.120.50 crore, comprising 12,05,00,000 shares of Rs.10 each.

7.28 During the year 2004-05, the Company achieved turnover of Rs.4534 crore and exports of Rs.150.05 crore. Exports during the current year up to December 2005 were of the order of Rs 105 crore (approx).

7.29 The dividend paid during the last 3 years has been 73.02% for 2002-03, 76.73% for 2003-04 and 94.54% in 2004-05 on the Paid Up Capital of Rs.120.50 crore.

7.30 Significant achievements of HAL during the year are highlighted below:-

(i) Intermediate Jet Trainer prototypes were displayed in Paris Air Show – 2005 both in flight and static displays. 100th flight was done on the second prototype during flight in Paris Air Show 2005.

(ii) To streamline the activities across the Company, the Enterprise Resource Planning (ERP) has been implemented at three pilot sites which will be extended to all the Divisions by 2006. Lean Initiative has been introduced to reduce wastes and wasteful activities and to improve productivity.

(iii) New Joint Venture (JV) : The Shareholders' Agreement to launch the HAL-Snecma JV was signed on July 20, 2005 with Snecma, France. The JVC has been formed with equal equity participation by both HAL and Snecma. The JV will be an export oriented unit and produce precision components for engine Fluid System, Turbine seals and cooling systems and Aluminium Outlet Guide Vanes (OGVs) for export. The JV will become operational in 2006.

7.31 Indigenisation content in sales has been 74% during the current year (upto October, 2005) as against the target of 72% for the year 2005-06.

7.32 It was awarded the Engineering Export Promotion Council (EEPC) Export Award on February 26, 2005 for two consecutive years 2001-002 and 2002-03 in the category of exporter of Engineering Consultancy, Technical Know-how and other engineering services.

7.33 HAL received the Enterprises Excellence Award i.e. a Golden Shield and Certificate for the year 2003-04 in the Engineering Sector for Financial and Operational Strengths in CEO's conference in May 2005.

7.34 Divisions of HAL have also maintained currency of Quality System approvals from International Aerospace Companies like M/s. Boeing, M/s. Airbus, M/s. Snecma, M/s. Rolls Royce, M/s. BAe Systems and M/s. Israeli Aircraft Industry for undertaking export.

7.35 Annual Corporate Quality Audits 2005-06 of all HAL Divisions have been carried out during May to August 2005. Implementation of recommendations of the audit reports has been ensured through monitoring of the action plans of the Divisions.

BHARAT ELECTRONICS LIMITED (BEL)

7.36 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 electronic equipment/ components for the use of defence services, para-military organisations 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

About 60% of BEL's turnover is with indigenous technology developed in-house and provided by DRDO laboratories. It has set up in-house Research & Development groups in all the Units in the respective product areas and is spending about 5% of its turnover on R&D.

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. The manpower of the Company in September 2005 was 12395.

7.37 BEL ranked first among medium sized Aerospace/ Defence Companies worldwide, for the second year in a row (2003 & 2004), by Aviation Week & Space Technology Magazine published by The McGraw-Hill Companies, USA.

7.38 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. The company's subsidiary BEL Optronics Device Limited (BELOP), which manufactures Image Intensifier Tubes, continues to perform well and is expected to improve its performance further in the coming years.

7.39 In the area of Quality Assurance, BEL has adopted the Total Quality Management (TQM) approach. A Corporate Quality Group – Total Organisational 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.

7.40 The company has adopted Six Sigma Concept – a concept which has been successfully implemented by global giants like Motorola, General Electric etc for quality enhancement and total quality management of its products.

7.41 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. About 60% of the Company's turnover is with indigenous technology developed in-house and provided by DRDO laboratories. The Company has set up in-house Research & Development groups in all the Units in the respective product areas. BEL is spending about 5% of its turnover on R&D.

7.42 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:-

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

(ii) Solar Photo Voltaic Systems

(iii) Smart Card Based Systems (Access Control, MNIC, Security & Regulatory Applications)

(iv) X-Ray Baggage and Cargo Inspection System

(v) Under Carriage Vehicle Inspection & Vehicle Authentication System

(vi) Compact Vacuum Interrupters

(vii) Set Top Box

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

(ix) Simputer

7.43 Significant achievements of BEL during the year are highlighted below:

(i) Project SANJAY & SHAKTI were successfully demonstrated to Indian Army.

(ii) A complex Electronic Warfare System for Shipborne Application 'ELLORA' having ESM & ECM features was supplied to Indian Navy.

(iii) The company paid the highest ever dividend of 112% for the year 2004-05. The company has already declared and paid an interim dividend of 40% for the year 2005-06 in November, 2005.

(iv) The company bagged Indira Gandhi Raj Bhasha Award for 2003-04, the highest award for implementation of Hindi as the official language. The award was received on September 14, 2005 at New Delhi.

(v) It received DSIR National Award for R&D Efforts in Industry (2005) for the successful commercialisation of Technologies acquired from other sectors.

(vi) All Units/Divisions of BEL are ISO 14000 : 1996 certified.

(vii) BEL has achieved 'Excellent' rating on Memorandum of Understanding (MoU) score for the seventh consecutive year.

BHARAT EARTH MOVERS LIMITED (BEML)

7.44 Bharat Earth Movers Limited (BEML) was established in May 1964 and commenced operations from January 1965. Government of India holds 61.23% of equity shares of the

BEML achieved a record turnover of Rs.1856.01 crore during the financial year 2004-05 registering a growth of around 5% over the previous year. The value of production of BEML during 2004-05 was Rs.1885.95 crore, an increase of Rs.194 crore showing a growth of 11.47% over the previous year. It exported earthmoving equipment worth Rs.58.56 crore during 2004-05.

company and continues to be the major shareholder. BEML is the prime earthmoving and construction equipment manufacturer in the country and also produces ground supporting equipment for armed forces for movement of men and material. The company also manufactures railway coaches and wagons for Indian railways and defence forces. Recently, BEML has diversified its business by successfully assembling state-of-the-art stainless steel metro coaches for Delhi Metro Rail Corporation (DMRC) under technical collaboration with M/s Rotem of South Korea.

7.45 BEML has 8 manufacturing divisions located at Bangalore, Kolar Gold Fields (KGF) and Mysore, which include 2 workshops at KGF

BE200 Hydraulic Excavator produced by BEML

acquired from erstwhile Bharat Gold Mines Limited (BGML). BEML also has a subsidiary steel foundry namely Vignyan Industries Limited (VIL) at Tarikere near Bangalore. The company has a strong R&D set up at its KGF complex. Emphasis is given to R&D activities so that the Company remains the leader in Earth Moving Industry. The manpower of the Company as on December 31, 2005 was 12,189.

7.46 BEML's products are exported to more than 30 countries

7.47 Significant achievements are highlighted below:

(i) Company achieved a record turnover of Rs.1856.01 crore during the financial year 2004-05 registering a growth of around 5% over the previous year. The value of production of BEML during 2004-05 was Rs.1885.95 crore, an increase of Rs.194 crore showing a growth of 11.47% over the previous year. The net worth of the Company as on March 31, 2005 stood at Rs.694.39 crore.

(ii) The profit after tax for 2004-05 stood at Rs.175.28 crore against the figures of Rs.24.17 crore achieved during 2003-04. The substantial increase in the profitability has been possible because of outstanding performance in all the spheres

of its operations and effective management of resources.

(iii) Company declared 100% dividend to its shareholders for the year 2004-05. BEML share value reached an all time high of Rs.900 per share. BEML is now ranked No.2 among PSUs next to BHEL in market capitalisation.

(iv) The Company exported earthmoving equipment worth Rs.58.56 crore during 2004-05. The company has executed export order worth Rs.24.31 crore at the end of November 2005 and export orders worth Rs.49.59 crore are in hand.

(v) BEML bagged an Export award from Engineering Export Promotion Council on February 26, 2005 at Chennai for superior export performance.

MAZAGON DOCK LIMITED (MDL)

7.48 The leading Warship building yard in the country, Mazagon Dock Limited was taken over by Government of India in May 1960. Over the years, 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. MDL has to its achievement crucial

A ship being launched at MDL

contributions towards infrastructure in the oil exploration sector. The manpower of the Company in September 2005 was 7962.

7.49 Medium refit of one submarine was completed in May 2005 and its post refit activities of modernization cum warranty are scheduled to be completed in near future.

GOA SHIPYARD LIMITED(GSL)

7.50 Goa Shipyard Limited is the largest Public Sector Enterprise in the State of Goa employing about 1652 people. It is located at Vasco-da-Gama, on the mouth of River Zuari, in close proximity to the Mormugao Port, Vasco Railway Station and Dabolim Airport.

7.51 Goa Shipyard has to its credit a wide range of vessels built in the recent past which include Tug boats, Survey Crafts, Landing Craft Utility, Seaward Defence Boats, Oil Tankers, Ferry Crafts, Torpedo Recovery Vessels, Sail Training, Ship Missile Crafts and Extra Fast Attack Crafts for the Navy, Offshore Patrol Vessels and Advanced Offshore Patrol Vessels for Coast Guard, Offshore Supply Vessels for ONGC and various types of Tugs, Barges, Deep Sea Fishing Vessels, Heave-up Mooring Vessels, Dredgers, Passenger Ferries, Pilot Boats etc. for Ports and other Commercial Organisations. GSL is presently constructing four Extra Fast Patrol Vessels and one Advanced Offshore Patrol Vessel for the Coast Guard. GSL has recently bagged orders for construction of three Naval Offshore Patrol Vessels for Navy and one Advanced Offshore Patrol Vessel for Coast Guard.

GARDEN REACH SHIPBUILDERS AND ENGINEERS LIMITED (GRSE)

7.52 Taken over by the Government of India on April 1, 1960, Garden Reach Shipbuilders and Engineers Ltd (GRSE) is among the leading shipyards in the country and the premium yard in the East. GRSE builds a wide range of ships – from sophisticated warships to ultra modern commercial vessels and from small Harbour craft to fast and powerful patrol vessels. India's first ever tanker fleet too was built at GRSE. The latest on the list is new generation hovercraft.

7.53 GRSE is among the few shipyards in the world with its own Engineering and Engine Manufacturing divisions. The manpower of the Company in September 2005 was 5364.

MISHRA DHATU NIGAM LIMITED (MIDHANI)

7.54 Mishra Dhatu Nigam Limited (MIDHANI) was incorporated as a Public Sector Undertaking under the administrative control of Department of Defence Production, Ministry of

For contribution in the area of extensive development of titanium and its alloys for Aerospace in general, and development of niobium based (NIOBHAT-101) for satellite applications in particular, MIDHANI was conferred Award for Development of Technology & Innovation for the year 2004-05 by the Society of Defence Technologists (SODET).

Defence 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 and Navy. The manpower of the Company as on December 31, 2005 was 1320.

7.55 Significant achievements of the company are highlighted below:-

(i) The company achieved 'Excellent' Memorandum of Understanding (MoU) rating for the overall performance in 2004-05 for the second year in succession.

(ii) MIDHANI has achieved a turnover of Rs.110.09 crore till end December, 2005 against the half yearly target of Rs.58 crore.

(iii) For contribution in the area of extensive development of titanium and its alloys for Aerospace in general, and development of niobium based (NIOBHAT-101) for satellite applications in particular, the Society of Defence Technologists (SODET) conferred the Award for Development of Technology & Innovation for the year 2004-05 in SILVER CATEGORY to MIDHANI.

(iv) Midhani has successfully developed a Nitride Steel 38XMUAW grade for MIG engine programme through in-house technical expertise and R&D efforts.

(v) MIDHANI have signed Memorandum of Understanding (MoU) with DMRL for the development of Supercast 247 A for turbine blade/ vane applications for Kaveri engine Programme.

(vi) Midhani has successfully executed much ahead of the schedule, an order from Ordnance Factory, Medak, valued at Rs 6 crore for the initial supply of 15 sets of Kanchan Armour for the Main Battle Tank Arjun.

(vii) The Company has obtained ISO 9001: 2001(latest standard) certificates from Bureau of Indian Standards (BIS) Audit Team.

BHARAT DYNAMICS LIMITED (B.D.L.)

7.56 BDL was set up in 1970 for manufacture of Guided missiles. It

is among a few strategic industries in the public sector and possesses the capability to produce advanced Guided Missile systems. The Company has two units, one at Kanchanbagh, Hyderabad and the other at Bhanur, Medak District. The Company is working in close association with DRDO for technology absorption of missiles.

7.57 The Milan, Konkurs, Prithvi and Information Technology Divisions of the company have ISO 9001 : 2000 certification.

7.58 The value of production and sales upto December 31, 2005 was Rs.278.66 crore and Rs.299.75 crore respectively. As part of its efforts to increase exports, BDL has executed orders worth Rs. 2.90 crore during 2005-06 (upto December 31, 2005). BDL has paid an amount of Rs. 23.00 crore as dividend to Government of India for the year 2004-2005.

SALES OF ORDNANCE FACTORIES AND DEFENCE PSUS

7.59 The total value of sales by Ordnance Factories and Defence Public Sector Undertakings during the last threes years, is given in table No. 7.1.

Defence Public Sector Undertakings and Ordnance Factories have exported items worth US $ 29.56 million during the current year (upto November , 2005).

INDIGENISATION

7.60 To achieve quest for self-reliance in the Defence sector, continuous efforts are being made to indigenise defence equipment wherever technologically feasible and economically viable. It has been a part of the indigenisation effort to locate and develop broad-based indigenous supply sources both in the public sector as well as in the civil trade for many complicated and intricate equipments. There has been a

Table 7.1

(Rupees in crore)

Year	*Ordnance Factories Total Sales*	*Public Sector Undertakings Total Sales*	*Grand Total*
2003-2004	6523.87	9892.73	16416.60
2004-2005	6186.65	11248.59	17435.24
2005-2006 (Upto Dec. 05) (Provisional)	4533.24	7237.93	11771.17

An institutional framework of 8 Technical Committees, under Directorate General of Quality Assurance and Directorate General of Aeronautical Quality Assurance has been setup for indigenisation of spares of the Defence Equipment.

paradigm shift in the role of private sector/ civil trade in the Defence sector i.e., from the role of supplier of raw-materials, components, sub-systems, they have now become a partner in the manufacture of complete defence equipment/ system. In May 2001, the defence industry sector, which was hitherto reserved for the public sector, was opened up for participation by the Indian Private sector. The Indian companies are now eligible to apply for licence to set up defence industry for manufacture of all types of defence equipment under licence. Such companies could also have foreign direct investment, upto 26% of the equity. Detailed guidelines have been issued by the Department of Industrial Policy and Promotion (DIPP) in consultation with Ministry of Defence regarding the modalities for consideration of applications for grant of licence.

7.61 After the opening up of the Defence Industry Sector for private participation, 28 Letters of Intent/ Industrial Licences were issued upto December 31, 2005, to the private companies for the manufacture of various types of Defence Equipment. Some of the large companies, such as, Larsen and Toubro Ltd., Mahindra & Mahindra Ltd., TIL Ltd and Automotive Coaches & Components Ltd. obtained letters of intent/ industrial licenses to enter the Defence Industry Sector as full-fledged manufacturers and suppliers of Defence equipment.

7.62 For indigenisation of spares of the Defence Equipment, an institutional framework has been in existence in the form of 8 Technical Committees, under Directorate General of Quality Assurance and Directorate General of Aeronautical Quality Assurance. These committees maintain a compendium of civil industries capable of undertaking the task of indigenisation of defence equipment/ stores after conducting surveys and assessing their capabilities. After identifying items in consultation with the user services for indigenisation and keeping in view the commercial viability and the strategic needs, these Committees undertake the indigenisation activity and ensure timely supply of defence equipment/ stores.

7.63 For enhanced and meaningful interaction, conferences/ exhibitions are held from time to time with civil

Directorate General of Quality Assurance (DGQA) is an inter-service organisation responsible for Quality Assurance of all defence stores and equipment, both imported and indigenous for the Army, Navy (excluding Naval Armaments) and common user items for the Air Force procured from all sources

industry. During the year, nine Exhibition-cum-Vendor Awareness Programmes (upto December, 2005) have been held.

7.64 A Committee under the Chairmanship of Dr. Vijay Kelkar, former Adviser to Finance Minister, was set up in the Department of Defence Production to examine and make recommendations on changes required in the procedure of acquisition/ procurement of Defence equipment in vogue to modify it on an approach based on "Product Strategy". The Committee was also tasked to suggest modalities for integration of user, Ministry of Defence and the Indian Industry (including private sector). It was also required to suggest measures to increase Defence exports, incorporation of offsets in Defence acquisition and changes required to facilitate Ordnance Factories and Defence PSUs to assume the role of designer and integrator of large defence equipment and platforms. The Report (Part I) of the Kelkar Committee was submitted on April 5, 2005 and its Report (Part-II) on November 10, 2005. The recommendations made by the Committee are under consideration of the Government.

OTHER ORGANISATIONS IN DEPARTMENT OF DEFENCE PRODUCTION

Directorate General Aeronautical Quality Assurance (DGAQA)

7.65 The Directorate General Aeronautical Quality Assurance (DGAQA) is the regulatory authority of the Ministry of Defence for Quality Assurance and final acceptance of military aircraft/Aero engine/Air Armament/ Unmanned Aerial Vehicle/ Aero Equipment during design/ development/ production and overhaul/repair/modification. The directorate has 34 establishments located at various places in India.

7.66 DGAQA follows an executive Quality Assurance (QA) System, i.e., an approved firm's inspection organization system for effective monitoring of the QA and final clearance in respect of the aircraft, aero engine and rotables under development, production repair and overhaul at defence PSUs for supply to the Armed Forces.

7.67 A direct inspection system is followed by DGAQA for Air Armament equipment under production at Ordnance Factories and ground support equipment for aircraft purchased through trade against Service Headquarters Orders.

7.68 DGAQA is also providing QA coverage as nodal agency for Missile

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

System Quality Assurance (MSQA). During the current year (upto September, 2005) DGAQA has inspected Aeronautical stores of the value of Rs.948 crore.

DIRECTORATE GENERAL OF QUALITY ASSURANCE

7.69 Directorate General of Quality Assurance (DGQA) is an inter-service organisation functioning under the Department of Defence Production in the Ministry of Defence. DGQA is responsible for Quality Assurance of all defence stores and equipment, both imported and indigenous for the Army, Navy (excluding Naval Armaments) and common user items for the Air Force procured form all sources viz Private Sector, Public Sector Undertakings and Ordnance Factories. It has, therefore, a vital role to play in defence preparedness of the country.

7.70 ***Organisational Structure and Functions:*** DGQA Organisation is structured into ten Technical Directorates each responsible for a distinct range of equipment. The Technical Directorates are vertically structured in three tiers for functional purposes, comprising their respective Headquarters, Controllerates and Field Quality Assurance Establishments. The tasks performed by them are complementary and are integrated to achieve maximum efficiency.

ACHIEVEMENTS OF DGQA

7.71 ***Inspection of Stores :*** DGQA ensures that stores accepted are strictly as per laid down specifications and performance parameters. The value of stores inspected during the last three years is given in table No. 7.2.

Table 7.2

Year	***Value Of Stores Inspected (In Crore)***
2003-2004	14692
2004-2005	16096
2005-06 (till Dec. 2005)	9616.78

7.72 ***Quality Assurance of Imported Equipment:*** DGQA performs the inspection of Imported Equipment and Weapon System being acquired by the Armed Forces.

7.73 ***Self Certification:*** DGQA Organisation awards Self-Certification status to quality conscious firms/ manufacturers who have well established Quality Management Systems and demonstrate consistent product quality during the execution of successive Defence Supply Orders. 52 firms have been awarded Self-Certification status so far.

7.74 ***Training Initiatives:*** The Defence Institute of Quality

The Directorate is the nodal point in the Department of Defence Production for international cooperation in defence production and defence exports.

Assurance, Bangalore has been training DGQA personnel in the field of Quality Assurance, Management/ Human Resource Development and Information Technology. Courses have been conducted for Services and personnel from Outside Organisations like Defence PSUs, OFB etc. Details of Officers trained in the last two years are given in table No. 7.3.

Table 7.3

Sl. No.	*Year*	*DGQA*	*Other Organisations*
1.	2004-2005	449	90
2.	2005-2006 (till December 2005)	365	64

DIRECTORATE OF STANDARDISATION

7.75 Directorate of Standardisation was constituted in 1962 with the objective to control item proliferation within Defence Services. It has nine Standardisation Cells and six Detachments. The primary objective of the Directorate of Standardisation is to establish commonality in equipment and components among the three Services so that the overall inventory of the Defence Services is reduced to the minimum. The objective is sought to be achieved through :-

DEO is primarily responsible for organising and coordinating defence exhibitions in India and aboard.

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

(b) Codification and Cataloguing of Defence Inventory.

(c) Entry Control.

7.76 Standardisation activities are done through 13 Sub-Committees, Panel/ Working Groups under these Sub Committees and several Specialists Technical Panels (STP) and Defence Equipment Codification Committee (DECC).

7.77 Significant achievements during the current year are highlighted below:

(i) Introduction of Five Year Roll-on-Plan (2005-10).

(ii) During 2004-05, 13527 items were codified as against target of 13,225. Against target of 10662 for the year 2005-06, 9818 items have been codified till December 2005.

(iii) During 2004-05, 765 standard documents were prepared against target of 658. For 2005-06, 519, standard documents have been prepared upto December, 2005 against target of 669.

7.78 ***Entry Control:***

(i) 131 statements of cases for introduction, scaling and declaring the items obsolete have been cleared upto December 31, 2005 for the year 2005-06.

(ii) 332 Departmental Specifications were uploaded during 2005-06 (upto December, 2005) on the website.

DIRECTORATE OF PLANNING & CO-ORDINATION

7.79 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. The Directorate is responsible for monitoring and implementation of major indigenisation projects being pursued by the Ordnance Factories. Development programme of armaments for the Army and Navy are other key activities of the Directorate. The Directorate also

Raksha Mantri inaugurating Defexpo, 2005

monitors the critical projects in the electronics sector for the three Services.

7.80 The Directorate is the nodal point in the Department of Defence Production for international cooperation in defence production and defence exports. The Directorate supports the Export wing of the Department during its deliberations with the various bilateral Defence Policy Groups and Joint Working Groups with other countries.

7.81 The Directorate coordinates, within the Department of Defence Production, the interaction with the Integrated Defence Staff Headquarters, regarding classification of the respective capital acquisition plans of the three Services into "BUY", "BUY & MAKE" and "MAKE" categories. The Directorate serves as the Secretariat for the Defence Production Board, which is charged with the function of monitoring progress emanating out of all "MAKE" decisions taken by the Defence Acquisitions Council (DAC). Defence Production Board also assists the DAC to arrive at optimum decisions regarding licence production, transfer of technology (TOT) and ab-initio Production/ development.

DEFENCE EXHIBITION ORGANISATION (DEO)

7.82 The Defence Exhibition Organisation (DEO), established in 1981, is primarily responsible for organising and coordinating defence exhibitions in India and aboard. It maintains the permanent Defence Pavilion at the Pragati Maidan, New Delhi. During IITF, 2005, products manufactured/ developed by Ordnance Factories, Defence Public Sector Undertakings and Defence Research and Development Organisation were displayed at the pavilion. In addition, the Armed Forces, Directorate General of Quality Assurance, Coast Guard and the National Cadet Corps were also represented. More than five lakh visitors visited the Defence Pavilion during IITF 2005. It provided an opportunity to the DPSUs/ DRDO/ DGQA/ OFB to display their product range and also to inculcate defence consciousness among the citizens. The Pavilion was awarded Gold Medal for excellence in display in the Central Government Category.

7.83 DEO also organises two international exhibitions in India, namely, the Aero India and Defexpo

India. While Aero India focuses on aviation and aerospace, focus of Defexpo India is on land and naval systems. Both exhibitions are biennial in frequency.

7.84 ***Aero India:*** The fifth edition of Aero India was organised at Air Force Station, Yelahanka (AFSY) from February 9 to 13, 2005. The exhibition has carved a niche for itself as one of the leading air shows in the world. About 148 Indian companies participated in the event as against 74 during Aero India 2003. International participation also increased significantly with the participation of 232 companies from 32 countries as compared to 174 companies from 23 countries during Aero India 2003.

7.85 ***Defexpo India:*** The fourth edition of Defexpo India was organised at Pragati Maidan, New Delhi from January 31 to February 3, 2006, jointly with Confederation of Indian Industry. Nearly 420 companies from more than 38 countries participated in the exhibition along with an equal number of Indian companies.

7.86 ***International Participation :*** DEO also organises "India Pavilion" at exhibitions abroad every year to develop market for defence products being manufactured by our DPSUs/ OFB. For the current year, India Pavilions were set up at LAAD, Brazil and IMDEX Asia at Singapore. This was a sequel to the Indian Pavilion established at Africa Aero and Defence, South Africa during financial year 2004 – 05 as part of South-South cooperation between India, Brazil and South Africa.

7.87 ***Defence Product Catalogue*** The third edition of Defence Product Catalogue was released in February 2005. The Catalogue provides details of products being manufactured by the OFB, DPSUs and the private sector companies.

7.88 The details of Investment, Value of Production & Sales and Profit of the eight Defence Public Sector Undertakings are shown in Tables 7.4, 7.5 and 7.6 respectively. The details of Value of Production and Sales in respect of Ordnance Factory Board (OFB) are shown in Table 7.7.

Table 7.4

INVESTMENT

(Rs. in Crore)

Name of PSUs	***2002-03***		***2003-04***		***2004-05***	
	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	-	19.40	-	19.40	-
BDL	115.00	-	115.00	-	115.00	-
MIDHANI	137.34	-	137.34	-	137.34	-
TOTAL	***832.15***	***-***	***832.15***	***-***	***832.15***	***-***

Table 7.5

WORKING RESULTS

VALUE OF PRODUCTION AND SALES

(Rs in Crore)

Name of the PSUs	***2002-2003***		***2003-2004***		***2004-2005***	
	Value of Production	***Value of Sales***	***Value of Production***	***Value of Sales***	***Value of Production***	***Value of Sales***
HAL	3477.84	3120.42	3756.14	3799.78	4984.55	4533.80
BEL	2536.39	2508.02	2807.83	2798.59	3234.97	3212.09
BEML	1740.16	1681.17	1691.86	1765.75	1885.95	1856.01
MDL	539.52	569.27	495.77	191.00	540.63	99.54
GRSE	523.09	153.69	486.90	390.76	470.28	881.41
GSL	232.14	386.50	200.83	296.92	141.83	83.49
BDL	330.38	277.72	522.47	524.80	465.79	450.98
MIDHANI	93.50	91.52	116.42	125.13	141.67	131.27
TOTAL	***9473.02***	***8788.31***	***10078.22***	***9892.73***	***11865.67***	***11248.59***

Table 7.6

PROFIT AFTER TAX

(Rs. in crore)

Name of the PSUs	***2003-2004***	***2004-2005***
HAL	409.79	501.06
BEL	316.10	446.32
BEML	24.17	175.28
MDL	7.92	69.14
GRSE	29.30	27.53
GSL	31.88	9.92
BDL	47.61	27.43
MIDHANI	6.89	6.85
TOTAL	***873.66***	***1263.53***

Table 7.7

WORKING RESULTS OF OFB

VALUE OF PRODUCTION AND SALES

(Rs in Crore)

2002-2003		***2003-2004***		***2004-2005***	
Value of Production	***Value of Sales***	***Value of Production***	***Value of Sales***	***Value of Production***	***Value of Sales***
7908.69	6508.05	8259.68	6523.87	8332.00	6186.65

8

DEFENCE RESEARCH AND DEVELOPMENT

'BrahMos' Supersonic Cruise Missile developed by DRDO

DRDO is fully dedicated towards progressive enhancement of self-reliance in defence systems, in state-of-the-art technologies, and R&D infrastructure of the country with a vision to promote the corporate strength and to make the country independent of foreign technologies in critical spheres.

8.1 Defence Research and Development Organisation (DRDO) was formed in 1958 with an objective to build up capability to make improvements in the existing weapon systems and to other imported equipment. Later on, in 70s, it was involved in development of armaments and ammunitions. During 80s, thrust was given to major programmes like, development of guided missiles, electronic warfare systems, aircraft, communication systems, etc. These programmes gave a new impetus to multiple design and technology centres resulting in production of weapon systems during 90s. The Department of Defence Research and Development came into existence in 1980. Now, the DRDO has emerged as one of the premier scientific and technological organisation in the country with a mission to design, develop and lead to production of state-of-the-art weapon systems, platforms and allied equipment. It also provides 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, in state-of-the-art technologies, and 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 spheres.

ORGANISATIONAL STRUCTURE

8.2 DRDO has a mission-mode structure, headed by the Scientific Adviser to Raksha Mantri (SA to RM), who is also the Secretary, Department of Defence Research & Development and Director General, Research and Development. The SA to RM is assisted by the Chief Controllers. The Organisation has a two tier system, viz. the Technical and Corporate Headquarters at New Delhi; and laboratories/ establishments located at different stations all over the country.

8.3 ***DRDO Headquarters:*** DRDO Headquarters under the Department of Defence Research & Development, is organized in two different types of Directorates - Technical Directorates and

Institute of Armament Technology (IAT) has attained status of Deemed University

Corporate Directorates. ***Technical Directorates*** include Directorates of Aeronautics, Armaments, Directorate of Materials, Combat Vehicles and Engineering, Electronics and Computer Sciences, International Cooperation, 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 in approvals of new projects in monitoring and review of ongoing projects and in co-ordinating with other laboratories and Directorates. Besides these, Scientific Advisers to Chiefs of the Army Staff, Air Staff, Naval Staff and Deputy Chief of Integrated Defence Staff also act as Technical Directors to render services to their respective Chiefs. ***Corporate Directorates***, such as Directorates of Personnel; Human Resource Development; Materials Management; Planning & Coordination; Management Services; Rajbhasha and Organisation & Methods; Budget, Finance & Accounts; Security & Vigilance; and Extramural Research & Intellectual Property Rights assist laboratories in improvement of their infrastructure, creation of new facilities, induction of manpower etc. Recruitment & Assessment Centre and Personnel Assessment Centre undertake fresh recruitments and assessment on periodic basis for the promotions of scientists for all laboratories and headquarters of DRDO under Defence Research Development Service (DRDS) and Defence Research Technical Cadre (DRTC).

8.4 ***DRDO Laboratories/ Establishments:*** Various programmes/ projects are being executed through a network of fifty laboratories/ establishments, Field Stations, Regional Centres of Military Airworthiness (RCsMA). They are engaged in R&D activities in the field of aeronautics, armaments, missiles, combat vehicles, advanced computing & networking, electronics, opto-electronics, military engineering systems, 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 has the mission to undertake design and development of advanced technology aircraft. SITAR designs digital components and devices required for various projects including high performance computing. Institute of Armament Technology (IAT), an establishment of DRDO, has

Scientists are recruited through national level Scientist Entry Test apart from talent hunt through campus interviews and scholarship schemes for advance research.

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

HUMAN RESOURCE DEVELOPMENT (HRD)

8.5 To meet the challenges of skill upgradation in the face of changing technologies in the strategic areas of national defence, DRDO has adopted a policy of dynamic and systematic human resource development. Rationalisation of cadre structure, incentive schemes, training policies, enhanced promotional opportunities, exit interviews are some of the mechanisms through which the organisation has endeavoured to ensure optimum utilization of human resource, apart from attracting and retaining best available talents in the country. The organisation has various schemes for awarding scientists, engineers, technical and administrative staff for their path-breaking research and excellence in performances.

7,100 engineers & scientists and 11,350 scientific and technical staff and 10,000 supporting staff constitutes the R&D manpower force for R&D activities in the DRDO.

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

8.7 ***Manpower Strength:*** DRDO is a project based Organisation and follows a very dynamic system of manpower planning. Authorised 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 29,350, which includes about 7,100 engineers & scientists and 11,350 scientific and technical staff and

10,000 supporting staff from various cadres. About 700 fresh engineers and scientists are inducted every year.

8.8 ***Knowledge and Skills Upgradation:*** DRDO carries out research and development activities in multidisciplinary areas. Due to fast changing scenario at the global level, it becomes necessary for the researchers to update their technical knowledge and skills to meet the present situation as well as future requirements. Keeping this in view, various training programmes are organized all over the country. Under the continuing education programme, 170 courses were organized by DRDO laboratories/ establishments in different disciplines. DRDO has three training institutes namely, Institute of Armament Technology (IAT), Pune, which caters to advanced technology training needs in the area of armaments; Institute of Technology Management (ITM), Mussoorie, which provides advanced managerial training to the scientists, technologists, managerial staff and Service personnel; and another centre at Jodhpur, which imparts training to administrative and allied cadres. HRD Cells have also been set up in each laboratory and establishment to provide in-house training.

PROJECTS MONITORING AND REVIEW MECHANISM

8.9 DRDO has instituted several review mechanisms to monitor programmes and projects 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 laboratories/ establishments. In addition, Corporate Reviews covering techno-managerial aspects are also carried out by a high level committee for the improvement of health of laboratories/ establishments. Staff projects for Army are reviewed by the Vice Chief of Army Staff, 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 mid-course corrections as deemed fit.

PROGRAMMES AND PROJECTS

8.10 DRDO has 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, produced 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.

(A) Missile Programme: The Programme envisaged the design and development of missile systems. The status of development 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. Army version of Prithvi is under regular production and it has already been inducted into the Indian Army. Development work on Air Force version of Prithvi has been completed. Limited Series Production version of Prithvi was successfully flight tested by users in collaboration with project team of DRDO during May 2005.

The Navy has accepted Dhanush on its off shore Patrol Vessel.

(b) ***Agni-I Missile:*** With a range of 700 km, surface-to-surface Agni-I missile was successfully test fired thrice. It 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. Induction of Agni –I into the Services is under progress.

(c) ***Agni-II Missile:*** The range for Agni-II is more than 2000 km. The salient features of the test firings were mobile launch capability, multi-staging, state-of-the-art control and guidance, re-entry technology and sophisticated on-board packages including advanced communication. Induction of Agni –II is under progress.

(d) ***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. Three flight trials of Dhanush have been conducted. Indian Navy has accepted to have

Dhanush on its Off shore Patrol Vessel (OPV). The process of weaponisation of INS Suvarna and Subhadra with the Dhanush missile is under progress.

(e) ***Akash Missile:*** Medium range, surface-to-air missile, Akash has multiple target handling capacity with digitally coded command guidance system. Eleven developmental flight trials have been successfully undertaken during the current year. Integrated group mode trials of total Akash weapon systems have been conducted in three phases in February, June, and October 2005. Acceptance test has been completed on Air Force Launcher (AAFL-1) and the same is being used for the flight trials. Rajendra-III equipment realization is under progress.

(f) ***Trishul Missile***: It is a low level quick reaction surface-to-air missile for the Indian Army, Air Force and Navy. So far, 79 successful developmental flight trials have been conducted including 6 trials during the current year. Flight test of enhanced range of 11.5 km configuration was conducted against remotely piloted aircraft meeting the mission objectives. All the flight tests during 2005 were undertaken using Air Force version of radar vehicle and ground system.

(g) ***Nag Missile:*** Third generation anti-tank missile, Nag, has "top-attack" and "fire and forget" capability. So far, 57 developmental flight trials have been carried out including 12 guided flights with Imaging Infra Red (IIR) Seeker. Two guided flights with day and night seeker, were conducted from KK Ranges, Ahmednagar. Through these two trials, the land version of Nag missile has successfully been completed. Six number of tandem warhead tests were also successfully conducted achieving the required penetration capability.

(h) ***BrahMos Supersonic Cruise Missile:*** BrahMos is the best in the family of cruise missiles. It has supersonic speed with a range of 290 km and high level of performance. It has gone through ten successive flight trials from mobile launchers on land and from warships against land and sea targets and met all mission requirements. Control system of BrahMos is totally autonomous and uses "fire and forget" principle. Indian Navy has identified a series of ships for its induction in inclined as well as vertical configurations. The induction process has already

'BrahMos' Missile being fired

commenced. Indian Army, after the evaluation of the system has accepted this missile as its precision strike weapon. Feasibility for the integration of BrahMos missile with SU 30 MK-I Combat Aircraft has been established.

(i) ***Astra Missile:*** Astra is a beyond visual range, air-to-air missile being indigenously designed and developed to engage and destroy highly maneuvering supersonic aerial targets. It has a range of about 80 km and designated to be a missile for LCA. Systems design, aerodynamic configuration design, etc of various sub systems have been completed. Controlled flights from the under slung ground launcher are planned in near future.

(B) Aero Systems:

(a) ***Light Combat Aircraft, Tejas:*** After successful completion of the first phase of Tejas, the second phase of Full Scale Engineering Development (FSED-II) is to be completed by the end of 2008. Tejas is a multi-role fighter aircraft being indigenously designed and developed by the Aeronautical Development Agency (ADA), Bangalore to meet the requirements of the Indian Air Force. Till December 2005, 480 flight tests were completed utilizing four aircrafts {two Technology Demonstrators (TD1 and TD2) & and two

Prototype Vehicle (PV1 & PV2)}. Manufacturing of Tejas (PV3) and (PV4) has been initiated, whereas, design of Trainer Version of Tejas (PV5) has already been completed. Production facility of 8 aircraft per year has been established at HAL. Kaveri engine integration with LCA is planned by October 2007.

(b) ***Light Combat Aircraft (LCA) for Navy:*** Full Scale Engineering Development (FSED) of LCA- Naval version was sanctioned by the Government on March 28, 2003 which is to be completed by March 2010. Scope of FSED-Navy includes building two aircrafts, a structural test specimen and flight-testing towards Operational Clearance. The first aircraft Naval Prototype-1 (NP-1) would be a two seat Naval Trainer and the second Naval Prototype-2 (NP-2) a single seat Naval Fighter.

(c) ***Kaveri Engine for LCA :*** The scope of the project is to design, develop, test and type certify the Kaveri engine to meet the specific needs of the LCA. Kaveri engine is an advanced technology, 80k thrust class, twin spool, low

LCA Tejas

bypass (ratio) augmented turbofan engine. Design of the engine, sub-systems, and components have been completed and sixteen Kaveri engines have been fabricated with equivalent sets. Kaveri engine is undergoing development trials. Four Kabini prototypes and nine Kaveri engine prototypes have been built for engine testing apart from various modules and components manufactured for their testing in the rigs to assess their aerodynamic and structural integrity performance. Four engines are undergoing development tests at GTRE. Till now, 1470 hours of ground testing and 79 hours of altitude testing at CIAM, Russia has been accumulated. The next version of weight optimized prototypes are being designed with a weight of 1100 kg against the present weight of 1235 kg and a partnership concept is being explored for design and manufacture.

(d) ***Kaveri Engine for Naval Ship:*** Kaveri Marine Gas Turbine Engine (KMGT) for Indian Naval ships has made significant progress. The gas generator of KMGT underwent tests at GTRE test bed and technology has been demonstrated to Indian Navy. Phase I of KMGT is expected to be completed by the first quarter of 2006 and subsequently Phase II, with maximum output of 19.5 MW will be taken up to test the engine under environmental conditions.

(e) ***Arrester Barrier :*** Twenty Ton class Arrester Barrier has been developed by the Aerial Delivery Research & Development Establishment (ADRDE), Agra. It has been installed at various Air Force units located all over the country. Technology of this product has been transferred to a production agency. ADRDE has also developed aircraft arrester barrier for SU-30 aircraft.

(f) ***Combat Free Fall System:*** DEBEL, Bangalore has completed the indigenous development of the life support system for paratroopers which consists of oxygen system and protective clothing & equipment and has submitted them for technical trials. Using the oxygen system and protective clothing, actual live jumps have been carried out from an altitude of 30,000 feet successfully, as a part of technical trials. User trials by the Army is likely to commence in the first quarter of 2006.

Technology for the commercial production of Lakshya - pilotless target aircraft, has since been transferred to HAL.

(g) ***Remotely Piloted Vehicle (RPV), Nishant:*** It has been developed by the Aeronautical Development Establishment (ADE), Bangalore. The objective of this Project is to carry out battlefield surveillance, reconnaissance, real-time engagement of targets by artillery fire, laser designation and limited electronic intelligence. The project has been successfully completed and an order of required quantity of Unmanned Aerial Vehicles (UAVs) has been placed on ADE by the Indian Army. Initially, the UAV will be produced by ADE and subsequently technology will be transferred to HAL to cater for further orders of Services.

(h) ***Pilotless Target Aircraft (PTA), Lakshya:*** It is an aerial target system remotely operated from ground. Under the limited series production of PTA, ADE has completed supplies of aircraft to all the three Services. The transfer of technology for production of these aircraft has been done on HAL. Order of further requirements by the Services has been placed on HAL.

(C) Electronic Systems:

(a) ***Airborne Early Warning and Control (AEW&C) System:*** This Programme was sanctioned by the Government in 2004 at a cost of Rs. 1800 crore with a time frame of 78 months for commencement of user trials. Development of one prototype and two operational executive jet based AEW&C systems is envisaged.

(b) ***Early Warning Suite for Aircraft (EWSFA):*** This EW programme for LCA, Tejas and MiG 27 aircraft involves development of an integrated receiver/ jammer system that will be internally mounted and will be capable of interacting with an emerging threat scenario. DARE, Bangalore has undertaken a major MiG 27 avionics upgrade programme in association with HAL. It has also supplied indigenous developed Mission Computer for Jaguar upgrade.

(c) ***Radar Warning Receiver (RWR):*** Radar Warning Receivers, developed by the DRDO and produced by M/s BEL, are incorporated in MiG 21, MiG 27 and Jaguar aircraft. An upgraded version of Radar Warning Receiver (RWR) Tarang 1B has been developed and technology of this

upgraded version has been transferred to BEL, Bangalore. Production order for about 350 systems of this version has been placed by IAF on BEL, for delivery over the next three years.

(d) ***Battle Field Surveillance Radar – Short Range (BFSR-SR):*** BFSR-SR has been designed and developed by the Electronics and Radar Development Establishment (LRDE), Bangalore. It is a state-of-the-art, battery powered, man-portable surveillance radar for use by the Infantry. The radar has capability to detect, track and classify crawling men, walking men, moving light/ heavy vehicles and low flying helicopters. The radar is quite compact and weighs about 27 kg and can be carried in three man packs. Indian Army has evaluated and cleared the radar for production and induction. An order of more than 1100 systems is placed on M/s BEL by the Army.

(e) ***Maritime Patrol Radar for Naval ALH (SV-2000):*** This radar has been successfully designed by the Electronics and Radar Development Establishment (LRDE), Bangalore for performing maritime patrolling. It has been fitted in Advanced Light-weight Helicopter (ALH) – Dhruv for Indian Navy. The primary roles of the radar are anti-ships, anti-submarines and air-to-air surveillances. The radar has capability to detect surface ships, airborne targets, beacon and submarine periscopes. The radar is undergoing user evaluation and M/s Bharat Electronics has been identified as the production agency.

(f) ***Multifunction Phased Array Radar, Rajendra:*** It is a primary sensor for the Akash weapon system with a range of 60 km. It provides detection and tracking of multiple aircraft targets, tracks and provides command guidance of multiple Akash missiles. The radar has been integrated with the missile system and demonstrated to the user.

(g) ***Three Dimensional - Central Acquisition Radar (3D-CAR):*** It is a multiple beam three dimensional surveillance radar (3D-CAR), used for long range surveillance and can detect and track multiple targets upto 180 km. The radar has been successfully developed, evaluated and integrated with the Akash weapon system.

(h) ***Electronic Warfare Programme for Army, Samyukta:*** It is a joint

Programme of DRDO and Indian Army. The system consists of communication and non-communication segments. The first production series unit of Control Centre (CC) of communication segment has already underwent user trials and second and third blocks are at various stages of production. For non-communication segment, core system demonstration is undertaken jointly by the DRDO and the Indian Army. Variants of Samyukta in various configurations are now being planned.

(i) ***Electronic Warfare Programme for Navy, Sangraha:*** It aims towards design and development of five different types of EW systems. Three types of systems (Kite, Eagle & Homi) are meant for naval helicopters/ aircraft whereas, two types of systems (Porpoise & Ellora) are for destroyer class of ships. Most of the systems have already been brought under production by M/s BEL and installed on the various platforms. Homi system has cleared the user trials and recommended for induction. The first production unit of Ellora has cleared Factory Acceptance Tests (FATs) and has been recommended for installation on the designated platforms.

(j) ***Radar Finger Printing System (RFPS):*** As a Technology Demonstration Project, it aims towards design and development of techniques for unique emitter identification. Indian Navy and Air Force have successfully conducted field trials of RFPS. Technology has been transferred to M/s BEL.

(k) ***3D Surveillance Radars Revathi & Rohini:*** Based on the 3D-CAR technology, these radars, are being realized in collaboration with M/s BEL for use by the Indian Navy and Air Force. Indian Air Force has negotiated for 7 systems with M/s BEL.

(l) ***Weapon Locating Radar (WLR):*** This radar is based on phase array technology. It is in the advanced stage of development. The developmental trials are scheduled during the first quarter of 2006.

(m) ***Command Information Decision Support System (CIDSS), Samvahak:*** It is a Corps to Battalion level decision support system to collect, collate, process and disseminate information between commanders of various formations. The system

MBT Arjun on display

is undergoing user trials and technology transfer to M/s BEL is under progress. The first production order for the induction of the system has been placed on M/s BEL.

(n) ***Briefcase Satcom Terminal:*** It has been developed by Defence Electronics Applications Laboratory (DEAL), Dehradun using indigenous technology. This light-weight portable compact communication equipment is suitable for tactical communication and disaster management. It has 10 kg weight and compact dimensions. Being satellite based, the terminals can provide wide coverage in a radius of around 3000 km from the center of the country, making it an asset for wide war theatre operations. M/s BEL has been identified as production agency and an initial order of immediate requirement of terminals has been placed by the Indian Army.

Mesoscale Weather Forecasting Model has achieve 80-90 % accuracy.

D) Combat Vehicles and Engineering

(a) ***Main Battle Tank (MBT), Arjun:*** After successful development, trials and evaluation, MBT Arjun

has been inducted by the Services. Production of 124 tanks by Heavy Vehicles Factory, Avadi is in progress.

(b) ***Bridge Layer Tank (BLT) T-72:*** Production of twelve numbers of BLT T-72 is under progress at HVF, Avadi. Four tanks have been handed over to Army and further six are likely to be completed by March 2006.

(c) ***Combat Improve Ajeya (CIA) :*** Transfer of technology of Combat Improve Ajeya (CIA) tank to HVF, Avadi has achieved maturity level and so far 148 CIA tanks have been manufactured. These tanks are fitted with explosive reactive armour for enhanced protection, accurate Global Positioning System (GPS) for navigation of the tank and re-configured smoke grenade discharger.

(d) ***Futuristic Infantry Combat Vehicle (ICV):*** The technology development programme aimed at design and development of ICV for mechanised forces of Indian Army has made significant progress. A number of futuristic technologies have been successfully realized. These are high-power density engine, hydro-gas suspension, hydraulic actuating system for brakes and steering, all-electric drive for turret, automatic ammunition feed and ejection, integrated dash-board display, armour material and seals for suspension system. One mild steel prototype and one armoured prototype vehicle have been realized.

(e) ***NBC Reccee Vehicle :*** This vehicle, based on BMP-II, has been developed for conducting reconnaissance and demarcation of radiologically and chemically contaminated areas. It has been developed to meet Army's requirements of combat engineer tasks. Maintainability and user trials have been conducted on prototype vehicle.

(f) ***NBC Water Purification System:*** It has successfully completed all phases of user trials. The plant was used to provide drinking water to the tsunami hit villages of Nagpattanam district. Limited Series Production (LSP) is under consideration by the Indian Army.

(g) ***Self Propelled Mine Burrier:*** It has been successfully developed by the R&D Engineers, Pune against a requirement projected by the Indian Army. It is a fully automatic mine laying system

developed on a high mobility carrier vehicle.

(h) ***Automated Platform for Multipurpose Payloads:*** A remote control platform/ vehicle with a capability of driving over a range of 500 m line-of-sight and staircase climbing capability has been successfully developed by the R&D Engineers, Pune. It is primarily meant for handling of hazardous materials and Improvised Explosive Devices (IEDs). Its technical trials have been completed.

Multi Barrel Rocket System, Pinaka

The Submarine Escape Set has been installed at INS Satvahana.

(i) ***Mesoscale Weather Forecasting Model:*** The Model has been developed by Snow and Avalanche Study Establishment (SASE), Chandigarh for prediction of weather, at least three days in advance. On experimental basis, Indian Army is being provided seven days advance weather information in different sectors of their operation. Feedback received from the Army on weather forecasting has been found to be in accuracy range of 80-90%.

(j) ***Snow Gallery:*** Gallery of 120 m length on approach road to proposed Rohtang Tunnel in Himachal Pradesh (HP) has been designed for the smooth passage of vehicular traffic.

(k) ***Artificial Triggering of Avalanches:*** Special explosive device has been developed by the SASE in collaboration with the TBRL, Chandigarh for artificial triggering of avalanches for safety of highways.

(E) Armaments:

(a) ***Multi Barrel Rocket System (MBRS), Pinaka:*** The system comprises of 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 second. 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.

(b) ***125 mm Fin Stabilised Armour Piercing Discarding Sabot (FSAPDS) (Soft Core) Ammunition Mk II:*** After users expressed the need for developing Mk II version of this ammunition for enhancing the fire power, it was designed and developed for use with T-72 Tank. This ammunition has higher muzzle velocity thereby giving higher penetration power besides other features as of Mk I version. Development of this ammunition has been completed and user trial successfully conducted.

(c) ***Under Barrel Grenade Launcher (UBGL):*** Armament Research and Development Establishment (ARDE), Pune has developed a UBGL compatible with 5.56 mm INSAS and AK-47 rifles. A total 16 numbers of weapon prototype are under manufacture at Ordnance Factory at Trichi which are to be subjected to troop trials planned at different climatic terrain.

(d) ***Influence Mine Mk II:*** 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. User trials were carried out successfully during February-May 2005. Performance has been found satisfactory meeting all user requirements. It has been recommended for introduction into Service.

(e) ***Modern Sub Machine Carbine (MSMC):*** Development of MSMC, which is a part of INSAS family, was taken up in 2002 by ARDE, Pune. Various aspects like, functioning, accuracy, penetration, etc. were demonstrated to the users. Two numbers of weapon components for demonstration are ready. Rest of the weapons are under manufacture at SAF, Kanpur for user trial.

(F) Naval Systems:

(a) ***Underwater Telephone Mk-II:*** Naval Physical and Oceanographic Laboratory (NPOL), Kochi has designed and developed underwater telephone to facilitate all modes of underwater communication

Very few countries have achieved the technology to manufacture light weight armour for body and helicopter protection.

from ship/ submarine to other vessels with NATO Standard Underwater Telephone and those of Russian Standard. The transfer of technology has been successfully transferred to a production agency.

(b) ***Submarine Escape Set:*** The set, developed by DEBEL, Bangalore, is used by submariners to escape from abandoned submarines. Acceptance trials of the set consisting of breathing apparatus and hydrosuit have been carried out. While the trials of the breathing apparatus have been successful, some modifications have been suggested on the hydrosuit which is presently being carried out. Test facilites comprising of breathing bag test facility and reducer test facility have been developed. After successful demonstration of the test equipment one set has been installed at INS Satvahana.

(G) Advanced Materials:

(a) ***Adsorbent Material for Submarine Filter:*** An adsorbent material has been developed which is capable of adsorbing physiological vapors, aerosol vapors, oil mist, etc. The adsorbent efficacy of the material was found to be better than the imported Russian material. This can be used to develop six different filters that can be used in submarines. The adsorbent is capable of adsorbing seven primary gases and thirty secondary gases.

(b) ***Piezo Electric Crystals :*** Lead Zirconate Titanate Piezo-electric material, commonly known as PZT, has extensive applications in the armament fusing of several heat ammunition. PZT crystals are in heavy demand to meet the requirements of sonar systems. Various PZT materials like, PZT powder, axially poled rings, piezo polymer components etc. were developed and supplied to the users. A Centre for Piezo-ceramics and Devices has been set up and is actively progressing to achieve self-sufficiency in this highly potential and strategic field of smart and very smart sensor materials, actuators and transducers.

(c) ***IRR Paints:*** Twenty five numbers of T-72 Tanks coated with camouflage and IRR paints and patterns, developed by Defence Laboratory, Jodhpur were presented in the colour presentation parade on May 16, 2005.

(d) ***Jet Injector(AJI):*** Developed by DRDE, Gwalior, the reusable AJI has been accepted and cleared for induction into Services. The single drug AJI is used for administration of antidotes namely, atropine sulphate and PAM chloride to soldiers exposed to nerve agent contamination.

(e) ***Nuclear Radiation Detection Instruments***: Defence Laboratory, Jodhpur has successfully developed upgraded versions of two nuclear radiation detection instruments, namely, Radio Photo Luminescent (RPL) Dosimeter Mk-II and Reader Mk-II and the same have been accepted and cleared for introduction into Services.

(f) ***Gun Recoil Fluid:*** DMSRDE, Kanpur has developed indigenous Gun Recoil Fluid (DAFC-60) which has been accepted for use in the plains and desert conditions. It has been successfully trial evaluated for use in high altitude areas also.

(g) ***Structural Adhesives:*** Structure Adhesives SA-8(M) for bonding optical components of gyro assembly and Elastomeric Structure SA-6 for use in NAG warhead assembly, have been developed by DMSRDE. These have been provided to RCI, Hyderabad and to Ordnance Factory, Chanda, respectively after successfully meeting respective functional requirements.

(h) ***Composite Armour Panels:*** Composite Armour Panels have been developed by DMSRDE for ballistic protection of helicopters to provide protection to aircrews and critical parts of helicopter ensuring its survivability against ammunition upto a caliber of 12.7 mm.

(i) ***Radiation Shielding Composites (NBC Pads):*** The composites can be used for combat vehicles to increase protection against INR and fallout radiation (gamma rays) progressed at DMSRDE. The shielding factors of test samples were evaluated against nuclear radiation sources and the polymer composition was finalized.

(j) ***Boron Carbide:*** It is an important armour against small arm ammunition for application where weight is very important such as to body armour, helicopter armour, etc. DMRL, Hyderabad has recently achieved a breakthrough in improving the hardness from an initial value of 500 to a level of 3500kg/sq mm, a value suitable

for armour applications. The polishing and optimization of etching process of this material have also been successful which is a major boost for the micro-structural characterization of this very hard and difficult material. Very few countries have been able to achieve this technology.

(H) Life Sciences Systems/ Products:

(a) ***Transgenic Tomato:*** To withstand the cold stress of high altitudes and to prolong the cultivation period in these areas for augmenting the availability of fresh vegetables for troops, Transgenic Tomato (T_2) has been developed through agro-bacterium mediated genetic transformation using osmotin gene. Cold tolerance studies conducted on these transgenic plants at Auli in Uttaranchal have provided encouraging results.

(b) ***Transgenic Capsicum:*** Mannitol-1 Phosphate Dehydrogenase gene has been successfully ingressed in capsicum through agro-bacterium mediated genetic transformation.

(c) ***2-deoxy-D-glucose (2-DG) :*** This technology has been transferred to Dr. Reddy's Laboratory, Hyderabad and the protocol for multi centric phase III clinical trials in the treatment of glioblastoma multiforme with 2-DG finalized and submitted to the Health Ministry for approval.

(d) ***Self-heating System for Retort Pouch Processed Ready to Eat:*** The product has been developed for ambient temperature, low temperature, and sub-zero (-10 ^{o}C) temperature conditions.

(e) ***Detection Method for Salmonella Typhl:*** A method has been developed in the format of ELISA for the detection of Salmonella Typhl using quartz crystal microbalance. The sensitivity was found to be 10^3 cell/ml of Salmonella Typhi. The traditional methods requires 24 hours for detection while this new method is capable of detecting the antigen within 50 minutes.

(f) ***ABO Cards:*** These have been developed for testing of blood groups of human beings. The cards are coated with polymer and antibodies of the blood group are immobilized on the card. By adding a drop of water and blood, the group of the blood and its RH factor can be determined.

(g) ***Antimalarial Compound:*** Synthesis of potential

antimalarial compound a-cyprone and formulation development of antimalarial plant extracts has been accomplished.

(h) ***Vegetable Cultivation:*** DRDO has created pilot scale facility for protected cultivation by establishing 15 trenches, 6 double walled polyenches and 2 polycarbonate greenhouses covering 2600 sq meter area for round the year vegetable cultivation.

(i) ***Fresh Vegetables and Fodder:*** DRDO has ensured local availability of fresh vegetables (50%) and animal fodder (47%) through farmers cooperative societies to Army deployed in 'L' sector.

(j) ***Preserved and Flavoured Chapaties:*** Improved quality of chapaties with respect to taste, texture and overall acceptability was developed, which remains stable and acceptable upto 12 months at ambient condition without the after bitter taste of preservatives during storage. Processing conditions for preserving chapaties by Retort technology have been optimized and standardized.

(k) ***Automatic Chapati Making Machine:*** It is a small and compact chapatti making machine which produces 1200 chapaties per hour. It contains 4 kw power pack and uses 5 kg/h LPG for baking of the same. First machine was installed at Base Hospital on January 17, 2005 and another machine at the R&R Hospital on September 23, 2005.

(l) ***Compo Pack Rations :*** Two hundred and twenty Compo Pack Rations were supplied to National Security Guard.

(m) ***Processed Food:*** It has been ordered by the National Centre for Antarctica and Ocean Research, Goa meant for XXVth Indian Antarctica Expedition. One hundred and twenty kg of processed food items meant for Mount Everest Expedition-05 have also been supplied to Indo-Tibetan Border Police Force.

(n) ***Survival Rations:*** Five thousand survival rations have been kept ready for delivering to DGST, Army Headquarters.

(o) ***Revamping of Security of Important Buildings:*** NBC ventilation system was developed for the incorporation of NBC protection in important buildings.

(p) ***NBCD Products:*** NBCD products developed by DRDE, Gwalior were used for security at important installations on Independence Day.

(q) ***Air Cleaning Filter:*** Air clearing filter of 100 m^3/hr capacity was developed and checked for efficient removal of odour and gases for air purification.

(r) ***Anthropometric Database:*** A database of anthropometric measurements and body composition for Air Force personnel has been developed, which can be accessed and used as guidelines for height-weight chart during induction and subsequent medical review and for design for personnel protective equipment.

(s) ***Solid State Cooling System:*** A system complete with liquid cooled garment has been developed and demonstrated to provide comfort to tank crew operating in desert summer.

(t) ***Tests for Selection of Candidates for Officers and other Ranks :*** Word association test, situation reaction test, emotional stability test, new language aptitude test battery, battery for trade allocation of armour trade and driver trade of soldiers (General Duty) of EMR Corps, battery for screening of COAS bodyguards, intelligence test battery (bilingual) for PC (SL) and SCO entry candidates for commissioned ranks, Trade allocation battery for airmen technical and non-technical branch have been developed and handed over to users.

(u) ***Group Testing Tasks Design Specification Manual:*** DIPR, Delhi has standardized design specification of group obstacle race and individual obstacles both tasks in the series of group testing battery. The newly designed tasks would elicit better behaviour manifestations to evolve a precise personality appraisal through the group testing technique. Manual has been handed over to the users.

(v) ***Combat Stress Behaviours Manual:*** The manual aims to highlight the emergence of various combat stress behaviours due to various stresses. A detailed layout of the symptoms of combat fatigue, misconduct behavior and psychiatric disorder has been covered.

INTERACTION WITH INDUSTRIES AND TRANSFER OF TECHNOLOGY

8.11 DRDO maintains close liaison with industries by way of transfer of technologies. The problems faced by industries in the processing and production of various products are solved by giving proper advice/ guidance. Analytical facilities available at the DRDO laboratories and establishments are also being extended to industries.

8.12 Naval Materials Research Laboratory, (NMRL), Ambernath has developed arsenic removal filter, NMR 51K and NMR 88K adhesives, polymeric rubbing strakes, sound absorbing sheets and vibration isolation tiles, methanol room heaters and high strength epoxy putty and these technologies have been transferred to various industries.

8.13 Naval Science and Technological Laboratory (NSTL), Vishakhapatnam has transferred technologies of shock testing of nickel–cadmium and silver oxide zinc batteries for torpedoes, shock testing control panels, shock tube for crash simulation of flight data recorder, etc to various industries.

8.14 DRDO has been identified as one of the nodal centres to provide technical backup to State Governments in the areas of Agro-animal development and malaria containment programmes. “Typhigen Kit” and “CR/Oleoresin based Munition” technologies, developed by Defence Research and Development Establishment (DRDE), Gwalior, have been transferred to M/s Agappe Diagnostic Pvt Ltd, Distt Thane and M/s Premier Explosives Ltd, Secunderabad, respectively. “Antifreeze Aloe Vera Cream” and “Portable Carbogen Breathing Apparatus” technologies, developed by Defence Institute of Physiology and Allied Sciences (DIPAS), Delhi, have been transferred to M/s Fem Care Pharma Ltd, Nasik and M/s SB Equipment, New Delhi, respectively. The cream has been found to be very effective in prevention/ treatment of cold injury. It has been issued to 14 Corps.

8.15 Defence Food Research Laboratory (DFRL), Mysore has transferred a number of the technologies to various industries. M/s Great Value Foods, New Delhi has been given TOT of “Supplementary Compo Pack Ration”, Insta Nutro Cereal Mix”, “Spiced Potato Paranthas”, “Dehydrated Potato Peas Curry”, “Preserved and Flavoured Chapaties”, “Vermicelli Kheer”, “Suji/ traditional Upma”, and “Instant Khichidi”. Technology of “Seabuckthorn Squash” and “Bisibele Bhat” have also been transferred to M/s MUSE, Himachal Pradesh and M/s Christy Fried Gram Industry, Bangalore.

8.16 Field Research Laboratory (FRL), Leh has developed “Vermicompost Technology” which has been transferred to M/s Exel Agro-Technology Industries and M/s Ecological Vermicompost Industries, Assam. The technology of “Nuclear, Biological and Chemical (NBC) Respiratory Mask” developed by DEBEL, Bangalore, has been transferred to three firms namely M/s Univest Technologies, Distt Thane; M/s Vijay Sabre Safety Ltd, Mumbai; and M/s Joseph Leslie, Mumbai.

TOT for “Anti G Suit” and “HAPO Bag” have been given to M/s Bengal Water Proof Ltd, Kolkata and Raksha Polycoats, Pune, respectively by the same laboratory.

8.17 FRL, Leh and DARL, Pithoragarh have provided affordable agro-animal technologies for rural upliftment in their respective areas. FRL has signed TOT with M/s Mamta Agro Foods, New Delhi for commercial production of “Seabuckthorn Beverage” in the name of Madrid Leh Berry. M/s Kohinoor International Agro Products, New Delhi has launched the Seabuckthorn herbal beverage in the name of “Ladakh Berry” in technical collaboration with FRL. INMAS, Delhi has transferred “Shudhika”, a skin decontamination kit, to M/s Raksha Polycoats, MIDC, Bhosari, Pune; and protective clothing for quick reaction team to M/s Bengal Waterproof Limited, Shakespeare Sarani, Kolkata. DRDO has also established water purification systems for removing of various impurities like iron and salinity in various rural areas of north-eastern region and Rajasthan.

PARTICIPATION IN NATIONAL AND INTERNATIONAL EXHIBITIONS

8.18 DRDO has ensured its presence in national and international exhibitions – providing a platform to showcase our strengths and achievements for the industry and the public at large to view. The more important exhibitions covered at the National level were – “Science on Wheels Exhibition: Vigyan Mail”, Indian Science Congress at Ahmedabad, “National Expo” at Kolkata, “Aero India – 2005” at Bangalore, “India International Trade Fair”, New Delhi. At the International level – “Latin America Aero & Defence” at Rio De Janeiro was covered.

BASIC RESEARCH

8.19 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.

8.20 ***Aeronautical Research & Development Board (AR&DB):*** The AR&DB is functioning since February 1971. The Board is currently funding 100 projects with a ceiling of Rs 5 crore per year in upstream area of aeronautics R&D at 25 academic and

research institutions in the country. Funding distribution is about 48% to Indian Institute of Technology (IITs), 23% to National Aeronautical Laboratories (NAL), 13% to Indian Institute of Science (IISc), and 16% to other institutions. Three Centres of Excellence have been set up at IIT, Mumbai, NAL and IISc, Bangalore in the areas of systems design and engineering, composite structure technology and computational fluid dynamics with linkages at other organization.

8.21 ***Armament Research Board (ARMREB):*** Under the ARMREB, 70 projects have been sanctioned to various academic institutions and other R&D organizations covering fields of high energy materials, sensors, ballistics, combustion and detonics, modeling/ simulation and other fields related to armaments. Out of these, 30 projects have been completed and remaining are being pursued.

8.22 ***Naval Research Board (NRB):*** The NRB continued to support the basic research applicable to naval/ marine technologies. Since its inception in 1996, 51 projects at a total cost of Rs 11.03 crore have been accorded to the academic/ research institutions. During the current year 17 more new projects have been sanctioned for a sum of Rs 4 crore.

8.23 ***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 19 projects have been recommended for funding during the current year. Three patents have been filed and one is under process. Some of the projects supported by LSRB pertain to evaluation of natural products for anti-hypoglycemic activity, flight simulation task performance, food bio-preservatives, molecular identification, multi drug resistance in cancer, gene expression in drug resistance, etc.

8.24 ***Centres of Excellence:*** DRDO has obtained the Government's approval to establish Centres of Excellence at various 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 following Centres are being set up:-

(a) Science and Synthesis of High Energy Materials for use as Explosives and Propellants.

(b) Science of Polymer Physics especially Polymer Electronics.

(c) Interaction of Microwaves and Matter for Stealth Applications;

(d) Nano-technology based Sensors for NBC Detection;

(e) Nano Opto-electronic Devices; and

(f) Life Sciences

8.25 DRDO also has an Advanced Technology Cell at Jadavpur University and Joint Advanced Technology Programme (JATP) at Indian Institute of Science, Bangalore for carrying out missile related research activities.

8.26 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. 7 crore per year under CARS.

EXTRAMURAL RESEARCH/ INTELLECTUAL PROPERTY RIGHTS

8.27 ***Extramural Research (ER):*** DRDO has close interactions with academic community to enhance availability of research opportunities to young scientists and technologists for widening the knowledge. The enhanced extramural funding coupled with intellectual resources available in academic institutions catalyse the generation and growth of new ideas leading to innovative technologies. The increased flow of funds galvanise research and scientific temper in the country. Imagination research projects form the focus of extramural research and are supported under the ER Scheme.

75 IPR applications (13 in foreign countries) were filed, 40 patents were granted and 50 were accepted for grant, 4 copyrights and 1 design was registered.

8.28 The ER Scheme has enlarged its academic reach and due care has been taken for availability of intellectual and infrastructural resources there. So far, during the current year, 43 new projects with an aggregate value of Rs. 9.21 crore have been sanctioned. The projects are spread over 28 academic/ research institutions of repute in the country.

8.29 ***Intellectual Property Right (IPR):*** To accord selective protective legal cover to intellectual property generated through research activities of DRDO, 75 IPR applications (including 13 in foreign countries) were filed on products/ processes in the field of materials, electronics, bio-medical sciences and food technology. During the current year, 40 patents were granted and 50 patents were accepted for grant. In addition, 4 copyrights and 1 design were registered in India. To promote IPR awareness, 8 awareness programmes/ workshops/ patent-clinics were held in different laboratories.

9

INTER-SERVICE ORGANISATIONS

National Defence College

The Inter-Service Organisations serve the Defence Forces in certain common field like medical services, public relations, sports, residential accommodation etc.

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

(i) Military Engineer Services
(ii) Armed Forces Medical Services
(iii) Directorate General of 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) School of Foreign Languages
(x) History Division
(xi) National Defence College
(xii) College of Defence Management
(xiii) Defence Services Staff College
(xiv) Ministry of Defence Library

MILITARY ENGINEER SERVICES (MES)

MES is a largest construction agency in the country working on 450 locations.

9.2 The largest construction agency of the country, the Military Engineer Services (MES) provides works cover in 450 stations spread across the country. It is the premier engineering arm of the Defence Services which provides works services to Army, Navy, Air Force, Defence Research and Development Organization, Directorate General of Quality Assurance, Ordnance Factories, Coast Guard, Kendriya Vidyalaya Sangathan and Central and State Government Undertakings. The current annual workload is in excess of Rs.6600 crore.

9.3 MES functions under the overall control of Engineer-in-Chief, who is the adviser to the Ministry of Defence and the three Services on construction engineering. It is structured to design works which are executed under the management of Directorate General of Works. MES 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, air fields, roads, blast pens, etc.

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

(a) ***Tsunami Disaster, Andaman and Nicobar Islands:*** The tsunami caused unparalled havoc along the entire South-Eastern coast of India and Anadaman and Nicobar Islands. Task forces were deployed by air/ land to far-flung areas for relief and rescue operations. All the airfields were kept operational despite extensive damages. Electric supply was restored to Defence areas and vital civil installations within 24 hours. Water supply was restored within seven days after repair of 18 kms of water pipelines. All the jetties were made operational within 24 hours for small ships. The repairs to the airfields and runways were taken on war footing. Prefabricated shelters were constructed for the accommodation of troops.

(b) Aero India Show: The fifth International Aerospace Exposition, Aero India-2005, was held between February 9 and 13, 2005 at Air Force Station, Yelahanka, Bangalore. The exhibition was amongst one of the largest international exhibitions ever organised in the country. A total of fifteen works worth Rs. 59.43 crore were completed for Aero India well in time.

(c) Naval Academy at Ezhimala: The construction of the Naval Academy at Ezhimala with an approximate cost of Rs. 500 crore is in progress. The project envisages construction of administrative buildings, classrooms, laboratories, auditorium and library, cadets' mess, living and married accommodation and other buildings. The cadets' mess and auditorium have been completed and were inaugurated on August 6, 2005.

(d) ***War Memorial at Jammu (Balidan Sthamb):*** The project was sanctioned on November 3, 2004 for Rs.7.25 crore. Phase-I of the project consisting of War Memorial Tower, Musical Fountains, Pillars and Electrification etc. is under progress. Target date for completion of the project is August 2006.

9.5 ***Married Accommodation Project (MAP):*** Phase I of the project for construction of 59593 dwelling units at an estimated cost of Rs. 5176.04 crore is under execution. Physical work has commenced at 44 Stations.

ARMED FORCES MEDICAL SERVICES (AFMS)

9.6 The Armed Forces Medical Services (AFMS) consisting of the

Army Medical Corps, the Army Dental Corps and the Military Nursing Services provide comprehensive health care to the serving Armed Forces personnel, their families and dependents which are about 6.6 million in number.

9.7 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 Armed Forces Medical Services. The Armed Forces Medical Services are also providing medical care to the ex-servicemen and their dependents to the extent possible.

9.8 ***Medical Research:*** Directorate General, Armed Forces Medical Services (DGAFMS) looks after the research activities in the Armed Forces Medical Services (Army, Navy and Air Force). The Armed Forces Medical Research Committee meets annually to discuss and select new research projects and also to review the ongoing projects. Research work is being done in the following major areas :-

Operation IMDAD coordinated entire relief operations for earthquake victims in J&K as well as Pakistan in conjunction with civil authority.

(a) The High Altitude Medical Research Centre situated at Leh conducts specific projects addressing the medical problems at high altitude. The area of work includes acclimatisation and training schedules, nitric oxide therapy in the treatment of high altitude pulmonary oedema, study of auto immune profile, epidemiological study of susceptibility of re-inductees to high altitude pulmonary oedema and causative factors for cold injuries etc.

(b) ***Collaboration with Indian Council of Medical Research (ICMR):*** A core group has been formed with the representatives of ICMR and DGAFMS to identify areas where collaborative research work will be undertaken in the years to come. The areas identified are Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) research, Stem Cell research, research in deep sea medicine and surveillance for infectious diseases including new and emerging infections.

9.9 ***Operation IMDAD – Earthquake relief for J&K and Pakistan:*** DGAFMS planned and coordinated the entire medical aid

Doctors of DGAFMS providing Medical Aid to tsunami victims

from the Armed Forces Medical Services as well as civil sources like Ministry of Health and Family Welfare for the earthquake affected areas of J&K as well as Pakistan.

9.10 ***Signing of Memorandum of Understanding (MOU) 2005 for training and research of the medical officers:*** The Armed Forces Medical Services of India signed an MOU with the Uniformed Services University of Health Sciences of USA in April, 2005 for training and research of the medical officers of the Indian Armed Forces in areas, such as, management of emerging infectious diseases using techniques of modern medicine, clinical trials, biological warfare and preparedness of military medical personnel in state-of- the-art techniques of casualty management.

9.11 ***Signing of declaration of partnership for the control of HIV/AIDS:*** A declaration of partnership with UNAIDS has been signed in April, 2005 for combating HIV/AIDS in the uniformed services.

DIRECTORATE GENERAL DEFENCE ESTATES (DGDE)

9.12 The Directorate General Defence Estates (DGDE) functions as an adviser to the Ministry of Defence on land and Cantonment Board matters. The Directorate General is

also entrusted with executive functions relating to hiring, requisition and acquisition of land and buildings to meet the defence requirements.

9.13 The DGDE supervises the activities of various Cantonment Boards through Principal Directors/ Directors, the Command and Cantonment Executive Officers. The Principal Directorates and Defence Estates Officers carry out the management of defence land which includes custody of all defence land records, procurement of immovable property and the payment of compensation and litigation matters. The extent of total Defence lands spread across the country is 17.61 lakh acres. The Directorate General and its subordinate offices maintain record as per the classification and use of land. Out of this, 0.68 lakh acre of land is directly under the management of the Directorate General.

9.14 In the on-going process of acquisition of land for the three services, an amount of Rs. 68.7 crore has been allotted by Ministry of Defence for acquisition of land for the year 2005- 2006.

The cantonment board caters to the need of civil population in the cantonment and provides medical educational and other social services.

9.15 DGDE is also responsible to control, monitor and supervise the Cantonment Civic Administration. There are 62 Cantonments in India which are located in 19 States and the National Capital Territory of Delhi. The Cantonment Boards are "Bodies Corporate" functioning under the Cantonments Act, 1924 (as revised).

9.16 The resources of the Cantonment Boards are very limited as the bulk of the immovable property in the Cantonment is Government owned, on which no property tax can be levied. Boards, however, receive service charges in respect of Central Government properties. Due to restrictions neither industries can come up nor can trade and business achieve any significant growth in cantonment areas. The Central Government provides financial assistance by way of grant-in-aid to a certain extent to augment their revenue.

9.17 Development and improvement of infrastructural facilities was undertaken by almost all Cantonment Boards within the available resources. Most of the Cantonment Boards maintain hospitals or dispensaries which cater to the needs of civil population of the Cantonment as well as the adjoining areas. The total number of hospitals/ dispensaries maintained is 69. Primary Schools are also maintained by the Cantonment Boards according to local requirements. A number of Cantonment Boards are also maintaining Higher Secondary Schools and Intermediate/ Junior colleges. Total schools and colleges

maintained by Cantonment Boards are 189 in number.

OFFICE OF THE CHIEF ADMINISTRAIVE OFFICER(CAO)

9.18 The office of Chief Administrative Officer (CAO) is responsible for providing civilian manpower and infrastructural support to the Services Headquarters and the Headquarter offices of Inter-Service Organisations (ISOs) under Ministry of Defence. Additional Secretary (Training) also discharges the functions of the Chief Administrative Officer (CAO) and Director (Security).

9.19 The functioning of CAO's Office is divided into the following six Divisions: - (i) Administration Division (ii) Personnel Division (iii) Manpower Planning and Recruitment Division (iv) Training, Coordination and Welfare Division (v) Finance and Materials Division and (vi) Estates and Works Division.

9.20 The Administration Division provides administrative cover to about 10,000 civilian employees employed in Service Headquarters and 26 Inter-Services Organisations.

9.21 The Personnel Division provides civilian manpower to the Service Headquarters and Inter-service Organisations and deals with the management of their manpower.

9.22 Manpower Planning and Recruitment Division is responsible for framing recruitment rules in consultation with DOP&T and effecting direct recruitment against all vacant civilian posts in the Service Headquarters and ISOs through prescribed channels.

9.23 Finance and Material Division provides material support which includes procuring and provisioning of office equipment, stores, furniture and stationery to all offices of Army Headquarters and Inter-Service Organisations.

9.24 The Defence HQ Training Institute functioning under the Training, Coordination and Welfare Division of CAO's Office caters to the training needs of the civilian personnel posted in Service Headquarters and Inter-Service Organisations.

9.25 Estates & Works Division performs the estate functions in respect of residential accommodation of Service Officers posted at Armed Forces HQs.

9.26 The Office of the Chief Security Officer, Ministry of Defence functions under the supervision of AS(T) & CAO. It is primarily responsible for physical security, access control and prevention of breaches of security and fire within Defence Headquarters Security Zone.

DIRECTORATE OF PUBLIC RELATIONS

9.27 The Directorate of Public Relations is responsible for

Special courses are conducted for journalist to enhance their knowledge on defence matters.

dissemination of information to the media about the landmark 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 the nodal agency for providing media support and services so as to ensure adequate publicity in print as well as the electronic media. It also facilitates media interaction with the leadership and senior officials of the Ministry of Defence and Armed Forces by conducting regular interviews, press conferences and press tours.

9.28 The Directorate conducted "Defence Correspondents' Course" for the media persons to enhance their knowledge about defence matters. Twenty five journalists from print and electronic media from all over the country attended the course. During the five weeks course, they were taken to National Defence Academy, Pune, Air Force Station, Pune, Naval Base Mumbai and forward areas of J&K.

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). Some of the issues of the journal focussed on tsunami and J&K Earthquake rescue and relief operations, Army Medical Corps, Army Day, Republic Day, Independence Day, Air Force Day and Navy Day.

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 each and every defence related events to the print media.

9.31 Among the major events covered by the Directorate during the year was the massive relief and rescue operations carried out by the Army and the Air Force in the quake affected areas of J&K. Visits of media persons to quake affected areas were also facilitated resulting in adequate publicity to the disaster management response of the Armed Forces.

9.32 Raksha Mantri's historic visits to Russia, Chile, Antarctica and USA, International Aerospace Exhibition 'Aero India 2005' at Bangalore, release of Defence Procurement Procedure Manual – 2005, signing of contract for Scorpene Submarine with France were some of the other important events which were accorded wide publicity.

9.33 Other important events that were publicised were, Republic Day

Celebrations, Combined Commanders' Conference and the NCC Rally addressed by the Prime Minister, visits by the Defence Ministers of Russia, UK, Vietnam, Kyrgyzstan, Chile and Maldives, Defence Investiture Ceremonies at Rashtrapati Bhawan, Joint Army-Air Force Exercise 'VAJRA SHAKTI' and the successful test flights of various missiles by Defence Research and Development Organisation.

ARMY PURCHASE ORGANISATION (APO)

9.34 Army Purchase Organisation (APO) in the Ministry of Defence 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. Whole milk powder, butter and ghee are procured from the members of the National Cooperative Dairy Federation of India. Tinned items like vegetables, fruits, jams, milk, meat and fish, coffee, egg powder, etc, are procured from registered suppliers including private parties. The indented quantities are procured specially during the flush season when availability is high and prices are low. During the current year, Rs. 943 crore was provided to the Army Headquarters for procurement of above items.

9.35 Quality control of the contracted items is ensured by the Composite Food Laboratories under the charge of Army Headquarters, which, after inspection and acceptance of the tendered commodities, supervises dispatch of goods to different supply depots according to requirement.

SERVICES SPORTS CONTROL BOARD (SSCB)

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

9.37 During the current year, Inter Services championships in 15 out of the total 19 disciplines have been conducted.

9.38 ***National Championships:*** SSCB is affiliated to 28 National Sports Federations and participates in 38 national championships including 10 junior sections.

9.39 ***International Championships:*** Two Services Boxers won Gold medals at Common Wealth Boxing

Championship held in Scotland from August 16 to 20, 2005..

9.40 Asian Boxing championship was held in Vietnam from August 28 to September 5, 2005. Three Services Boxers and one Doctor represented India in the championship.

9.41 Four Services weightlifters represented India in Asian Weightlifting championship held in Dubai from September 24 to October 1, 2005. .

9.42 Commonwealth Weightlifting Championship was held at Melbourne, Australia from October 6 to 9, 2005. Two Services players were part of the Indian contingent and won one silver and one bronze medal.

9.43 Asian Athletics Championship was held in South Korea from September 1 to 4, 2005. Seven Services athletes were part of the Indian contingent.

9.44 ***Best Services Sportsman:*** On the basis of performance in Services, National and International championships of the preceding year, Nb Sub CPO CPR Sudhir Kumar of INS Valsura was adjudged "Best Services Sportsman" for the year 2004-05, and was awarded the AVM Jaswant Singh Trophy during the Combined Commanders' Conference 2005.

Lt. Col. RVS Rathore, AVSM was conferred 'Rajiv Gandhi Khel Ratna' and Maj Deep Ahlawat and Nb Sub J Krishnan were awarded Arjuna Awards.

9.45 ***Rajiv Gandhi Khel Ratna Award:*** Lt. Col. RVS Rathore, AVSM was awarded the highest sports award of the country 'Rajiv Gandhi Khel Ratna' in August, 2005.

9.46 ***Arjuna Awardees:*** Two Services sportsmen Maj Deep Ahlawat and Nb Sub J Krishnan were awarded Arjuna Awards in August 2005 for Equestrian and Rowing disciplines respectively.

ARMED FORCES FILM & PHOTO DIVISION (AFFPD)

9.47 The Armed Forces Film & Photo Division (AFFPD) is primarily responsible to meet the requirements of Services Headquarters and other Defence Organisations with regard to production, procurement and distribution of training films, production of photographs, art work etc to meet the needs of training, weapon trials, security, defence research, intelligence and records. It is also responsible for photo and video coverage of ceremonial functions and other important activities of the Ministry of Defence.

9.48 AFFPD has a very rich collection of rare films and photographs looking back at the history. This material inherited from the British is of great historical value and is maintained and preserved in the Central Defence Film Library of this Division. The photographs depict the Indian forces in action in various theatres of Second World War, parades, ceremonies, festivals and also personalities and

training activities etc. Some important films in the collection are Battle of Britain, Battle of Russia, Battle of China, Desert Victory, Japanese Surrender, Nazis Strikes, Burma Campaign, Churchil the Man and London Victory Parade.

9.49 This year the main thrust area is "Combat First Aid". Due to its long duration and necessity for future training purposes, it is being converted into a series of five films. The work has been undertaken on top priority basis.

9.50 Production of defence training film "General Court Martial" was completed within the stipulated time. Photo shoot and video coverage covering multifarious activities in various Ordnance Depots/ Units located at CAFVD KIRKEE, Jabalpur, Kanpur, Bharatpur, Secunderabad and Leh have been recently undertaken.

9.51 AFFPD had 37 films on its production programme including some backlog. Out of these, 11 films have been completed and five films are at final stages of production. Three films will be entered in International Film Festival, 2006.

9.52 The Mobile Cinema Unit of this Division also procures/ distributes documentary films/ news magazines to the troops in the forward areas.

9.53 This year AFFPD has made a film on Investigation and General Court Martial. The film on Meat Hygiene and Veterinary Public Health was released this year and the film on Fuel Conservation is entered in the Mumbai Film Festival.

9.54 The Central Defence Film Library (CDFL) of this Division is responsible for distribution of training films to various units/ formations/ training establishments/ commands, to meet their specific training requirements. The Library holds 578 titles in 35 mm sizes, 1165 titles in 16 mm size and 250 titles in Video format. During the year, 2500 training Films/ Video Cassettes/ CDs have been distributed among the troops.

SCHOOL OF FOREIGN LANGUAGES (SFL)

9.55 The School of Foreign Languages has been pioneer in foreign language teaching in India since 1948. It is a unique institution of our country as nowhere else so many foreign languages are taught under the same roof. At present, the School is engaged in imparting training in 22 foreign languages to personnel of the three Services. It also caters to the needs of other Ministries and Departments of the Government of India, such as, the Ministry of External Affairs, the Cabinet Secretariat, Central Police Organisations viz. Border Security Force, Central Reserve Police Force and Indo-Tibetan Border Police. The civilian students are also admitted for Certificate of Proficiency, Advanced Diploma and Interpretership Courses as per the laid down Government rules.

SFL imparts training in 22 foreign languages to the personnel of the Armed forces.

9.56 The School of Foreign Languages conducts four types of courses, viz., Interpretership Course, Certificate of Proficiency Course, Advanced Diploma Course and Short-term Course in ten languages (Arabic, Burmese, Bahasa Indonesia, Chinese, French, German, Russian, Sinhala, Spanish and Tibetan) on a regular basis and twelve languages (Dari, Dwivehi, Hebrew, Italian, Japanese, Malay, Persian, Pak Urdu, Pushto, Turkish, Thai, Vietnamese) on request basis. School of Foreign Languages is the only institute in the country where courses in Bahasa Indonesia, Pushto, Thai, Sinhala and Burmese are offered.

9.57 The Certificate of Proficiency Course is followed by the Advanced Diploma Intensive Course. Both are part-time courses and of one year duration each and taken together, these are equivalent to the three year Diploma Courses of the Universities.

9.58 Short-term courses are purely need-based programmes. They are conducted as and when necessary, especially for Military Attache designates and officers being sent on UN missions or as per specific needs of user offices.

9.59 The School of Foreign Languages is the mother organisation of foreign language teaching wings of Defence Institutions where foreign languages are taught. It conducts examinations and issues diplomas to the successful candidates. For Indian Foreign Service (IFS) probationers, it is obligatory to qualify the Advanced Diploma (IFS) examinations conducted by the Institute. The School conducts examination in regimental language, viz. Nepali at various Service units all over the country. Examinations are also held for Dhivehi language.

9.60 In addition, a Technical Intensive Course in Russian language has also been successfully conducted by the School of Foreign Languages at INS Satavahana at Vishakhapatnam for Naval personnel.

HISTORY DIVISION

9.61 Historical Section (India) was established on October 26, 1953, to write and publish the official accounts of the post-independence military operations of the Indian Armed Forces. The history of the operations in Jammu and Kashmir (1947-48) was its first assignment. Till now, it has brought out 19 volumes. The Historical Section was re-designated as History Division with effect from April 1, 1992.

9.62 The History Division functions as the record and reference office of the Ministry of Defence and the Indian Armed Forces. During the current year, about 3962 operational records were received from the

Services Headquarters, Units and Formations for permanent retention in the History Division.

9.63 The Division provides two Research fellowships for conducting research in military history under the Research Fellowship Scheme of the Ministry of Defence.

9.64 The Heraldic Cell of the History Division assists the three Services Headquarters and the Ministry of Defence by suggesting names for new establishments, designing of crests and badges and coining suitable mottoes for Units/ Formations.

NATIONAL DEFENCE COLLEGE

9.65 The National Defence College (NDC) was inaugurated on April 27, 1960 by the first Prime Minister, Pandit Jawaharlal Nehru. Located in the heart of Delhi, the College has grown from strength to strength in the last 45 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. As a pre-eminent joint military educational institution of the Defence Forces, it explores every domain of national security.

NDC aims to produce future policy makers for shouldering increase responsibilities through strategies structures for national security.

9.66 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 endeavour is to prepare the future policy makers for increased responsibility through a programme of studies in strategies and structures for national security. The Course is structured to cover socio-political and economic issues, science, technology, international security environment, global issues, India's strategic/ immediate neighbourhood and military dimensions of national security.

COLLEGE OF DEFENCE MANAGEMENT (CDM)

9.67 College of Defence Management is a tri-service category "A" training establishment that has been 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. The curriculum at CDM is dynamic and each capsule/ course is tailor-made for the specific participants, with 'value addition' for them being the key consideration.

9.68 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.

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

(a) Higher Defence Management Course (HDMC): This is a 44 weeks 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 weeks 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 weeks duration and is attended by 20 officers of the rank of Major General and equivalent.

(d) Assignment Oriented Management Training (AOMTs): 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 weeks duration for middle level officers.

DEFENCE SERVICES STAFF COLLEGE (DSSC)

9.70 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

9.71 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 specialises in Defence and related subjects, besides catering to the needs of general readers. During the year, the library added 1750 books, subscribed to 122 Journals/ Periodicals and 23 Newspapers.

10

RECRUITMENT AND TRAINING

IMA cadets during passing out ceremony

Excellent, dedicated and motivated manpower capable of shouldering responsibilities of national security is the mission of various training courses under the Armed Forces.

RECRUITMENT IN THE ARMED FORCES

10.1 The Armed Forces epitomize the ideals of service, sacrifice, patriotism and our country's composite culture. The recruitment to the Armed Forces is voluntary and every citizen of India, irrespective of his caste, class, religion and community, is eligible for recruitment in the Armed Forces provided he meets the laid down physical, medical and educational criteria.

RECRUITMENT OF OFFICERS IN THE ARMED FORCES THROUGH UPSC

10.2 Recruitment of commissioned officers in the Armed Forces is mainly done through the Union Public Service Commission (UPSC). The UPSC conducts All India Competitive Examinations for the under-mentioned entries :-

(a) ***National Defence Academy (NDA) :*** The UPSC holds entrance examination twice a year for entry into the National Defence Academy (NDA). Candidates on completion of 10+2 Examination or while in the 12th standards, are eligible to compete. Successful candidates join the NDA. On completion of the NDA course, they are sent to the respective Service academies for their pre-commissioning training.

(b) Combined Defence Services Examination (CDSE): The UPSC also holds an All India competitive examination, known as the Combined Defence Services Examination (CDSE), twice a year. University graduates are eligible to appear in the examination. Successful candidates join the Indian Military Academy/Officers' Training Academy, Air Force Academy and Naval Academy for regular/Short Service Commission.

NON-UPSC ENTRIES IN THE ARMY AS COMMISSIONED OFFICERS

10.3 Recruitment through Service Selection Board (SSB) is made for

Arms/ Services in the Army for the following entries :-

(a) ***University Entry Scheme:*** Final/ Pre-final year students in the notified engineering disciplines are eligible to apply for Permanent Service Commission into the technical Arms of the Army as commissioned officers under the University Entry Scheme. Eligible candidates are selected through a campus interview under the Screening Teams deputed by the Army Headquarters. After SSB and the Medical Board, the finally selected candidates are required to undergo one year's pre-commission training at IMA, Dehradun, before being commissioned. Cadets through this entry are also entitled for two years' ante-date seniority on commission.

(b) ***Technical Graduates Course (TGC):*** Engineering graduates/ post graduates from notified disciplines of engineering are eligible to apply for Permanent Service Commission into technical Arms through this entry. After SSB and the Medical Board, the finally selected candidates are required to undergo one year's pre-commission training at IMA, Dehradun, before being commissioned. Cadets through this entry are also entitled for two years' ante-date seniority on commissioning.

(c) ***Short Service Commission (Technical) Entry:*** The Short Service Commission (Technical) Entry Scheme provides for recruitment of eligible technical graduates/ post graduates into technical Arms. After SSB and Medical Board, the finally selected candidates are required to undergo 11 months' pre-commission training at OTA, Chennai. On completion of training, successful candidates are inducted as Short Service Commissioned Officers in the technical Arms. Cadets through this entry are also entitled for two years' ante-date seniority on commission.

(d) ***Technical Entry Scheme (10+2 TES):*** Candidates who have qualified 10+2 CBSE/ ICSE/ State Board Examination with minimum aggregate marks of 70% marks in Physics, Chemistry and Mathematics are eligible to apply for commission under the 10+2 Technical Entry Scheme (TES). On being successful in SSB and being declared fit by 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 Service Commission. On being commissioned they are further put through one year specialised training of the Arm in which commissioned. Through this entry, volunteer cadets can also seek commission in the Combat Arms.

(e) ***Women Special Entry Scheme Officers (WSES-O):*** Eligible women candidates are recruited in Army as Short Service Commissioned Officers through the Women Special Entry Scheme (WSES-O). Commission is granted in Corps of Electrical and Mechanical Engineers, Engineers, Signals, Army Education Corps, Army Ordnance Corps, Army Supply Corps, Corps of Military Intelligence, Judge Advocate General's Branch and Air Defence Artillery. Vacancies per year for women officers have been increased to 75 per course. There are two courses in a year and each course is of six months' duration conducted at OTA, Chennai. Women are offered Short Service Commission in three streams viz Non Technical, Technical and Specialist streams 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 dispensation of age by four years and have a reservation of 5% seats.

(f) ***NCC Special Entry Scheme:*** University graduates possessing NCC 'C' Certificate with minimum 'B' grading and 50% marks in graduation examination are eligible to apply for Short Service Commission into the Army through this entry. Such cadets are exempted from appearing in the written examination (CDSE) conducted by the UPSC and are directly put through the SSB interviews followed by a Medical board. Candidates meeting the Qualitative Requirement have to apply through various NCC Directorates at State level. Screening is done by the DGNCC who forward the applications of deserving cadets to the Recruiting Directorate of Army HQ.

SERVICE ENTRIES IN THE ARMY AS COMMISSIONED OFFICERS

10.4 Recruitment of Personnel Below Officer Rank into officer cadre is done through Service Selection Board for Arms/ Services in the following entries:-

(a) Commission through ACC Entry: The eligible Other Ranks

The SCO schemes helps in making of deficiency of officers in the Army and improves carrier prospects of the existing JCOs/ NCOs/ ORs.

from the three Services, after 10+2 examination, can apply for regular commission through the Army Cadet College (ACC) Entry. After selection through SSB and a Medical Board, the cadets are trained at Army Cadet College, 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. Permanent Commission is granted in all Arms/ Services.

(b) Induction under Special Commissioned Officer (SCO) Scheme: Government had approved the creation of Support Cadre of Special Commissioned Officers. Eligible Junior Commissioned Officers (JCOs) and Other Ranks (ORs) fill up these posts. Under this entry, JCOs/ Non-Commissioned Officers (NCOs)/ ORs in the age group of 30-35 years, with an Army Senior School Certificate Pass (Class 10+2 Pattern) qualification, are eligible for commission after screening/ selection through SSB and a Medical Board. They have to undergo pre-commission training of one year duration at IMA, Dehradun. The officers so commissioned earn promotion upto the rank of Colonel. 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 upto the rank of Major. They retire at the age of 57 years after service of about 20-25 years as officer. The scheme not only improves the career prospects of the existing JCOs/ NCOs/ ORs but also helps in making up the deficiency of officers in the Army to a considerable extent.

(c) Induction through PC(SL) Cadre: The eligible personnel below officer rank are granted Permanent Commission Special List [PC(SL)] after selection by the SSB into various Arms/ Services. A few vacancies are earmarked for this cadre. This entry has improved the motivation level of the cadre.

INTAKE

10.5 During the year 2005, intake of candidates for pre-commissioning training as officers is given in table No.10.1.

Table 10.1

(a)	***NDA***			556
(b)	***IMA***			529
	(i)	IMA(DE)	422	
	(ii)	ACC	91	
	(iii)	SCO	16	
	(iv)	PC(SL)	In Progress	
(c)	***OTA***			566
	(i)	WSES(O)	142	
	(ii)	SSC(NT)	322	
	(iii)	NCC	102	
(d)	***Tech Entries***			382
	(i)	UES	63	
	(ii)	SSC(Tech)	27	
	(iii)	10+2 TES	171	
	(iv)	TGC	121	

NON-UPSC ENTRIES IN THE NAVY AS COMMISSIONED OFFICERS

10.6 Recruitment for the non UPSC entries is made through Service Selection Board interviews for the following Branches/ Cadres of the Navy:-

During the year 1477 candidates were recruited for pre commission training as officers.

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

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

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

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

10.7 ***10+2 (Tech) Scheme:*** The Scheme is for Permanent Commission in the Engineering and Electrical branches of the Indian Navy. Under the scheme, candidates with 10 +2 (PCM) qualification, after selection through the Services Selection Board, are sent to the Naval Academy for the Naval Orientation Course (NOC). Thereafter, they undergo a four-year Engineering course at INS *Shivaji/ Valsura*. On successful completion of the course they are granted

permanent commission in the Electrical and Engineering branches of the Navy.

10.8 ***University Entry Scheme (UES):*** The UES has been re-launched with effect from August 2005 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 Naval Headquarters 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.

10.9 ***Women Officers:*** Women are being inducted into the Navy as Short Service Commission (SSC) officers in the Executive (ATC, Law & Logistic Cadres) and the Education branch.

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

10.11 ***Special Naval Architecture Entry Scheme:*** Government has recently approved the induction of 45 Naval Architect officers into the Naval Architecture Cadre of the Engineering Branch of the Indian Navy, as Short Service Commission Officers, under a Special scheme of 'Special Naval Architects Entry Scheme' (SNAES).

10.12 An empowered Naval team visits IIT *Kharagpur*, IIT *Chennai*, Cochin University of Science and Technology (CUSAT) and Andhra University, where B Tech (Naval Architecture) course is conducted, to select the candidates through campus interviews. The selected candidates undergo medical examination at the nearest Military Hospital and, if found fit, are selected for training.

RECRUITMENT OF OFFICERS IN AIR FORCE

10.13 Recruitment of Permanent Commissioned Officers in the Air Force for Flying Branch is done through NDA and CDS examinations conducted by Union Public Service Commission. For Technical Branches, Women Special Entry

Scheme, NCC Special Entry Scheme and Op Support Group recruitment is made directly through IAF Recruiting Directorate.

NON-UPSC ENTRIES IN THE AIR FORCE AS COMMISSIONED OFFICERS

10.14 ***Recruitment through Selection Board For PC & SSC Officers (Men)*** : Recruitment through Air Force Selection Board is made for the following branches of the Air Force: Aeronautical, Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology.

10.15 ***University Entry Scheme:*** Final/ pre-final year students in engineering disciplines are eligible for induction into the Technical Branches/ Services of the IAF as Commissioned Officers under the University Entry Scheme starting with effect from January 2007.

10.16 ***Recruitment of Women Officers:*** Eligible women are recruited as Short Service Commissioned Officers in the following Branches of the IAF:- Flying, Aeronautical Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology.

10.17 ***Recruitment through NCC:*** University graduates with Physics & Maths at 10+2 level possessing Senior Division NCC 'C' Certificate are inducted in the Air Force as regular Commissioned Officers. These graduates are exempted from appearing in the CDSE conducted by the UPSC and are selected through the AFSBs.

RECRUITMENT OF PERSONNEL BELOW OFFICER RANK (PBOR) IN THE ARMY

10.18 The recruitment of Other Ranks in the Army is carried out according to the percentage of Recruitable Male Population (RMP) of the State/ Union Territories. The Recruitable Male Population includes all males of the State/ Union Territories who meet the laid down qualitative recruitments and it is reckoned as 10% of the total male population. Eleven Zonal Recruiting Offices, one Gorkha Recruiting Depot, Kunraghat and an Independent Recruiting Office at Delhi Cantt in addition to 47 Regimental Centres carry out recruitment. During the recruiting year 2004-2005, the recruiting organisation has enrolled ***62514*** recruits (PBOR) for the Army.

10.19 The important decision taken in the recent past/ major developments in the area of recruitment of PBOR in the Army are as under :-

(a) ***Direct Enrolment of Meritorious Sportsmen in the***

Rank of Havildar in the Army: Sanction for direct enrolment of meritorious sportsmen in the Army has been extended by the Government for one year i.e. upto December 31, 2005.

(b) ***Educational Qualification Requirement (QR) for Soldier Technical Category:*** Educational QR for Soldier Technical category has been revised as simple 10+2 pass with no stipulation of marks percentage. However, the mandatory requirement of English, Physics, Chemistry and Maths in 10+2 still remains.

(c) ***Cut off Date for Determination of Age at the time of Enrolment:*** The date of physical screening has been taken as effective date for determining eligibility of candidate for age with effect from March 28, 2005.

(d) ***Recommendation for Dispensation to Soldier General Duty (GD) Category – Punjab State:*** Education Standard for recruitment to Soldier GD Category from Matric pass with minimum 45% marks to simple Matric pass has been granted to the candidates from the State of Punjab within the aerial distance of 20 Km from the International Border (IB) w.e.f. August 17, 2005 upto the expiry of existing dispensation policy i.e. March 31, 2007, as a special case.

(e) ***Raising of new BROs:*** Two new Branch Recruiting Offices (BROs) have been raised at Behrampore (WB) and Aizawl.

RECRUITMENT OF SAILORS IN THE NAVY

10.20 ***Method of Recruitment:*** Recruitment of sailors in the Navy is carried out based on an All India Merit after the process of a written examination, physical fitness test and medical examination. To make recruitment 'candidate friendly', the recruitment schedule provides enough preparation time for the candidates and results are announced on the same day. Recruitment publicity for the Navy is carried out on all-India basis through advertisements in all leading national and regional newspapers and Employment News. Publicity material is also despatched to a large number of schools/ colleges and all Zila Sainik Boards. The local administration carries out the publicity drive in rural/ backward areas through local media.

10.21 ***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) Matric Entry Recruits – Matriculation.

(d) Non-Matric Entry Recruits – Below Matric.

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

RECRUITMENT OF PERSONNEL BELOW OFFICER RANK IN THE AIR FORCE

10.22 Recruitment of Airmen to the Air Force is done through the Central Airmen Selection Board, located at Air Force Station, Naraina, New Delhi-10. There are 13 Selection centres under the Board.

10.23 ***Selection Procedure:*** The recruitment of Personnel Below Officer Rank (PBOR) as an airman in the IAF is conducted through All India Selection Tests and Recruitment Rallies. All India Selection Tests are conducted at the Airmen Selection Centres (ASCs) located all over India as per schedule whereas the Recruitment Rallies are conducted from time to time in selected areas/ regions of particular State/ Union Territories of the country.

Airmen are recruited through well planned rallies keeping in view the geographical, demographical and topographical consideration.

NEW DEVELOPMENTS IN THE AREA OF RECRUITMENT IN THE INDIAN AIR FORCE

10.24 (a) ***Enhancement of Induction of officers from North Eastern (NE) States:*** To enhance the induction for the Officers' Cadre from the low response NE states, an extensive publicity campaign was carried out for Fast Track Selection.

(b) The Short Service Commission (SSC) Scheme in the Air Force has been extended beyond December, 2005 on the existing terms and conditions of service, revised to the extent that the term of engagement will be 10 + 4 years. The revised term of engagement has been introduced to bring in uniformity among the three Services.

(c) ***Recruitment of Airmen through Open Recruitment Rallies:*** A new system of recruiting Airmen has been introduced with effect from April 1998 by carrying the recruitment through open recruitment rallies only. Recruitment rallies are planned well in advance, keeping in view the geographical, demographical and topographical considerations. At least one such rally is held in

each month by combining districts/ areas and regions, thereby giving every aspirant one opportunity in a year to get himself enrolled in Air Force, irrespective of his place of residence.

(d) ***University Entry Scheme:*** Under the University Entry Scheme starting from January 2007, final/ pre-final year students in Engineering disciplines are likely to be inducted into Technical Branches of Air Force as Commissioned Officers.

TRAINING FOR DEFENCE SERVICES

10.25 The environment in which the defence officers have to work, demand a holistic approach to training. Training aims at equipping the officers and soldiers with necessary inputs to make them efficient fighting men and also well-informed on national and international developments. The training requirements are properly matched for the freshly recruited officers, for officers in need of advanced and specialised training, and for Other Ranks(ORs). Accordingly, a large number of training institutions in the Defence Sector work in coordination with one another to achieve these objectives.

The sainik schools aim to develop boys to join the Armed Forces through the NDA.

SAINIK SCHOOLS

10.26 Sainik Schools were established as joint venture of the Central and State Governments. These are under the overall governance of Sainik Schools Society. At present there are 20 Sainik Schools located at Nagrota (Jammu & Kashmir), Sujanpur Tira (Himachal Pradesh), Kapurthala (Punjab), Kunjpura (Haryana), Chittorgarh (Rajasthan), Ghorakhal (Uttaranchal), Rewa (Madhya Pradesh), Gopalganj & Nalanda (Bihar), Tilaiya (Jharkhand), Goalpara (Assam), Purulia (West Bengal), Bhubaneswar (Orissa), Balachadi (Gujrat), Korukonda (Andhra Pradesh), Satara (Maharashtra), Imphal (Manipur), Bijapur (Karnataka), Amravatinagar (Tamil Nadu) and Kazhakootam (Kerala). Approval, in principle, has been accorded for opening of two more Sainik Schools in Mizoram and Nagaland.

10.27 The objectives of Sainik Schools include bringing quality public school education within the reach of the common man, all round development of a child's personality and to remove regional imbalance in the officers' cadre of the Armed Forces. The Sainik Schools prepare boys academically, physically and

Training at NDA

mentally to join Armed Forces through the National Defence Academy (NDA).

10.28 Sainik Schools admit boys in classes VI and IX. Their age should be 10-11 years for class 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 Entrance Examination held in January each year.

10.29 The entrance examination includes a written examination and an interview. Admission is further subject to the candidates being found medically fit according to medical standards prescribed for entry to National Defence Academy.

10.30 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. These institutions also aim at developing the cadets' sound character, team spirit, dedication to duty, patriotic outlook and desire to serve the country with efficiency.

10.31 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, as cadets are obliged to take the NDA entrance examination.

10.32 Sports and games, co-curricular activities, educational tours, excursions, adventure courses and Socially Useful Productive Works aimed at developing the dignity of labour, form an integral part of the training imparted in Sainik Schools.

10.33 As on date, more than 6000 officers of the Defence forces are alumni of Sainik Schools.

10.34 During the current year some major initiatives were taken by the Sainik Schools Society for the betterment of these schools. These are:-

(a) Introduction of cash awards of Rs. 50,000/- alongwith the Raksha Mantri Trophy for the School achieving maximum number of NDA selections.

(b) Introduction of Training Grants upto a maximum of Rs. 10 lakh per school per year for providing financial assistance for teachers' training, specialised competition oriented training for cadets and improvement of training infrastructure.

(c) Introduction of admissions to Class XI in addition to the existing regular admissions to Classes VI and IX from academic session 2006-07 in order to achieve optimum utilisation of available infrastructure and to provide more competitive environment to cadets.

(d) Discontinuation of the annual 10% hike in tuition fees from academic year 2006-07 onwards. Tuition fee hike to be linked to the inflation index instead.

MILITARY SCHOOLS

10.35 Military Schools, the erstwhile King George's Schools were opened in the pre-Independence era with an aim to provide Public School education to the wards of serving soldiers who could subsequently join the Regiment of their parents. With the changing socio-economic condition, the scope of education was further modified and the wards of officers and civilians were also permitted to pursue education in these schools. At present the aim of these Military Schools is "to provide quality education and prepare the cadets to join Defence Services".

10.36 There are five Military Schools, which are located in Chail (1925), Ajmer (1930), Belgaum (1945), Bangalore (1946) and Dholpur (1962). Military School, Ajmer celebrated its Diamond Jubilee during this year.

Hut of Remembrance at National Defence Academy

RASHTRIYA INDIAN MILITARY COLLEGE (RIMC)

10.37 The Rashtriya Indian Military College (RIMC) was founded on March 13, 1922, with the objective of providing the necessary preliminary training to the boys of Indian birth or domicile, wishing to become officers in the Armed Forces of India. RIMC is now a premier educational institution in the country. For more than eighty years the college has been preparing cadets for leadership in the Armed forces. The institution now serves as a feeder institute to the National Defence Academy, Khadakvasla (Pune).

10.38 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 RIMC is biennial, in January and July. The boys are admitted to Class VIII in the age groups 11/ ½ to 13 years. The college runs classes in science stream on 10+2 CBSE pattern.

NATIONAL DEFENCE ACADAMY (NDA)

10.39 The National Defence Academy (NDA) is the country's premier inter-service training institution. It has the unique distinction of being one of the first institutions in the world to impart combined training to officer cadets of the Army, the Navy and the Air Force.

10.40 The three years course at the NDA is covered in six semesters

during which a bond of friendship and respect for each other's service develops. On conclusion of this training, the cadets proceed to their respective Service Academies for further training before being commissioned as officers in the Armed Forces.

10.41 The aim of training at the NDA is to ensure that all cadets are able to:-

(a) Attain the requisite educational standards and acquire mental, moral and physical qualities essential to their progressive and continued development as officers of the fighting services.

(b) Obtain such basic service training as will assist in developing their character, initiative, self-confidence and above all, qualities of leadership.

(c) Develop ability to appreciate the inter services aspect of the Armed Forces.

(d) Develop an interest in outdoor extra curricular activities.

INDIAN MILITARY ACADEMY (IMA), DEHRADUN

10.42 The Indian Military Academy, founded in 1932, boasts of a glorious and colourful history. The academy is located between Shivalik and the Himalayan foothills, in the salubrious climate of Dehradun. With the forest environment and rugged mountains, close to the mythological ashram of Dronacharya, it forms the ideal training ground for commission in the profession of arms.

OTA aims to train gentlemen cadets for grant of Emergency Commission.

10.43 IMA also imparts training to Gentlemen Cadets from friendly countries like Maldives, Mauritius, Lesotho, Palestine and Bhutan. In addition to basic service training and broad academic education, IMA has a number of extra curricular activities to develop a fully rounded personality and inculcating finer aesthetic qualities.

OFFICER TRAINING ACADEMY (OTA), CHENNAI

10.44 The Officers Training Academy was established in 1963 as Officers Training School (OTS) to meet the increased demand of officers in the Army. It was renamed as Officers Training Academy (OTA) from January 1, 1988 on completion of 25 years of its existence. To begin with, its main task was to train Gentlemen Cadets for grant of Emergency Commission, and from 1965 onwards the Academy started training cadets for Short Service Commission.

10.45 Since September 21, 1992, the Indian Army has opened up its portals for entry of women as commissioned officers. Initially 50

lady cadets were commissioned every year. With the entries presently limited to Army Service Corps, Army Education Corps, Judge Advocate General's Department, Corps of Engineers, Signals and Electrical and Mechanical Engineers, approximately 100 lady officers get commissioned from OTA every year.

ARMY WAR COLLEGE, MHOW

10.46 Army War College, Mhow is a premier training institution of Indian Army, which trains officers of the Armed Forces to meet future conflicts. The College is equipped with state-of-the-art training infrastructure combined with supporting administrative set up. The College imparts tactical training to officers of all arms and services at various levels of command viz, sub unit, unit and formation levels. Inter-arms and inter service aspects are included in the training which is aimed at enabling officers to handle mixed group of various arms and services at levels appropriate to the course. Three main courses conducted by the College are:-

(a) ***Higher Command Course:*** The aim of this course is to train officers for higher command, with particular reference to divisions and for holding senior staff appointments at Command, Corps and Division levels.

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

(c) ***Junior Command Course:*** The aim of this course is to train officers of all arms and services at lower command level, (with not less than six years of service) in the tactical employment of a Rifle Company or 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.

10.47 ***Short Courses:*** The College conducts a large number of short courses to train potential staff officers and commanders at various levels viz., All Arms Logistic Course, Combined Operational Review and Evaluation Programme, Formation Commanders Orientation Programme and Defence Correspondent Course.

HAWS trained personnel accounted well during Indo-Pak wars and operation Meghdoot and Vijay.

JUNIOR LEADERS ACADEMY (JLA), BAREILLY

10.48 Junior Leaders Academy was set up in 1998 with the aim of imparting institutionalised training in leadership and related subjects to the Junior Leaders i.e. JCOs and Sr NCOs of all arms and services with a view to make them more effective. JLA shifted from its interim location at Margoa (Goa) to Bareilly in July, 1999. The Academy in a short span has established itself as one of the premier training institutions of the Indian Army.

JUNIOR LEADERS ACADEMY (JLA), RAMGARH

10.49 Considering the gigantic magnitude of our Army, the requirement of training Junior Leaders was only partially met with the raising of JLA Bareilly. Therefore, it was decided to raise the JLA at an interim location at Ramgarh in 2001.

10.50 JLA Ramgarh has been organised on the same lines as JLA Bareilly. This being an interim location, only the existing infrastructure and facilities have been utilised. The institution has commenced training from February, 2003. This institution is presently training 648 students every year.

HIGH ALTITUDE WARFARE SCHOOL (HAWS), GULMARG

10.51 The School was initially set up in 1948 as 19 Infantry Division Ski School. The school soon gained popularity in skiing and winter warfare training. During winter of 1949-50, it was upgraded to a Command Establishment and re-designated as Winter Warfare School. On April 8, 1962, it was raised as Category 'A' Training Establishment and re-designated as High Altitude Warfare School to function directly under the Army Headquarters. It trains selected personnel in all aspects of high altitude (HA), mountain warfare and develop techniques for fighting in such terrain.

10.52 The establishment played an important role in training the personnel who took part in the Indo-Pak Wars of 1965, 1971 and Operation Meghdoot and Operation Vijay. The School's contribution in operations in Siachen too has been quite significant.

COUNTER INSURGENCY & JUNGLE WARFARE SCHOOL (CIJW), VEIRANGTE

10.53 Counter Insurgency and Jungle Warfare (CIJW) School is a Category 'A' Training Establishment designed to conduct counter insurgency and counter terrorism

Counter Insurgency Training has benefited units to understand the peculiarities of insurgency problem.

courses for officers, JCOs and NCOs of the Army. The School also conducts language courses in Assamese, Bodo, Manipuri & Tangkhul and Nagamese. In addition, Pre-Induction Training for all units inducted into Combat Insurgency grid is also conducted. Training of Para Military Forces, Central Police Organisations and State police personnel is also carried out at the School.

10.54 Even the US Army exhibited keen interest in training at the establishment, which took shape in the form of Joint Indo-US exercise named EX VAJRA PRAHAR, EX YUDH ABHYAS (04-01) and EX YUDH ABHYAS (05-01) conducted during 2003, 2004 and current year respectively under the Indo-US Defence Cooperation Programme. The School evolves and reviews tactical doctrine and techniques regularly for operations in counter insurgency and jungle warfare, and counter terrorism and keeps abreast of all tactical and technical aspects of insurgency in all parts of the World.

10.55 A number of students from Para Military Forces and friendly foreign countries also attend the courses conducted by CIJW School. With the present capacity, the School is imparting training to 150 Officers, 575 JCOs/ NCOs in one training cycle. By virtue of its Charter and Role, the training conducted in this institution is operation specific and mission oriented.

COUNTER INSURGENCY PRE INDUCTION TRAINING BATTLE SCHOOLS

10.56 Due to escalation of insurgency problem in J&K and in the East, a need was felt to impart pre-induction training to all units being inducted into counter insurgency environment. Capacity of CIJW School was limited, besides peculiar operational situation and administrative problems of movement of units, it was necessary to impart training to units in areas closer to their areas of operation. To overcome these problems, three 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. Pre-induction training in these schools has benefited all the units, as they were able to understand the peculiarities of the insurgency problem in their locality. 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

10.57 The Infantry School is the largest and oldest Military Training Institution in India. It conducts various courses of instruction apart from developing new tactical doctrines, battle techniques and battle drills pertaining to the infantry. It is also involved in study and evaluation of the latest trends in the development of infantry tactics, weapons, ammunitions and equipment.

10.58 The Infantry School conducts a total of 52 courses for Officers, JCOs and Jawans of the Infantry and trains a total of 7830 students in weapon handling and tactics every year. The School has two training Wings at Mhow, Weapons and Trials Wing and Young Officers Wing.

10.59 The School also has a Junior Leaders Wing located at Belgaum. A Non Commissioned Officers (NCOs) Academy at Binaguri raised on April 18, 2005 is also a part of the Infantry School. The NCOs Academy conducts courses for all Non Commissioned Officers of the Indian Army in leadership development and combat training. In addition, Infantry School has a Trials Cell at Mhow responsible for conducting all trials of weapons and equipment prior to their induction into service. The Army Marksmanship Unit located at Mhow is also a part of the Infantry School which is responsible for training of shooters for national and international shooting events. *Lt Col RVS Rathore* who won a *silver medal in the Olympics* last year for shooting, was trained at Army Marksmanship Unit.

JUNIOR LEADERS WING (JLW), BELGAUM

10.60 The Junior Leaders Wing at Belgaum trains 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 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 make them capable of operating as part of special mission groups or leading independent missions in all types of terrain and operational environment.

COLLEGE OF MATERIALS MANAGEMENT

10.61 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. With the changing doctrines of training and the advanced concepts introduced, the AOC School was renamed as College of Materials Management (CMM) in 1987 and affiliated to the University of Jabalpur (Rani Durgavati Vishwa Vidhyalaya) in 1987. Since 1990 CMM is an autonomous institution. The College is also registered as a 'Government College' with the University Grants Commission. It also has the approval of All India Council of Technical Education (AICTE).

10.62 The College is accredited with National Assessment and Accreditation Council (NAAC), an autonomous body constituted under the UGC Act. NAAC 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

10.63 The School of Artillery, Deolali is the academic centre for various sub-disciplines of the science and methodology of artillery warfare. It imparts technical training to the officers, JCOs and NCOs of the regiment of Artillery on artillery weapons and systems including training of pilots for Air Observation Post duties.

10.64 The School of Artillery has trained a large number of Officers, JCOs and NCOs in the year to help them to imbue and develop technical skills and expertise in operating and employing artillery weapon systems. During the year, several officers and personnel from friendly foreign countries were also imparted training.

ARMY AIR DEFENCE COLLEGE, GOPALPUR

10.65 Army Air Defence College (AADC) earlier functioned as a wing of School of Artillery, Deolali till October, 1989, when it was moved to Gopalpur as a precursor to bifurcation 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.

10.66 The Army Air Defence College conducts a number of courses. Some of the courses are Long Gunnery Staff Course (Officers), Young Officers Course,

Training at Army Air Defence College, Gopalpur

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 CENTRE AND COLLEGE, BANGALORE

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

ARMY EDUCATION CORPS TRAINING COLLEGE AND CENTRE, PACHMARHI

10.68 The AEC Training College & Centre, Pachmarhi is an ace institution for Educational Training in the Armed Forces. Only one of its kind, it is both a Cat 'A'

MMW has 200 musical compositions to its credits.

establishment and a Cat '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.

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

10.70 The Unit Education Instructors (UEI) Course is an invaluable course in training of ORs from all Arms and Services of the Indian Army to be effective instructors in their Units. The Course duration is of 12 weeks.

10.71 The Foreign Language Wing (FLW), which is one of the three Divisions of the AEC Training College & Centre, Pachmarhi has today established itself as one of the premier nodes of foreign language training, not only in the Armed Forces but also in the national academic environment. The FLW has two digitised language labs, each with a capacity of 20 students. Recently, a Computer Aided Language Learning Lab has been established at FLW for training in regional and foreign languages.

MILITARY MUSIC WING, PACHMARHI

10.72 The Military Music Wing (MMW) was raised in October, 1950 as a part of the AEC Training College & Centre, Pachmarhi. The Military Music Wing has 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 and pipers or drummers.

REMOUNT AND VETERINARY CORPS CENTRE AND SCHOOL, MEERUT

10.73 The Remount and Veterinary Corps (RVC) Centre and School, located in Meerut, is the alma mater of all RVC personnel. The aim of the School is to train officers and personnel below officer rank of all Arms and Services on animal management and veterinary aspects. Eleven courses for officers and six for PBORs are conducted. The total strength of students being trained is 250.

ARMY SPORTS INSTITUTE

10.74 An Army Sports Institute at Pune has been established with Army Sports Nodes in selected disciplines at various places in the country.

ARMY SCHOOL OF PHYSICAL TRAINING, PUNE

10.75 Army School of Physical Training(ASPT) is a premier institution imparting systematic and comprehensive instruction to personnel of the Army regarding the conduct of physical training in units and sub units. It also imparts basic training in Sports and Games with a view to improve 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 from friendly foreign countries. ASPT has started six allied sports courses in collaboration with National Institute of Sports in Boxing, Volleyball, Basketball, Swimming and Life Saving, Judo and Yoga Courses for personnel below officer rank.

COMBAT ARMY AVIATOR TRAINING SCHOOL (CAATS), NASIK ROAD

10.76 Combat Army Aviator Training School(CAATS) has been set up at Nasik Road in May 2003 with a view to train aviators in aviation skills and handling of aviation units in various operations of war. It also trains aviation instructors, develop Standard Operating Procedures (SOPs) and assists Army Training Command in development of Aviation Tactical Doctrine in synergy with ground troops. The courses such as 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, are conducted at the School.

COLLEGE OF MILITARY ENGINEERING (CME), PUNE

10.77 The College of Military Engineering at Pune is a premier technical institution. The training is conducted for personnel of the Corps of Engineers, other Arms and Services, Navy, Air Force, Para Military Forces, Police and Civilians. 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 recognises the graduate and post graduate courses run by the CME. The College trains on an average 1500 officers and 800 PBORs every year.

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

10.79 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

focus on their maintenance, repairs and inspection. It also provides training in management and tactics at senior, middle and supervisory levels. The MCEME is designed to train 1760 personnel (all ranks). It conducts a range of 13 officers courses and 61 different courses for PBORs.

CORPS OF MILITARY POLICE CENTRE AND SCHOOL, BANGALORE

10.80 The aim of the School is to train officers and PBORs on military and police duties in legal matters, investigation, traffic control etc. Four courses for officers and fourteen courses for PBORs are being conducted. Total strength of students being trained is 910.

ARMY AIRBORNE TRAINING SCHOOL, AGRA

10.81 The Army Airborne Training School (AATS) is located at Kilometer Stone 05 on the Agra - Jaipur highway. It was previously designated as Army Air Transport Support School (AATSS). The Army Air Transport Support School was redesigned as Army Airborne Training School with effect from January 15, 1992.

10.82 Presently five types of army courses and a total of nine courses in a training year are being conducted by the school. These courses are subscribed by Indian Army (All arms/ service), Para Military Forces as well as by the students from friendly foreign countries.

MILITARY COLLEGE OF TELECOMMUNICATION ENGINEERING (MCTE)

10.83 MCTE, Mhow, achieved a new milestone in its modernisation programme by establishing a state-of-the-art 'Convergence Technology Lab'.

10.84 Army Officers, JCOs and ORs undergoing various technical courses would get an opportunity to handle latest convergence technology equipment which would enable them to engineer and maintain various communication and computer networks in the field units.

10.85 Keeping pace with latest development in Information Technology, Geographical Information System (GIS) has emerged as a major Decision Support System in Indian Army. A GIS laboratory has been set up with the aim of giving hand-on exposure to the students on various aspects of GIS like digitization of vector data, spatial analysis and generation of Digital Elevation Models (DEM) for better visualization and evaluation of terrain.

10.86 A Wireless Network Laboratory (Wi-Net) has also been established with the aim to provide practical handling and trouble shooting experience of wireless networks to the students.

MILITARY INTELLIGENCE TRAINING SCHOOL AND DEPOT

10.87 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. The School also imparts training to personnel of friendly foreign countries. The civilian officers of the Department of Revenue Intelligence are also trained at this establishment. The School imparts training to 90 officers and 130 Junior Commissioned Officers/ Non Commissioned Officers of all arms at any one time. The School trains approximately over 350 Officers and 1100 Junior Commissioned Officers/ Non Commissioned Officers every year.

ELECTRONICS AND MECHANICAL ENGINEERING SCHOOL, VADODARA

10.88 The Electronics and Mechanical Engineering School is a premier establishment responsible for conducting post graduate level courses for officers and diploma and certificate level courses for PBORs. The mission of EME School is to provide education in science, engineering and management which would enhance the operational effectiveness of the equipment held in the hands of Indian Army. A number of officers and PBORs from friendly foreign countries like Nepal, Sri Lanka, Kenya, Zambia, Botswana, Malaysia, Nigeria, Sultanate of Oman, Trinidad and Tobago and Indonesia have been attending various courses conducted at EME School.

INSTITUTE OF MILITARY LAW, KAMPTEE

10.89 The Institute of Military Law was established at Shimla. On August 26, 1989, the institute was shifted to Kamptee. In the Army, justice is administered by the Commanders at various levels. Minor offences can be disposed of summarily by powers vested in them under the provisions of the Army Act. For grave offences, Courts Martial are assembled on the orders of superior commanders. Commanding Officers are empowered to hold Summary Courts Martial. As there is no approval to the decision of these tribunals, it is essential that these powers are exercised judiciously and laid down procedures are adhered to. The charter of duties of the School is to cater for a comprehensive system of legal education for officers of all Arms and Services of the Army and to undertake wide ranging research, development and dissemination work in the field of Military and allied laws.

ARMOURED CORPS CENTRE AND SCHOOL, AHMEDNAGAR

10.90 In 1948, after partition, the Training Wings, the Recruits Training Centre and Armoured Corps Depot and Records were shifted to Ahmadnagar where the fighting Vehicles School was already functional 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.

TRAINING OF FOREIGN ARMY PERSONNEL

10.91 After Operation Vijay and Operation Parakram, the interest of foreign armies for training in Indian Army establishments has increased tremendously. Army personnel from neighbouring countries, South East Asia, Central Asian Republic (CAR), African continent and a few developed countries are being trained in India.

10.92 The Government of India provides assistance to the developing and under developed nations under the Indian Technical and Economic Cooperation (ITEC) programme of Ministry of External Affairs. Courses are also availed by Nepal and Bhutan under Special Aid Programme of Ministry of Defence. Under this programme, personnel from developing countries get training in service institutions either free of cost or at subsidised rates. Developed western countries also send their officers for training in these institutions on reciprocal basis and on self financing basis by paying cost of training and other related charges.

11

RESETTLEMENT AND WELFARE OF EX-SERVICEMEN

Pension grievances of Ex-servicemen being sorted out in Defence Pension Adalat

At the time of retirement majority of service personnel are at an age where they have numerous unfinished responsibilities, which necessitate their taking up of a second occupation.

11.1 The National Common Minimum Programme (NCMP), as adopted by the Government, envisaged setting up of a new Department of Ex-Servicemen Welfare in the Ministry of Defence. A new Department called "Department of Ex-Servicemen Welfare" was created on September 22, 2004. The main objective was to give focused attention to welfare programmes for ex-servicemen and their dependants including pensionary benefits, re-employment and rehabilitation.

11.2 In order to maintain a youthful profile of the Armed Forces, approximately 60,000 service personnel are retired/released every year at a comparatively younger age. At the time of retirement, majority of service personnel are at an age where they have numerous unfinished family and other social responsibilities which necessitates taking up a second occupation. There are about 19.5 lakhs ex-servicemen (ESM) and about 4 lakhs widows registered as on June 30, 2005. The ESM population is mainly concentrated in the states of Punjab, Uttar Pradesh, Uttaranchal, Haryana, Maharashtra, Kerala, Rajasthan and Tamil Nadu.

11.3 The Department of Ex-Servicemen Welfare formulates various policies for the welfare and resettlement of ESM in the country. The Department has two Divisions, Resettlement Division and Pension Division and is assisted by two Inter Services Organizations i.e. Directorate General of Resettlement (DGR) and Kendriya Sainik Board (KSB). While the KSB, which is headed by Raksha Mantri as an 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 Directorate General of Resettlement implements various policies/ schemes/programmes of the Government. The Directorate General of Resettlement has five Director Resettlement Zones (DRZs) in five Army Commands.

11.4 The KSB/Directorate General of Resettlement are also assisted in their task by various Rajya Sainik

The primary thrust of the Directorate General of Resettlement, Kendriya Sainik Board, Rajya Sainik Boards and Zila Sainik Boards is on dignified resettlement and efforts are made to explore various avenues for employment of Ex-Servicemen.

Boards/Zila Sainik Boards which are under the administrative control of respective State Governments. The Government of India bears 50% of the expenditure incurred on the organisation of RSBs while the remaining 50% expenditure is borne by the respective State Governments, since the welfare and resettlement of ESM is the joint responsibility of the Central Government as well as the state governments.

RESETTLEMENT

11.5 The primary thrust of the Directorate General of Resettlement, Kendriya Sainik Board, Rajya Sainik Boards and Zila Sainik Boards is on dignified resettlement and efforts are made to explore various avenues for employment of ex-servicemen. To resettle/re-employ ex-servicemen, the Central Government arranges the following:-

(a) Training programmes to reorient retiring Defence personnel towards civil employment.

(b) Reservation of posts for providing employment opportunities in government/ semi government/ public sector organizations and assistance in employment with corporate sector.

(c) Schemes for self-employment, and

(d) Assistance in entrepreneurship and setting up small scale industries.

TRAINING PROGRAMMES

11.6 Training for preparing both ex-servicemen and retiring service personnel for their resettlement in civil life is one of the major functions entrusted to the Directorate General of Resettlement. This year, the Directorate General of Resettlement has introduced some new courses which will provide nationally/ internationally accepted certification to facilitate retired persons to get quick employment within/ outside the country. The programme includes courses on information technology, managerial science, technical skills and agro based industries. Constant endeavour is made to improve the quality of training by regular monitoring. The courses are reviewed every year to include courses in new fields based on the current requirements of civil market and corporate world and also to remove obsolete courses.

11.7 ***Officers' Training:*** The Directorate General of Resettlement

organises employment oriented training programmes for officers to enhance their qualifications and enable them to seek suitable employment after retirement. The Resettlement Training Programmes range from vocational courses of three months duration to degree/ diploma courses, via distant learning programme of one to three years duration. The courses are conducted in multifarious fields like Information Technology, Security Services, Entrepreneurship Development, Business Administration, Personnel Management, Hotel Management, Tourism, Human Resources Development, Law and Insurance. Recently, management courses of six months duration have been introduced at Management Development Institute, Gurgaon and Indian Institute of Management, Lucknow. These courses have received an overwhelming response from officers and resulted in good job placements in the coporate sector. In order to meet the aspirations of retiring officers, many more reputed institutes, including IIM Ahmedabad and IIM Indore, have been empanelled to run additional courses. Computer diploma and Engineering courses of six months duration have also been introduced in various institutions across the country. Besides these, an specially designed two week programmes in Second Career Transition have also been introduced for officers looking to build successful new careers in the corporate/ self entrepreneurial sectors.

11.8 ***JCOs/ ORs Equivalent Training:*** Resettlement Training Programmes for Junior Commissioned Officers/ Other Ranks and their equivalent from the other services are carried out under Vocational Training. The training courses are conducted in diversified fields for a duration of upto one year in government, semi-government and private institutes spread all over the country. The salient fields covered are Security Services, Management, Information Technology, Travel & Tourism including Adventure Tourism, Entrepreneurship & Small Business Management, technical (including medical) trades, non-technical trades, secretarial support services, agro based industry and many other miscellaneous trades. This year courses offered by the Confederation of Indian Industry (CII) under the City and Guilds banner, with internationally accepted certification, have been introduced for Personnel Below Officers Rank (PBOR) to improve their employment avenues. Three day capsules on Second Career Transition/Preparation have also been introduced for retiring PBORs in order to arm them with sufficient information for a smooth transition to a second career in the civil market. The courses are conducted on free of cost basis for

the PBORs and the course fee is paid directly to the institutes through the DGR budget. The course duration is treated as Temporary Duty and PBORs are permitted to avail Free Railway Warrant for to and fro journey. Details of courses are published each year through a brochure distributed down to each unit and Zila Sainik Board.

11.9 ***Ex-Servicemen Training:*** Under this scheme, funds are allotted to RSBs for conducting vocational training for ESM in their States. The scheme is primarily meant for those ESM who could not avail the facility of resettlement training while in service. The scheme has also been extended to the widow/ one dependent of an ESM, irrespective of whether his death is attributable to military service or not. The course is free of cost for the ESM and a stipend of Rs. 700/- per month is paid to each trainee.

11.10 The details of personnel imparted training in various fields during the last three years are given in table 11.1.

Table 11.1

SCHEME	2003-04	2004-05	2005-06*
Officers' Trg	583	679	827
PBOR Trg	4019	3016	4395
Ex-servicemen Training	1102	1102	843

** Figures upto January, 2006*

RE-EMPLOYMENT

11.11 The Central and State Governments provide a number of concessions to ex-servicemen for their re-employment in Central/ State Government posts. 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.

11.12 ***Reservation in Government Jobs:*** The Central Government has reserved 10% of Group 'C' posts and 20% of Group 'D' posts for ESM, while central PSUs and nationalised banks provide 14.5% reservation in Group 'C' and 24.5% in Group 'D' posts. 10% posts of Assistant Commandants in paramilitary forces are also reserved for ESM. In Defence Security Corps, 100% vacancies are reserved for ESM. In addition, most of the State Governments are providing reservations to ESM in State Government jobs.

11.13 ***Security Agencies:*** The DGR registers/ sponsors private ex-servicemen security agencies for providing security guards to various PSUs 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. Besides, some States have set up ESM corporations. They are also providing security services. The Department of Public Enterprises (DPE) had issued instructions to all PSUs to get security personnel through State Ex-servicemen Corporations located in the concerned State or DGR sponsored Security Agencies. The scheme has shown good results. Through this scheme about 1800 ESM security agencies have been empanelled and approximately over 1,10,000 ESM have gained employment. Fresh forays have been made into the banking sector with active intercession of the Reserve Bank of India and the Finance Ministry. The RBI has issued instructions that the security of the treasury chests of all Banks in the country be entrusted to DGR sponsored ESM Security Agencies only, in the absence of the Banks own integral security.

11.14 ***Placement of JCOs/ORs :*** The details of ex-servicemen, who have been provided employment through Directorate General Resettlement and Zila Sainik Welfare Offices in the States during the last three years are given in table 11.2.

11.15 ***Officer's Employment :*** During the current year, a total number of 514 officers have been registered with the DGR for

Table 11.2

	2003	***2004***	***2005***
Central Govt	5503	5459	4313*
State Govt	3092	2517	1356*
Private Sector	3064	2963	1706*
Security Agencies	9543	10939	12110**

**Figures upto June 2005*

*** Figures upto January , 2006*

employment assistance and 2810 officers have been sponsored for various employment opportunities. To spread awareness about potential in ex-defence personnel, a seminar was organised in conjunction with the Confederation of Indian Industries at Bangalore in October 2005 and another seminar was held at New Delhi on January 4, 2006.

SCHEMES FOR SELF-EMPLOYMENT

11.16 As it is not feasible to provide government jobs to all ex-servicemen after their retirement from the Armed Forces, Government has formulated several schemes for encouraging and giving financial support by way of loans to ex-servicemen entrepreneurs for setting up small and medium industries. Major self-employment schemes are SEMFEX-II, SEMFEX-III and National Equity Fund Scheme. Applications for sanction of loans are submitted by ex-servicemen directly to concerned Zila Sainik Boards in the States who scrutinise the applications and recommend for

sanction of loan through Small Industries Development Bank of India (SIDBI), Central Cooperative Banks, State Land Development Banks and Regional Rural Banks aided by National Bank for Agriculture and Rural Development (NABARD) and the State Khadi and Village Industries Board (KVIB)/ Banks aided by the Khadi and Village Industries Commission (KVIC).

11.17 ***SEMFEX-II Scheme:*** The scheme has been promoted with the assistance of NABARD to set up agriculture and allied activities, including State Road Transport Operators (SRTO), and also for setting up of village, cottage, tiny and small scale industries in rural areas. Agro/food processing units can be set up irrespective of location in rural and urban areas. There is no upper age limit for loan in respect of projects under farm sector including agro/food processing units. The financial assistance in case of non-farm sector activities is available upto SSI limit, for setting up industries in rural areas. This scheme is operative from the year 1988-89. Rs.124.87 crore loan has been sanctioned to 20455 ex-servicemen up to June 2005.

11.18 ***SEMFEX-III Scheme:***The scheme is operative in collaboration with the Khadi and Village Industries Commission (KVIC). The maximum loan limit for individual entrepreneurs, cooperative societies/ institutions and trusts is Rs. 25 lakh per project to establish industries in rural areas. This scheme is operative from the year 1992-93. Rs. 12.65 crore loan has been sanctioned to 1074 ex-servicemen up to June, 2005.

11.19 ***National Equity Fund Scheme (NEF):*** The scheme has been launched in collaboration with SIDBI. Financial assistance is available to set up projects in tiny/ small scale industrial sector, service enterprises and also for undertaking expansion, technology upgradation, modernisation and revival of viable sick units in SSI Sector. The maximum loan limit is Rs 50 lakh per project. This scheme is operative from the year 2000-01. Rs. 2.30 crore loan has been sanctioned to 44 ex-servicemen up to June 2005.

11.20 ***Allotment of Army Surplus Vehicles:*** Ex-Servicemen and widows of defence personnel, who died while in service, are eligible to apply for allotment of an Army surplus phased out Class V-B Vehicles. The application forms are routed through Zila/ Rajya Sainik Boards in case of retired personnel, and through units for those in their last six months of service, to DGR for registration and onward submission to Army Headquarters for allotment

on the basis of depot-wise seniority maintained by them. During the year 2005, 2519 applications were registered with DGR for allotment of Army surplus vehicles.

11.21 ***Coal Transportation Scheme:*** DGR sponsors Ex-Servicemen Coal Transport Companies for providing loading and transportation of coal in various coal subsidiaries of Coal India Limited (CIL). The unemployed retired officers and JCOs registered with DGR, are selected to form ESM Coal Transport Companies and are sponsored to respective coal subsidiaries for five years, extendable by another four years. Presently, 94 such companies are operating under the various coal subsidiaries of CIL. The functioning of these companies is monitored by DGR.

11.22 ***Coal Tipper Scheme:*** The widows of Defence personnel, who died while in service due to causes attributable to military service and disabled soldiers can be sponsored by DGR for attaching one tipper truck in their name with an ESM Coal Transport Company. Eligible widow/ disabled soldier is required to make a deposit of Rs.85,000/- with any nominated coal transport company. The company pays them Rs. 3000/- per month for a period of five years, after which the deposited amount of Rs.85,000/- is paid back to widow/ disabled soldier. The functioning of these companies is monitored by DGR. At present 436 widows/ disabled ex-servicemen are availing the benefit of this Scheme.

11.23 ***Allotment of Oil Product Agencies:*** Ministry of Petroleum and Natural Gas has reserved 8% of the Oil Product Agencies, i.e. LPG Dealership, Petrol Pumps, Kerosene Distributorship etc. for widows and dependants of those who died due to causes attributable to military service and disabled soldiers with disability of 20% and above attributable to military service. Eligible persons can apply as and when such a vacancy under 'Defence Category' is advertised in the newspapers. The DGR sponsors eligible candidates by issuing eligibility certificate to them. Interview is conducted by a Dealer Selection Board constituted by the Ministry of Petroleum and Natural Gas. Final allotment is made by the concerned oil company to the selected candidates. During 2005, 472 eligibility certificates have been issued by DGR .

11.24 ***Mother Dairy Milk and Fruit & Vegetables Shops:*** Junior Commissioned Officers (JCOs)/ Other Ranks (ORs) are allotted Mother Dairy Milk shops and fruit & vegetable shops in the National Capital Region. 686 milk shops and 282 fruit & vegetable shops are being operated by ex-servicemen.

Dependant sons (where the Ex-Servicemen are not eligible) are also considered for allotment of fruit & vegetable shops in and around Delhi.

11.25 ***Management of CNG Stations in National Capital Region (NCR):*** The scheme for management of CNG stations belonging to Indraprastha Gas Limited was launched as a pilot project in July 2001. On success of the pilot project, the scheme has been extended to retired officers. As on date, there are 60 retired officers managing 84 CNG station. Three ex-lady officers have also been allotted CNG stations in Delhi. This scheme is presently available in Delhi only.

To encourage higher technical and professional education for the wards of widows and Ex-Servicemen of the Armed Forces, 'Prime Minister's Merit Scholarship Scheme' is being launched from the academic year 2006-07. A total number of 5000 scholarships of Rs.1250/- and Rs. 1500/- per month for boys and girls respectively, would be available under this scheme.

11.26 ***Reservation in CSD:*** The Canteen Stores Department of India (CSDI) has reserved 15% of the 30 selected CSD items and the Ministry of Defence has reserved 10% of the 262 selected items manufactured by Ex-Servicemen Entrepreneurs under the Defence Purchase Programme for which Ex-Servicemen manufacturing units alone are eligible.

NEW INITIATIVES AND THRUST AREAS

11.27 ***PM Scholarship Scheme:*** A new scholarship scheme known as "Prime Minister's Merit Scholarship Scheme" is being launched from the academic year 2006-07 to encourage the wards of widows and ex-servicemen to take up higher technical and professional education. The scheme would provide a scholarship of Rs. 1250/- p.m. for boys and Rs.1500/- p.m. for girls for the recognised professional and technical courses for a duration ranging from 2 to 5 years. A total number of 5000 scholarships would be available to be funded from National Defence Fund, out of which 4000 scholarships will be for wards of widows/ex-servicemen from armed forces and the remaining 1000 will be available to the wards of central para-military forces and Railway Protection Force being managed by Ministry of Home Affairs and Ministry of Railways respectively.

11.28 ***Computerisation:*** A scheme for cmputerisation of data base to be implemented by DGR was approved at a cost of Rs. 86 lakhs.

PUBLICITY

11.29 Wide publicity of policies and various schemes sponsored by DGR is of paramount importance so as to reach each unit and ex-servicemen/widows across the

length and breadth of the country. This is done by the DGR by means of publication of its periodical magazine "PUNARVAS", brochures, leaflets, articles in Sainik Samachar and Baatcheet. The electronic media is also used for the purpose.

11.30 The DGR had put up a stall at the Aero-India 2005 at Bangalore to spread awareness about schemes concerning ex-servicemen. Various other forums provided by Command HQs, RSBs and Sainik Sammelans are also utilised for publicity purpose.

11.31 The activities of DGR and KSB have also been publicised through CD –ROMs forwarded down to Zila Sainik Boards and Units. DGR participated in India Industrial Trade Fair held at Kolkata from December 21 to 31, 2005 on the theme of "Access to excellence in Human Resources" and also in DEFEXPO at Pragati Maidan, New Delhi from January 31, 2006 to February, 2006.

WELFARE

11.32 ***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 also administers various welfare activities financed from interest earnings of the Armed Forces Flay Day fund. The fund has a corpus of Rs 125.22 crores. Financial assistance is provided to institutions, such as, paraplegic homes at Kirkee and Mohali, the Red Cross Society, Cheshire Homes, Military Hospitals, St. Dustan's After Care Organisation 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. DGR also funds the running of War Widows Hostels, scholarships to ex-servicemen's orphans and other such philanthropic activities. The following is the amount of the financial assistance provided to various institutions out of the Armed Forces Flag Day Fund upto January 2006.

(a)	PRC Kirkee	Rs. 18,78,874/-
(b)	PRC Mohali	Rs. 5,96,105/-
(c)	Cheshire Homes	Rs. 1,12,000/-
(d)	Military Hospitals (Vocational Trg Centre)	Rs. 1,01,256/-
(e)	St. Dunstan's After Care	Rs.10,00,000/-
(f)	All India Gorkha Ex-Servicemen Welfare Association, Dehradun	Rs. 5,00,000/-
(g)	Serious Diseases	Rs. 58,25,000/-

11.33 ***Assistance from Raksha Mantri's Fund:*** A portion of the earnings of Armed Forces Flag Day Fund is set apart as Raksha Mantri's Discretionary Fund 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. Monthly financial assistance, upto a period of two years, is provided to old and infirm ex-servicemen and widows of ex-servicemen living in penury. An amount of Rs. 84,34,150/- as Financial Assistance out of Raksha Mantri's Discretionary Fund covering 752 cases has been provided upto December 31, 2005.

11.34 ***Concessions and Facilities:*** The following concessions and facilities are available to eligible personnel :-

(a) Free educational facilities to Children of Defence personnel killed or disabled in action in schools/ colleges recognized by the Central or State Governments.

(b) 27 seats in the MBBS, one seat in BDS and one seat in engineering stream are available through KSB to dependants/ wards of certain categories of defence personnel through Ministry of Health and Family Welfare.

(c) 25% seats are reserved for the wards of serving and ex-servicemen personnel in Sainik Schools.

(d) States/ UTs have made reservation of seats in professional colleges/ ITIs/ Polytechnics for wards of serving and retired defence personnel.

(e) Two educational grants viz., (i) Rs 600/- per month (ii) Rs 300/- per month are provided to the wards of war bereaved and to the wards of disabled (attributable/non attributable) and peace time casualties respectively, to enable them to pursue their studies. These wards are housed in 35 War Memorial Hostels. Upto October 31, 2005 an amount of Rs. 20,09,867/- covering 207 cases and Rs. 2,10,097/- covering 51 cases has been provided by the KSB under the two Educational Grants.

(f) ***Medical Facilities to Ex-Servicemen:*** Until now ex-servicemen and the families of deceased service personnel drawing pension of any kind were entitled to free out-patient treatment and in-patient treatment (subject to availability of beds) in military hospitals. With the introduction of Ex-servicemen Contributory Health Scheme (ECHS) from April 1,

Medical officer checking the patients

2003, the ex-servicemen pensioners are eligible to get free medical facilities on becoming member of ECHS after contributing prescribed amount. The scheme is optional for ex-servicemen who retired before March 31, 2003 and compulsory for service pensioners retiring after April 1, 2003. The scheme, to be completed in 5 years, envisages setting up of 227 polyclinics in 104 military and 123 non-military stations. Besides, there is a provision for empanelling reputed hospitals and diagnostic centres where patients can be referred by polyclinics. 195 polyclinics have been set up till January 2006. Besides, 462 reputed hospitals and diagnostic centres have so far been empanelled.

War widows and disabled veterans have been exempted from contribution for membership. Non-pensioner ex-servicemen/ dependents, however, will continue to get financial assistance from Armed Forces Flag Day Fund for treatment of specified serious diseases. The World War Veterans will continue to get authorised medical treatment from Armed Forces Medical Services.

(g) ***Travel Concessions:*** Various concessions are given to War Widows/ Gallantry Award Winners for rail and air travel.

Table 11.3

Year	Pension Disbursed (Rs. in Crore)
2003-04	10999.67
2004-05	11920.95
2005-06	10282.49*

**Figures up to January 2006*

(h) ***Reservation of House Sites/ Houses:*** Several States have made reservations for serving/ retired Armed Forces personnel in allotment of house sites/ houses.

(i) ***Sainik Rest House Facilities:*** Over 252 Sainik Rest Houses have been built in the country, which provide transit facilities to Ex-Servicemen and their dependants at nominal rates.

(j) ***Cash Award/ Annuity/ Cash in lieu of Land for Gallantry/ Non Gallantry Award Winners:*** The States/ UTs provide Cash Award/ Annuity/ Cash in lieu of land for Gallantry/Non gallantry Award winners.

PENSION TO ARMED FORCES PERSONNEL

11.35 As on April 1, 2005 the number of Defence pensioners is estimated to be about 21.29 lakh. The pension is disbursed through all branches of the 27 Public Sector Banks, four Private Sector Banks viz. HDFC Bank, ICICI Bank, UTI Bank and IDBI Bank, 640 Treasuries, 61 Defence Pension Disbursing Offices (DPDOs) and five Pay and Accounts Offices (PAOs) scattered all over India. For the Armed Forces pensioners residing in Nepal, disbursement of pension is done through three Pension Payment Offices in Nepal. The eligibility conditions, rates etc. of different types of pension are detailed in the succeeding paragraphs.

11.36 The annual expenditure on Defence pensions, during last three years, is given in table 11.3.

RETIRING/SERVICE PENSION

11.37 For Commissioned officers, the retiring/ service pension is calculated at 50% of the average reckonable emoluments drawn during the last 10 months. In the case of Personnel Below Officers 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 shall be subject to a minimum of Rs.1275/- p.m. and maximum of upto 50% of the highest pay applicable to Armed Forces personnel. For pre-1996 pensioners, as per the formula evolved under the modified parity, with effect from January 1, 1996, pension shall not be less than 50% of the minimum pay in the revised scale of pay of the rank held by the pensioners at the time of retirement.

11.38 ***Weightage :*** To compensate for truncated career, the Armed Forces personnel are given weightage for computing service pension. In the case of Commissioned Officers, the minimum period of qualifying service required to earn retiring pension is 20 years. The officers are given benefit of weightage ranging from three to nine years depending on the rank. The minimum period of qualifying service for Personnel Below Officers Rank to earn retiring pension is 15 years. They are given a uniform weightage of five years. For calculating gratuity, a uniform weightage of five years is given to all ranks.

COMMUTATION OF PENSION

11.39 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.

FAMILY PENSION

11.40 Family pension is admissible to Armed Forces personnel who die during service or after retirement with pension, at a uniform rate of 30% of reckonable emoluments subject to a minimum of Rs.1275/- p.m. with effect from January 1, 1996. With effect from January 1, 1998 ordinary family pension is admissible to dependant parents, widowed/ divorced daughters who fulfill the prescribed eligibility criteria.

11.41 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 have been allowed in addition to the family pension admissible under the relevant Pension Regulation in the case of re-employed ex-servicemen pensioners.

11.42 Merger of Dearness Relief as Dearness Pension: With effect from April 1, 2004, 50% Dearness Relief has been merged with basic pension as dearness pension which qualifies for computation of dearness relief beyond 50%.

DISABILITY PENSION

11.43 A person who is released or retired from service on account of 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 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 76% or above. This is an improvement introduced with effect from January 1, 1996 on the

recommendations of the 5th Central Pay Commission.

11.44 Disability pension consists of two elements viz., the service element and disability element. Service element is related to the length of service rendered by the individual at the time of invalidment and the disability element is paid in the form of compensation for the disablement and depends on the degree of disablement. The rate of disability element of the disability pension for 100% disability is Rs.2600/- p.m. for Commissioned Officers, Rs.1900/- p.m. for Junior Commissioned Officers and Rs.1550/- p.m. for Other Ranks. For individuals who are retained in service despite disability and retire/ are discharged on attaining the age of retirement or on completion of tenure, the same rates are applicable with effect from January 1, 1996.

WAR INJURY PENSION

11.45 Considering the supreme sacrifice made by the Armed Forces personnel during war or war like situation or action against extremists, anti-social elements etc, war injury pension is granted to the personnel who sustain injury or disability during such operations. 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, in no case, the aggregate of service element and war injury element will exceed last pay drawn.

11.46 In case a person is found to have a disability which is sustained during war or war like situations and the disability is assessed at 20% or more for life but the individual is retained in service despite such disability and opts for lump sum compensation, he shall be paid the lump sum compensation in lieu of war injury element. The rate for calculation of lump sum compensation in lieu of war injury element for 100% disability for life will be Rs.5200/- per month for Commissioned Officers, Rs.3800/- per month for Junior Commissioned Officers and Rs.3100/- per month for Other Ranks.

CONSTANT ATTENDANCE ALLOWANCE

11.47 Personnel with 100% disability are paid a Constant Attendance Allowance at the rate of Rs.600/- per month on the recommendation of the Medical Board.

SPECIAL FAMILY PENSION

11.48 If the death of a Service personnel has 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/- p.m. Widows who got remarried on or after January 1, 1996 are also eligible for special family pension subject to certain conditions.

LIBERALISED FAMILY PENSION

11.49 In the event of death of Armed Forces personnel in war or war like operations, counter insurgency operations, action against terrorists, extremists etc. the families are granted Liberalised Family pension at the rate equal to reckonable emoluments last drawn by the deceased personnel at the time of death. If the personnel is not survived by widow, but is survived by children, they are entitled to liberalised family pension at the rate equal to 60% of reckonable emoluments last drawn by the deceased subject to fulfillment of prescribed conditions.

Liberalized Family Pension of those widows, which was stopped on their remarriage before January 1, 1996 with a person other than real brother of the deceased, will now be restored with effect from June 24, 2005.

11.50 With effect from January 1, 1996 on remarriage of widow, full liberalised family pension would continue to her subject to other prescribed conditions. Liberalised Family Pension of those widows which was stopped on their remarriage before January 1, 1996 with a person other than real brother of the deceased, will now be restored w.e.f. June 24, 2005.

EX-GRATIA AWARDS IN CASES OF DEATH OF CADETS (DIRECT)

11.51 The following ex-gratia awards are payable subject to certain conditions in the event of death of a cadet due to causes attributable to or aggravated by military training :

(a) Ex-gratia lumpsum 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 (NOKs) in addition to (a) above.

11.52 The ex-gratia lumpsum 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 effect with effect from August 1, 1997.

EX-GRATIA AWARDS IN CASES OF DISABILITY OF CADETS (DIRECT)

11.53 The following 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 :

(a) Monthly ex-gratia of Rs. 1275/- per month

(b) 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 %.

(c) Constant Attendance Allowance(CAA) of Rs. 600/-per month for 100% disability on the recommendation of Invaliding Medical Board.

11.54 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 effect with effect from August 1, 1997.

STEPS TAKEN FOR REDRESSAL OF GRIEVANCES OF DEFENCE PENSIONERS

11.55 It has been a constant endeavour of the Department to strengthen the mechanism for redressal of the grievances of the Defence pensioners promptly and effectively. In order to achieve this end, several steps were initiated in the recent past. Some of the steps taken in this regard are as under:

(i) Some more agencies involved in handling the pension matters of Defence pensioners have initiated action to computerize the records.

(ii) The process of pension sanctioning at PCDA(P) is fully computerized. PCDA(P), Allahabad has placed the relevant orders and instructions relating to pension in their web site which also provides a calculator so that the pensioner could find out correct entitlement.

(iii) Regular Defence Pension Adalats, six in number, are organised in different parts of the country to redress the grievances of the Armed Forces pensioners. In addition, mini pension adalats are held by the Defence Pension Disbursing Offices.

(iv) All the branches of the Public Sector Banks and 4 Private Sector Banks have been added to the existing pension disbursement network.

(v) A single window system has been introduced in DPDOs which facilitates hassle free and prompt release of first payment cheques on any working day after retirement.

With effect from January 1, 2006, the pension of pre 1.1.1996 PBOR retirees shall be revised with respect to the maximum of past 1.1.1996 pay scales. The weightage of all past and future retirees of Sepoy, Naik and Havildar ranks would be increased to 10, 8 and 6 years respectively from the existing weightage of 5 years subject to maximum qualifying service of 30 years. It has also been decided to give the benefit of the higher scale given under Assured Career Progression for the purpose of pension calculation.

(vi) A special drive has been launched for joint notification of family pension in the remaining cases of pre-1989 retirees. Endorsement of family pension on PPO of retirees prior to 1989, numbering about 2 lakhs were pending. A special drive has been launched for joint notification of family pension in the pending cases of pre-1989 retirees.

(vii) Role of Medical Adviser (Pension) has been dispensed with for adjudicating disability pension claims. The recommendation of the Medical Boards, as approved by the prescribed authorities would be treated as final.

11.56 Simplification/ liberalization of provisions relating to pensionary matters is a continuous process so that the grievances of the pensioners are reduced considerably and even if there are grievances the same are attended to promptly.

11.57***SIGNIFICANT IMPROVEMENT IN PENSIONARY BENEFITS***

1. With effect from 1.1.2006, the pensionary benefits of PBOR have been significantly improved, following Group of Minister's recommendation on the question of (i) one rank one pension and (ii) removal of 33 years conditionality for full pension, as follows at an annual cost of Rs. 460 crores per annum:

(i) The pension of pre-1.1.1996 PBOR retirees shall be revised with respect to the maximum of post-1.1.1996 pay scales.

(ii) The weightage of all past and future retirees of Sepoy, Naik and Havildar ranks would be increased to 10, 8 and 6 years respectively (from existing weightage of 5 years), subject to a maximum qualifying service of 30 years. However, in case a person is already getting more than 30 years with the existing weightage, he would continue getting that benefit and there would be no enhancement in his case.

The above measure would benefit about 12 lakh pensioners.

2. It has also been decided to give the benefit of the higher scale given under Assured Career Progression (ACP) for the purpose of pension calculation.

12

COOPERATION BETWEEN THE ARMED FORCES AND CIVIL AUTHORITIES

Indian Army personnel in rescuing victims of earthquake in Jammu & Kashmir

Besides securing borders of our country, the Armed Forces also assist the civil authorities in maintenance of law and order and/ or essential services as well as in rescue and relief operations during natural calamities.

12.1 Besides securing borders of our country, the Armed Forces also assist the civil authorities in maintenance of law and order and/ or essential services as well as in rescue and relief operations during natural calamities. In addition of providing actual relief, the Armed Forces maintain regular liaison with the civil authorities to refine contingency planning and to ensure timely response. The details of assistance provided by the Armed Forces during the period are outlined in the succeeding paragraphs.

12.2 On December 26, 2004, tsunami ravaged large areas in India, Sri Lanka, Indonesia and Maldives. The Government launched relief and rescue operations at a large scale, in which the Armed Forces were also deployed. 35 aircraft, 42 helicopters, 40 ships and nearly 20,000 armed forces personnel were deployed in the relief operation.

35 aircraft, 42 helicopters, 40 ships and nearly 20,000 Armed Forces Personnel were deployed in the tsunami relief operation.

12.3 ***Andaman & Nicobar Islands:*** Relief camps were established at various islands in the Andaman and Nicobar. These camps provided basic amenities like food, water, medical and shelter to about 46,000 persons and 48 doctors were deployed in these camps. Power, water and telecommunication facilities were restored in shortest possible time.

12.4 ***Southern States (Kerala, Tamil Nadu and Pondicherry):*** Nine ships with four helicopters and twelve Army Columns were deployed along the Southern Coast for search and rescue. 16 Relief Camps were established. Food was distributed to 1,19,086 persons and medical aid/ treatment was provided to 26,213 persons. Assistance was provided for construction of temporary shelters. 170 feet Bailey Bridge was launched at Karaikal (Pondicherry), two 40 tons Ferries were operated in Alleppey (Kerala) and two causeways were established at Nagapatinam (Tamilnadu).

12.5 ***Assistance to Foreign Countries:*** Sri Lanka, Maldives and Indonesia were provided immediate rescue and relief. Ten Naval and

Coast Guard Ships (for Sri Lanka-5, Male-3, Indonesia-2), five aircraft (for Sri Lanka-2, Male-3) and six helicopters (for Sri Lanka) were deployed for relief and rescue operations. Relief material of about 1,187 tons was provided, 860 sorties were executed and 1,750 personnel were airlifted to safer places. One Army Field Hospital, two Hospital ships and eight Medical Camps provided medical services and treated 14,800 patients. Harbour survey, clearance of debris, evacuation of 1,200 persons, repair of roads, water pumps, providing generators, restoration of power, water and communication services and establishment of nine relief camps were some of the major rehabilitation work carried out.

12.6 In addition to provide relief and succour during tsunami, the Armed Forces cooperated with the civil authorities and provided assistance, whenever it was required. The details are given in the following paragraphs.

ARMY

Flood Relief Operations

12.7 ***Flash Flood in Kinnaur District of Himachal Pradesh:*** On June 26, 2005, due to the collapse of the natural dam on the Pare Chu in China, a flash flood situation arose in Kinnaur District of Himachal Pradesh in which 24 villages were affected. Road communication along the NH 22 was cut off between Karchham and Sumdo. Five bailey bridges at Leo, Khab, Akpa, Poari and Karchham were also washed away. The Army immediately swung into action. A total of eight task forces, each having strength of approximately 40 personnel, were activated in Sumdo, Puh, Karchham, Jhakri and Rampur, for rescue and relief operations. The Army columns rescued 235 persons, including 71 foreign tourists. Later, assistance was provided to Border Roads Organisation for reconstruction of the Khab, Akpa, Kharo and Karchham bridges.

12.8 ***Gujarat***: During the period June 29, 2005 to July 8, 2005, Gujarat was lashed with continuous heavy rains, which constituted almost 69 percent of the average annual rainfall. 20 out of the total 25 districts were affected by floods. Four districts, namely, Vadodara, Anand, Ahmedabad Rural and Kheda, were severely affected. On request from the civil administration, the Air Defence Brigade launched OP Yaduvanshi for relief and rescue operations. More than 5,000 persons were rescued and approximately 3,00,000 food and water packets were distributed.

12.9 ***Madhya Pradesh***: Incessant heavy rains in the State raised the

levels of numerous rivers, resulting in inundation of large areas in the north eastern part of Madhya Pradesh. Eleven districts, with 415 villages and 6 urban centres, were affected by floods. One hundred twenty nine villages were marooned, out of which 7 villages were submerged under water. The floods claimed 45 lives and affected more than 2.5 lakh people. Civil administration requisitioned for aid from the Army on July 4, 2005. The Army personnel rescued more than 1700 lives in the districts of Amanganj, Saugor, Chhaterpur and Damoh.

12.10 ***Uttar Pradesh:*** Heavy rains in Uttar Pradesh resulted in severe floods in various districts of the State. Four Army columns and 20 boats were deployed in the flood relief operations in Uttar Pradesh when requested by the civil administration. The Army personnel rescued about 2200 persons and provided medical aid to about 1900 patients, besides distributing relief material.

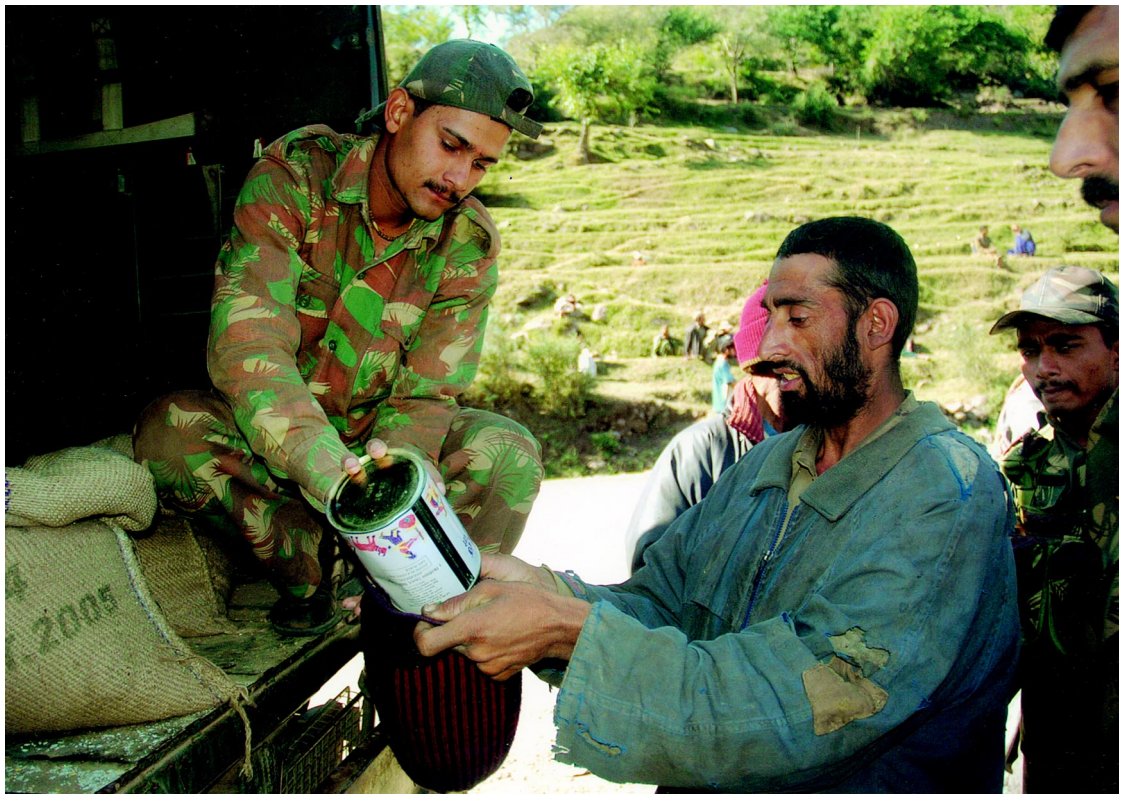
12.11 ***Maharashtra:*** Heavy rains in the coastal and inner regions of Maharashtra caused floods in the districts of Parbhani, Thane, Pune, Mumbai, Raigarh, Ratnagiri, Nanded, Satara, Sangli, Akola, Solapur and Kolhapur. When requested by the civil administration, Army columns and medical teams were deployed in the flood relief operations in Maharashtra. The Army personnel rescued about 26,000 persons and provided medical aid to numerous patients. One act of bravery that showed out during the operation was the rescue of over 250 children from a submerged school building.

12.12 ***Karnataka:*** Due to heavy rainfall and flooding of rivers a large population in Belgaum, Raichur, Gulbarga and Bagalkot Districts was affected. Low-lying areas along the Krishna River were badly affected due to release of water from the Almati Dam. On request from civil authorities major rescue aid relief operation was undertaken by the Army team in Belgaum, Raichur, Bagalkot and Bangalore Districts of Karnataka. The Army personnel rescued more than 8,000 persons from the flooded area.

12.13 Similar rescue operations in flood affected areas of Tamil Nadu, Bihar and Orissa were also undertaken by the Army.

Earthquake Relief Operations in Jammu & Kashmir

12.14 ***Operation IMDAD:*** A devastating earthquake struck Jammu and Kashmir on October 8, 2005 which caused wide spread loss to life and property. The Indian Army and Indian Air Force unmindful of their own casualties mounted rescue



Indian Army distributing relief material to J & K earthquake victims

operation called "OPERATION IMDAD" almost immediately.

12.15 A disaster Co-ordination Cell was established at Base Hospital, Delhi Cantt and was manned round the clock by the officers of Director General Armed Forces Medical Services and Director General Medical Services (Army) to co-ordinate medical relief for the affected victims. Initially three surgical teams and three medical teams from Western Command were launched immediately for medical relief in J&K, in addition to the eight medical teams and one Advance Dressing Station already deployed from the Medical unit of Northern Command in the Uri and Tangdhar region. Later on nine medical teams (three from Navy and six from Army) from Southern Command were also deployed in J&K. Seventeen civilian doctors including specialists were also provided by Emergency Medical Relief, Ministry of Health for medical relief in conjunction with the Army. As a long term measure, Army have adopted three villages of Chururda in Uri Sector, Tethwal in Tongdher and Karwan in the Punch Sector for complete rehabilitation.

Army have adopted three villages of Chururda in Uri Sector, Tethwal in Tongdher and Karwan in the Punch Sector for complete rehabilitation.

OTHER TYPES OF ASSISTANCE

12.16 ***The Avalanche Relief:*** The two avalanches that hit Jammu

and Kashmir on February 18, 2005 painted a grim picture of death and devastation. It was once again that our Armed Forces were mobilised on a war footing and despite their own loss of lives and infrastructure, went out of the way to extend a helping hand in the time of crisis.

12.17 ***Landslide in Raigarh District of Maharashtra:*** One Army column and 3 medical teams provided aid from July 26, 2005 to August 08, 2005. The columns rescued more than 219 persons and provided medical aid to 639 patients. The column also recovered 58 dead bodies from Jui landslide.

12.18 ***The Overseas Operations Relief:*** In calamities like tsunami in Sri Lanka, floods in Bangladesh, Hurricane Katrina in the USA, and the earthquake in Pakistan, help was extended across the seven seas and on the Line of Control to the victims of nature's fury. The language of humanity that the Indian Armed Forces have spoken in international arena has helped to enhance the image of India as a nation.

12.19 ***Bomb Blasts in Delhi:*** Three Bomb Disposal Teams were requisitioned by the Delhi Police for anti sabotage checks in various locations at Delhi from October 30, 2005 to November 01, 2005. Due to the heightened security threat, Delhi Administration demanded the services of Army Bomb Disposal Teams for various requirements in Delhi during the month of November 2005. Their demands were fully met in view of the prevailing situation.

ANTRACTIC EXPEDITION

12.20 The Army's involvement in Antarctic commenced with the second expedition in 1982-83, when a small contingent of three officers, including a medical officer, formed part of the expedition. Ever since, the Army has been intimately involved in the conduct of these expeditions. The Army's participation mainly involves assisting the Department of Ocean Development in the following:-

(a) Construction of permanent stations.

(b) Repair, maintenance and extension of stations.

(c) Running of all life support systems in the station and their maintenance.

(d) Overland transportation of men and material in Antarctica.

12.21 The strength and composition of the Army contingent has varied with the tasks assigned to it in each expedition. Owing to the nature of the tasks, the Army contingent has comprised of personnel from the Corps of Engineers, Electrical and Mechanical Engineers and Army Medical Corps. Presently, 24th Antarctic Expedition

comprising two officers, one Junior Commissioned Officer and 10 Other Ranks is in the Antarctica.

COMMUNICATION SUPPORT

12.22 The Army has also been the front runner in providing communications in aid to civil authorities. The Army communications have been the Nation's only lifelines in times of disaster, be it the tsunami, floods or the earthquake in Jammu and Kashmir. Besides, the Signals were the only agency to establish communications for the inauguration of the Srinagar-Muzaffarabad Bus Service and the Jammu-Udhampur Rai Link.

NAVY

12.23 Apart from the regular operations, the Indian Navy also undertakes tasks such as rendering assistance to those in distress in the high seas or even those trapped during floods, earthquake disasters, etc. Assistance rendered to various agencies by the Indian Navy are enumerated in subsequent paragraphs.

A major relief operation code named 'RAHAT' was launched during which a total of 24 Relief teams (equipped with Geminis) and one medical team were deployed for Relief Operations in Maharashtra and Karnataka.

12.24 ***Fire at Production Platform at Bombay High North (BHN):*** Production Platform BHN caught fire due to pipeline rupture resulting from collision by Offshore Supply Vehicle (OSV) Samudra Suraksha on July 27, 2005. Indian Naval Ships Delhi, Mumbai, Aditya Ganga, and Gomati were diverted from sea and Vinash was sailed to carryout 'Search and Rescue (SAR) Operations'. Indian Navy and Coast Guard's Dornier aircrafts undertook sorties to drop life rafts for the survivors. Integral helicopters of ships were also employed for Search and Rescue. Two IAF MI-8s operating from Kunjali also joined the Search and Rescue effort.

12.25 The Regional Contingency Committee (RCC) at Mumbai was activated and Indian Navy coordinated the Search and Rescue Operation. The well-coordinated operations of all the agencies involved in this operation resulted in saving of 361 persons and recovery of 11 dead bodies.

12.26 ***Flood Relief Operations in Maharashtra:*** Heavy and incessant rains in the coastal areas of Maharashtra during July and August 2005 resulted in flooding of various locations. A major relief operation code named 'RAHAT' was launched during which a total of 24 Relief teams (equipped with Geminis) and one medical team were deployed for Relief Operations in Maharashtra and Karnataka.

12.27 ***Diving Assistance to Civil Authorities:*** The Divers of Indian Navy have been actively involved in various relief operations through out the country.

(a) About 75 Indian Naval divers were deployed for supply of relief material in remote areas, survey of Jetties and Islands in Andaman &Nicobar Islands. Teams of Divers were deputed for relief operations in Indonesia and Sri Lanka after the December 2004 tsunami as well.

(b) An incident of accidental flooding took place in Central Saunda Colliery of Central Coalfields Ltd at Hazaribagh, Jharkhand on the night of June 15, 2005 trapping 14 miners. A Naval diving team comprising one officer and eight sailors was deployed. They recovered the bodies of all 14 miners from the accident site.

(c) ***Assistance in Flood Relief Operations in Maharashtra:*** Eight diving teams from Western Naval Command and five diving teams from Eastern Naval Command were mobilised on September 16, 2005 for deployment in Nagpur and Gondia Districts. A total of 254 people were rescued and shifted to safer areas by the relief teams. The diving teams

Indian Naval personnel providing medical aid to tsunami victims in Andaman & Nicobar

distributed approximately seven tons of medical and relief supplies.

(d) ***Assistance in Flood Relief Operations in Andhra Pradesh:*** The development of a Cyclonic storm on September 19, 2005, along the Andhra Pradesh coast resulted in heavy rains and subsequent water logging in low lying areas. Consequently, eight naval diving teams were deployed in Viskhapatnam, Khammam, Bhadrachalam, Kovvuru, Vijaywada, and Pollavaram districts for flood relief operations. The teams evacuated people to safety, distributed essential supplies, water and medicines in the affected areas. Six diving teams comprising 20 divers, three medical assistants and one communication sailor were deployed in various locations in Visakhapatnam. In addition to relief and rescue operations, the teams also evacuated people from low lying areas to safe grounds.

(e) ***Assistance in Relief Operations at Train accident site in Andhra Pradesh:*** On October 29, 2005, a team of 15 Indian Naval divers was deployed at the train accident site in the Secunderabad- Guntur section. The team worked in close coordination with the railway authorities and provided the required assistance.

12.28 ***Medical Camps:*** Medical camps are regularly organised by various Naval Commands and outlying units.

(a) ***Blood Donation:*** A blood donation camp was organized in association with the District Health Authorities of Vellore on February 25, 2005. Indian Naval personnel participated in the blood donation camp and more than 100 units of blood was collected.

(b) ***Laproscopic Tubectomy:*** A camp for conducting Tubectomy through Laproscopy was organized on March 11, 2005, in conjunction with the Zonal Railway Hospital at Arkkonam.

(c) ***Children's Health:*** Free health check-up and treatment was organised for children studying and staying in different Orphanages at Arkkonam on March 12, 2005. About 240 children in the age group of 8 to 16 years were treated.

(d) ***Senior Citizens Health:*** Health camps for senior citizens in

and around naval bases were organised to mark the Senior Citizen's Day on October 1, 2005. The health check-up included comprehensive investigations. Fresh ailments/ diseases detected during the camp were followed-up and therapeutic measures instituted.

(e) ***Village Camp:*** With a view to provide medical aid to the poor and the needy villagers and also to create health awareness amongst them medical camps were organised at Kattarpati Villai, Kanmaniyin, Kudiyiruppu and Parappadi villages in Tamil Nadu during the year.

INDIAN COAST GUARD

12.29 ***Bomay High North (BHN) Fire Incident:*** After a major fire at ONGC platform in BHN, Indian Coast Guard Ships Vijaya, Sagar and Vigraha, alongwith with pollution control equipments, were sailed on July 27, 2005 to assist the Search and Rescue efforts resulting in saving of 361 lives.

12.30 ***Tamil Nadu Flood Relief Operations:*** Ramnagar and Mandipakkam area in Chennai were flooded due to heavy rains on October 27, 2005. On request of civil administration, DHQ–5 diving team rescued around 600 marooned civilians.

12.31 Assistance was provided for Tamil Nadu flood relief operations in Porto Novo (Sethiathape) by Indian Coast Guard ships Vikram, Varaha and Habba Khatun from November 24 to 28, 2005. Thirty one helicopter sorties were carried out from Indian Coast Guard Ships Varaha and Vikram for rescue/ evacuation of 194 people and air dropping of 16500 food packets in the flood affected areas. On November 25, 2005, Indian Coast Guard Ship Mandapam provided flood relief assistance in Sivaganga district.

12.32 ***Car Festival Of Puri:*** Indian Coast Guard Ships (ICGS) Razia Sultana, Sucheta Kripalni and Jijabai provided security coverage from July 16 to 18, 2005 during car festival of Puri.

12.33 ***Operation OLIVA:*** From November 7, 2005, Operation OLIVA, for protection of endangered species of Olive Ridely Turtles was executed in east coast of India.

AIR FORCE

12.34 ***Flood Relief Operations***: The Indian Air Force (IAF) undertook flood relief operations in Andhra Pradesh, Gujarat, Madhya Pradesh, Himachal Pradesh and Maharashtra. During the period,

Indian Air Force personnel extending helping hand to the Mumbai Flood Victims

616 Tonnes of load and 3708 passengers were airlifted by IAF aircraft/helicopters involving total flying efforts 1085 sorties amounting to 1024 hours.

12.35 ***Casualty Evacuation***: IAF evacuated 388 casualties from Northern and Eastern sectors involving 336 sorties amounting to 312 hours.

In J&K Earthquake Relief Operation, 1285 tonnes of load and 1389 passengers were airlifted by IAF aircraft/helicopters involving 1018 sorties amounting to 586 hours.

12.36 ***Earthquake Relief:*** In Jammu and Kashmir, during this period 1285 Tonnes of load and 1389 passengers were airlifted by IAF aircraft/ helicopters involving 1018 sorties amounting to 586 hours.

12.37 ***International Relief Operations:***

(a) ***Katrina Flood Relief*** One IL-76 was tasked for cyclone relief supplies to USA during September 2005 carrying 25 tonnes of load and consuming 51 hrs of flying.

(b) ***Pakistan Earthquake*** : One IL-76 was tasked to carry earthquake relief supplies to Pakistan, during October 2005.

12.38 ***Air Maintenance Operations:*** The IAF continued

to provide air logistic support to the Army and other civilian agencies operating in the difficult and far flung areas in Northern and Eastern sectors. Both Fixed Wing aircraft and Rotary Wing aircraft continued to operate round the year airlifting approximately 36319 tonnes of load during the year. The IAF provided airlift to the troops and other personnel in remote areas through air landing and airdrop operations.

13

NATIONAL CADET CORPS

NCC Girl Cadets in Republic Day Parade, 2006

The NCC strives to provide opportunities to the youth of the country for their all round development with a sense of commitment, dedication, self-discipline and moral values so that they become good leaders and useful citizens.

13.1 The National Cadet Corps (NCC) established under the NCC Act, 1948, has completed 57 years of its existence. The NCC strives to provide opportunities to the youth of the country for their all round development. It tries to inculcate sense of commitment, dedication, self-discipline and moral values so that they become good leaders and useful citizens and can take their appropriate place in all walks of life in the service of the nation. The progress and quality of training is reviewed and necessary changes are incorporated periodically to bring about improvement.

13.2 The total sanctioned strength of NCC cadets is 13 lakhs. The wing-wise distribution of the cadet strength is as under: -

(a)	Army Wing	-	9,68,094
(b)	Air Wing	-	66,360
(c)	Naval Wing	-	67,265
(d)	Girls Wing	-	1,85,684

The NCC's presence can be felt in almost all the districts of the country covering 8,029 schools and 4,816 colleges.

The total sanctioned strength of NCC cadets is 13 lakhs.

TRAINING OF CADETS

13.3 ***Training Camps:*** Camp training is an important part of NCC curricula. The camps help in developing camaraderie, teamwork, dignity of labour, self-confidence and the most important aspects of Unity and Discipline. The various types of camps conducted are as listed below:-

(a) ***Annual Training Camps (ATC):*** Annual Training Camps are conducted at State Directorate level. It is ensured that a minimum of 50% of enrolled strength of cadets attend at least one camp every year. Approximately 900 such camps are conducted in a training year.

(b) ***National Integration Camps (NIC):*** A total of 37 NICs are scheduled in which 23480 cadets from all States and Union Territories participate. In addition, Special NICs were conducted/are scheduled at the following places: -

NCC Cadets presenting cultural programme

(i) ***NIC Leh:*** The special NIC was conducted at Leh from July 1 to 12, 2005 wherein a total of 170 cadets from all parts of the country participated.

(ii) ***NIC Chakabama:*** The special NIC in the North East was conducted at Chakabama (Nagaland) from November 28 to December 9, 2005 with the participation of 200 cadets from the North East Region and 400 cadets from the rest of India.

(iii) ***NIC Srinagar:*** The special NIC was conducted at Srinagar from June 1 to 12, 2005 wherein 310 cadets from all parts of the country participated.

(iv) ***NIC Port Blair:*** The special NIC Port Blair (Andaman & Nicobar Island) was held from February 12 to 23, 2006 with the participation of 180 cadets, including 80 cadets from the mainland.

(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 Air Force Station Jalahalli

(Bangalore) from October 18 to 29, 2005 with a strength of 420 SD and 180 SW cadets.

(d) ***Nau Sainik Camp (NSC):*** This camp of 12 days duration is organized once a year. Four hundred SD cadets and 160 SW cadets attend the camp. The camp was conducted at Visakhapatnam from October 15 to 26, 2005. Five cadets from Singapore also participated in the camp.

(e) ***Thal Sainik Camps (TSC):*** Two TSCs, one for Senior Division(SD)/Junior Division(JD) boys and other for Senior Wing(SW)/Junior Wing (JW) girls are conducted at RD Parade ground, Delhi Cantt every year. Six hundred forty boy and 640 girl cadets take part in these camps. This year the camps were conducted from September 23 to October 4, 2005.

(f) ***Leadership Camps:*** These camps are conducted on an all India basis. There are four Advance Leadership Camps (ALC), one each for SD, JD, SD Naval Wing boys and SW girls and three Basic Leadership Camps, one each for SD boys, SW and JW girls. These camps impart training to 3220 boy and girl cadets and were conducted during the months from March 2005 to January 2006.

(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 spirit of adventure. Four of these camps are held at Gwalior in Madhya Pradesh and other four camps at Neyyar Dam near Trivandrum in Kerala. 1080 boy and girl cadets attended these camps during the months of November to December 2005.

(h) ***Republic Day Camp –2006:*** Republic Day Camp-2006 was conducted from January 1 to 29, 2006 at New Delhi. The camp was inaugurated by the Vice-President of India on January 8, 2006. The camp was attended by 1800 cadets from all over India and also cadets of friendly foreign countries with whom NCC have a Youth Exchange Programme. Inter Directorate competitions connected with institutional training, Cultural Competitions and National Integration Awareness presentations were conducted during the month-long camp. A host of dignitaries visited the camp. As a regular feature, Prime Minister's Rally was held on January 27, 2006 during the Camp.

13.4 ***Attachment Training:*** The NCC cadets derive first hand experience of immense value by attachment to the Armed Forces units. During the year, attachments conducted were as under: -

(a) Four hundred forty officers and 20,000 cadets were attached to the army units. This includes women officers and 560 SW girl cadets.

(b) One hundred twenty boy cadets were attached to the Indian Military Academy, Dehradun from May 28 to June 8, 2005 and 48 girl cadets were attached with Officers Training Academy, Chennai from September 20 to 30, 2005.

(c) One thousand girl cadets were selected for attachment with various Military Hospitals.

(d) Thirty eight SD and 12 SW cadets of Air Wing are attached to Air Force Academy, Dundigal twice a year for 13 days. This year the attachment was conducted from June 20 to July 2, 2005 and October 9 to 21, 2005.

NCC Cadets performing slithering as part of Air Wing Training

(e) ***Naval Attachment – INS Mandovi:*** Attachment training camp for 25 Naval Wing (SD) cadets was conducted at Naval Academy, INS Mandovi, Goa for a duration of 12 days during December/January.

13.5 ***Gliding and Microlite Flying:*** Gliding facilities are provided at 38 NCC Air Squadrons. Despite the fact that holding of the serviceable gliders has fallen to as low as 25% of the authorisation, the NCC Air Squadrons have carried out 14839 launches during the year. 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 7384 hours of microlite flying was undertaken during the year.

13.6 ***Foreign Cruise:*** The following foreign cruises are conducted every year:-

(a) ***Coast Guard Cruise:*** Six Naval SD cadets proceeded to Japan and Korea from October 25 to December 15, 2005.

(b) ***Naval Cruise:*** Six cadets sailed to Sri Lanka and Maldives from March 8 to 30, 2005 and nine cadets sailed to Muscat and Abu Dhabi from September 15 to October 8, 2005.

ADVENTURE TRAINING

13.7 (a) ***Mountaineering Courses:*** NCC nominates 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 & Allied Sports, Manali every year. During the year, 307 cadets were nominated for various courses.

(b) ***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 successfully undertook an expedition to Sudarshan Parbat (6507 M) in May/June 2005 and the girls team undertook an expedition to Kalanag Peak (6387 M) in September/October 2005.

(c) ***Cycle and Motor Cycle Expeditions:*** These expeditions are organised both at the national and state levels. During the current year, Vehicle Rally was organized by Gujarat Directorate from October 25 to November 10, 2005 from Ahmedabad to North Sikkim covering a distance of 6600 Kms. Twenty five SW cadets took part in the expedition. Karnataka Directorate conducted a Motor Cycle Rally from Bangalore to Kargil

covering a distance of 4725 Kms from July 8 to August 10, 2005.

(d) ***Trekking Expedition:*** A total of 10 trekking expeditions were conducted during the current year with the participation of 1,000 cadets per trek.

(e) ***Para Sailing:*** Para Sailing is conducted at each Group level as a part of adventure activity for boy and girl cadets of NCC. During the year, 12,500 cadets have been trained in this activity.

(f) ***Para Basic Courses:*** Every year 40 boy and 40 girl cadets undergo the Para Basic Course for 20 days at AATS Agra.

(g) ***Desert Camel Safari:*** This adventure activitiy is conducted every year with 20 cadets taking part in it. It is conducted in the Jaisalmer District of Rajasthan.

(h) ***White Water Rafting:*** White Water Rafting Node has been established at Raiwala (Haridwar). NCC is in the process of finalising establishment of three more White Water nodes in Punjab, West Bengal and Gujarat.

(i) ***Sailing Expedition:*** The major Water sailing expeditions conducted during the year are shown in Table 13.1: -

Table 13.1

S No.	*Dte*	*From*	*To*	*Distance*	*Date*	*No. of Cadets*
1.	Bih	Patna	Patliputra	598 kms	Sep 20 to Oct 1, 2005	20 SD+10 SW
2.	Guj	Garudeshwar	Bhadboot	363 kms	Sep 1-12, 2005	35 SD & 15 SW
3.	Kar	Karwar	Malpe	404 kms	Dec 6-21, 2004	24 SD & 16 SW
4.	Mah	Mumbai	Goa	418 kms	Dec 15, 2004 to Jan 7, 2005	27 SD & 13 SW
5.	WB	Farakka	Kolkata	430 kms	May 14 to Jun 2, 2005	80 SD & 10 SW
6.	TN	Pondicherry	Kodiakarai	436 kms	Jul 26 to Aug 6, 2005	40 SD
7.	MP	Brahmanghat	Hoshangabad	418 kms	Oct 17 – 24, 2005	40 SD
8.	J&K	Govindsagar Lake		459 kms	Sep 14 – 23, 2005	25 SD+10SW
9.	Pb	Bilaspur	Lathiani	545 kms	Aug 29 to Sep 9, 2005	33 SD & 17 SW
		Kollam	Thaneermukam	350 kms	Sep 19 – 30, 2005	30 SD
10.	Ker	Calcut	Payyoli	240 kms	Jun 11-16, 2005	21 SD
		Kollam	Kumarkam	350 kms	Dec 6-17, 2004	50 SD
		Kochi	Kollam	450 kms	Oct 20-29, 2005	21 SD
11.	Raj	Jaisamand Lake		460 kms	Aug 16-27,2005	38 SD
		Bilaspur Dam		456 kms	Sep 5-16, 2005	20 SD & 10 SW
				TOTAL		***504SD + 91SW***

NCC has adopted community development activities with the aim to imbibe values such as selfless service for the community, dignity of labour, importance of self help, protection of environment and upliftment of weaker sections of the society.

YOUTH EXCHANGE PROGRAMME (YEP)

13.8 ***Out-Going YEP Visits :*** The following visits were undertaken during the year as part of YEP: -

(a) Visit of one officer and six cadets (Naval Wing) to Singapore to participate in International Sea Cadet Exchange Programme from May 29 to June 11, 2005.

(b) Visit of one officer and four cadets (Air Wing) to Singapore to participate in International Air Cadet Exchange Programmes from May 29 to June 11, 2005.

(c) Visit of one officer and twelve cadets to UK from July 19 to August 4, 2005.

(d) Visit of two officers and ten cadets to Russia from September 16 to 26, 2005.

(e) Visit of two officers and twelve cadets to Bhutan from November 7 to 13, 2005.

(f) Visit of two officers and thirteen cadets to Vietnam from November 15 to 24, 2005.

(g) Visit of two officers and nine cadets to Singapore from December 2 to 11, 2005.

13.9 ***In-Coming YEP Visits:*** The following foreign delegations visited India during the year as part of YEP:-

(a) One officer and eight cadets from Singapore for Nau Sainik Camp at Visakhapatnam from October 15 to 26, 2005.

(b) Two officers and six cadets from Singapore for Desert Safari at Jaisalmer (Rajasthan) from November 21 to December 2, 2005.

(c) Eighty five cadets and 14 officers from eight countries were invited for Republic Day Camp, 2006.

(d) One officer and six cadets from Bangladesh NCC attended All India Yachting Regatta from January 22 to 27, 2006 under the aegis of NCC Directorate Orissa.

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

13.10 NCC has adopted community development activities with the aim to imbibe values such as selfless service for the community, dignity of labour, importance of self help, protection

of environment and upliftment of weaker sections of the society. This involves activities such as adult education, tree plantation, blood donation, visit to Old Age Homes, slum clearance, village upliftment and various other social schemes. NCC cadets participate in the following community development activities:-

(a) ***Tree Plantation:*** NCC cadets plant saplings and look after them in conjunction with the concerned State Department/ Colleges/ Schools and Villages. This year, as part of NCC Day celebrations, every cadet planted one sapling.

(b) ***Blood Donation:*** Cadets donate blood as voluntary service whenever needed by Hospitals/ Red Cross. As part of NCC Day celebrations, all SD and SW NCC cadets have donated blood.

(c) ***Old Age Homes:*** Old Age Homes in the country are patronised and regularly visited by NCC cadets.

(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, train accidents and provided the healing touch in riot affected areas. NCC cadets actively assisted in the relief operations during the tsunami disaster and the earthquake in Jammu & Kashmir.

(g) ***Anti Leprosy Drive:*** NCC cadets have launched anti-leprosy drive throughout the country and are helping various voluntary organisations.

(h) ***AIDS Awareness Programme:*** NCC participates actively in the AIDS awareness programmes and is working alongwith UNAIDS and Directorate General Armed

Forces Medical Services (DG AFMS) in carrying out AIDS Awareness Programmes throughout the country. A two year programme to spread awareness on HIV/AIDS is being organised with the participation of UNAIDS. As a precursor to "Train the Trainer", first batch was started on September 19, 2005 with Directors, selected officers and WTLOs from all State 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, 17 such CAPS have been conducted.

ACTIVITIES AT NATIONAL LEVEL

13.11 The NCC cadets also participated in the following activities conducted at the national level: -

(a) ***Jawahar Lal Nehru Hockey Cup Tournament:*** NCC fielded four teams (3 boys and 1 girls) in the Jawahar Lal Hockey Tournament conducted in September-October 2005.

(b) ***Subroto Cup Football Tournament:*** NCC has been participating in this tournament for the last 26 years. One NCC team each from Orissa and North Eastern Region NCC Directorate participated in this year's tournament held from September 14 to October 13, 2005 at New Delhi. NER Directorate team reached the semi finals of the tournament.

(c) ***All India GV Mavlankar Shooting Championship:*** All India Mavalankar Shooting Championship is conducted by the National Rifle Association of India (NRAI) every year in the month of October/ November. 32 selected cadets (16 SW & 16 SD) from NCC participated this year.

(d) ***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. Forty eight SD and 48 SW cadets from the State Directorates attended the programme this year.

TRAINING OF SAFF

13.12 The following courses with vacancies as indicated are conducted for training of Associated NCC Officers (ANOs) and Permanent Instructors (PI) staff:-

(a) ***Refresher Course for ANOs:*** Sixteen courses are conducted every year at Officer Training Academy (OTA) Kamptee for 1135 ANOs.

(b) ***Orientation Courses for PI Staff:*** Twenty six courses are conducted at OTA Kamptee for 2810 PI Staff every training year.

(c) ***Pre-Commission Courses:*** Four Pre-Commission (PRCN) courses are conducted at OTA Kamptee for 500 ANOs.

(d) ***Refresher Courses for Lady ANOs:*** Four courses are conducted at NCC 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 NCC OTA Gwalior.

(f) ***Refresher Course for Naval ANOs:*** Thirteen SD and 44 JD ANOs attended Refresher Course from September 5 to 25, 2005 at INS Circars, Vishakhapatnam

(g) ***Refresher Course for Naval PI Staff:*** Thirty Naval PI Staff attended Refresher Course at Seamanship School, Kochi from August 22 to September 10, 2005.

(h) ***Pre-Commission Course for Naval ANOs:*** Naval SD/JD ANOs underwent Pre-Commission Training at Seamanship School, Kochi from July to October 2005 as follows: -

(a) Fourteen Naval SD ANOs underwent Pre-Commission Training at OTA Kamptee from July 11 to July 30, 2005 and Seamanship School, Kochi from August 8 to October 8, 2005.

(b) Twenty five Naval JD ANOs underwent Pre-Commission training at Seamanship School Kochi from August 8 to October 8, 2005.

(i) ***Orientation Course for Air PI Staff:*** Forty Air PI Staff undergo Orientation Course of 5 days duration at OTA Kamptee every year.

(j) ***Civil Defence Management Courses:*** A total of 27 Officers/

JCOs/ ANOs were detailed to attend various courses conducted at National Civil Defence College (NCDC), Nagpur.

PLANNING SECTION

13.13 ***Increase in NCC coverage:*** During the year 2005-2006, NCC has been allotted to 220 institutions all over the country covering a total of 25269 students.

13.14 ***Enrolment of Girls in Junior Division of Air and Naval Wing NCC:*** The landmark decision has immensely influenced the junior girl cadets and they can undertake Naval & Air Wing training also.

14

DEFENCE RELATIONS WITH FOREIGN COUNTRIES

French Refueller refuelling IAF's Su-30

India has stepped up dialogue and cooperation with various countries in order to find ways of using its capabilities for the overall well being of mankind.

14.1 As India's political relations with the rest of the world were reinforced and strengthened, India's defence ties with her traditional partners and new countries continued increasingly during the year. Events such as joint exercises held between the individual or combined Armed Forces of India and its foreign partners assumed a new meaning, when the military assets of India, US and other countries joined together for coordinated and cooperative initiatives to provide immediate help and relief to the huge populations affected by the Asian tsunami disaster. This was by far the most tangible result of the bilateral and multilateral defence cooperation, and provided ground for further such effort.

14.2 The challenges facing the global community, including terrorism, proliferation of weapons of mass destruction, smuggling of narcotics, arms and human trafficking, the growth of non-state actors intent on using violence against unarmed civilians and non-traditional threats such as pandemics, continued to mount during the period under review. This has encouraged nations across the earth to join hands in order to tackle and eliminate such dangers. The defence forces of various countries, including India have also stepped up their dialogue and cooperation in order to find ways of using their individual capabilities for the joint good of mankind.

14.3 High level visits, including that at the level of Defence Minister were an important feature of the bilateral dialogue between India and her partner countries. In addition, five important defence cooperation agreements/MOUs were also signed during the year, in addition to various protocols and other mutually agreed documents reflecting the close collaborative effort between India and her numerous international partners.

14.4 Raksha Mantri Shri Pranab Mukherjee undertook an official bilateral visit to the ***United States*** in June 2005. In his talks with Defence Secretary Rumsfeld and other senior US leaders, the growing defence

Indian Sea Harriers with US FA18s during Indo-US exercise Malabar CY-05

partnership with the US was reviewed. The two sides signed the New Framework for the US-India Defence Relationship. Raksha Mantri also delivered a talk at the Carnegie Endowment for International Peace at Washington DC on the topic, 'India's Strategic Perspective'. From the US a number of delegations visited India primarily to explore opportunities in the expanding Indian market for defence products and services. Defence Secretary led the Indian delegation for the Seventh Meeting of the India-US Defence Policy Group (DPG) on November 21-23, 2005 to Washington DC. Raksha Mantri led the first ever visit of an Indian Defence Minister to ***Chile*** in October 2005. Besides pledging to step up their defence relationship, including in the field of supply of defence related products from India to Chile, the host side also arranged for a visit to their base station in Antarctica, as a starting point for scientific research cooperation between the two countries in Antarctica. Earlier in the year the Defence Minister of Chile had visited India. All the three Service Chiefs from Chile also visited India during this period.

14.5 Visits at the level of Chief of Defence/General/Joint Staff or Services form a vital part of our military-to-military relationship expanding the framework of professional interaction and exchanges and enhancing mutual understanding. From India Vice

Admiral Raman Puri, CISC visited China in June 2005 to attend the "International Symposium on Non-Traditional Security: Challenges and Responses". And Vice Admiral Sangram Singh Byce, DCIDS (PP&FD) visited Hawaii, USA in October 2005 to attend Chiefs of Defence (CHOD) Conference. General Henri Bentegeat, Chief of Defence Staff, France visited India in March, 2005. Vice Admiral Daya Sandagiri, Chief of Defence Staff and Commander of the Sri Lankan Navy visited India in June 2005, General Hajime Massaki, Chairman, Joint Staff Council, Japan Self Defence Force in September 2005 and Lt. General Papa Khalilou Fall, Chief of Defence Staff, Senegal Armed Forces in December 2005.

14.6 Visits at the level of Service Chiefs include the visits of Vice-Admiral SOE Thane, Commander-in-Chief of Myanmar Navy; Admiral J. Fallon, Commander, U.S. Pacific Command (April, 2005); Major General Desmond Kuek, Chief of Army, Singapore (June 2005); General Juan Emilio Cheyre, Commander-in-Chief of the Chilean Army (August 2005); Air Marshal Geoff Shepherd, Chief of Air Force, Australia (September 2005); Lt. General S.H.S. Kottegoda, Cdr of Sri Lankan Army (September, 2005); Admiral Rodolfo Codina, Commander-in-Chief of the Chilean Navy (November, 2005); Admiral Sergio Siraghi, Chief of Italian Navy (November, 2005).

The signing of the P-75 Scorpene submarine deal with French companies, has added impetus to the high profile defence relationships with France which was reviewed during Prime Minister's talks with President Chirac in Paris in September 2005.

14.7 From India General J.J. Singh, Chief of the Army Staff visited Bhutan in May, 2005; Oman and United Kingdom in July, 2005; Australia and Myanmar in October-November 2005; and Egypt and Nigeria in November-December, 2005. Air Chief Marshal SP Tyagi, Chief of Air Staff visited Turkey in May, 2005, France in June, 2005, Philippines in August, 2005; Germany in September, 2005. Admiral Arun Prakash, Chief of the Naval Staff visited USA in March, 2005; Singapore (IMDEX) in May 2005; Thailand in May 2005, Malaysia and Indonesia in July, 2005; Maldives in November, 2005; Japan in October, 2005; and Bangladesh in December, 2005.

14.8 In ***Europe***, our military-industrial ties with ***France*** and the ***UK*** continued to grow. The signing of the P-75 Scorpene submarine deal with French companies, gave an added impetus to the high profile defence relationship which was reviewed during Prime Minister's talks with President Chirac in Paris in September 2005. The India-France High Committee

IAF SU-30 with French Mirages during Garuda 2

on Defence Cooperation held its review meeting in New Delhi in November. The French Chief of Defence Staff visited in March 2005. The newly appointed Secretary of State for Defence (Defence Minster) of the UK, Dr. John Reid visited India in early October 2005. Earlier the India-UK Defence Consultative Group (DCG) held its annual meeting in London on September 26-28, 2005. The ongoing Hawk Advanced Jet Trainer production line for India was inspected by the high level delegation led by Defence Secretary, which was in Britain for the DCG meeting.

The signing of the bilateral Intellectual Property Rights (IPR) Agreement with Russia was the highlight of Prime Minister's visit to Russia in December, 2005.

14.9 Joint exercises between the Indian Armed Forces and their counterpart organizations in France, Russia, Singapore, UK and the USA were stepped up during the course of the year. Satisfactory execution of such activities has led to a demand for increased joint exercises in the coming years.

14.10 Raksha Mantri led a high level defence delegation to ***Russia*** in November 2005 for the fifth meeting of the Indo-Russian Inter Governmental Commission on Military Technical Cooperation. Joint Indo-Russian Naval and Airborne Exercises were conducted in October 2005 off the Visakhapatnam coast and at the Mahajan Firing Ranges in Rajasthan, which was witnessed by the Russian Defence

Personnel during Indo-Russian Joint Exercise

Minister Mr. S. Ivanov. While he was able to see the para-dropping and commando assault on mock terrorist headquarters exercises at Mahajan, due to bad weather he was unable to travel to Visakhapatnam to witness the naval exercise. The signing of the bilateral Intellectual Property Rights (IPR) Agreement with Russia was the highlight of Prime Minister's visit to Russia in December, 2005.

14.11 With ***Uzbekistan***, an Agreement between India and Uzbekistan on cooperation in military and military-technical areas was signed on 5th April 2005 by Raksha Mantri and by the Minister of Defence of the Republic of Uzbekistan, during the visit of the President of Uzbekistan to India. The Defence Minister of ***Kyrgyztan***, Lt Gen Ismail Isakov visited India from November 24-28, 2005 at the invitation of Raksha Mantri and held discussions. Both sides agreed on the need for enhancing cooperation in the field of defence training and military technical cooperation.

14.12 Defence cooperation between India and ***Singapore*** has grown considerably in the recent times. A joint naval exercise hosted by the Singapore Navy, was held in the South China Sea from February 26-March 2, 2005. While the two countries have held joint naval exercises for over a decade, the first joint air exercise was held in October 2004 and the second air exercise was held in January

2006. The first-ever joint army exercise involving armour and artillery was held in India in March 2005. The Defence Minister of Singapore visited during this period to witness the exercise. With ***Republic of Korea***, India signed an MOU on Defence Industry and Logistics Cooperation in September 2005 during the visit of Mr. Young Hwan Lee, Deputy Minister for Acquisition, Ministry of National Defence of ROK. Indian Coast Guard ship "Samar" paid a visit to ROK from November 21-24, 2005 and held joint exercises with the Korean Coast Guard (KCG) at the port of Busan. This was the first joint exercise between the two countries and its successful conclusion was considered the first in expanding cooperation between the two Coast Guards. With ***Mongolia***, the second Indo-Mongolian Joint Exercise was held in December 2005 at Vairangte, which was witnessed by the visiting Mongolian Defence Minister H.E. Mr. Ts. Saravdorj. The Mongolian Defence Minister met with Raksha Mantri and other senior officials. During these interactions both sides emphasized the need for enhancing the defence cooperation between the two countries. Both sides agreed to establish a Joint Working Committee on Defence Cooperation, which will meet in early 2006 to work out practical means to further defence cooperation projects.

14.13 Defence cooperation between India and the ***Maldives*** is marked by frequent high level visits between the two countries. The Defence Minister of Maldives, H.E. Mr. Ismail Shafeeu came on an official visit to India from 24-28 September 2005. During the visit he held discussions with Raksha Mantri and other senior officials. Chief of Naval Staff visited Maldives in November 2005. The cordial relationship between ***Oman*** and India was further strengthened with the visit of the Minister Responsible for Defence Affairs of Oman H.E. Sayyid Badr Bin Saud Bin Hareb Al Busaidi from 5-7 December 2005. During the visit a Memorandum of Understanding on Military Cooperation between India and Oman was signed which will enable both countries to enhance their defence cooperation. The Indo-Oman Joint Naval Exercise has been institutionalized under the name of 'Thammar Al Tayyib' meaning the 'The Best of the Dates'. The first Combined Exercise took place in 1993 and the last exercise was held from 21-22 February 2005 in the Gulf of Oman.

14.14 With ***China***, the recent initiatives taken by India for strengthening defence ties include stepping up exchanges of military

delegations, high level visits, training exchanges and invitation to participate as observers in each other's military exercises. The efforts are focused on building of trust and confidence between the two countries. The officers of the Indian Armed Forces Officers participated as observers in the second phase of the India-Russia Joint Exercise held at Qingdao, Shandong (China) in August 2005 and the Exercise "North Sword 2005" in Beijing Command, China in September 2005. Recent high-level visits include the visits of the Chief of Army Staff and Vice Chief of Naval Staff from India and the Chief of General Staff of the People's Liberation Army (PLA) to India.

14.15 India has traditionally close defence ties with ***Nepal*** in the sphere of training, equipment supplies and cooperation in the field of security. Training programmes are continuing as in the past. Contacts with the Royal Nepalese Army (RNA) are maintained through the Indian Embassy in Kathmandu. The question of supply of lethal weapons to the RNA, which were halted after February 1, 2005 remains under constant review.

14.16 Defence Secretary level talks between India and ***Pakistan*** on the Siachin issue were held in Rawalpindi in May 2005. The India-Pakistan talks on the Sir Creek issue under the Composite Dialogue Framework covered the issue of demarcation of the international boundary between the two countries in the Sir Creek area. Indian Director General of Coast Guard visited Pakistan in October 2005 to sign a Memorandum of Understanding (MOU) on the Establishment of a Communication Link between the Indian Coast Guard and the Pakistan Maritime Security Agency. An Agreement on Prevention of Incidents on and over the sea has been signed between India and Pakistan.

14.17 India has historically close relations with ***Bhutan*** extending also into the defence and security sphere. An Indian Army Training Team assists the Royal Bhutanese Army in meeting many of its training requirements. India has shown keen interest on the operationalization of the Air Traffic Control at the Paro International Airport. The meeting of the India- Bhutan Joint Group on Border Management and Security was conducted in September 2005.

14.18 Defence relations with ***Bangladesh*** continued in the form of participation in training courses and ship visits of the Indian Navy and Coast Guard. The External Affairs Minister of India visited Bangladesh in August 2005. During this visit Indian assistance to Liberation War Museum, Dhaka and medical

assistance to 'Muktijodhas' were discussed. The Chief of Naval Staff visited Bangladesh in December 2005. Sixty 'Muktijodhas' were invited to the on-going Vijay Diwas celebrations at Eastern Command, Kolkata on December 15-16, 2005 with a view to bring together forces who fought together for the first time in 1971.

14.19 India-***Sri Lanka*** defence ties strengthened soon after the signing of the ceasefire Agreement with the Liberation Tigers of Tamil Eeelam (LTTE) by the Government of Sri Lanka in February 2002. India-Sri Lanka defence cooperation and relations have developed positively and comprehensively since then. Defence cooperation with Sri Lanka in the fields of defence training has expanded manifold during the last two years. The Sri Lankan armed forces comprise the largest number of foreign trainees in Indian armed forces training institutions. Vice-Admiral Daya Sandagiri, Sri Lankan Chief of Defence Staff and Commander of the Navy visited India in June 2005. Lt. General SHS Kottegoda, former Commander of Sri Lanka Army visited India in September 2005 to discuss areas of mutual interest and cooperation between the two Armies which inter-alia include areas such as disaster management, United Nations Peace Keeping Operations, assistance in welfare activities etc. As part of Confidence Building Measures as well as training, two Indian Naval ships INS Sukanya and INS Kirpan, and three Sri Lankan vessels participated in Sri Lanka-India Naval Exercise (SLINEX).

14.20 In the face of the Asian tsunami that befell Sri Lanka in December 2004, the Indian Navy assisted in the relief operations by dispatching a number of vessels and aircraft with medical teams, medical supplies, relief equipment and supplies. The relief operations involved the immediate supply of food and drinking water, medical camps for first aid and treatment of casualties, diving operations, Search and Rescue of marooned people off the coast/outlying islands. As part of the rehabilitation operations underwater damage assessment, minor salvage operations, transportation of relief material, hydrographic survey of harbours, de-contamination of drinking water wells by pumping out saline water, minor repairs of generators, supply of water purification tablets and medicines were undertaken. In addition, survey ships were converted into 46 bed hospital ships for undertaking surgeries on board with pathological laboratory, X-Ray and ICU facilities.

14.21 The continent of Africa has many countries with which India has had deep historical and political bonds. Countries in the South and

West African regions have had close defence training interaction with Indian military training establishments. India is providing troops for peacekeeping missions in Africa in ***Ethiopia*** and ***Eritrea*** (UNMEE) and Congo (MONUC). The largest numbers of Indian military training teams are deployed in Africa including helicopter-training detachments in ***Mauritius*** and ***Namibia***. Despite the Denel incident, India-***South Africa*** defence cooperation continues to have considerable significance for both the countries. The first ever Tri-Nation Sailing ragatta under the auspices of IBSA (India, Brazil, South Africa) was conducted in South Africa from September 20-26, 2005. With a view to enhancing the international image of the Indian Air Force and its increased role as a force multiplier, the IAF carried out joint exercises with the Air Force of South Africa. Indian Army Training Teams (IATTs) have also been set up in ***Seychelles***, ***Botswana***, ***Zambia*** and ***Lesotho***. Agreements/Memorandum of Understanding on defence cooperation between India and some countries in the African region are under negotiation.

14.22 India's defence relations with foreign countries have resulted in a dramatic increase in the number of foreign visitors to the Ministry of Defence. Measures are being taken to strengthen its Protocol Section and initiate new practices and protocols for visiting foreign dignitaries, including a solemn ceremony to honour the unknown soldier at the Amar Jawan Jyoti.

15

CEREMONIAL, ACADEMIC AND ADVENTURE ACTIVITIES

Investiture Ceremony - 2005 held at Rashtrapati Bhawan

The Armed Forces cherish and nourish the spirit of adventure and sacrifice and commemorate them.

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 Aru, Kashmir

15.2 The important activities of these institutions during the period under review are enumerated in the succeeding paragraphs.

INSTITUTE FOR DEFENCE STUDIES AND ANALYSES (IDSA)

15.3 The Institute for Defence Studies and Analyses was established in November, 1965 to initiate studies and research problems of national security and the impact of defence measures on national development. Over the years, the Institute has evolved as a premier research institution carrying out authoritative policy – related studies on national and international security issues. The Institute is a registered body under the Societies Act of 1860 (Punjab Amendment Act. 1957) as amended from time to time and is governed by an Executive Council elected by the members of the Institute. The Institute is accessible to political leaders, scholars, the media, service officers and others who have an interest in problems of national security. On the occasion of the 40th Anniversary, on November 11, 2005, Prime Minister, Dr Manmohan Singh delivered the Foundation Day lecture.

15.4 ***Activities:*** The Institute organised 50 Round Table Discussions with visiting scholars, diplomats and foreign delegations/ teams.

15.5 ***The Research Faculty:*** The Institute has a well-established and multi-disciplinary research faculty of over 50 scholars. They are drawn from the academia, the defence forces, the paramilitary organisations and the civil services. Their

collective efforts ensure an all encompassing and by and large an Indo-centric assessment of various regions, countries and issues that affect our current and future security environment. The Institute also offers facilities to foreign scholars for their research.

15.6 ***Bilateral and Multilateral Interactions:*** To enrich the quality of research work of the scholars, IDSA has developed bilateral ties with a number of similar Institutes across the globe. At present, the Institute has bilateral ties and multilateral interactions with the Japan Institute of International Affairs, National Institute of Defence Studies (Japan), Emirates Centre for Strategic Studies & Research (UAE), South Africa Institute of International Studies (South Africa), Institute of International and Strategic Relations (France), Institute for National Strategic Studies (USA), Bangladesh Institute of International and Strategic Studies (Bangladesh), Institute of Political and International Studies (Iran), Begin-Sadat Centre for Strategic Studies (Israel), Kazakhstan Institute for Strategic studies (Kazadhstan) and the Council for Security Cooperation in the Asia Pacific (CSCAP).

IDSA has developed bilateral ties with similar institutes across the globe and is open to all who have an interest in problems in national security.

15.7 ***Research Orientation:*** The research output of the faculty is published mainly in the Institute's Quarterly journal 'Strategic Analysis' or as monographs and books. The researchers frequently present their papers in various national and international seminars and also contribute articles and chapters to foreign journals and publications. Besides, the IDSA also brings out the 'Strategic Digest' which is a monthly compendium of information from open sources on nuclear and disarmament issues, military doctrines, arms transfer and technology developments. It has been found useful by many institutions and the defence departments of the numerous universities in India. Important books published by the IDSA during the period under review are "Changing Security Dynamics in Eastern Asia", "Emerging India: Security and Foreign Policy Perspective", "India and the World", "United Nations, Multilateralism and International Security", "India and Central Asia : Advancing the Common Interest" and "Bangladesh: A Fragile Democracy".

15.8 ***Training Programmes :*** Besides the research projects, the Institute is also engaged in training programmes for the Government officers drawn from the Indian Administrative Service, Indian Police Service, Indian Foreign Service, the

Armed Forces, and the Para-Military Forces. During the year, one training capsule was organised by the Institute for IPS officers. The faculty members have often been invited as guest speakers at various training establishments and universities in the country.

15.9 ***Information Resources:*** The Institute has a sizeable resource base on issues of national security and defence strategy. It has a collection of over 50,000 books and a number of CD-ROM databases. In addition, more than 300 current journals, in print as well as electronic/online versions are received. IDSA also publishes a monthly bulletin called 'Current Journal Contents' that lists the contents of about 140 journals received in the Library. The Institute maintains a website (address: http://www.idsa-india.org) on which the details of new activities as well as progress in the ongoing activities are posted.

MOUNTAINEERING INSTITUTES

15.10 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 Uttranchal and Jawahar Institute of Mountaineering & Winter Sports (JIM), Aru (presently located at Pahalgam in J&K). The expenditure on the institutes is shared by the Central and respective State Governments as per agreed funding pattern. 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.

The HMI aims to inculcate adventure and love for mountains.

15.11 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 along with Sir Edmund Hillary on May 29, 1953. This Institute provided 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 at Aru in J&K in October 1983.

15.12 Due to disturbances in the valley, students were reluctant to come to Aru for training. Accordingly, it was decided to shift the Institute temporarily to Batote on the Jammu side of Banihal in August 1990. In October 2003, the Institute was shifted to Pahalgam where it is conducting the courses.

15.13 The broad objectives of the Mountaineering Institutes are:-

(a) to impart theoretical knowledge and practical training in mountaineering and rock climbing techniques;

(b) to awaken interest in and love for mountains and exploration; and

(c) to encourage and provide training in Winter Sports

15.14 The Institutes conduct Basic and Advance 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. During the lean period, the Instructors of the Institutes conduct rock-climbing courses at the request of Mountaineering Clubs/ Organisations in the country. The Instructors also join various expeditions.

15.15 Trainees to these courses come from all parts of the country and include Army, Air Force, Navy, ITBP and BSF personnel, NCC Cadets and private students. Foreigners are also permitted to join these courses.

15.16 The courses conducted by these institutes from April 2005 to November 30, 2005 are detailed in table No. 15.1.

Table No. 15.1

Courses	***HMI***	***NIM***	***JIM***
Basic	05	05	04
Advance	02	03	01
Adventure	02	03	-
MOI	01	01	-
S&R	-	01	-

15.17 The number of students trained in these courses are given in table No. 15.2.

Table No. 15.2

Courses	***Men***	***Women***
Basic	662	135
Advance	158	21
Adventure	90	83
MOI	18	09
S&R	23	-

15.18 HMI conducted 13 special courses comprising Advance,

Adventure and Rock Climbing Courses, in which 567 men and women were trained during the period. NIM also conducted 3 special courses for various organizations in which 155 men were trained during the year. JIM has trained 541 men and 189 women in various special Adventure/ Tourist/ Guide/ Rock Climbing courses during the period.

15.19 HMI Darjeeling also conducted an Adventure Camp for SAARC nations from 7th to 17th November 2005. Fourteen youths from four SAARC countries, viz. Bangladesh, Bhutan, India and Pakistan took part in this camp. The adventure activities included Rock/ Artificial Wall climbing, trekking in high altitude, camping and water sports.

15.20 To commemorate 40th anniversary, NIM launched an expedition to 8012 m high Mount Shisha Pangma in Tibet, China. All the seven members, without bottled oxygen, climbed the summit in one push on May 17, 2005. This was the first Indian assent to this Peak.

First Indian ascent to 8012 m high Mount Shisha Pangma in Tibet, China was done to commemorate 40th anniversary of NIM.

15.21 JIM Pahalgam, successfully carried out an expedition of J&K Armed Police to Mount Stock Kangri during August-September 2005 in which 19 J&K Armed Police personnel summated this peak.

CEREMONIALS, HONOURS AND AWARDS

15.22 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 organisation of these ceremonies requires coordination of activities of various Ministries/Departments and other agencies. The Ceremonial functions organised during the year are detailed in the following paragraphs.

INVESTITURE CEREMONY, 2005

15.23 The Defence Investiture Ceremony, 2005 was held at Rashtrapati Bhawan on April 12 and 19, 2005 when the Gallantry and Distinguished Service Awards mentioned in table No. 15.3 and 15.4, announced on the Independence Day 2004 and Republic Day, 2005, were presented by the President to the awardees.

Table No. 15.3

Gallantry Awards

Kirti Chakra	05	(3 posthumous)
Shaurya Chakra	41	(26 posthumous)

Table No. 15.4

Distinguished Service Awards

Uttam Yudh Seva Medal	03
Param Vishisht Seva Medal	28
Bar to Ati Vishisht Seva Medal	01
Ati Vishisht Seva Medal	49

15.24 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.

INDEPENDENCE DAY CEREMONY, 2005

15.25 Beginning of celebrations of the Independence Day was marked with the choir singing of patriotic songs by school children in different Indian languages at Red Fort on August 15, 2005 in the early morning. Later 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 on the occasion was followed by 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.

15.26 After the function at Red Fort, the President laid wreath at the Amar Jawan Jyoti at India Gate paying Homage to the memory of those who sacrificed their lives for the freedom of the motherland.

15.27 The gallantry awards announced on the Independence Day 2005 are detailed in table No. 15.5.

Table No. 15.5

Award	Total	***Posthumous***
Kirti Chakra	01	-
Shaurya Chakra	19	08
Bar to Sena Medal (Gallantry)	05	01
Sena Medal (Gallantry)	86	19
Nao Sena Medal (Gallantry)	05	-
Vayu Sena Medal (Gallantry)	12	-

VIJAY DIWAS

15.28 Vijay Diwas was celebrated on December 16, 2005 followed by inauguration of Defence Equipment Display-cum-Photo Gallery by Raksha Mantri followed by a cultural programme and band display at National Stadium.

Raksha Mantri at Vijaya Diwas Celebrations

AMAR JAWAN JYOTI CEREMONY, 2006

15.29 Prime Minister laid wreath at the Amar Jawan Jyoti Memorial under the arch of India Gate in the early morning of January 26, 2006. Two minutes silence was observed for paying homage to those who sacrificed their lives in safeguarding the freedom of the nation.

REPUBLIC DAY CELEBRATIONS, 2006

15.30 Unfurling of the National Flag at the Rajpath gave a glorious beginning to the Republic Day Parade. President's Body Guards presented the National Salute followed by National Anthem played by the Service Bands and 21 gun salutes. Custodian of the two holy mosques King Abdullah Bin Abdul Aziz Al-Saud of Saudi Arabia was the Chief Guest on the occasion.

15.31 Army's mounted columns of 61 Cavalry, mechanised columns comprising of MBT Arjun, Weapon Locating Radar, Agni-I & Agni-II missiles, Mobile Communication Node, marching contingents and bands of Services, Para Military Forces, Delhi Police, RPF and NCC were part of the parade. Out of the seventeen items displayed in the mechanised columns of the Services, twelve were indigenous. The DRDO equipment column included 'Pinaka' multi barrel rocket launcher, Bridge

Republic Day parade 2006

Layer Tank, Amphibious Ferry and Floating System, 'BrahMos' etc. National Bravery Award Winning Children on elephants, tableaux and cultural items were other attractions of the parade. The tableaux and children items reflected the cultural diversity of the nation. The parade ended with dare-devil motor cycle display by BSF 'Janbaz' followed by Fly Past by aircraft of the Indian Air Force.

15.32 The gallantry and distinguished service awards announced on the Republic Day are given in table No. 15.6.

BEATING RETREAT CEREMONY, 2006

15.33 The 'Beating Retreat' is a centuries old military tradition dating from the days when troops disengaged from battle at sunset. The Beating Retreat Ceremony denotes departure of the troops assembled at Delhi to participate in the Republic Day Celebrations. This year the Ceremony was organized at Vijay Chowk on January 29, 2006. 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, 2006

15.34 On January 30, 2006, the President laid wreath at Mahatma Gandhi's Samadhi at Rajghat. Floral tributes were also paid by the Vice President, the Prime Minister and

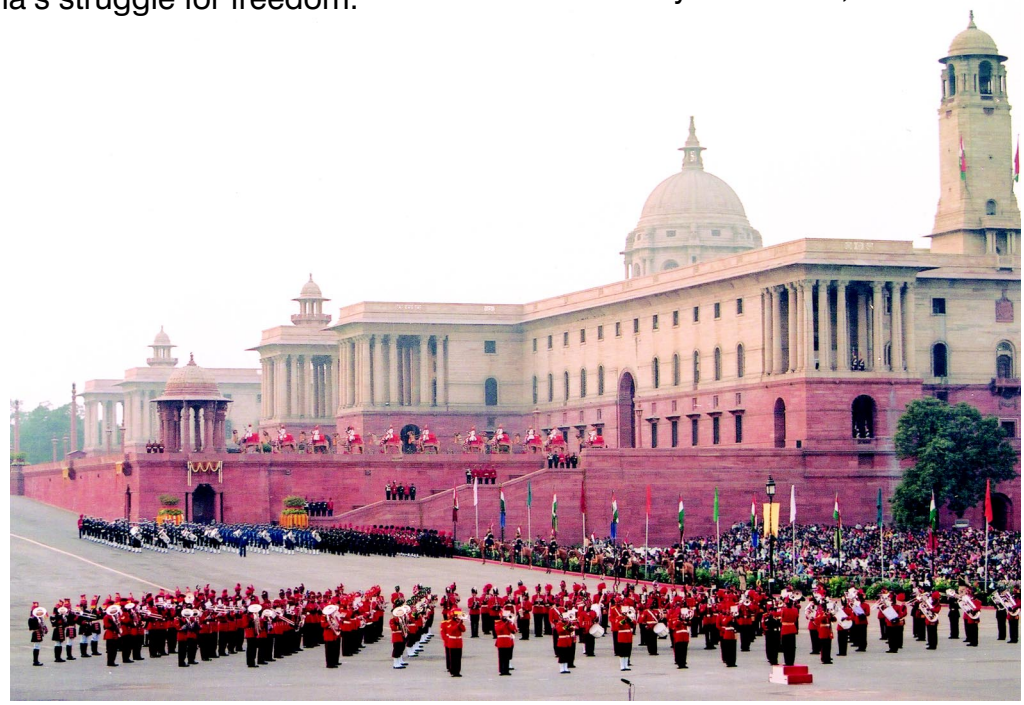
Table No. 15.6

Award	*Total*	*Posthumous*
Kirti Chakra	03	03
Shaurya Chakra	24	9
Bar to Sena Medal/Nao Sena Medal/Vayu Sena Medal (Gallantry)	01	-
Sena Medal/Nao Sena Medal/ Vayu Sena Medal (Gallantry)	85	21
Param Vishisht Seva Medal	29	-
Bar to Ati Vishisht Seva Medal	02	-
Ati Vishisht Seva Medal	52	-
Bar to Vishisht Seval Medal	06	
Vishisht Seva Medal	132	-
Bar to Sena Medal (Gallantry)	01	-
Sena Medal/Nao Sena Medal/ Vayu Sena Medal (Devotion to duty)	73	-

some of the Cabinet Colleagues of the Prime Minister. 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

15.35Official Language (OL) Division of Ministry of Defence implements the Official Language Policy of the Union in the Ministry of Defence, its subordinate



Beating Retreat Ceremony 2006

offices and various inter-service organizations, Defence Public Sector Undertakings as well as all other defence offices. The other main functions of this Division are:

(i) to translate the material received from various offices/ sections of the Ministry;

(ii) to impart training to the staff in Hindi language, stenography and typing through the Hindi Teaching Scheme of the Ministry of Home Affairs; and

(iii) to propagate and promote the use of Hindi in official work by organizing Hindi workshops, seminars, etc. and encouraging the staff members through various incentive schemes.

15.36 ***Annual Programme***: In the Annual Programme for the year 2005-06 formulated by the Department of Official Language, Ministry of Home Affairs, the main thrust was given to the targets regarding correspondence in Hindi, compliance of the provisions of the Section 3(3) of the Official Language Act as also of Rule 5 of Official Language Rules, operation of various incentive schemes to do official work in Hindi and training in Hindi stenography and typing to the officers/staff of Ministry of Defence. The progress in this regard was reviewed in quarterly meetings on a regular basis. In this connection, the following measures were also undertaken:-

(i) Hindi workshops, aimed at motivating the officials to use Hindi in the official work were organised regularly. The participants in the workshops were provided practice exercises in their respective subjects and were apprised of the provisions of Official Language Act and the Rules.

(ii) Quarterly meetings of two departmental Official Language Implementation Committees viz., one for the Department of Defence, Department of Defence Research & Development and the Department of Ex-Servicemen Welfare and the other one for the Department of Defence Production were held in the Ministry of Defence.

(iii) Joint official language inspections of various headquarters/subordinate offices of three services, inter-service organizations, defence undertakings etc. The inspections covered 28 subordinate offices and 21 sections in the Ministry upto November 30, 2005.

(iv) Hindi fortnight was celebrated in the Ministry from September 1 to 15, 2005. Competitions were held during the fortnight in which a large number of officers and staff participated. Cash awards and gifts were given to the winning competitors. Similar fortnights

were also organized in various Defence Undertakings, Inter-Service organizations and offices located throughout the country.

(v) Important orders, instructions etc. issued by the Department of Official Language were reiterated.

15.37 ***Translation Work***: The material translated from Hindi to English and vice-versa included general orders, notifications, resolutions, administrative and other reports, Parliament Questions, etc. Besides, material relating to Public Accounts Committee matters, audit paras, Consultative Committee meetings, papers laid in the Parliament, VIP references, Republic Day, Independence Day and Investiture ceremony programmes were also translated into Hindi during the year.

15.38 ***Hindi Training***: Keeping in view the targets fixed for imparting training to the staff in Hindi stenography and Hindi typing, the maximum number of officials were nominated to these classes. The position/progress was reviewed in quarterly meetings of the departmental Official Language Implementation Committee.

15.39 ***Hindi Salahakar Samities***: Both the Hindi Salahakar Samities for the Ministry of Defence i.e., one for the Department of Defence, Department of Defence Research & Development and the Department of Ex-Servicemen Welfare and the other one for the Department of Defence Production, were reconstituted.

15.40 ***Scheme for writing Hindi Books:*** The scheme for writing original Hindi books on defence subjects has been made more attractive by doubling the total prize money. During the year, entries were invited for the block year 2003-05. After completing the selection procedure under the scheme, awards will be announced.

15.41 ***Monitoring:*** The overall monitoring regarding the progressive use of Hindi in the Ministry of Defence Secretariat, three Service Headquarters, Inter-Service Organizations and Defence Undertakings is done by two separate Departmental Official Language Implementation Committees. Four meetings each of the above Committees were held during the year, in which progress made in the use of Hindi was reviewed and remedial measures were suggested.

15.42 ***Inspection of various Defence Organisations by the Committee of Parliament on Official Language:*** During the year 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, located at Delhi, Kochi, Dehradun, Joshimath, Silcher, Jodhpur, Kolkata, Dibrugarh, Chennai, Mandapam and Daman. Instructions were issued for ensuring timely fulfillment of the assurances given to the Committee during these inspections.

16

ACTIVITIES OF VIGILANCE UNITS

A CVO for the Department of Defence, Ex-Servicemen Welfare, and Defence Research & Development Organisation, and one for Deptt. of Defence Production oversee vigilance work.

16.1 The Vigilance Division in the Ministry of Defence deals with vigilance cases involving Group 'A' civilian officers working in the Ministry of Defence. For administrative convenience, the vigilance work in respect of the Department of Defence, Department of Ex-Servicemen Welfare, and Defence Research & Development Organisation is being looked after by one Chief Vigilance Officer and in respect of the Department of Defence Production by another Chief Vigilance Officer. The Vigilance Division looks after all vigilance matters and provides a link between the Ministry/ Department and the Central Vigilance Commission (CVC).

During the year major penalities were imposed on 32 gazetted officers and minor penalties on 5 of them. 57 complaints were investigated to logical conclusion. Rs.650.45 lakh were saved due to Vigilance work.

The Vigilance Division is responsible for regular and surprise inspection of sensitive cases, review and streamlining of procedures and initiating other measures for combating corruption. The complaints received through the Prime Minister's Office and the CVC are also being dealt by the Vigilance Division. During the year, 32 (MES-29, DGDE-1, DRDO-1 & CAO-1) gazetted officers (Group 'A') were given major penalty and 5 (MES-3, DGDE-1- & DGQA-1) minor penalty. A total of 57 complaints were investigated and brought to a logical conclusion.

16.2 In accordance with the directives issued by the CVC, Vigilance Week was observed in the Ministry, Defence Public Sector Undertakings, Attached and Subordinate Offices in the month of November, 2005.

DEPARTMENT OF DEFENCE RESEARCH AND DEVELOPMENT

16.3 The main activities of the Vigilance Units in DRDO during the year are as under: -

(a) Periodic sensitisation of all officers and staff on vigilance aspects at all levels.

(b) Sensitisation programmes and seminars bringing to fore the importance of a proper and effective management of public funds and public resources.

(c) Surprise vigilance inspections of laboratories/ establishments to ensure that standing instructions and orders are being implemented.

(d) Conducting confidential enquiries against malpractices and bringing the errant to book.

(e) Processing vigilance cases/ inquiries and preparation of documents for vigilance charge sheets.

(f) Ensuring compliance of procedures of purchase management laid down by DRDO through periodic vigilance inspection of laboratories/ establishments.

(g) Observance of Vigilance Awareness Week as per guidelines laid down by the CVC.

DEPARTMENT OF DEFENCE PRODUCTION

16.4 ***Hindustan Aeronautics Ltd.(HAL):*** The Vigilance Department has been laying greater emphasis on preventive vigilance. Preventive checks and surprise checks help in identifying areas which are prone to corruption and subject them to intensive examination with a view to plug loopholes in the system. Savings/ pecuniary loss prevented due to vigilance work (upto September 2005) amounted to Rs.650.45 Lakh. A seminar on 'Integrity Pact' was organised in co-ordination with the HAL Management on May 10, 2005, in which 55 executives from the Government, Armed Forces and Public Sector Undertakings participated.

16.5 ***Bharat Electronics Ltd.(BEL):*** The Chief Vigilance Officer in BEL is assisted by 17 vigilance Committees. Each unit/ Strategic Business Unit (SBU) has a vigilance committee responsible for implementing the various CVC/MOD guidelines and supervising vigilance activities in their Unit/SBU. The vigilance committee consists of Unit/SBU head as the chairman, the vigilance officers of the unit/SBU as the member secretary; head of Material Management, Finance Personnel and Investigation officer, as members. The committee meets

6 Vigilance Complaints Box has been installed which are opened every Monday.

once in a month to review and monitor vigilance activities.

16.6 ***Bharat Earth Movers Ltd. (BEML):*** An elaborate and well-structured vigilance system has been established covering all the areas and operations of organisational activity. The Vigilance Department is functioning effectively for ensuring the objectives of Central Vigilance Commission (CVC) by adopting preventive and detective measures in the organisation in accordance with the guidelines issued by CVC from time to time.

16.7 ***Mazagon Dock Limited (MDL):*** During the current year, Vigilance Department received 10 complaints out of which 4 were anonymous and pseudonymous while 6 were signed complaints. The anonymous/ pseudonymous complaints were filed without action upon as per the guidelines of the CVC. Investigations are under process in the case of the 6 signed complaints.

16.8 ***Goa Shipyard Ltd.(GSL):*** The Vigilance set up in Goa Shipyard Ltd. is headed by a full-time Chief Vigilance Officer (CVO). He is assisted by one Senior Vigilance Supervisor, a Senior Assistant and two Vigilance Guards. In order to encourage employees and other persons having business and other relations with the Company to come forward with information and grievances with a vigilance angle, six Vigilance Complaint Boxes have been installed at various places in the premises of the Company.

All the Open Tenders were pasted on the GRSE Website, and payments are made through Electronic Cash System (ECS) mode only.

16.9 ***Garden Reach Shipbuilders & Engineers Ltd. (GRSE):*** During the current year, the vigilance activities in GRSE emphasised maintaining transparency in all dealings and thus, preventive vigilance remained the thrust area of activities of this department. All the Open Tenders were invariably pasted on the GRSE website. All payments are made through Electronic Cash System (ECS) mode only. No cash payment was made. It has been the endeavour to ensure that payment was released within 30 days of submission of bills. Files dealing with procurement/contracts over Rs.50 lakhs were subjected to special vigilance scrutiny. Special workshops on Vigilance Awareness were organised for the personnel, working in sensitive departments. Vigilance Complaint/Suggestion Box have been placed at all conspicuous places in GRSE. Registration of vendors has been made most stringent to ensure that only vendors with adequate expertise, experience and infrastructure are registered.

16.10 ***Bharat Dynamics Ltd. (BDL):*** The Vigilance Department

continued its efforts focusing on preventive steps leading to systems improvements, which included highlighting environmental issues. Joint Surprise Checks were held along with the CBI in some of the cases. The disciplinary cases against one AGM and one GM have ended in imposition of major penalties. Achieved savings to the tune of 2.95 crores on account of intensive inspection of supplies made by M/s John Galt International, Mumbai.

17

EMPOWERMENT AND WELFARE OF WOMEN

A woman officer with the President of India Dr. APJ Abdul Kalam in forward areas

The role of women has been increasing steadily in the field of national defence. Women Officers in various non-combatant branches of the Armed Forces like logistics and law have a larger role to play and have carved a niche for themselves.

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 Special Entry Scheme Officers (WSES-O):*** Eligible women candidates are recruited in Army as Short Service Commissioned Officers through the Women Special Entry Scheme [WSES(O)]. Commission is granted in Corps of Electrical and Mechanical Engineers, Engineers, Signals, Army Education Corps, Army Ordnance Corps, Army Supply Corps, Military Intelligence, Judge Advocate General's Branch and Air Defence Artillery. Vacancies for women officers have been increased to 75 per course. There are two courses in a year and each course is of six months' duration conducted at OTA, Chennai. 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.

Women Officers are recruited in Army as Short Service Commissioned Officers into the various branches for 10 years with an option to continue for another 4 years.

17.3 5% of the vacancies released, are earmarked for induction of widows of the officers and the personnel below officer rank in the Army, whose husbands died in operation or discharge of duties to the Government .

17.4 ***Induction of Women Officers Through Short Service Commission Scheme:***

The tenure of Short Service Commissioned Officers(SSCOs)/ Women Special Entry Scheme Officers(WSESOs) has been increased to 14 years from March 31, 2004. The Government has also approved the following:-

A Court of Inquiry or Board of Inquiry is mandatory in all cases of reported sexual harassment involving service personnel.

(a) Closure of the existing Women Special Entry Scheme.

(b) Induction of women officers under the Short Service Commission scheme.

(c) Grant of substantive promotion by time scale upto the rank of Lieutenant Colonel to SSCOs at par with permanent commissioned officers.

17.5 ***Existing Schemes and Policy on Women as Civilian Defence Employees:*** Women cells have been established in Army units/ establishments that have sizable number of civilian women for welfare of women civilian employees in the lower formations of Army. The women cells at the unit level undertake developmental activities for women employees as well as female members of employees' families. Common room, crèche, ladies toilets attended to by women safai karamcharies are provided to women employees in most of the Army units.

17.6 The work of women cell at the unit level is monitored at the Command HQ level as well as at Army HQ. A redressal mechanism exists for prevention of sexual harassment at work places.

17.7 ***Mechanism to deal with Sexual Harassment cases:*** The Armed Forces of the Union have in-built measures in their respective Acts to deal with sexual harassment involving service personnel. However, keeping in view the judgement of the Hon'ble Supreme Court in this regard, institution of a Court of Inquiry or Board of Inquiry has been made mandatory in all cases of reported sexual harassment involving service personnel.

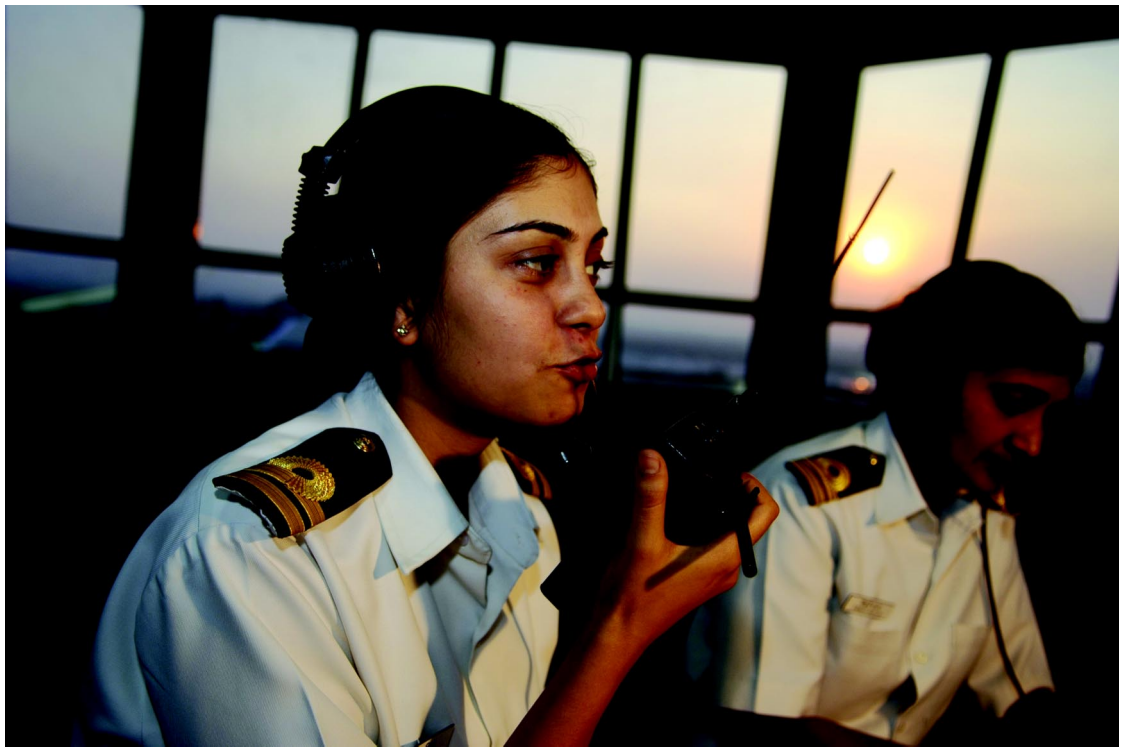
INDIAN NAVY

17.8 The Indian Navy first inducted women in 1992. A total of 179 women officers (including 58 Medical Officers) are serving in various units in the Navy. These officers are very much part of the mainstream and their promotion prospects, training as well as career progression are at par with their male counterparts.

17.9 The Naval Wives' Welfare Association (NWWA), has been regularly conducting adult literacy and computer classes for women.

17.10 Information Technology (IT) complex have been opened for ladies and family members for computer and IT learning.

17.11 All the Naval Commands conduct regular programmes to encourage young women to opt for a career in the Indian Navy. This



Women officers on job

includes visits onboard Indian Naval Ships.

INDIAN AIR FORCE

17.12 In 1992, the Indian Air Force (IAF) began induction of women as Transport Pilots, Engineers, Administrators, Logisticians, Accountants and Education Officers. The first batch of 12 General Duty Women Cadets joined Air Force Academy in July 1992. Today a force of 530 women officers are serving in the front line IAF bases.

At the end of 14 years, the women officers are equipped with not only a very high degree of confidence but also a high level of professional competence and experience and carve a niche for themselves and prove beyond doubt that they are as good as men.

17.13 As per present policy, the women officers are given an initial term of engagement for 10 years with an extension of 4 years, giving them an overall tenure of 14 years. At the end of 14 years, the women officers are equipped with not only a very high degree of confidence but also a high level of professional competence and experience. The women officers of the IAF have carved a niche for themselves and proved beyond doubt that they are as good as men.

COAST GUARD

17.14 The Indian Coast Guard has recruited lady officers in the rank of Assistant Commandant through open direct recruitment. Presently, 14 such lady officers are in service.

Young Women Officers being briefed

17.15 In the Coast Guard, women officers are inducted in administration, logistics and pilot cadre on permanent commission for ashore duties. The selection procedure is same as applicable to their male counterparts. The training pattern is designed as per the cadre requirement, after completion of basic training which is common for all trades. As women officers are inducted for ashore billet, they are exempted from sea training, though an introductory capsule attachment is provided to them. They have similar career profiles as Gentlemen officers. Specialist courses are assigned to them as per cadre requirement, such as, Long Logistics Management Course (LLMC), Long Electronic Data Processing course (LEDP) for administration branch and MET & ATC courses for pilots.

Defence Public Sector Undertakings (DPSUs) in association with Standing Conference of Public Enterprises (SCOPE) has been creating necessary facilities for harnessing the full potential of women employees in the DPSUs.

FAMILY PENSION

17.16 Ministry of Defence has special pension schemes for the widows of Service personnel. If the death of a Service personnel has 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/- p.m. Widows

who remarried on or after January 1, 1996 are also eligible for special family pension subject to certain conditions.

17.17 With effect from January 1, 1996 on remarriage of a widow, full liberalized family pension would continue to her subject to other prescribed conditions. Liberalised Family Pension of those widows which was stopped on their remarriage before January 1, 1996 with a person other than real brother of the deceased, has now been restored w.e.f. June 24, 2005.

DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DRDO)

17.18 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 skill and knowledge. The laboratories of DRDO have already been instructed to set up Women's Cell to look after the welfare of women employees. A Women Cell has been constituted in DRDO Headquarters too.

DEPARTMENT OF DEFENCE PRODUCTION

17.19 A separate forum of Women in Public Sector (WIPS) has been established in Defence Public Sector Undertakings (DPSUs) under the aegis of the Standing Conference of Public Enterprises (SCOPE) to assist the DPSUs in harnessing the full potential of women employees and also to play a catalytic role in improving the status of women in the DPSUs. Almost all DPSUs have provided certain facilities such as crèches for the children of working women, lunch and rest rooms to working women.

17.20 Some of the important steps taken by the Defence Public Sector Undertakings (DPSUs) for empowerment and welfare of women are as follows:-

(i) ***Hindustan Aeronautics Limited (HAL):*** The strength of women employees in HAL as on December 31, 2005 was 1608. A sizeable number of women employees are in supervisory and executive cadres. They are provided with equal opportunities for advancement in their career. Training programmes exclusively for women are arranged at the Technical Training Centre and HAL Management Academy.

Over and above the provisions under the Maternity Benefit Act, the company has a policy to grant one month's extra leave, in case of the female employees who are not

physically fit to join duty after delivery.

Conduct, Discipline and Appeal (CDA) Rules have been amended in line with the directions of the Hon'ble Supreme Court of India on prevention of sexual harassment of women at work place. Complaints Committees have been constituted in each Division/Complex.

(ii) ***Bharat Electronics Limited (BEL):*** A total of 2458 women employees are working in its various units and offices. BEL has been providing a variety of facilities and benefits to women employees. Specially furnished exclusive Rest Rooms are also provided for ladies working in large numbers in areas like Assembly Departments. Creche facilities are also provided to enable working mothers to leave their infants for day care. Awareness programmes on various women oriented topics are conducted for women employees. Women employees are nominated to participate in the meets / conferences organised by the set up "Women in Public Sector" (WIPS). Women employees of Non-ESI category also get the complete maternity benefits including pre-natal care. Akshaya – run by the Bharat Electronics Ladies' Association (Bangalore) provides employment opportunities for destitute women.

(iii) ***Bharat Earth Movers Limited (BEML):*** The Company has constituted Women Cells in all the Production Units as well as in the Corporate Office to redress the grievances of the women employees in accordance with Hon'ble Supreme Court directives in this regard. The total strength of women employees and officers in the company is 218 and 77 respectively.

(iv) ***Mazagon 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 towards harnessing their full potential. A database has been prepared to collect comprehensive information on the profile of women employees to evolve meaningful policy in order to improve the status and position of women employees. Similarly, MDL have a Standing Committee on Redressal of Complaints of Sexual Harassment.

(v) ***Bharat Dynamics Limited (BDL):*** There were 215 women

employees (30 Executives and 185 are non-Executives) in December, 2005. The company has amended its Standing Orders to include sexual harassment of women employees at work place as misconduct. A Complaints Committee headed by a lady Additional General Manager with five Women and one male officer as members has been appointed. The Company accords necessary facilities to women employees for participation in the conferences/ programmes organized by Central Public Sector Undertaking from Women in Public Sector (WIPS).

(vi) ***Mishra Dhatu Nigam Limited (MIDHANI):*** The company continued its focus on empowering women employees by providing a necessary platform to realize their potential and creating necessary environment at all work places with statutory safeguards and amenities, so that they can work safely, with due dignity. There is a well designed redressal mechanism in place.

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, 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 metres 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 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 theatres 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 weapons 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

1. Matters relating to Ex-Servicemen including pensioners.

2. 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 Scheme/ 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 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 Defence Accounts.

MINISTERS, CHIEFS OF STAFF AND SECRETARIES WHO WERE IN POSITION FROM APRIL 1, 2005 ONWARDS

RAKSHA MANTRI

Shri Pranab Mukherjee — From May 23, 2004 onwards

RAKSHA RAJYA MANTRI

Shri B.K. Handique — From November 30, 2004 to January 29, 2006

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 Ajai Vikram Singh
From July 1, 2004 to July 31, 2005

Shri Shekhar Dutt
From August 1, 2005 onwards

Secretary, Defence Production

Shri Shekhar Dutt
From August 2, 2004 to July 31, 2005

Shri Dhanendra Kumar
From July 31, 2005 to October 31, 2005

Shri K.P. Singh
From November 2, 2005 onwards

Secretary (DR&D) and Scientific Advisor to Raksha Mantri

Shri M. Natarajan
From August 31, 2004 onwards

Secretary (Defence Finance)/ Financial Advisor (Defence Services)

Ms. Somi Tandon
Secretary (Defence Finance)
From August 10, 2004 to July 31, 2005

Smt. Sheela Bhide,
Addl Secy & FA(Acqn)
From August 4, 2005 to
November 8, 2005

Shri V.K. Misra
Financial Advisor (Defence Services)
From November 8, 2005 onwards

Chief of Army Staff

General J.J. Singh,
PVSM,AVSM,VSM, ADC
From February 1, 2005 onwards

Chief of Naval Staff

Admiral Arun Prakash,
PVSM, AVSM, VrC, VSM, ADC
From August 1, 2004 onwards

Chief of Air Staff

Air Chief Marshal S.P. Tyagi,
PVSM,AVSM,VM,ADC
From December 31, 2004 onwards

SUMMARY OF LATEST COMPTROLLER & AUDITOR GENERAL (C&AG) REPORT ON THE WORKING OF MINISTRY OF DEFENCE

I. DEPARTMENT OF DEFENCE

Poor Management of Peace Keeping Mission Accounts: Permanent Mission of India (PMI) held an amount of USD 81.70 Million (Rs. 393 crore) in Peace Keeping Mission accounts maintained at New York without proper investment. At the instance of audit, PMI negotiated with the bank and got additional credit of interest of USD 130590 (Rs. 60.16 lakh) from January to September 2003 with future recurring benefits. The benefit of earning interest of an estimated USD 0.2 Million (Rs. 96 lakh) per annum however had been lost in the past.

(Para 2.1 of Report No. 6 of 2005)
(Army and Ordnance)

Delayed purchase and insignificant utilization of equipment procured under the Fast Track Procedure: Demining equipment valuing Rs. 103.91 crore were procured from a foreign firm under "Fast Track Procedure" in view of operational urgency. The equipment were received eight to sixteen months of requirement. Army had, meanwhile, to resort to manual demining which involved risk to human life.

(Para 2.2 of Report No. 6 of 2005)
(Army and Ordnance)

Non-utilisation of Radio Receiver Sets: Radio receiver sets valuing Rs.7.79 crore urgently required for national security remained unutilized from May 2002 onwards due to rejection of antenna mast, which was an accessory and could have been replaced by purchasing at risk and cost of defaulting firm.

Ministry also confirmed the fact in December 2004 that the equipment was still lying unutilized and rejection of equipment was due to lack of coordination between various agencies.

(Para 2.4 of Report No. 6 of 2005)
(Army and Ordnance)

II. ARMY

Working of Army Base Workshops: Eight Army Base Workshops provide repair and overhaul support to the Army for tanks, infantry combat vehicles, artillery guns, transport vehicles and other equipment. Performance audit of the base workshops disclosed significant under performance with reference to the targets for overhaul. They missed the targets of overhaul by 40 to 68 *per cent* during 1999-2004. The inefficient performance left the Army

with accumulation of large number of repairable tanks, combat vehicles and guns, which could affect their battle readiness. The facilities for overhaul of Bofors artillery gun at the annual capacity of mere 20 were woefully inadequate to cover the overhaul requirements of the guns.

The norms for estimating the capacity of the base workshops and the yardstick for overhaul of tanks were slack and need to be tightened. Besides, the Army and the base workshops need to pay attention to advance planning and procurement/ manufacture of the spares required for repair/ overhaul.

(Para 3.1 of Report No.6 of 2005)
(Army and Ordnance)

Recoveries*/ *Savings at the instance of Audit: Based on audit observations relating to irregular payments, units/ formations recovered unauthorised payment of various allowances, electricity duty, testing charges, electricity/ rent and allied charges, liquidated damages etc. amounting to Rs 3.52 crore and cancelled 14 irregular work sanctions resulting in savings of Rs 18.33 crore.

(Para 3.2 of Report No.6 of 2005)
(Army and Ordnance)

Infructuous expenditure of Rs.2.63 crore on invalidation of recruits due to suspect medical examination at the time of recruitment: Between 1999 and 2004, 1608 recruits declared medically fit at the time of their enrolment by Recruiting Medical Officers (RMO) were subsequently declared medically unfit during second medical examination. Out of these, 1083 recruits were invalidated on the grounds of diseases, which existed even before enrolment but could not be detected by RMO casting doubts on the quality of medical examination. This led to infructuous expenditure of Rs.2.63 crore on pay, allowances and ration of invalidated recruits.

(Para 3.3 of Report No.6 of 2005)
(Army and Ordnance)

Loss of Rs.1.44 crore due to over provisioning of specialized Oil-OX-320: Directorate General of Supplies & Transport (DGST) procured large quantity of oil-OX-320 (a lubricant) having a limited shelf life without assessing the actual requirement resulted in a wasteful expenditure of Rs 1.44 crore on over provisioning of oil.

(Para 3.7 of Report No.6 of 2005)
(Army and Ordnance)

Avoidable payment of container detention charges: Failure of Directorates of Service Headquarters/ consignees to send shipping documents to Embarkation Headquarters (EHQ) in time coupled with the delay by EHQs in fulfilling port formalities resulted in avoidable

payment of container detention charges of Rs.1.04 crore.

(Para 3.8 of Report No.6 of 2005)
(Army and Ordnance)

III. WORKS AND MILITARY ENGINEER SERVICES

Engineer Stores Depot: The Engineer Stores Depots (ESDs) Kankinara and Delhi Cantonment responsible for procurement, receipt and issue of engineer equipment, plant and stores of engineer origin, failed to meet the demands of the users timely and effectively affecting the performance of the dependent units. The Engineer Stores Depot Kankinara is largely underloaded while having the major share of manpower.

(Para 4.1 of Report No.6 of 2005)
(Army and Ordnance)

Extra expenditure due to delay in implementing 'Fast Track Procedure': Failure of Military Engineer Services (MES) to accept the tenders for married accommodation projects within the time stipulated under the Fast Track Procedure led to re-tendering and resultant extra expenditure of Rs.1.44 crore on acceptance of the contracts at higher rates. The main objective of sanctioning the work under Fast Track Procedure was thus defeated.

(Para 4.2 of Report No.6 of 2005)
(Army and Ordnance)

IV. DEPARTMENT OF DEFENCE PRODUCTION

Non-recovery of Rs 1.17 crore from a firm on failure to complete the supply: In violation of Ministry's guidelines of 1987, Department of Defence Production paid an advance of Rs 48.82 lakh to a firm for the supply of Arm of Road Wheel. The firm failed to supply the full quantity and consequently a sum of Rs 1.17 crore on account of advance and interest remained unrecovered even after a period of more than eight years.

(Para 5.1 of Report No.6 of 2005)
(Army and Ordnance Factories)

Infructuous expenditure of Rs. 2.77 crore on procurement of Ammunition shells: Department of Defence Production did not cancel a contract despite failure of the firm to supply the item for over eight years. The long delay resulted in the item being no longer required leading to wasteful expenditure of Rs. 2.77 crore and undue benefit to the firm

(Para 5.3 of Report No.6 of 2005)
(Army and Ordnance Factories)

V. RESEARCH & DEVELOPMENT ORGANISATION

Failure to recover advance of Rs 12.93 crore from a foreign firm: While importing modification kits for air defence system, Defence Research and Development

Laboratory (DRDL) accepted a bank guarantee for advance payment of Rs 12.93 crore as per vendor's format. When the vendor did not supply the equipment due to arms embargo, DRDL failed to encash the bank guarantee and recover the amount as the format favoured the foreign vendor.

(Para 6.1 of Report No.6 of 2005)
(Army and Ordnance Factories)

VI. BORDER ROADS ORGANISATION

Avoidable extra expenditure due to injudicious planning: Army Headquarters approved the road improvement work in Srinagar-Sonamarg-Gumri (SSG) road to National Highways Double Lane (NHDL) specification in October 1999. Meanwhile, Director General Border Roads executed an intermediate berm strengthening work on three portions of the same stretch leading to duplication of work and an avoidable extra expenditure of Rs.72.83 lakh.

(Para 7.1 of Report No.6 of 2005)
(Army and Ordnance Factories)

VII. ORDNANCE FACTORY ORGANISATION

Performance of Ordnance Equipment Group of factories: Review of performance of ordnance equipment group of factories, which are entrusted with manufacturing of clothing items of combat uniforms, parachutes, tents, blankets etc. for defence services disclosed significant underperformance. The ordnance factories could not meet the targets of production and overstated the figures of production and issues in their report and accounts. They carried forward large spill-over productions from the previous years during each of the financial years covered under the review. The material and labour cost of the same items produced by two or more factories varied in an unacceptable range. The ordnance factories paid enormous amount of overtime, while the available standard man-hours remained unutilized. The factories failed to realize good value for money from equipment/ machines due to setting up excess capacity, sub-optimal utilization and failure to commission the machines.

(Para 8.2 of Report No.6 of 2005)
(Army and Ordnance)

Extra expenditure due to rejection of 5.56 mm rifles: Rifle Factory Ishapore incurred extra expenditure of Rs. 3.05 crore in manufacture of 2800 service rifles, which were issued as Drill Purpose due to rejection in proof. The factory also accumulated 866 rejected rifles valuing Rs. 1.50 crore that were awaiting

conversion for use in training establishment.

(Para 8.3 of Report No.6 of 2005)
(Army and Ordnance)

Extra expenditure in procurement of item from sister factory: Ordnance Factory, Dehu Road obtained tail units from a sister factory at un-economic costs in disregard of OFB instructions. This led to an additional burden of Rs.3.04 crore on the defence exchequer.

(Para 8.4 of Report No.6 of 2005)
(Army and Ordnance)

Loss due to defective manufacture of cartridge cases: Defective manufacture of empty cartridge cases at Ordnance Factory, Varangaon and Metal and Steel Factory, Ishapore resulted in rejection of cartridge cases worth Rs.6.44 crore without any prospect of its utilization.

(Para 8.6 of Report No.6 of 2005)
(Army and Ordnance)

Loss due to rejection of ammunition: Defective manufacture of 30 mm Armour Piercing Tracer ammunition at Ordnance Factory Khamaria had resulted in rejection of ammunition worth Rs.17.12 crore during 2000-01 to 2003-04.

(Para 8.7 of Report No.6 of 2005)
(Army and Ordnance)

VIII. AIR FORCE AND NAVY

Avoidable expenditure on repatriation/ expatriation due to defective drafting of a contract: Three Naval frigates, Talwar, Trishul and Tabar acquired at a cost of Rs. 3040 crore were delivered after delays ranging from seven to thirteen months. Naval HQ failed to synchronise the training of the crew of the frigates with the frigates' actual delivery schedule. Delay to repatriate the crew immediately after training, irregular retention of personnel, coupled with expatriation of crew caused avoidable expenditure of Rs. 30.12 crore. Navy also failed to levy liquidated damages of Rs. 177.10 crore on the builder.

(Para 2.1 of Report No.7 of 2005)
(Air Force and Navy)

Exploitation of Dornier Aircraft: Nine years after CCPA approved acquisition of Dornier Aircraft, Navy is yet to acquire vital operation role equipment for the aircraft, limiting the role of eight aircraft costing Rs. 188 crore to mere surveillance as against their specific role of maritime reconnaissance and anti submarine warfare.

(Para 2.2 of Report No.7 of 2005)
(Air Force and Navy)

Unauthorised operation of training institutions in Naval Bases: Indian Navy permitted running of three professional institutions in Naval Bases in Mumbai and Visakhapatnam without proper authorization. These institutions utilize Naval infrastructure and installation located in high security area. Revenues earned through exploitation of Government land and buildings were retained in non-public funds. Naval authorities also levied unduly low rents on these institutions.

(Para 2.3 of Report No.7 of 2005)
(Air Force and Navy)

Non accounting of revenues earned from Defence Assets: Indian Navy was crediting gate money (estimated at Rs. 1.10 crore) realized from visitors of a museum run on a de-commissioned Navy ship to non-public funds. Air Force and Naval authorities are using defence assets for golf courses although these are not authorized under scales of accommodation. Entire income from them was being credited to non-public funds.

(Para 2.5 of Report No.7 of 2005)
(Air Force and Navy)

Recovery from PSUs at the instance of Audit: At the instance of Audit, the Defence Accounts Department recovered Rs. 3.93 crore towards interest from Bharat Dynamics Ltd. Repair charges of Rs. 26.45 lakhs for manufacturing defect and excess payment of Rs. 23.18 lakh due to wrong application of rates were also recovered from Hindustan Aeronautics Limited.

(Para 2.6 of Report No.7 of 2005)
(Air Force and Navy)

Irregular payment of Modified Field Area Allowance: In violation of Govt. orders, DSC personnel attached to an Air Force unit who were not eligible for Field Service Concessions, drew Modified Field Area Allowance of Rs. 0.57 crore (approximately).

(Para 2.7 of Report No.7 of 2005)
(Air Force and Navy)

Irregularity in purchase of mosquito nets: HQ Maintenance Command, Air Force, wrongly granted Proprietary Article Certificate for mosquito nets to a private firm and placed orders on them on single tender basis. Subsequently, repeat orders were also placed on the same firm. Requirements were arbitrarily inflated, which resulted in excess procurement of mosquito nets valued at Rs.3.78 crore.

(Para 3.1 of Report No.7 of 2005)
(Air Force and Navy)

Avoidable extra expenditure on procurement of stores from HAL: Air HQ placed supply order on HAL

for aircrafts spares even though these were available from abroad at less than one-third the cost. This resulted in extra expenditure of over Rs. 4.29 crore.

(Para 3.2 of Report No.7 of 2005)
(Air Force and Navy)

Recovery at the instance of Audit: Indian Air Force deposited Rs. 21.40 lakh, realized from tea gardens, into Government Accounts at the instance of Audit. In another case, erroneous payment of Rs. 5.53 lakh on account of Composite Transfer Grants and Baggage Allowance to commissioned officers on first appointment was also recovered by IAF at the instance of Audit.

(Para 3.5 of Report No.7 of 2005)
(Air Force and Navy)

Delay in setting up of facilities for Sea King helicopter: Despite release of entire project cost of Rs. 71.68 crore to HAL, the repair and overhaul facilities for the transmission systems of Sea King helicopters was delayed. Out of this released amount, Rs. 36.68 crore were paid in violation of CCS stipulates. In absence of repair facilities in the country, Sea King components were sent abroad for overhauls at a cost of Rs. 16.90 crore since April 2003.

(Para 4.1 of Report No.7 of 2005)
(Air Force and Navy)

Procurement of spares for frigates: Navy imported 446 items of spares exercising special financial powers delegated for meeting operational requirements. The import was despite the fact that 252 items were indigenously available with HAL, of which, 114 items were cheaper by Rs.1.76 crore. Past trends in consumption revealed that procurement of seven items costing Rs.10.41 crore was unnecessary. The foreign firm charged different prices for the same items, resulting in excess payment of Rs.0.40 crore.

(Para 4.4 of Report No.7 of 2005)
(Air Force and Navy)

Procurement of defective shoes: Violation of induction procedure of new clothing items by Naval HQ resulted in infructuous expenditure of Rs. 39 lakh on procurement of unsuitable shoes.

(Para 4.5 of Report No.7 of 2005)
(Air Force and Navy)

Lack of competitive tendering in purchase of clothes for Naval uniforms: Procurement of uniform material costing Rs. 9.94 crore on single tender basis resulted in extra expenditure of Rs. 3.62 crore with reference to rates obtained subsequently on competitive tendering.

(Para 4.7 of Report No.7 of 2005)
(Air Force and Navy)

Ill-conceived augmentation of testing facilities: Center for Airborne System (CABS), Bangalore, augmented Lightning Test Facilities investing Rs 1.20 crore on the basis of willingness expressed by Bharat Heavy Electrical Limited (BHEL) to use the HVDC testing facilities in CABS. BHEL had, however, not placed a single order with CABS even after four years of the augmentation. The augmented facilities remained unutilized for almost four years rendering the investment unproductive.

(Para 5.1 of Report No.7 of 2005)
(Air Force and Navy)

Delay in development of Advanced Experimental Torpedo: Despite delay of over 12 years and expenditure of Rs 46.24 crore, the Advanced Experimental Torpedo project failed to fructify, compelling Navy to extend the life of obsolete torpedoes.

(Para 5.2 of Report No.7 of 2005)
(Air Force and Navy)

IX. DEPARTMENT OF DEFENCE PRODUCTION (COMMERCIAL)

Bharat Electronics Limited

Procurement of spares in anticipation of orders from customers resulted in blocking of funds of Rs.4.60 crore for over seven years and consequential loss of interest of Rs.4.57 crore.

(Para 7.1.1 of Report No.3 of 2005)
(Commercial)

In contravention of DPE guidelines, inclusion of 'family planning incentive' as part of 'emoluments' for payment of *ex-gratia* under voluntary retirement scheme resulted in extra expenditure of Rs.51.60 lakh.

(Para 7.1.2 of Report No.3 of 2005)
(Commercial)

Garden Reach Shipbuilders & Engineers Limited

Introduction of revised pay scales retrospectively in contravention of the DPE guidelines resulted in avoidable expenditure of Rs.3.22 crore.

(Para 7.2.1 of Report No.3 of 2005)
(Commercial)

Goa Shipyard Limited

Due to construction of housing colony without basic amenities such as road and water supply, the Company could not allot the quarters to its employees. This resulted in blocking up of funds amounting to Rs.8.17 crore with a consequent loss of interest of Rs.93.96 lakh.

(Para 7.3.1 of Report No.3 of 2005)
(Commercial)

Hindustan Aeronautics Limited

Abnormal delay in realisation of deferred revenue expenditure from the Ministry of Defence resulted in loss of interest of Rs.6.68 crore.

(Para 7.4.1 of Report No.3 of 2005)
(Commercial)

Failure on the part of the Company to detect inclusion of imported items

as indigenised items in the price catalogue resulted in avoidable extra expenditure/commitment of Rs.6.60 crore.

(Para 7.4.2 of Report No.3 of 2005)
(Commercial)

Failure to furnish the required indemnity bond/documentation in time, to avoid shortages in supply and to ensure continuous pursuance of the invoices with Mazagon Dock Limited, resulted in delayed realisation of dues with consequent loss of interest of Rs.1.88 crore

(Para 7.4.3 of Report No.3 of 2005)
(Commercial)

Hindustan Aeronautics Limited executed an order without finalising the terms of purchase order resulting in non-realisation of packing and forwarding charges of Rs.1.56 crore.

(Para 7.4.4 of Report No.3 of 2005)
(Commercial)

Mazgaon Dock Limited

The Company incurred a loss of Rs.11.90 crore due to unrealistic estimation while tendering for the construction of a Tug for Jawaharlal Nehru Port Trust.

(Para 7.5.1 of Report No.3 of 2005)
(Commercial)

Bharat Electronics Limited

Project Implementation, Production Planning, Marketing Activities and Internal Controls

- The Company's investment of Rs. 27.40 crore in seven projects was largely Idle/ unproductive due to preparation of unrealistic feasibility reports, under utilisation of capacity due to unwarranted expansion, non-receipt of anticipated orders, inability to capture market and non safeguarding of its interests.
- The Company could not achieve its objective of self-reliance through indigenization as it continued to import 73 per cent of the raw materials and components.
- The Company could not withstand the competition in non-defence sector resultantly its sales (non-defence sales to total sales) decreased from 26.06 per cent in 1999-00 to 22.85 per cent in 2003-04. It also incurred loss of Rs.8.57 crore in taking up four products meant for civilian sector.
- There was delay in raising sales invoices from 12 to 424 days resulting in loss of interest of Rs.3.93 crore.
- The Company's existing internal control procedures were not adequate to keep

pace with increasing business activities and change in technology.

(Report No.4 of 2005)
(Commercial)

Bharat Electronics Limited

Information Technology Audit on the Computerisation of inventory management at Bangalore Complex

- The primary objective of implementation of Integrated Information System with particular emphasis on scalability and upgradeability was not achieved.
- Discrepancies to the tune of Rs.67.75 crore existed in the comparable data between Manufacturing Resource Planning System-II (MRP-II) and Integrated Finance Accounting System (IFAS); 350 items valued at Rs.26.07 crore appearing in IFAS did not appear in MRP-II.
- Alteration of financial data in IFAS for reversal of sale of Rs.29.78 crore was done but no alterations took place with stock position.
- The criterion adapted by the system for fast, slow and non-moving Inventories analysis was flawed and consequently material worth Rs.2.16 crore which had not moved for one to two years was identified as fast-moving in one of the divisions.
- Right of access had been giving to employees without analysis of minimum access requirement.

(Report No.4 of 2005)
(Commercial)

GARDEN REACH SHIPBUILDERS AND ENGINEERS LIMITED

Review on Shipbuilding Activities

- The Government of India acquired the erstwhile Joint Stock Company under the name and style of Garden Reach Shipbuilders and Engineers Limited (GRSE) in April 1960 to cater to the defence requirements relating to shipbuilding and ship repair. The company has three functional divisions namely ship division, engineering division and engine division. Of these, ship division carries out the main activity of shipbuilding.
- Shipbuilding is essentially a manufacturing-cum-assembly industry and the capacity of shipbuilding should be judged taking into account all aspects of ship construction. It should be measured in terms of a single parameter like

"Standard Ship Unit" (SSU). Though other Companies involved in shipbuilding activities under the Ministry of Defence have adopted this parameter, GRSE has, in spite-of being in operation for the last 44 years, failed to measure its capacity in terms of SSU.

- While the Company has been earning profits, this has been essentially on account of 'cost plus' contracts where the customer ensures a margin over the actual cost.
- Of the vessels delivered by the Company in the last six years, there was a time overrun ranging from one to 125 months. There was a cost overrun of Rs.1669.88 crore in the construction of 15 ships. In addition, the Company has incurred liquidated damages amounting to Rs.7.35 crore due to delays that occurred on the part of the Company.
- The Company incurred an avoidable expenditure of Rs.l4.28 crore on salary and wages for idle mandays.

(Report No.4 of 2005)
(Commercial)

Hindustan Aeronautics Limited

Information Technology Audit on computerisation of integrated material management system.

- The Local Area Network (LAN)/ Wide Area Network (WAN) established in March 2003 in three Divisions of the Company at a cost of Rs.2.53 crore were not being utilised optimally due to non-compatibility with Central Network Server Systems.
- There was absence of a well laid down password policy and logical access control mechanism rendering the system vulnerable to abuse besides making it difficult to fix responsibility in case of manipulation/ corruption of the database.
- Various deficiencies in application control resulting in incomplete, inaccurate and unreliable data were observed for want of required level of input controls, absence of validation checks/constraints at data entry level, duplication of work without compensating controls, duplicate material codes, duplicate part numbers, error in programme logic, non-inclusion of key fields,

numerous manual interventions and non-devising of monitoring system

- Helicopter Division charged off a sum of Rs.22.64 crore to consumption and cost of sales on an ad-hoc basis through a dummy work order.
- There were negative balances in the material ledger due to deficiencies in system logic/ applications; as such adjustments had to be carried out for Rs.51.38 crore and Rs.67.47 crore in 2002-03 and 2003-04 respectively.
- The Company had not formulated any IT Policy.

(Report No.4 of 2005)
(Commercial)