Annual Report
2003-2004

सत्यमेव जयते

Ministry of Defence
Government of India

Annual Report
2003-04

Ministry of Defence
Government of India

Front Cover:
'Tejas' the world's smallest light weight multi-role aircraft designed by DRDO to meet the demands of Indian Air Force, has sucessfully completed 200 flight tests.

Back Cover:
'INS Talwar', the Stealth Frigate, inducted in the Indian Navy in July 2003 adds to Navy's punch.

Contents

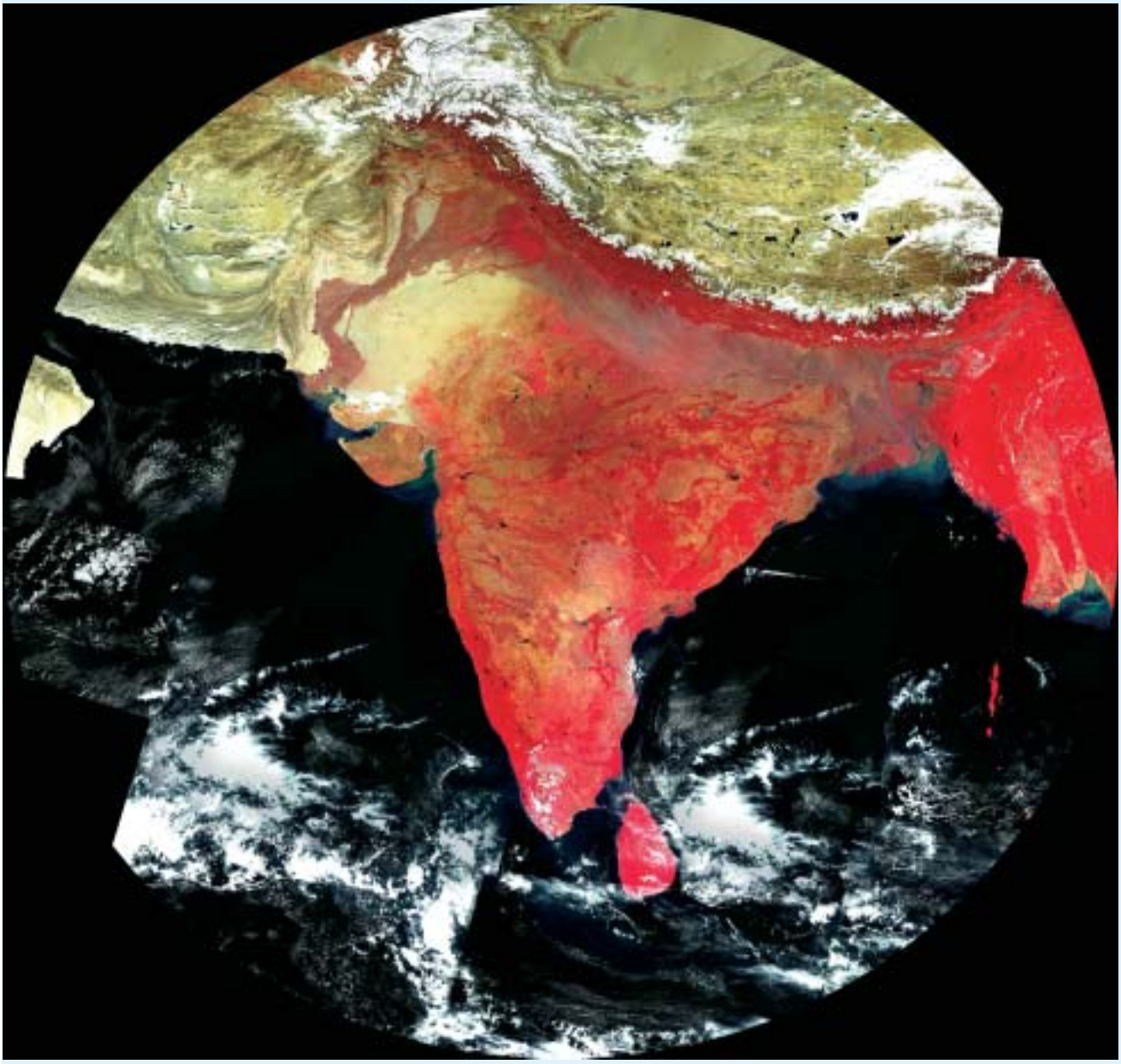
1.	Security Environment	5
2.	Organisation and Functions of the Ministry of Defence	15
3.	Indian Army	25
4.	Indian Navy	39
5.	Indian Air Force	49
6.	Coast Guard	59
7.	Defence Production	71
8.	Defence Research and Development	97
9.	Inter-Service Organisations	115
10.	Recruitment and Training	127
11.	Resettlement and Welfare of Ex-Servicemen	147
12.	Cooperation Between the Armed Forces & Civil Authorities	165
13.	National Cadet Corps	173
14.	Defence Relations With Foreign Countries	183
15.	Ceremonial, Academic and Adventure Activities	201
16.	Activities of Vigilance Units	211
17.	Empowerment and Welfare of Women	213

Appendices

I.	Matters dealt with by the Departments of the Minstry of Defence	219
II.	Ministers, Chiefs of Staff & Secretaries who were in position from April 1, 2003 onwards	223
III.	Summary of latest C&AG Report on the working of Ministry of Defence	224

1

Security Environment



Security environment around India underlines the need for a high level of vigilance and defence preparedness

Few countries face the range of security challenges, concerns and threats that India faces, from terrorism and low-intensity conflict to nuclear weapons and missiles, in its neighbourhood.

1.1 India's security preoccupations are determined by the dynamics of the global and regional strategic and security environment. The post-Cold War international situation and the terrorist attack against the United States on 9/11 have brought about a greater international convergence on global security issues and challenges, though significant differences of perception and action on specifics remain. India's location at the centre of an arc of terrorism between North Africa and South-east Asia, its close proximity to a key source of nuclear proliferation and the continuing acts of terrorism from across her western border require India to maintain a high level of vigilance and defence preparedness. The nature of new threats has also reinforced the need for international cooperation to combat terrorism and proliferation of weapons of mass destruction, and underline the role that India could play in the global response against such forces.

1.2 Global events in recent years have had a profound effect on the strategic environment for India. The collapse of the former Soviet Union has left the US as the pre-eminent world power. The US-led wars in Kosovo, Afghanistan and Iraq have demonstrated US military power and willingness to use it unilaterally or in association with allies or coalition partners; and heralded a worldwide revolution in military affairs using new technologies, notably information and communication technologies, sensors and satellites, and precision-guided munitions.

1.3 Old confrontations have given way to new equations and alignments. The European Union is consolidating and expanding to include much of former East and Central Europe. NATO too is enlarging and has deployed forces in Afghanistan even as Europe has been trying to shape its own common Foreign and Security Policy. Relations between major powers have been, by and large, stable and tension-free. Strains

did appear in transatlantic relations over Iraq, but they did not interfere with cooperation in areas of common approach such as Afghanistan and the US-led Proliferation Security Initiative. Russia continued with its structural reforms and deepening of ties with the US, Europe, China and Central Asia for its security and economic revival. Frictions, characterizing an earlier phase of US-China relations, eased. China is modernizing rapidly, building up its 'Comprehensive National Power'. Global dependency for energy resources on the Gulf remains and is likely to increase, triggering rivalry and competition for access and control of the region and for alternatives sources of energy, notably in Central Asia. Terrorism and the prospect of the use of weapons of mass destruction (WMD) for terrorism, have emerged as the new and most immediate issues of global security concern.

1.4 In response to these and other perceived challenges, the US is redeploying its posture, forces, defences and operational philosophy worldwide. As the pre-eminent world power with global influence and ability to project power, US policies and actions shape the international security environment in many ways, directly or indirectly. There has been a stepped up US presence in varying degrees in the Gulf, Afghanistan, Pakistan, Central Asia and South-east Asia and reductions elsewhere. The US declared Pakistan a Major Non-NATO Ally (MNNA) as a partner in the war against terrorism.

1.5 To an extent not often realized, few countries in the world face the range of security challenges, concerns and threats that India faces today. At one end of the spectrum, India has faced a series of low intensity conflicts such as a proxy war fanned by radical jehadi outfits and supported by state institutions; insurgencies, in many cases tolerated, aided or abetted by sources from outside India; and spillovers of conflicts in neighbouring states. At the other end, it inhabits an environment in which two of its neighbours have nuclear weapons and missiles and its immediate neighbourhood has been a source of nuclear proliferation. In between these poles, it has experienced, in the course of its 50-plus years of post-Independence history, at least four major conventional border wars besides an undeclared war at Kargil on account of external aggression.

1.6 Terrorism is India's primary and most immediate security threat. India's location at the centre of the arc of extremist activism and terrorism and next to its epicenter in Pakistan, amplified by a history of Pakistan's use of it to wage a low-intensity proxy war against India; the prospect of terrorists getting access to weapons of mass destruction; and the wanton disregard they have for the lives of others and themselves, require that India be particularly on guard against the phenomenon. Terrorism in and against India has anticipated and mirrored terrorism worldwide. The original act of mass, synchronized terrorism, similar to the 9/11 attacks in the US, took place in Bombay in 1992. Terrorist attacks in Iraq, Saudi Arabia, Turkey and Spain during the year have been echoed in attacks by terrorist groups motivated by the same ideology in

The fencing along the Line of Control and the international border helps check infiltration.

India, notably the Mumbai bomb blast of August 2003 and frequent acts of terrorism in Jammu and Kashmir.

1.7 Though it is part of the same international phenomenon of jehadi ideology, terrorism faced by India has its specificities. Unlike the non-state nature of most domestic and local manifestations of terrorism, and the international terrorism of Al Qaeda or the Jemmah Islamiyah, the terrorism faced by India is typically cross-border and State-sponsored. Terrorism also draws upon the radicalization of society. As a country with a vital stake in preserving the traditions of peaceful co-existence amongst its diverse and mixed religious communities, India is deeply concerned about the intrusion of dogmatic, alien and extremist religious tendencies funded by some charities and supported by quasi-government institutions in some parts of Asia. India has the size, population, intrinsic character, composition, and national strength to act as a bulwark against the forces of extremism in this region.

1.8 India's response to these multiple threats and challenges has always been restrained, measured and moderate, consistent with its peaceful outlook and reputation as a peace-loving country. Diplomacy remains India's chosen means of dealing with these challenges, but effective diplomacy has to be backed by credible military power. India's strategic and security interests require a mix of land-based, maritime and air capabilities, and a minimum credible deterrent to thwart the threat of use of nuclear weapons against it.

1.9 Connected by land to west, central, continental, and south-east Asia, and by sea to the littoral states of the Indian Ocean from East Africa to the Indonesian archipelago, India is strategically located vis-à-vis both continental Asia as well as the Indian Ocean Region. It has a landmass of 3.3 million sq. kms. and is home to over a billion people with varying ethnic, religious and cultural backgrounds.

1.10 The topography of India is diverse ranging from the snow clad Himalayas with peaks over 28,000 feet to deserts, thick jungles and vast plains. The Siachen Glacier in the North is the world's highest battlefield with posts located as high as 21,000 feet. India's western border runs through deserts, fertile plains and thickly forested mountains. The north-eastern frontier also comprises steep, high ranges and dense tropical forests. To the South, there are ranges close to the sea, inland plateaus interspersed with river valleys, coastal plains, and far flung island territories. On three sides, from Gujarat to West Bengal, it is bordered by the Arabian Sea, the Indian Ocean and the Bay of Bengal. This geographical and topographical diversity, especially on its borders, poses unique challenges to our Armed Forces.

India's response to multiple threats and challenges has been restrained, measured and moderate, consistent with its peaceful outlook and reputation as a peace-loving country.

1.11 India's land frontiers extend across more than 15,500 kms sharing borders with seven neighbours namely Afghanistan, Pakistan, Bangladesh, Myanmar, China, Bhutan and Nepal. Few of them share borders amongst themselves, heightening the focus of their relations with their larger common neighbour.

1.12 India's peninsular shape provides India a coastline of about 7600 kms and an Exclusive Economic Zone of over two million sq. kms. The island territories in the East are 1,300 kms. away from the mainland, physically much closer to South-East Asia. Peninsular India is adjacent to one of the most vital sea-lanes, stretching from the Suez Canal and the Persian Gulf to the Straits of Malacca through which much of the oil from the Gulf region transits. The seas surrounding India have been a theatre of super power rivalry in the past, and continue to be a region of heightened activity from and by extra-regional navies on account of global security concerns.

1.13 Historically, India with its long, layered and textured history stretching back close to 5,000 years, is one of the major sources of civilization, having received, and radiated, influences from and to West and Central Asia, China, Mongolia and East Asia, South-East Asia, the Gulf and East Africa. Today, politically, South Asia hosts a diversity of political experiences and experiments ranging from monarchies and military dictatorships to nascent and established democracies. The region also faces the menace of terrorism and trafficking in, and proliferation of, arms and drugs. In the midst of this, India stands as a centre of economic gravity in the region, a beacon of democracy, despite challenges of human

Vigil on the High Seas by Indian Navy

diversity and economic disparity, a bastion of stability and a symbol of peaceful coexistence and non-violence. An appreciation of India's security concerns and its security is thus critical to regional and global stability and security.

1.14 India's size, strategic location, trade links and Exclusive Economic Zone (EEZ), and a security environment link India's security directly with its extended neighbourhood, particularly neighbouring countries and the regions of Central Asia, South-East Asia, the Gulf and the Indian Ocean. India's location at the top of the Indian Ocean also gives it a vantage point in providing security of shipping for all countries in the Indian Ocean Region.

Though there have been positive developments in Afghanistan and Bhutan, and in India's relations with China and Pakistan, a closer look at the neighbourhood and the wider region continues to present a disturbing picture.

The Regional Security Environment

1.15 Though there have been positive developments in Afghanistan and Bhutan, and in India's relations with China and Pakistan, a closer look at the neighbourhood and the wider region continues to present a disturbing picture. Internal instability, authoritarian and/or military rule, extremist political or religious movements, weak state structures, and insurgencies or ethnic conflicts characterize many of the countries of the region. Despite attempts to crack down on Al Qaeda and Taliban elements on the Pak-Afghan border, the principal threat to peace and stability in the region remains the combination of fundamentalism and terrorism nurtured in madarssas and training camps in the area and the history of ingrained adventurism of a section of the Pakistan military motivated by its obsessive and compulsive hostility towards India. The revelations of the involvement of top Paki-

Fundamentalist activism and terrorism are India's primary security challenges. Pakistan is at its epicentre.

India is concerned about the challenge posed by nuclear proliferation from its neighbourhood.

stani scientists in an elaborate network of clandestine nuclear and missile trade spanning several countries have proven Pakistan's deep involvement in WMD proliferation and cannot be taken lightly.

1.16 Bilaterally, Pakistan has been the source of infiltration, cross-border terrorism, revanchism and military adventurism and nuclear and missile posturing and threats. There are also now concerns related to internal stability in Pakistan on account of sectarian conflict and promotion of fundamentalist forces. Efforts at dealing with them have been partial and selective. It is not yet clear whether the sponsors of terrorism in Pakistan realize that terrorism to the west and to the east cannot be compartmentalized and insulated from each other. There have been assassination attempts on Gen. Musharraf, believed to be by fundamentalist outfits linked to J&K and Al Qaeda.

1.17 Afghanistan has, with the strong support of the international community, advanced along the framework worked out in the Bonn Accord of December 2001. While a new constitution has been agreed to by the Constitutional Loya Jirgah in Afghanistan, and Presidential and parliamentary elections have been announced, and the tasks of reconstruction and rebuilding institutions are progressing, there has been some deterioration in the internal security situation in Afghanistan and on the Pak-

Mid-air refuelling of Indian Air Force planes

Instability in Afghanistan, Nepal, Bangladesh, Sri Lanka and Myanmar pose varying security challenges.

Relations with China are improving.

Afghan border on account of activities of Al Qaeda, the Taliban and other militant outfits. Despite public proclamations of discontinuation of support for the Taliban, infiltration of small groups of fighters into Afghanistan with the intention of fomenting instability especially in the east and south-east is taking place. India has made a major contribution to economic reconstruction in almost every province of Afghanistan in the interest of peace and stability in the country.

1.18 Within the sub-continent, despite close and good relations with most of its other immediate neighbours, lesser security problems continue to complicate relationships. Bangladesh has not been responsive to India's concerns regarding the presence and activities of Indian insurgent groups from the north-east and the Pakistani Inter-Services Intelligence (ISI) on Bangladesh soil, large-scale illegal immigration, and border crimes. A large cache of arms and ammunition bound for the north-east of India was recently detected in Chittagong. There is a need to watch the rising influence of political parties and organizations of fundamentalist and radical Islamic orientation in Bangladeshi society and government.

1.19 In Nepal, the growing influence and grip of the Maoists throughout the country particularly in the Terai area bordering India, and their links with left extremist outfits in parts of India are a cause of serious concern. India has cooperated with Nepal in addressing its security requirements. Bhutan displayed courage and good-neighbourliness in acting against military camps and bases of operations of Indian insurgent groups within its territory in the interest of mutual security. In Sri Lanka, the political stalemate and the suspension of the talks between the LTTE and the Government is a cause of concern though the ceasefire and the commitment of the Sri Lankan political parties to the peace process remain positive features. The LTTE is a potent non-state military force that continues to arm itself, and the danger of backsliding of the political process remains. Despite periodic coordination of efforts, Indian insurgent groups from the north-east continue to operate from camps in Myanmar.

1.20 China is pursuing a policy of rapid military modernization drawing on the lessons of recent US-led wars while seeking peaceful relations with its neighbours in order to consolidate itself politically and economically internally and build up its 'Comprehensive National Strength'. India and China have stepped up efforts to build mutual trust and confidence including between their armed forces. Raksha Mantri, Shri George Fernandes, visited China in April 2003. The Chinese Defence Minister, Gen. Cao Gangchuan, returned the visit in March 2004. Both sides are trying to address differences over the boundary question and are agreed that pending an ultimate boundary settlement, the two countries would work together to maintain peace and tranquillity in their border areas and continue to implement the agreement

Fundamentalist activism in West, Central and South-East Asia needs to be watched.

Concerns over security of sea-lanes between Persian Gulf and East Asia shared with South-East and East Asia.

signed for this purpose. A decision was taken during Prime Minister Vajpayee's visit to China in June 2003 to appoint Special Representatives to explore, from the political perspective of the overall bilateral relationship, the framework of a boundary settlement. At the same time, China's close defence relationship with and regular military assistance to Pakistan, including assistance in the latter's nuclear and missile programmes at critical stages, its build up in the Tibet Autonomous Region, its military modernization, its nuclear and missile arsenals, and its continental and maritime aspirations, require observation.

1.21 Further west of the region, the situation in West Asia and the US-led war against Iraq continues to feed Islamic radicalism aggravating fault-lines based on religion and concern in relation to the security of the 3.5 million strong Indian community resident in the Gulf states, and of oil and energy supplies. It has distracted international attention from Pakistani behaviour in its neighbourhood, particularly in India and Afghanistan. Sunni resistance, radical Shia opposition and the opportunity the US-led action and presence in Iraq has provided for radical Islamists and jehadi terrorists, has made the situation in Iraq volatile with daily incidents of resistance and terrorism against Western interests in Iraq and elsewhere. New places in Iraq, Saudi Arabia, Turkey and Spain were added to the terrorist target map. Efforts by fundamentalist outfits to destabilize Central Asia continue. Central Asia also attracts strategic attention because of its location and energy assets.

Indian Armed Forces prepared for the full spectrum of security challenges from terrorism and low-intensity conflict to conventional war and the possibility of the use of nuclear weapons and missiles.

1.22 Fundamentalist religious activism and periodic acts of terrorism across South-east Asia, most notably Indonesia, and the appearance of terrorist cells linked to international terrorism has also focused local, regional and international concern on the region as a new hub of militant Islam. India and South-East Asia have a vital interest in preserving the traditions of peaceful co-existence amongst their diverse religious communities against the intrusion of fundamentalist and exclusivist tendencies. India's rapid economic integration with the Asia-Pacific also underpins a common interest with South-east and East Asia in the security of shipping and energy flows from the Western Indian Ocean to the Asia-Pacific. Evidence of an elaborate nuclear and missile trade involving the DPRK and Pakistan is also a matter of serious concern to India.

Conclusion

1.23 The security environment highlighted above brings out four key elements fundamental to India's security planning. These are:

(a) The Indian Armed Forces have to

India's force postures are defensive in orientation, while its nuclear policy is characterized by a commitment to no-first-use, moratorium on nuclear testing and minimum credible nuclear deterrence.

be prepared for the full spectrum of security challenges from terrorism and low-intensity conflict to conventional war and the possibility of the use of nuclear weapons and missiles.

(b) India is not a member of any military alliance or strategic grouping; nor is this consistent with our policies. India thus requires a certain independent deterrent capability.

India is fully committed to maintaining peace with its neighbours and stability in the region through unilateral restraint, confidence building and dialogue and expanding bilateral interactions.

(c) Due to an externally inspired low-intensity proxy war, India's Armed Forces are involved in internal security functions – more than most other armed forces - requiring a corresponding force structure and orientation.

(d) India's interests and responsibilities in the North Indian Ocean, including the security of her EEZ and island territories, and shipping in the region, highlight the need for a blue water naval capability commensurate with its responsibilities.

1.24 Against this strategic backdrop, India remains fully committed to maintaining peace with its neighbours and stability in the region through a combination of defence-preparedness, unilateral restraint, confidence building and dialogue, and expanding bilateral interactions. In the area of defence-preparedness, it has reformed its higher defence management and streamlined procurement procedures. Its force postures remain defensive in orientation while its nuclear policy is characterized by a commitment to no-first-use, moratorium on nuclear testing, minimum credible nuclear deterrence, and the rejection of an arms race or concepts and postures from the Cold War era.

2

Organisation and Functions of the Ministry of Defence

An illuminated view of the South Block which houses the Ministry of Defence.

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.

HISTORICAL BACKGROUND

2.1 A Military Department was created in the Government of the East India Company at Calcutta in the year 1776, having the main function to sift and record orders relating to the Army issued by various Departments of the Government of East India Company. The Military Department initially functioned as a branch of the Public Department and maintained a list of Army personnel.

2.2 With the Charter Act of 1833, the Secretariat of the Government of East India Company was reorganised in four Departments, including a Military Department, each headed by a Secretary to the Government. The Army in the Presidencies of Bengal, Bombay & Madras functioned as respective Presidency Army till April 1895, when the Presidency Armies were unified into a single Indian Army. 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 The supreme authority over the Indian Army vested in the Governor General-in-Council, subject to the Control of the Crown, which was exercised by the Secretary of State for India. Two Members in the Council were responsible for military affairs, one of whom was the Military Member, who supervised all administrative and financial matters, while the other was the Commander-in-Chief who was responsible for all operational matters. The Military Department was abolished in March 1906 and it was replaced by two separate Departments, the Army Department and the Military Supply Department. In April 1909 the Military Supply Department was abolished and its functions were taken over by the Army Department. The Army Department was redesignated as the Defence Department in January 1938. The Department of

Defence became the Ministry of Defence under a Cabinet Minister 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. 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 has been changed to Department of Defence Production. A Scientific Adviser to the Defence Minister was appointed to advise him on scientific aspects of military equipment, research and design of equipment used by the Defence forces. In 1980, the Department of Defence Research and Development was created.

Defence on Display : An aerial view of the Republic Day Parade.

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 in the context of the defence of the country.

DEPARTMENTS, SERVICE HEADQUARTERS AND COMMITTEES

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 consists of three Departments, namely, Department of Defence, Department of Defence Production and Department of Defence Research & Development. The Defence Secretary functions as head of the Department of Defence and is additionally responsible for

co-ordinating the activities of the three Departments in the Ministry. The principal functions of all the Departments are as follows:

(i) The Department of Defence deals with the Integrated Defence Staff (IDS) and the 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 for 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 used by the Services.

2.8 The Finance Division of the Ministry of Defence is headed by Secretary Defence (Finance). He 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). The detailed note of items dealt in various Departments of the Ministry of Defence is given Appendix – I of the 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-Services 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 in which the Service Chiefs discuss matters having a bearing on the activities of the Services and 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 three Departments of the Ministry and the Secretary

Defence (Finance) who held positions from April 01, 2003 onwards is given in Appendix-II to this report.

REFORMS IN MANAGEMENT OF DEFENCE

2.12 The broad array of challenges both existing and potential to the national Security in the fast changing geo-strategic security environment mandate a periodical re-appraisal of our security procedures to cope with them. The Government, keeping this in view, had instituted a comprehensive review of the National Security System in its entirety for the first time in the history of independent India. The review was carried out by a Group of Ministers(GOM) constituted on April 17, 2000. The GOM consisted of the Home Minister, the Raksha Mantri, the External Affairs Minister and the Finance Minister. The Group of Ministers set up four Task Forces one each in the areas of (i) Internal Security; (ii) Border Management; (iii) Intelligence Apparatus; and (iv) Management of Defence, which were multi-disciplinary in character and comprised of acknowledged experts, to facilitate its tasks. The recommendations of the Group of Ministers, which aim at integration of the civil and military components and ensuring 'Jointness' and 'Synergy' among the Armed Forces, were approved by the Government on May 11, 2001.

2.13 The Report of the GOM in so far as 'Management of Defence' is concerned included amongst others, measures such as creation of the Chief of Defence Staff(CDS), creation of a Defence Procurement Board, a Defence Production Board, a Defence R&D Board, preparation of holistic and integrated Defence Perspective Plans for 15-20 years, establishment of a National Defence University, effective media management, establishment of Andaman & Nicobar Island Command and Strategic Forces Command, integration of Service Headquarters with the Ministry of Defence and delegation of higher administrative and financial powers to the Services. Service Headquarters which were until now used to be attached offices of the Ministry of Defence have now been integrated with the Ministry as Integrated Headquarters of the Ministry of Defence. Some of the major reforms are detailed in subsequent paragraphs.

2.14 Integrated Defence Staff : With a view to ensure higher degree of jointness amongst the Services and attempt inter-service and intra-service prioritization, the Government has set up the Integrated Defence Staff, headed by the Chief of Integrated Staff functioning under Chiefs of Staff Committee (COSC). The role of COSC is to supervise the Integrated Defence Staff, to chair all multi-Service bodies and the Defence Crisis Management Group (DCMG). Chiefs of Staff Committee is also responsible for the coordination of long-term plans, five year plans and annual budgetary proposals of the three Services in consultation and co-ordination with the Integrated Services Headquarters. The Chief of Integrated Staff to Chairman, Chiefs of Staff Committee (CISC) renders advice to the Government on prioritization, on developing force levels through restructuring

proposals, undertakes net assessment of the national capability, formulates joint doctrines, conceptualises policy and programmes on joint planning and military education, renders advice for evolving responses to non-conventional and conventional threats to national security. CISC also proposes measures for jointness amongst the Armed Forces with a view to enhance the efficiency and effectiveness. Within a short period of its formation, this organisation has become fully functional and is producing positive results.

2.15 Defence Intelligence Agency : The Government has also set up the Defence Intelligence Agency (DIA) under the Director General Defence Intelligence Agency to co-ordinate and synergise the intelligence Wings of the Services. The Defence Intelligence Agency is responsible for providing integrated intelligence inputs to the higher echelons of Defence Management.

2.16 Defence Acquisition Council : The Government has set up a Defence Acquisition Council headed by the Raksha Mantri for decision making in regard to the totality of the new planning process, which *inter-alia* involves according 'in principle' approval of capital acquisitions in the long term perspective plan and according 'in principle' approval for each capital acquisition programme. The decisions flowing from the Defence Acquisition Council are to be implemented by the following three Boards:-

(i) Defence Procurement Board headed by the Defence Secretary;

(ii) Defence Production Board headed by the Secretary (Defence Production); and

(iii) Defence Research & Development Board headed by Secretary (Defence Research & Development).

These Boards have been entrusted with specific functions. A Defence Acquisition Wing headed by Special Secretary (Acquisition) has also been created to assist the Defence Procurement Board in its functioning.

2.17 To work out the recommendations for the Council, two committees have been formed with representatives of Headquarters Integrated Defence Staff, three Service Headquarters, Defence Research & Development Organisation and Department of Defence Production. These are the Annual Acquisition Plan Categorisation Committee and the Annual Acquisition Plan Categorisation Higher Committee. A Cross Budgeting Team has also been formed to provide an integrated view of the plans, weapons and equipment and budgetary support to the acquisition process. This integrated approach has facilitated expeditious decision-making and brought about higher degree of transparency, cost effectiveness to the process of acquisition of equipment, weapons and weapon systems. It has also given a boost to indigenous development and production programmes in the country.

2.18 Defence Technology Council (DTC): Defence Technology Council has been constituted under the Chairmanship of Raksha Mantri by the Government to provide guidance and supervision of growth and

promotion of research, development and production related to Defence Technologies. DTC will assist the Defence Acquisition Council in taking holistic decisions on specific Defence Projects related to long term perspective plans and five year plans.

2.19 Andaman and Nicobar Command : The tri-Service Command for Andaman and Nicobar (A&N) was established in October 2001 and has been effectively operational for over 2 years. The Command is being headed by Officers from the three Services on rotation basis. The present Commander-in-Chief (C-in-C) of A&N Command is from Indian Army. The Commander-in-Chief exercises control over all force components of the three Services and the Coast Guard located in Andaman & Nicobar Islands. The C-in-C, A & N Command, reports to the Chairman, Chiefs of Staff Committee.

The Service Headquarters which used to be attached offices of Ministry of Defence are now integrated with the Ministry of Defence and known as Integrated Headquarters of Ministry of Defence.

2.20 Management of Strategic Assets : Strategic Forces Command, created to manage our strategic assets, has worked towards establishment of an effective Command and Control structure. The Command is working towards operationalisation of the strategic assets of the country, based on the directions given by the Nuclear Command Authority.

2.21 Formation of Horizon Core Technology Group: To keep pace with the revolutionary technological changes in the Defence Weapon Systems and warfare, a tri-Service team, i.e., Horizon Core Technology (HCT) Group has been constituted. The Horizon Core Technology Group comprises of members of the three Services from within HQ Integrated Defence Staff as also the representatives of the three Services. Defence Research and Development Organisation (DRDO) has also been co-opted in the HCT group by way of incorporating of Group for Analysis of Systems (G-FAST), a DRDO organisation.

2.22 The HCT Group interacts with DRDO to identify Horizon Core Technologies to meet the capability requirements of the Defence Services in the long term. The group strives for establishment of mechanisms between the Services, DRDO and the Industry, to provide an insight of the planning and the technology forecasting process of DRDO/G-FAST and the potential of the Industry to meet the Services requirements of future capabilities and the associated technologies.

2.23 National Defence University: The Committee on the setting up of National Defence University (CONDU), chaired by Dr K Subrahmanyam, presented its recommendations on creation of a National Defence University that would conduct all such research programmes as may be necessary to enable it to serve as a think tank on all strategic issues of concern to Government and its various agencies, and to provide educational and awareness programmes on related subjects to present as well potential future leaders in the National Security community. The report of the Committee is under examination of the Government.

Various administrative and financial powers have been delegated to the Integrated Service Headquarters to impart enhanced autonomy in their functioning.

2.24 Tri- Service Committee On Joint Training: Based on the GOM recommendations, a Tri-Services Committee On Joint Training (TCJT) was formed by the COSC to formulate concrete proposals for carrying out optimisation and integration of training resources amongst the Services. TCJT submitted its report in keeping with the long- term perspective and Inter Services needs, keeping in mind the optimum utilisation of resources for Joint Training. Most of the issues have been resolved, while some of them are in the process of implementation through various boards of officers/experts committees by respective Services HQrs.

2.25 Delegation of Administrative and Financial Powers : Various administrative and financial powers have been delegated to the Integrated Service Headquarters to impart enhanced autonomy in their functioning. Decentralisation of decision-making powers has strengthened and upgraded the decision-making apparatus in the Services. With higher delegation of financial powers, greater efficiency and cost effectiveness with accountability has brought about the transparency desired in the system of defence related expenditure.

DEFENCE EXPENDITURE

2.26 The two charts in this chapter represent Service/Department-wise break-up of Defence expenditure for the years 2001-2002, 2002-2003, Revised Estimates for 2003-2004 and Budget Estimates for the year 2004-2005 and Service/ Department-wise expenditure as a percentage of total Defence expenditure.

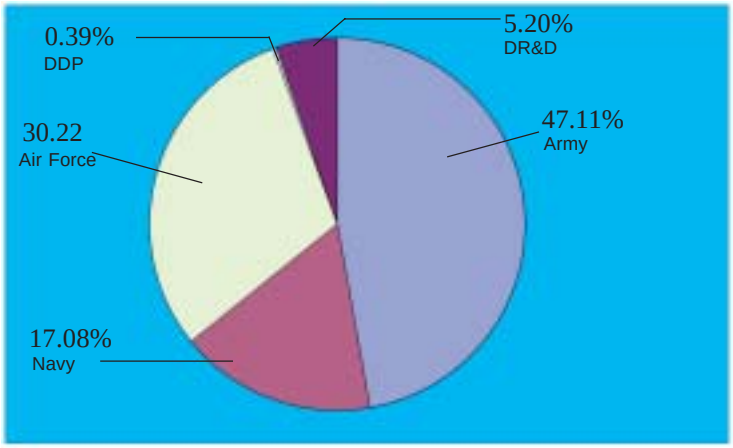
Service/Department-wise Break-up of Defence Expenditure

(Rs. in crores)

Service/Deptt		2001-002	2002-2003	R.E.2003-2004	B.E.2004-2005
Army		31096.88	32127.78	32287.52	36277.50
Navy		8368.45	8155.32	10413.75	13149.97
Air Force		11783.76	12385.26	13957.96	23270.53
DDP	DGOF	(-)471.61	(-)388.89	(-)210.99	(-)139.58
	DGQA	368.45	374.25	393.52	440.64
	Total	(-)103.16	(-)14.64	182.53	301.06
DR&D		3119.80	3008.11	3458.24	4000.94
TOTAL		54265.73	55661.83	60300.00	77000.00

Service/Department-wise Break-up of Defence Expenditure

Service/Department-wise Expenditure as Percentage of Total Defence Expenditure 2004-05 (BE)



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

3

Indian Army

An infantry combat vehicle (BMP-II) participating in Exercise Divya Astra at Suratgarh, in Rajasthan.

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

3.1 The Armed Forces of India are responsible for defending the country against external aggression and safeguarding the territorial integrity of the nation. The Indian Army has to be extremely vigilant at all times to meet various challenges along the borders of the country encompassing different geographical and climatic conditions. In addition, Army helps the civil administration during internal disturbances and helps in the maintenance of law and order and also during natural calamities like floods, earthquakes, cyclones, and in the maintenance of essential services. Keeping in view the threat perceptions, advances in technology and geo-political environment, the Indian Army is suitably structured, equipped and trained to effectively perform its tasks.

Constant training keeps the Army jawans in fine fettle.

MODERNISATION OF WEAPON SYSTEMS AND EQUIPMENT

3.2 During the year, continued efforts were made to modernize and upgrade the weapons and weapon systems of the Army to prepare it to address the requirements of modern day warfare, and enhance its combat efficiency. Following are some of the notable efforts;

(i) Armoured Corps: As a part of the effort to equip the Armoured Corps with night fighting capabilities, Thermal Imager Based Stand Alone Sight and Thermal Imager Fire Control System for the T-72 Tanks are under process for procurement. Image Intensification Based Sights for the drivers of T-72 Tanks and Image Intensification Based Sights for the commanders, gunners and

drivers of T-55 Tanks are undergoing trials and evaluation as part of the procurement process. Armoured Recovery Vehicles have also been contracted for procurement.

(ii) Mechanised Infantry: To enhance the combat efficiency of the Forces, Konkurs-M Anti-Tank Guided Missiles have been acquired along with transfer of technology. Anti-Tank Guided Missile Launchers of the Infantry Combat vehicle BMP-II are being equipped with the Thermal Imaging sights to enhance night-fighting capability. Image Intensification based Night Vision Devices for the drivers of BMPs are also in the process of procurement.

(iii) Artillery: To enhance the fire-power of the Army, efforts are being made to equip them with 155 mm Artillery Gun, for employment in various types of terrain. Besides, trials have been successfully completed for the Multi-barrel Rocket Launchers. Trial Evaluation of the latest Artillery Ammunition System for induction viz Terminally Guided Munitions, Trajectory Guided Munitions, Velocity Enhanced Long Range Artillery Projectiles and Anti-radiation Ammunition is also in progress. Moreover, to enhance the Surveillance Capability of the Army, considerable progress has been made in the direction of acquisition of Long Range Reconnaissance and Observation System, Weapon Locating Radar and Unmanned Aerial Vehicle.

(iv) Air Defence Artillery: The negotiations for induction of improved version of Tunguska M1 Weapon system in Air Defence Artillery units of strike/mechanised formations are going on. Air Target System 'Lakshya', developed by Aeronautical Development Establishment (ADE) of DRDO has also been recently evaluated by the Army and will be used for practice firing of Air Defence Weapon Systems. In conjunction with the IAF, a revamp of the existing Control and Reporting System of Air Defence Artillery is being carried out. The thrust is towards automation of various warning and control systems and processes. A review of the requirement of modern Air defence Weapon System has been carried out to replace the obsolescent equipment in a phased manner to enable it to meet emerging air threats.

(v) Infantry: The combat potential, surveillance and counter-insurgency capability of the Infantry is being significantly improved by acquisition of following equipment and weapon systems:-

(a) Fire Power: 20 mm Calibre and 14.5mm Calibre Anti Material Rifle, Automatic Grenade Launcher-30, Multiple Grenade Launcher, 84 mm MM Rocket Launcher MK II and Kornet-E Anti-Tank Guided Missile are under procurement.

(b) Surveillance Devices: Battle field Surveillance Radars (BFSR), Hand-Held Thermal Imagers (HHTI) and various

types of Unattended Ground Sensors (UGS) have been procured for surveillance in conventional and counter-insurgency roles and to monitor the intrusion across the Line of Control/ Actual Ground Position Line.

(c) Mobility: A family of High-Mobility Vehicles, Bullet-Proof Vehicles and Anti-Tank Guided-Missile Vehicles are being procured to improve the mobility of the infantry.

(vi) Signals: Procurement of state-of-the-art communication equipment and systems has brought about substantial qualitative improvements in the communication capability of the Army. Some of the major procurements are: RS HX long-range frequency-hopping high-frequency radio sets, Hand-Held Walkie-Talkie Radio Sets, Interception Receiver AR 5000, Radio Set 5 Watt/20 Watt VHF, and Radio Set 5 Watt/50Watt VHF for Armoured Fighting Vehicles. A countrywide-secured value-added backbone data network is also being established connecting the important Formation headquarters of the Army.

(vii) Engineers: After withdrawal of forces from the border, equipment to assist de-mining operations, have been procured to minimize the casualties. Trials and procurement of various equipment is also underway which will improve capability for disaster-management during a nuclear, chemical and biological warfare scenario. Army's capability to fight against insurgency/ terrorism has been considerably bolstered by equipping them with more equipment.

MODERNISATION OF ORDNANCE DEPOTS

3.3 Ordnance Depots are used by Army for the storage and management of armament, equipment, general stores and spare parts. There are seven Ordnance Depots located at Delhi Cantonment, Dehu Road, Cheokki, Kanpur, Agra, Mumbai and Jabalpur. These Depots setup in the pre-independence period are housed in temporary/semi-permanent structures, which have now become dilapidated and lack modern material handling and storage facilities.

3.4 Since the inventory is of varied types, sizes and magnitude, the existing manual operations are labour intensive, time consuming and damage prone. The present configuration of the storage buildings do not provide scope for any improvement and deployment of appropriate Material Handling Equipment, resulting in continued manual operations. There is also a strain on the existing security and safety system due to dispersal of store warehouses and other buildings over a wide area.

3.5 In view of the above factors, it has been decided to take up modernization of all the seven Ordnance Depots in a phased manner. To begin with modernization of the Central Ordinance Depots(COD) at Kanpur at an estimated cost of Rs. 187 crores has been taken up. The modernization of COD Kanpur envisage state-of-the-art Warehousing facilities with higher vertical space utilization, automated Material Handling

Equipment, Forklift Trucks, Mobile belt conveyors, hydraulic elevating cable etc., for loading/unloading and retrieval/stacking of stores, Computerised inventory management system, installation of state-of-the-art fire-prevention and fire- fighting and security systems. The project is likely to be completed by the end of 2004.

3.6 Proposals for modernization of COD Agra and COD Jabalpur, at an estimated cost of Rs. 300 crores each, have been approved in principle and work has begun for preparation of Detailed Project Reports.

DE-MINING OPERATIONS

3.7 After achieving the objectives of Operation Parakram, demining of the area along the Western border and the LOC in Jammu and Kashmir, was a challenging job for the Army. Demining is a difficult operation as some of the mines had drifted due to inundation or caught fire leading to pre-recovery blasts. Out of 10.5 lakh mines laid, 8.91 lakh have been recovered. Rajasthan has been fully cleared of mines, 95.8% mines have been cleared in Punjab and 53.5% in Jammu & Kashmir. Different kinds of equipment such as trawls, tractors, Hydremas, Punch Auto Mine (PAM) and Roller Anti Mine (RAM) were used for the demining operations to ensure that fields were cleared of all mines prior to handing over the land to land owners.

COUNTER-INSURGENCY OPERATIONS

Jammu and Kashmir

3.8 Despite the severe winter, the month of January 2003 saw higher infiltration as compared to January 2002. The infiltration again picked up between July and September 2003 and was higher as compared to the corresponding period previous year. With heavy attrition of top leadership

The Army has raised special 'Ghatak' units to combat terrorists. 'Ghataks' undergoing training.

The morale of terrorists is low due to heavy attrition, resulting in uncertainty and confusion in the top leadership of major groups. There has been a marginal reduction in infiltration after the cease-fire since 26 November, 2003.

of the major militant groups, there had been a change in the terrorist strategy. To create sensationalism, gain media attention and raise the sagging morale of their cadres, terrorist groups resorted to two suicide attacks on Army camps in the Jammu region. As a result of intense pressure by the Security Forces, terrorist violence is now directed towards soft targets.

3.9 The multi-pronged strategy adopted by the Security Forces has been able to create near-normal conditions for the State Government to function efficiently. Security Forces operations have put intense pressure on terrorist groups. The morale of terrorists is low due to heavy attrition, resulting in uncertainty and confusion in the top leadership of major groups. There has been a marginal reduction in infiltration after the cease-fire since 26 November, 2003.

North-East

3.10 The Security Forces continued to retain ascendancy over militant groups in the North-East. As a result, the insurgency situation in the North-East is at its ebb. Relentless pressure by the Security Forces has forced the militants to escape to hideouts outside the country, especially in Bhutan and Bangladesh. The offensive operations conducted by the Royal Bhutan Army in Bhutan and logistic support provided by the Indian Army along the Indo-Bhutan border, have struck a decisive blow to the capability of the United Liberation Front of Assam, the National Democratic Front of Bodoland and the Kamtapur Liberation Organization. The peace talks with Nationalist Socialist Council of Nagaland (Issac Muviah) and the establishment of Bodoland Territorial Council Autonomous District have progressed well. Peaceful conduct of elections in Tripura and enthusiastic participation of the people in Republic Day and Independence Day events are signs of normalcy being restored through sustained efforts of the Security Forces.

3.11 Assam: The two-pronged strategy to persist with counter-insurgency operations and concurrently win hearts and minds of the population has paid good dividends. In the year 2003-04, 312 terrorists have been eliminated, 930 apprehended and 1356 weapons have been recovered. More important, 3457 militants have surrendered, having realized the futility of continuing their armed struggle. Implementation of the Bodoland Territorial Council accord leading to surrender of 2640 Bodoland Tiger cadre on December 6, 2003 were significant milestones in the effort to rid the State of militancy. As a result, both National Democratic Front of Bodoland and United Liberation Front of Assam have been greatly marginalised. Once Bodoland Territorial Council Autonomous District is formed, the Bodoland Liberation Tiger cadres are likely to come overground while the National Democratic Front of Bodoland cadres may also join the mainstream.

3.12 Manipur: The situation in the State has been generally under control. The Security Forces have exerted unrelenting pressure on the underground elements with appreciable success. Despite the prevalent peace, the ethnic polarization between the Nagas and the Meiteis, still persists. During the operations since January, 2003, 136 militants were killed, 701 apprehended and 139 weapons recovered.

3.13 Tripura: Porosity of the border is being exploited by the militants for launching trans-international border forays from safe havens in Bangladesh. Realignment of area of responsibility and a dynamic employment of troops has helped to keep the militants on the run. During offensive operations by the Security Forces, 26 militants were killed, 143 apprehended and 134 weapons recovered.

3.14 Arunachal Pradesh: The State is peaceful except for the districts of Tirap and Changlang, which are declared as disturbed. Security Forces are helping in the maintenance of law and order.

UNITED NATIONS PEACE-KEEPING OPERATIONS

3.15 India continues to make significant contribution to the United Nations Peace-keeping Missions. Having contributed over 68,000 troops to 38 United Nations Peace-keeping Missions, India remains one of the largest troop contributors to United Nations Peace-keeping Missions. The professionalism and dedication of Indian soldiers and the quality and performance of Indian units deployed on such missions have established a benchmark of quality. During the year 2003-04, Indian Army was actively involved in United Nations peace-keeping operations in Lebanon, Ethiopia-Eritrea, Democratic Republic of Congo, Iraq, Kuwait, Ivory Coast and Burundi. Approximately 2,350 troops are deployed on peace-keeping duties overseas.

3.16 United Nations Interim Force in Lebanon (UNIFIL): India has been contributing an infantry Battalion Group and a number of staff officers to the United Nations Interim Force in Lebanon since 1998. Established in 1978, to oversee the Israeli withdrawal from South Lebanon and return of Lebanese Government authority, United Nations Interim Force in Lebanon is an extremely important peace-keeping mission in the perpetually volatile region. The professionalism and tact displayed by the Indian peace-keepers have ensured that peace in the region is not disturbed and that the mandate of the United Nations mission is effectively achieved. The numerous humanitarian projects undertaken by the Indian Army soldiers have also endeared them to the local population and brought a good name to our country.

3.17 UN Mission in Ethiopia-Eritrea (UNMEE): India has been contributing an infantry Battalion Group, a Force Reserve Company, an Engineer Company and a number of Military Observers and Staff Officers to the United Nations Mission since 2001. Established in the year 2000, at the end of a bitter three-year war between

Ethiopia and Eritrea, the United Nations Mission had the task of separating the two forces by creating a buffer zone and ensuring security in the region until the international border could be demarcated. India is the largest contributor to this mission. A number of relief and rehabilitation projects undertaken by the Indian peace-keepers have helped rebuild hope among thousands of suffering Ethiopians and Eritreans, ravaged by years of conflict.

3.18 United Nations Mission in Congo (MONUC): United Nations Mission in Congo was established in 1999 and India has been contributing Military Observers ever since. An Aviation Unit and a Guard Company were deployed in Congo in July 2003. The task of United Nations Organisation Mission in Democratic Republic of Congo is to oversee implementation of the cease-fire agreement and to assist in the conduct of disarmament, demobilisation, repatriation, rehabilitation and re-integration of various armed groups, thus paving the way for a negotiated political settlement of the problem.

To reduce the commitment of Army for internal security, the Government has approved in principle the raising of 30 additional Rashtriya Rifles battalions.

3.19 United Nations Observer Mission in Iraq-Kuwait (UNIKOM): India contributed a total of eight Military Observers to the United Nations Observer Mission in Iraq-Kuwait ever since it was established in 1991 after the first Gulf War. The mission

An Indian Patrol keeps vigil in the Buffer Zone separating Ethiopia and Eritrea.

closed down in March 2003 after the coalition forces entered Iraq.

RASHTRIYA RIFLES

3.20 The security environment in Jammu & Kashmir is likely to remain turbulent in the near future. To reduce the commitment of Army for internal security, the Government has approved in principle the raising of 30 additional Rashtriya Rifles battalions. Various formations and units of Rashtriya Rifles have been providing yeomen's service to Jammu and Kashmir in combating terrorism, providing aid to civil authorities and conducting meaningful civic action programmes. As a result of the vision, drive and determination of various Rashtriya Rifles formations and unit commanders, highly motivated patriotic troops of the Force will continue to achieve success in different spheres. Rashtriya Rifles also ensured successful and safe conduct of the Amarnath Yatra despite threats from terrorists.

TERRITORIAL ARMY

3.21 The Territorial Army(TA) has a great history of service to the nation and immense potential to contribute in promoting national integration, discipline, harmony and pride

among the citizens, and to the defence of the country. The Territorial Army, which came into existence in 1949, has a strength of approximately 32,800 personnel in 50 TA units comprising 31 Infantry Battalions (Territorial Army) and 19 Departmental units.

3.22 All the 31 Non-Departmental TA units remained embodied under OP Parakram during the year. Out of these, six Infantry Battalions (TA) comprising 30 Companies were deployed in Northern Command. The TA Directorate is now providing post- commission training course at Indian Military Academy, Dehradun. This course is of twelve weeks duration and is to be conducted twice a year.

ADVENTURE AND SPORTS ACTIVITIES

3.23 Mountaineering Expeditions:-

(a) Joint Indo-Nepal Everest Massif Expedition 2003: Indian Army's tradition of valour was once again proved beyond doubt when the Joint Indo-Nepal Army expedition team scaled Lhotse (8510 Mtrs) on May 13, 2003 and Everest (8850 Mtrs) on May 22 and 26, 2003. The team set many new records in the annals of mountaineering. The following records were set by the team:

(i) First Indian Ascent: This is the first team to have scaled Lhotse, the fourth highest peak in the world.

(ii) World Record on Everest: 31 members comprising nine from Indian Army, 10 from Royal Nepalese Army and 12 Sherpas scaled Mt. Everest on May 22 and 26, 2003 and created a new world record for the maximum number of summiteers by any single team.

(iii) World Record on Lhotse: 12 climbers comprising five from the Indian Army, three from Royal Nepalese Army and four Sherpas scaled Lhotse and created a new world record as it is the highest number of summiteers on Lhotse by any single team.

(b) Rashtriya Indian Military College (RIMC)Mountaineering Expedition to Gangotri (6672M): RIMC mountaineering expedition to Gangotri-I (6672M) was launched on May 27, 2003. One Officer and 16 cadets successfully scaled the peak on June 12, 2003.

(c) Mountaineering Expedition to Mt. Gya (6794M): An expedition by 7/11 Grenadiers (GR) succeeded in scaling Mt. Gya on July 4, 2003. Capt. N.S. Negi and nine ORs reached the summit at 1200 hrs on July 4, 2003.

(d) Mountaineering Expedition to Sri Kailash (6932 Mtrs): 14 Infantry Division mountaineering expedition of Sri Kailash peak was flagged off on July 31, 2003. First team of one Officer and five ORs scaled the peak on August 24, 2003 and second team of one JCO and four ORs reached the summit on August 25, 2003.

(e) Mountaineering Expedition to Panchachuli – II (6904M): Kumaon Scouts mountaineering expedition successfully scaled the peak on September 30, 2003 and October 3, 2003.

One Officer, two JCOs and eight ORs scaled the peak.

(f) 4 DOGRA Mountaineering Expedition: 4 DOGRA mountaineering expedition to Leo Pargial-I (22351 ft.) succeeded in scaling the peak on September 4, 2003. one Officer, one JCO and six ORs of the unit scaled the peak.

(g) Corps of Electrical and Mechanical Engineers (EME) Mountaineering expedition: Corps of EME mountaineering expedition to Satopanth (23347 ft) was launched on September 2, 2003. two Officers and four ORs successfully scaled the peak on September 2, 2003.

(h) Mountaineering Expedition to Sri Kailash (6932 M). Air Defence (AD) Arty mountaineering expedition to Sri Kailash was successfully scaled on August 23 and 24, 2003. Three Officers and 12 ORs scaled the peak.

(i) Army Ladies Everest Expedition (8850 M). An Army ladies expedition will attempt to scale Mount Everest in 2005. Approximately 34 ladies have attended the basic mountaineering course at the Nehru Institute of Mountaineering (NIM), Uttarkashi, for the Indian women Army Everest Expedition.

3.24 Water Rafting Expeditions:-

(a) White Water Rafting Expedition by HQ 58 Armoured Brigade: HQ 58 Armoured Brigade white water rafting expedition has been conducted from October 10 to 14, 2003 from Rudraprayag to Rishikesh. Composition of the team was four Officers, four JCOs and 15 ORs.

(b) White Water Rafting Expedition by 14 Artillery Brigade: HQ 14 Artillery Brigade white water rafting expedition was conducted from November 17 to 21, 2003 from Rudraprayag to Vir Bhadra Barrage. Conmposition of the team was two Officers, two JCOs and seven ORs.

(c) White Water Rafting Expedition by 14 Horse: 14 Horse white water rafting expedition was conducted from November 15 to 25, 2003 from Karanprayag to Haridwar. Composition of the team was one officer, three JCOs and 15 ORs.

(d) White Water Rafting Expedition by Garhwal Rifle Regiment Centre: Garhwal Rifle Regiment Centre white water rafting expedition was conducted from November 15 to 21, 2003 from Karanprayag to Haridwar. Composition of the team was two officers, three JCOs and 38 ORs.

(e) White Water Rafting Expedition by 46 Armoured Regiment: 46 Armoured Regiment white water rafting expedition has been conducted from November 16 to 20, 2003 from Legang to Sevoke. Composition of the team was four officers, four JCOs and 15 ORs.

(f) Kayaking Expedition by HQ 74 Infantry Brigade: HQ 74 Infantry Brigade has conducted a Kayaking Expedition from November 3 to 6, 2003 from Kota to Guhata. Composition of the team was one Officer, one JCO and 14 ORs.

(g) White Water Rafting Expedition by 3 Mechanical Infantry: 3 Mechanical

Infantry has conducted a white water rafting expedition from March 19 to 23, 2004 from Teesta to Sevok Road (Tiger Bridge). Composition of the team was two officers, three JCOs and 17 ORs.

3.25 Miscellaneous activities:-

(a) Army Adventure Challenge Cup 2003: A triathlon Challenge Cup of mountain cycling, hill running and river rafting was conducted at Raiwala from November 1 to 5, 2003. 21 teams including a team each from Indian Air Force (IAF) and Indo-Tibetan Border Police (ITBP) participated in the same. During the Challenge Cup 2003 demonstrations on aero and aqua adventure activities comprising para motor flying, para gliding, para sailing, scuba diving, kayaking and canoeing was carried out.

Next-of-kin of all battle casualties and war-disabled soldiers who were boarded out from August 15, 1947 to April 30, 1999 are being given Rupees one lakh from the National Defence Fund/Army Central Welfare Fund.

(b) Indo-UK Scuba Diving Expedition: Indo-UK Scuba Diving expedition has been successfully conducted in the Andaman and Nicobar Islands from January 6 to 13, 2004. The team consisted of 29 personnel including 10 divers each from both the countries and nine support members from Indian Army.

(c) Air Race 2003: Air Race 2003 was organized by the Aeronautical Society of India to commemorate 100 years of manned flight from November 20 to 23, 2003. Army Adventure Wing had fielded four aircraft in the race in which more than 50 aircraft participated. The participation has been first of its kind by Army Adventure Wing.

WELFARE

3.26 Rehabilitation and Welfare Measures: As part of the welfare measures initiated by the Government, the next-of-kin of all battle casualties and war-disabled soldiers who were boarded out from August 15, 1947 to April 30, 1999 are being given Rupees one lakh from the National Defence Fund/Army Central Welfare Fund.

3.27 Disabled soldiers (Battle Casualties) who are boarded/invalided out of service w.e.f. May 1, 1999 (other than OP VIJAY) are eligible for one time grant of Rs one lakh out of Army Central Welfare Fund. The next-of-kin of battle casualties w.e.f. May 1, 1999 are granted Rs 7.5 lakh as ex-gratia and Rs 30,000/- from Army Central Welfare Fund.

3.28 The disabled soldiers (Battle Casualties) who sustained injuries in various military operations after May 1, 1999 and are retained in service get a grant out of Army Central Welfare Fund (ACWF) based on their disability percentage. Next-of-kin of all personnel who die in harness after April 30, 2001 are paid one time grant of Rs 30,000/- from ACWF.

3.29 The Delhi Development Authority (DDA) has offered a housing scheme 'Vijay Veer Awas Yojna'. Under the scheme the DDA has constructed 312 flats for Personnel Below Officer Rank (PBOR) and 102 flats for officers. The scheme was open for

next of kin of battle casualty and disabled/ boarded out soldiers of all operations with effect from May 1, 1999. The scheme was open till September 30, 2003. The cost laid down is Rs 5.93 lakh for flats for officers and Rs 3.98 lakh for JCOs/ORs. Cost of land and development charges have not been charged by the DDA.

3.30 Award of Educational Scholarship to Children of Armed Forces Personnel Killed/ Missing/Permanently Disabled in Action: The educational concessions available to the children of Armed Forces Personnel killed/ missing/permanently disabled in 1962, 1965, 1971 Wars, OP PAWAN, OP MEGHDOOT have now been extended to all post MEGHDOOT Operation including counter-insurgency operations, both in India and abroad. These concessions include fee exemptions, free books and uniforms, etc.

3.31 Pre-Release Resettlement Training: Till November 2003, -5267 Army personnel below Officers Rank were imparted pre-release resettlement training in various disciplines at ITIs, Public Sector Undertakings and Private Institutions.

3.32 Paraplegic Rehabilitation Centres: Paraplegic Rehabilitation Centres have been established for 100 per cent disabled Ex-servicemen of the Armed Forces. Two Paraplegic Rehabilitation Centres at Kirkee and Mohali are being sponsored by the Ministry of Social Justice and Empowerment.

3.33 Medical Welfare Teams: 15 Medical Teams visited and treated the ex-servicemen and dependents of Service personnel of Indian Army domiciled in Nepal during the year.

3.34 Assistance to Handicapped, Deaf, Dumb and Blind Children: During the period 20 applications were received from the wards of ex-servicemen and all were given financial assistance.

3.35 Financial Assistance to Schools: During the period 24 schools were provided financial assistance. Till now 548 schools have been granted assistance under the scheme in Nepal.

3.36 Vocational Training: A total of 3508 ex-servicemen/ widows/ wives/ wards of ex-servicemen have been trained so far. Various courses are conducted in the twelve Vocational Training Centres (VTCs) to enhance the technical efficiency of ex-servicemen and their families so as to enable them to get jobs.

3.37 Army Welfare Society: Army Welfare Society was established and registered in June 1998 with a view to process welfare projects particularly with the Ministry of Social Justice and Empowerment. The Ministry had agreed to provide funds for welfare-related projects for physically handicapped children. The Army is running 28 vocational-cum-rehabilitation training schools for disabled children at several Cantonments. The Ministry is providing funds to run these schools.

3.38 Admission of Children of Jammu and Kashmir to Army Public School, BEAS: Army Welfare Society launched a unique mission by admitting 101 children, 11-15 years of age, from Jammu and Kashmir alongwith four Kashmiri Teachers for education in Army Public School at Beas. The children are those affected by terrorist

Army Welfare Society launched a unique mission by admitting 101 children, 11-15 years of age, from J&K alongwith four Kashmiri Teachers for education in Army Public School at Beas.

activity, belonging to the under-privileged section of the society. They are being provided with free education, boarding and lodging, uniform and transportation to Beas. This project has been launched in pursuance of the policy of providing a healing touch to Kashmiri citizens who have been victims of violence.

3.39 Legal advice to soldiers, families and widows: Judge Advocate Departmental Officers posted at various appointments in formation Headquarters have been directed to render legal advice in matters relating to property claims, matrimonial disputes and related issues concerning soldiers, ex-servicemen and their dependents. Legal help is also being sought by the families/dependents of service personnel; serving/retired/deceased with regard to disability benefits and terminal entitlements. Legal advice to widows is being imparted through Army Wives Welfare Association (AWWA) on matters of succession, property laws, marriage, divorce, adoption and monetary entitlements.

3.40 Human Rights Cell: Our Armed Forces are increasingly being called upon to assist the States in controlling internal security situations and in the maintenance of law and order in the country. There has been a concerted effort to sensitize all ranks from the soldier to the officer on human rights. The subject is included in the training curriculum right from the time when a soldier is inducted into the Army and is continued later at various levels of courses and in the formation level training. When inducted into insurgency areas units go through an intensive re-orientation capsule in specially established counter-insurgency schools, where training to sensitise them about human rights is included in the syllabus. Seminars are conducted in formations and training institutes where members of National Human Rights Commission (NHRC), media persons and other eminent speakers come to give their views on various human rights aspects, following which there is an interaction with officers and men to gather first-hand knowledge about ground realities.

Children from Jammu and Kashmir studying at the Army Public School, Beas

3.41 Telemedicine Project :

(i) Telemedicine Network for the Army is being developed under the aegis of Indian Space Research Organisation (ISRO), Department of Space (DOS). The first phase of the project (Pilot

When inducted into insurgency areas units go through an intensive re-orientation capsule in specially established counter-insurgency schools, where training to sensitise them about human rights is included in the syllabus.

Project), wherein the Hardware and Software as well as the connectivity of 348 kbps for five years was to be supplied free of cost has now been completed. Army Hospital (Research and Referral) (Delhi Cantt) Command Hospital (Northern Command) (Udhampur), 92 Base Hospital (Srinagar), 153 GH (Leh), 403 Fd Amb (Partapur) and 2121 Fd Amb (Kargil) are the six sites where the pilot project has been implemented. The outdoor equipment including VSAT antennas and the indoor equipment including Servers and Digital Cameras have been installed at all the sites. The system has been tested and is functional since December 1, 2003. Tele-consultations and video-conferencing between the nodes are taking place on a regular basis and so far a total number of 668 consultations have taken place since December 2003.

Diagnostic techniques at Army Hospitals: tele-medicine room which transmits data to six other centers for assessment by specialists.

4

Indian Navy

Indian Navy – a multi-dimensional Service.

The presence of multinational maritime forces in the region placed a heavy demand on the Indian Navy to maintain its equipment and personnel in a high state of combat preparedness during the year.

4.1 The year continued to witness a great deal of maritime activity in the Indian Ocean Region especially in the North Arabian Sea. The presence of multinational maritime forces in the region placed a heavy demand on the Indian Navy to maintain its equipment and personnel in a high state of combat preparedness.

4.2 An upswing in naval cooperation with friendly foreign countries in the fields of training, exercises and operations have further strengthened our relations with littoral nations. The Indian Navy was also called upon to provide assistance to foreign countries in the form of flood relief in Sri Lanka, seaward protection for the African Union Summit at Mozambique, patrolling of the Exclusive Economic Zone (EEZ) of Mauritius and Hydrographic assistance to Seychelles.

4.3 The induction of two Krivak class frigates namely Talwar and Trishul in June 2003 and one Extra Fast Attack Craft (XFAC) in October 2003 have added the much-needed punch to the Indian Navy. To enhance the force levels, induction of platforms in accordance with the Long Term Perspective Plan is being implemented in a systematic manner. The indigenously designed stealth frigate 'Shivalik' was launched on April 18, 2003. A contract has been signed with Russia for the refurbishment and acquisition of the aircraft carrier 'Admiral Gorshkov' alongwith deck-based carrier aircraft.

MAJOR OPERATIONS

4.4 Security Patrols off Maputo: Indian Naval Ships Ranjit and Suvarna were deployed at Maputo in Mozambique from June 23, 2003 to July 15, 2003 for ensuring security of the maritime frontiers during the 'African Union Summit' which was held at Maputo from July 4 to 12, 2003. During this operation, in addition to providing security, Indian Naval ships also provided training to over 100 personnel of the Mozambique Navy. INS Suvarna also

carried a large consignment of medicines, which was handed over by the High Commissioner of India to the Health Minister of Mozambique.

4.5 Anti-Smuggling/Gun-Running Operations: Ships and aircraft of the Naval detachments based in Gujarat and Maharashtra, undertook regular patrols along the coast, to prevent smuggling and gun-running, including illegal movement of undesirable personnel.

4.6 Palk Bay Patrols: Naval/Coast Guard ships, aircraft, and trawlers of the seven detachments along the Tamil Nadu coast, undertook patrolling in the Palk Bay area, during the year.

4.7 Surveillance-cum- Presence Missions: Surveillance of areas of strategic interest, which is one of the vital tasks of the Navy, was undertaken. Naval ships and aircraft were deployed on extensive surveillance missions, which included anti-poaching operations in the Andaman & Nicobar and Lakshadweep Islands. These presence-cum-surveillance missions were not restricted to Indian waters only, but extended to adjoining areas as well.

INS Tarangini arriving at Kochi after completing circumnavigation of the World.

MAJOR EXERCISES

4.8 'SUMMEREX-2003' was conducted from July 5 to 25, 2003 on the eastern seaboard while AMPHEX-2003 was conducted from December 10 to 21, 2003, in the Andaman and Nicobar Islands. It was for the first time that Headquarters Integrated Defence Staff conducted an AMPHEX. Units of the Western and Eastern Fleets, along with elements of the Army, Air Force and Coast Guard participated in the annual naval exercises 'SPRINGEX-2004' held from February 1 to 25, 2004 on the western seaboard.

OVERSEAS DEPLOYMENT

4.9 Circumnavigation Voyage - INS Tarangini: The Indian Navy's Sail training barque, INS Tarangini, sailed from Kochi on January 23, 2003 on a circumnavigation voyage, for a duration of 15 months. During this voyage, Tarangini visited 37 ports in 18 countries covering a distance of over 34,923 nautical miles. During third leg of her voyage, Tarangini participated in the four races of the Tall Ship Challenge Series, held in the Great Lakes of USA and Canada from July 14 to August 20, 2003. Competing against professionals from USA, Canada, UK and a number of other coun-

President Dr. A.P.J. Abdul Kalam embarked onboard INS Tarangini on her return after circumnavigation.

tries, Tarangini stood first in her Division. On completion of the voyage, INS Tarangini entered Kochi on April 25, 2004. Dr. APJ Abdul Kalam, the President of India, embarked on board along with the Chief of the Naval Staff Admiral Madhvendra Singh and other senior officers as part of the home-coming reception

4.10 Tri-centenary Celebrations at St Petersburg: Soon after commissioning at St Petersburg, Russia, on June 25, 2003, INS Trishul participated in the St Petersburg Tri-centenary Celebrations held from June 25 to 29, 2003.

4.11 Langkawi International Maritime and Aerospace Exhibition (LIMA)-03: INS Delhi and Kora visited Langkawi, Malaysia, to participate in LIMA-03 held from September 29 to October 5, 2003.

4.12 Friendship Across the Seas: During the end of March 2003, INS Sharda was tasked for overseas deployment to Seychelles and Mauritius. During this mission the ship trans-shipped a Chetak helicopter of the Mauritius National Coast Guard from Kochi to Port Louis. On the return leg from Port Louis, the ship also exercised with the Mauritius ship CGS Guardian.

4.13 International Maritime Defence Exhibition – 2003 (IMDEX-2003): IN Ships Brahmaputra and Kirch visited Singapore, to participate in the IMDEX-2003 from November 9 to 15, 2003.

4.14 Operation SAMBANDH 03/03: INS Nirdeshak carried out Hydrographic Survey of sea areas, off Seychelles. The ship was deployed in Seychelles from November 21 to December 18, 2003, for the survey.

4.15 Other Visits: Indian Naval ships paid goodwill visits to ports in the Persian Gulf and the South China Sea during the year.

INTERACTION WITH FOREIGN NAVIES

4.16 MILAN 03: A multi-national exercise and interaction, involving navies of

South Asia and South East Asia, generically named 'MILAN 03', was held at Port Blair from February 11 to 15, 2003. While warships from Indonesia, Sri Lanka and Thailand participated, Australia, Malaysia, Myanmar and Singapore sent their delegations.

4.17 The details of other interaction with foreign navies, during the period under review, are given in the table beneath.

EXERCISES AND JOINT OPERATIONS WITH FOREIGN NAVIES

4.18 The Indian Navy has institutionalised joint exercises with USA, France, and Singapore and joint patrols with Indonesia. In addition, Indian Naval ships also carried out joint exercises with Russian Naval units in the Indian Ocean. Following are the details of such exercises.

4.19 Joint Exercises with USA:

(a) SAREX-2003: A bilateral Search and Rescue Exercise (SAREX) was conducted off Chennai from July 8 to 12, 2003. The US Navy fielded P-3C Orion aircraft and an Oliver Hazard Perry Class Guided Missile Frigate (USS Curts). Indian participation involved INS Sukanya, a Seaking helicopter and CGS Varaha. Two observers each from Maldives, Sri Lanka, Madagascar, and Mauritius, also participated.

(b) MALABAR – 03: The annual Indo-US Joint Exercise, 'MALABAR-03' was conducted off Kochi from October 5 to 10, 2003. USS Chosin (Ticonderoga Class Guided Missile Cruiser), USS Fitzgerald (Arleigh Burke Class Guided

S.No.	Dates	Event	Country	Place
1.	February 20-22, 2003	IN/SLN Sixth Operational Review Meeting (ORM)	Sri Lanka	New Delhi
2.	June 5, 2003	Seventh International Maritime Boundary Line (IMBL) Meeting	Sri Lanka	Palk Bay
3.	July 21, 2003	Visit by Malaysian delegation to study work-up facilities	Malaysia	New Delhi
4.	August 5-08, 2003	IN/SLN Seventh Operational Review Meeting (ORM)	Sri Lanka	Colombo
5.	September 9-10, 2003	Indo-French Navy-to-Navy Operational Staff Talks	France	Mumbai
6.	October 10, 2003	Eighth International Maritime Boundary Line (IMBL) Meeting	Sri Lanka	Palk Bay
7.	November 20-21, 2003	IN/US Seventh ESG Meeting	USA	New Delhi
8.	December 15-18, 2003	Mid Planning Conference for Indo-French Exercise VARUNA 2004/1	France	Toulon
9.	December 15-18, 2003	Indo-Israel Staff Talks	Israel	New Delhi
10.	December 22-26, 2003	Indo-Thai Joint Working Group Meeting	Thailand	Bangkok
11.	March 1-4, 2004	Indo-French Staff Talks	France	France
12.	March 3-5, 2004	Indo-Sri Lanka Op Review Meeting	Sri Lanka	New Delhi

Missile Destroyer), USS Pasadena (Los Angeles Class Attack Submarine) and P3C Orion (Maritime Reconnaissance Aircraft) were the major units which participated from the US side. Indian participation included INS Brahmaputra (Guided Missile Frigate), INS Ganga (Guided Missile Frigate), INS Shalki (Submarine), INS Shakti (Replenishment Tanker), Tu 142 aircraft (Maritime Reconnaissance and Anti Submarine Warfare) and Dornier aircraft (Maritime Reconnaissance), apart from the ship's integral helicopters. On the sports field, teams from the two sides, also competed for the MALABAR Cup on October 9, 2003, which was won by the Indian Navy team.

4.20 France: The fourth Indo-French Exercise of the 'Varuna' series, namely VARUNA-2003/1 was conducted off Mumbai, from August 25 to 30, 2003. The French Navy was represented by FNS Marne (a Replenishment Tanker and the Flagship of the French Admiral Commanding French Forces in the Indian Ocean), FNS Dupleix (an Anti-submarine Destroyer) and an Atlantique MK II aircraft (Maritime Patrol), operating from Goa. The Indian participation included INS Ganga (Guided Missile Frigate), INS Dunagiri (Anti-Submarine Frigate) and INS Shankul (Submarine).

4.21 Singapore: The sixth Indo-Singapore Anti Submarine Warfare exercise was conducted off Kochi from March 7 to 19, 2004. RSS Vigilance and RSS Victory (Missile Corvettes), RSS Brave (Patrol Vessel) and RSS Endurance (Logistics Support) represented the Republic of Singapore. The Indian participation included INS Ganga (Guided Missile Frigate), INS Vindhyagiri (Leander), one Offshore Patrol

Indian Naval Ship "INS MYSORE" (left) exercising with a Russian Vessel in the Indian Ocean.

Vessel, one Submarine and TU 142 Maritime Patrol aircraft.

4.22 Russia: The first Indo-Russian Exercise, called 'INDRA-2003' was conducted from May 20 to 22, 2003 on the western seaboard, and from May 29 to 31, 2003 on the eastern seaboard. The Russian participation included Moskva (Slava Class Cruiser with Vice Admiral EV Orvlov, the Deputy Chief of Naval Staff and Commander Black Sea Fleet embarked), Marshal Shaposhnikov (Udaloy Class Destroyer), Admiral Pantyeleyev (Udaloy Class Destroyer) and Vladimir Kolechitsky (Tanker). The Indian participation included IN Ships Mumbai, Mysore, Viraat, Brahmaputra, Gomati and IN Submarine Sindhuvijay on the western seaboard and Indian Naval Ships Rajput, Ranjit, Ranvijay and Submarines Sindhuvir and Vela on the eastern seaboard.

4.23 Indonesia: The third Indo-Indonesia Coordinated Patrol, called 'INDINDOCORPAT' was conducted from March 5, 2004 for about a month. IN Ships Tarasa and Tarmugli participated from the Indian side while Indonesian Naval Ship, KRI Pati Unus, represented Indonesia.

4.24 Oman: The Indo-Oman Joint Exercise 'Thammar Al Tayyib' was conducted on the western seaboard from April 24 to 26, 2003.

4.25 China: On completion of the port-call to Shanghai, IN Ships Ranjit and Kulish carried out a Search and Rescue exercise (SAREX) with the ships of the Chinese Navy, off Shanghai, on November 14, 2003. From the Chinese side, PLA (N) ships Jiaxing (Frigate with integral helicopter) and tanker Panyang Hu participated.

Indian and US Naval personnel after a joint exercise.

DEFENCE COOPERATION

4.26 HYDRO IND – 2004: As part of the Golden Jubilee celebrations, the Indian Navy hosted the first International Hydrographic Seminar in India, "HYDRO IND 2004" at Mumbai from March 26-27, 2004, which was attended by Professionals from all over the world. The fourth meeting of North Indian Ocean Hydrographic Commission (NIOHC) from March 24-25, 2004 preceded the seminar. Representative of the twelve maritime countries located in the Indian Ocean Region attended this meeting.

ASSISTANCE RENDERED

4.27 Flood Relief Operations in Sri Lanka: INS Sharda was deployed at Galle, Sri Lanka from May 20 to 26, 2003, to provide relief in the flood affected areas of South and Central Sri Lanka. The Indian teams distributed more than 5000 food packets, 2500 blankets and provided medical relief to more than 1000 patients.

4.28 Towing of MCGS Vigilant: Mauritian Coast Guard Ship Vigilant was towed by INS Matanga from Port Louis,

The Indian Navy has institutionalized joint exercises with USA, France, and Singapore and joint patrols with Indonesia. In addition, Indian Naval ships carried out joint exercises with Russian Naval units in the Indian Ocean.

Mauritius to Mumbai in April 2003, for undertaking repairs at Mumbai. A Chetak helicopter was also embarked aboard Vigilant for transportation to India, for overhaul at HAL, Bangalore.

4.29 Assistance to Merchant Ship in Distress: On June 10, 2003, Yard 3010 (Betwa), during the Sea Trials off Sand Heads, provided assistance to a Merchant Vessel, 'MV Fortune Carrier', in distress. Betwa was able to safely rescue the entire crew of 20 personnel from the ship before it sank.

4.30 Assistance at Daman: The Indian Naval diving team, along with the Coast Guard diving team, rescued personnel and a vehicle, which had fallen in water due to the collapse of the bridge on Daman Ganga river at Daman on August 28, 2003.

4.31 Casualty Evacuation (CASEVAC) by INS Sharda: In January 2003, while keeping vigil off Minicoy Islands, INS Sharda evacuated a Turkish sailor who was ill, from merchant ship MV Muzeyyen Ana 100 nm west of Minicoy. The ill sailor was brought to Kochi on the midnight of January 30, 2003 and was handed over to the specialist medical team of the Medical Trust Hospital.

4.32 Casualty Evacuation (CASEVAC) by Chetak: 321 Garuda flight undertook a CASEVAC mission off Kochi on July 12, 2003 in adverse weather conditions. A critically ill patient was winched up from the merchant ship MV Car Bridge and transferred to Civil Hospital.

TRAINING

4.33 Interaction with Foreign Countries: A total of 400 vacancies have been allotted for training of personnel from friendly foreign countries in India for the year 2003-04. The list of countries who have been offered these vacancies is as follows: -

S.No	Country	Vacancies
(a)	Bangladesh	10
(b)	Kenya	03
(c)	Malaysia	07
(d)	Mauritius	16
(e)	Myanmar	04
(f)	Nigeria	05
(g)	Seychelles	09
(h)	Vietnam	03
(i)	Sri Lanka	297
(j)	Maldives	44
(k)	Singapore	02

4.34 Similarly, a total of 31 Indian personnel have been deputed abroad for training and various courses, which includes 12 personnel to the US under the International Military Education and Training programme.

4.35 Hydrographic Co-operation: Ten foreign officers from Bangladesh, Sri Lanka, Vietnam, Nigeria, Malaysia, Seychelles, Thailand and Mauritius attended the free basic Hydrography course between October 21, 2002 and May 24, 2003 at the National Hydrographic School, Goa. This is in line with the NHD's International

Cooperation efforts in the littoral region, as part of the North Indian Ocean Hydrographic Commission (NIOHC) efforts of capacity building.

4.36 First Training Squadron: A total of 141 cadets were trained onboard INS Tir and Krishna of First Training Squadron. During the course of sea training, besides visiting all major ports of India, the cadets also visited port of Suez, Palermo, Alexandria, Port Said, Bandar Abbas, Al Fujaira and Muscat during the overseas deployment.

INFORMATION TECHNOLOGY

4.37 Navy Wide Networking: A Navy Wide Network is being set up to ensure data transfer and connectivity. This is being set up in a progressive manner over three years.

4.38 Computerisation: Various application programmes are under consideration for development in areas of Pay and Allowances, Hospital administration and Administration. These packages shall be developed both through in-house expertise as well as outsourcing.

4.39 IT Training: IT Training continues to be vital to meet the increasing requirement of computerisation in the Navy. Various courses are being planned and conducted on site from time to time.

ADVENTURE AND SPORTS

4.40 First Afro-Asian Games: Following naval personnel brought laurels to the Indian Navy in the first Afro-Asian games held at Hyderabad from October 24 to November

A surface-to-surface missile being fired by an Indian Navy destroyer

1, 2003: - (a) Petty Officer, AL Lakra, Silver Medal in boxing. (b) Chief Petty Officer, CPRS Kumar, Bronze Medal in weight lifting.

4.41 11th Asian Sailing Championship: Naval sportsmen won 2 Gold, 2 Silver and 1 Bronze medal in the 11th Asian Sailing Championship at Mumbai from January 8 to 13, 2004 in different categories.

4.42 International YMCA Boxing Tournament: Petty Officers, AL Lakra and M Suranjoy Singh, won silver medals each in International YMCA Boxing tournament held at Delhi from February 3 to 7, 2004.

4.43 9th SAF Games: Naval sportsmen won 6 Gold, 1 Silver and 2 Bronze medals in the 9th SAF Games held at Islamabad in March 2004.

4.44 Aero Adventure Sport: A node for conducting para jumping, sky diving, microlite flying etc. has been set up at Dega, Visakhapatnam. The Navy is also setting up its own Sky Diving Team. The team would subsequently participate in various international events.

4.45 Mountaineering: The IN Mountaineering Cell has been set up at Naval Headquarters. After a successful assault on Mount Suitilla in 2002, the Naval Mountaineering team recently scaled Mt Kamet/ Abigamin and Mt Saser Kangri in the year 2003.

4.46 XXIII Antarctic Expedition: A three-member naval team participated in the XXIII Indian Summer Antarctica Expedition from December 2003 to March 2004.

5

Indian Air Force

The induction of SU-30 MK-1 adds a cutting edge to the lethal potential of India's defence capability.

The IAF continues to modernize in a phased manner and today epitomizes a credible air power of capability and repute.

5.1 The Indian Air Force (IAF) is a modern, technology intensive force with commitments to excellence and professionalism. IAF has completed seven decades of dedicated service to the nation. Keeping pace with the demands of contemporary advancements, the IAF continues to modernise in a phased manner and today epitomises a credible air power of capability and repute.

5.2 IAF ensures that all personnel hone their professional skills to the highest level, minimise wastage, reduce expenditure and optimise output. Although the possible cost and complexity of new technology continue to make unprecedented demands on the skill and commitment of the Indian Air Force, these challenges have been met with exemplary elan and fortitude. IAF has been operationally alert continuously and its personnel have withstood with determination the pressures and uncertainties.

5.3 The IAF has rendered yeoman service and undertaken multifarious responsibilities viz, air defence, air interdiction, reconnaissance and conducted counter-surface operations in support of ground forces. Besides, it is committed to provide assistance to civil authorities during natural calamities, for movement of personnel to maintain law and order as well as to cater to the needs of a large number of soldiers, who man outposts in the treacherous, forbidding and inaccessible reaches of the Himalayas. IAF pilots and airmen of the transport and helicopter fleets have maintained the lifeline in the skies under the most gruelling conditions.

FLEET IMPROVEMENTS/INDUCTIONS

5.4 IAF has achieved significant milestones in the field of self-reliance in the operation and maintenance of its fleet. Many aircraft are indigenously maintained and overhauled. In addition, aircraft and weapon systems are undergoing upgradation with the latest avionics systems and modifications. Follwoing are some of the significant areas of achievement.

The Hawk, Advanced Jet Trainer, being acquired for training IAF pilots.

5.5 Advanced Jet Trainer (AJT) : The requirement of an advanced jet trainer has long been felt by the Air Force to meet its training needs. The contract for Hawk AJT aircraft was concluded on March 26, 2004 with the manufacturers, M/s BAE Systems, UK. 24 aircraft would be procured from M/s BAE Systems in flyaway condition and the remaining 42 aircraft would be license-manufactured in India by Hindustan Aeronautics Limited (HAL).

5.6 Kiran Mk- I & II : These aircraft were inducted in the IAF in 1968. They are utilised for intermediate and advanced training of IAF pilots. Another important role undertaken by these aircraft is aerobatics as part of the Surya-Kiran Aerobatic Team, which requires precision flying and faultless maintenance. Hindustan Aeronautics Ltd (HAL) has indigenised many spares of this aircraft.

5.7 Additional Multi-Role Aircraft : In principle approval for additional Multi-Role aircraft has been accorded.

5.8 MiG-21 (BIS UPG): MiG-21 Bis aircraft are under series upgrade at HAL (Nasik Division) and are being fitted with latest state-of-the-art avionics systems. The inclusion of new systems enhances the capabilities of the aircraft. 64 aircraft have been upgraded by HAL so far.

5.9 Su-30 :The first batch of Su-30K was inducted in 1997 and Su-30 MKI Phase I was inducted in 2002. Su-30 MKI Phase II aircraft was inducted during October-December 2003. HAL has concluded a contract with Russia for manufacture of Su-30 MKI aircraft under licensed agreement from 2005 to 2018. HAL will also set up Repair and Overhaul (ROH) facilities. Induction of Su-30 MKI in IAF is a major step towards self-reliance and will add a cutting edge to the lethal potential of India's defence capability.

5.10 Jaguar : Jaguar aircraft were inducted into IAF in 1979 and have given

Induction of Su-30 MK-I is a major step towards self-reliance and will add a cutting edge to the lethal potential of India's defence capability.

good service over the past 25 years. Currently, a number of modifications are in progress to improve the performance of these aircraft. These modifications are aimed at improving the avionics and fitment of new-generation weapon systems. These aircraft are capable of air-to-air refuelling and their radius of action has been considerably enhanced by acquisition of air-to-air refuellers. Approval of the Government was accorded for acceptance of eight new twin seater aircraft from HAL during 2003-04. Avionics integration on these aircraft is completed and weapon system integration is in progress.

5.11 Unmanned Aerial Vehicle (UAV) : UAVs were first inducted into the Indian Air Force in 2000. The fleet was further expanded in 2003. The delivery of the UAVs is expected to be completed in 2004-05.

5.12 Executive Jets : The contract was signed on September 19, 2003 for the acquisition of four Embraer aircraft for the IAF and one for the Ministry of Home Affairs. The contract also involves integration of a Self Protection System (SPS) suite by the vendor. The delivery of the first two aircraft would commence by middle of 2005.

5.13 HS-748 Aircraft Upgrade: In view of the obsolescence of certain avionics and other equipment on HS-748 aircraft, it was proposed to replace them and additionally install a few new avionics such as Global Positioning System (GPS), Distance Measuring Equipment (DME) and radio altimeter. Upgrade of prototype has been completed and the aircraft handed over to the Air Force. Contract for modification of the aircraft has been signed with HAL on March 27, 2003 and the delivery will be commencing from April 30, 2004.

5.14 Advanced Light Helicopters (ALH): The IAF has already procured Advanced Light Helicopters as a part of its schemes to replace Chetak helicopters. This is an indigenously built helicopter and received very good reviews at the recently concluded Singapore Air Show where the IAF displayed the helicopter through its display team 'SARANG'. The initial helicopters would be with a conventional cockpit, which would be upgraded to a glass cockpit with an upgraded engine. In February 2004, 5 ALHs of IAF participated in the air display at Singapore Air Show.

5.15 Light Combat Helicopters (LCH) : IAF is planning to induct 65 state-of-the-art Light Combat Helicopters (LCH) to be designed and developed indigenously. Apart from supporting the Army in Low Intensity Conflict Operations (LICO), these helicopters would enhance the combat effectiveness of the Air Force.

5.16 Mi-8 & Mi-17 Helicopters : Induction of Mi-8 & Mi-17 helicopters into the IAF commenced from 1972 and 1984 respectively. They have given exceptionally good service. IAF has procured 10 new Mi-17IV helicopters. A contingent of Mi-17 helicopters is presently operating in the UN Mission in Congo.

5.17 Mi-35 Helicopters: Mi-35 helicopters were inducted into the IAF in 1994 and have given exceptionally good service. These helicopters are being upgraded for their day and night capability. A contingent of Mi-35 helicopters is presently operating in the UN Mission in Congo.

5.18 Pechora Missile System Upgrade : Pechora missile system will continue to be operational till year 2015. In order to ensure its reliable operation, Government has approved the proposal for selective upgrade of Pechora Systems.

5.19 Prithvi Missile System : Prithvi Missile Systems are gradually being inducted in the IAF. Three squadrons along with the associated ground support equipment are planned to be inducted.

5.20 SAR/ISAR Option for ELTA Radar: The SAR/ISAR option is an upgrade on the existing fire control radar on the maritime Jaguar aircraft. The trials were successfully conducted and acquisition finalized through a contract on January 13, 2004.

A memorandum of principles and order of cooperation on the AWACS project for IAF outlining the scope of work and responsibility of the parties, was signed by the Government of India, the Government of Israel and the Government of Russian Federation on 10.10.2003.

5.21 Airborne Warning and Control System (AWACS): A memorandum of principles and order of cooperation on the AWACS project for IAF outlining the scope of work and responsibility of the parties, was signed by the Government of India, the Government of Israel and the Government of Russian Federation on 10.10.2003. Subsequently, an Inter-Government Agreement (IGA) was concluded with Israel on 3rd March 2004 followed by a contract with M/s IAD Elta System to acquire AWACS aircraft. These aircraft, as force multipliers, would enhance the combat effectiveness of the IAF. The basic platform is the IL-76 aircraft, thus giving commonality with the existing fleet of the Air Force.

5.22 Air Defence Ground Communication Network: Various state-of-the-art communication networks like Integrated Air Command, Control and Communication System (IACCCS), Aerostat, Unmanned Aerial Vehicle (UAV), Prithvi Tactical Air Centre (TAC) / Joint Air Defence Centre (JADC) / Delhi Area Defence Centre (DADC) / Control and Reporting Centre (CRC) etc. are being planned using Fibre Optic Media (FO Media), satellite and microwaves system for effective and efficient integration of Air Defence Operation Elements like fighter aircraft squadrons, radars, Command Headquarters etc. Also the existing Air Defence Ground Environment System (ADGES) communications network is being modernized with Asynchronous Transfer Mode (ATM) technology using Fibre Optic Media.

5.23 Air Defence Ground Radar: State-of-the-art radar and communication systems such as Aerostar, Low Level Light Weight Radars (LLLWR) etc are under various stages of induction to provide effective Air Defence against enemy attack.

TECHNOLOGICAL EDGE

5.24 Central Acquisition Radar (CAR) :This radar has been indigenously designed and developed by the Defence Research and Development Organisation (DRDO). In keeping with the IAF policy to bolster indigenous technological development, the prototype radar underwent performance evaluation and the results have been encouraging.

5.25 Force Multipliers : The IAF has acquired four IL-78 Flight Refueling Aircraft (FRA). IAF has operationalised in-flight refueling on Su-30, Su-30 MKI, Jaguar and Mirage 2000 aircraft.

ENHANCING FLIGHT SAFETY

5.26 Anti-Bird Strike Measures: There have been no Category I (Cat-I) accidents due to bird strike this year (April 1, 2003 to March 31, 2004). This was possible due to a vigorous drive for clearance of vegetation and implementation of anti-bird measures. 52 stations have been supplied with heavy-duty tractors and grass cutting machines for environment cleaning. Two additional Bird Hazard Combat Teams (BHCTs) have been established and 15 temporary BHCTs have been made permanent. The scope of expenditure on anti-bird hazard measures have been enlarged to increase its effectiveness.

Microlite aircraft getting ready for a bird survey flight.

5.27 Measures to Reduce Human Error Accidents : The concept of Operational Risk Management (ORM) is being implemented in the IAF to reduce accidents. Software for implementing this concept is under development.

5.28 Helpline Service : A 'Helpline' service has been established to render assistance to the kin of personnel involved in aircraft accidents.

INFORMATION AND ELECTRONIC WARFARE

5.29 Space Applications : The IAF has made significant progress by using space technologies in the field of communications, surveillance and reconnaissance, search and rescue. INSAT series of satellites are used for communications, while IRS series of satellites are used for imaging. India has obtained the capability of 1 metre resolution imaging through Indian Remote Sensing Satellite (IRS)-TES.

5.30 Progress has been made in the field of Electronic Intelligence (ELINT) and enhancing the resolution further in the field of imaging. In Search & Rescue (SAR), IAF has planned to procure beacons for its aircraft, which would be compatible with satellite based SAR system.

5.31 Electronic Warfare (EW) Equipment: The fitment of basic minimum Integrated

EW self protection suite comprising Radar Warning Receiver (RWR), Counter Measure Dispensing System (CMDS) and Airborne Self Protection Jammer (ASPJ) on the fighter fleet is being pursued vigorously. In addition, fitment of RWR and CMDS is planned on transport aircraft and helicopters.

5.32 A number of advanced Early Warning (EW) systems viz., Integrated EW Range, Communication Jamming (COMJAM) systems, Airborne and Ground based Signal Intelligence (SIGINT) systems, missile warning systems etc. are planned for procurement to provide the cutting edge to IAF in Early Warning (EW) capability.

5.33 Signal Intelligence (SIGINT) : New SIGINT systems on board airborne platforms as well as ground systems are planned to be procured to replace the ageing systems as well as to augment the surveillance capabilities.

5.34 Integrated Early Warning (EW) Workshop: This is a new concept introduced so as to make Early Warning (EW) training more efficient and to assess squadron and units on Early Warning (EW) in an integrated manner.

5.35 Surveillance and Early Warning : The Aerostat surveillance system with multiple payloads is being inducted into the IAF. The primary role of this system is to reinforce the low-level detection coverage of the air defence infrastructure. The Aerostat system will play the role of a force multiplier and provide both strategic and tactical advantage over adversaries. The payloads would form a part of the aerostat balloon, which would be hoisted in the air. This will give the capability to peep into enemy territory and also provide support to offensive missions.

5.36 Airborne Early Warning and Control system (AEW&C): Two AEW&C platform are being indigenously developed by the Centre for Airborne System (CABS) in coordination with DRDO. These platforms will minimize our dependency on foreign vendors in the field of Electronics Warfare.

5.37 Low Level Light Weight Radar (LLLWR): The LLLWRs are lightweight radars that can be man ported or airlifted to inhospitable terrain and mountainous regions. Induction of these radars would give the capability to deploy radars at any site at short notice. It has the capability to detect threats at low level and provide the much-required early warning in mountainous terrain.

5.38 Securing L/L Communication: Landline communications has been vulnerable to interception. Encryption system has been planned to secure the media for transmission of voice and data communications. Presently, 2 Mega Bits Per Second (MBPS) inter-command network and Tropo lines for stage-I(WAC) have been secured using Bulk encryption units. The encryption of other systems is planned with their upgradation.

5.39 Nuclear, Biological & Chemical (NBC) Warfare: Procurement of NBC equipment for certain forward airbases and Quick Reaction Teams (QRT) is underway. Personal protective clothing like NBC suits, gloves and boots and detection/decontamination equipment is part of the procurement.

TRAINING

5.40 A review of the national security system by a Group of Ministers (GoM) brought out the need for greater harmony between military and civil organisations for bringing synergy in exploitation of resources/ efforts. Pursuing this objective, Indian Air Force took up the issue of recognition of training/ courses conducted in the IAF, with All India Council of Technical Education (AICTE) and Director General Of Civil Aviation (DGCA). The result of this exercise are summarised below:-

- DGCA's approval for the training at Flying Training Establishments and technical training (both for officers and airmen of Maintenance Branch) have been obtained.
- Award of Diploma in Engineering, duly recognised by AICTE, to the technical training imparted in IAF has been obtained.
- Recognition of the civil equivalence of military qualification awarded to non-technical tradesmen by Government of India, Ministry of Labour has been obtained in June 2003.

5.41 Air Force Engineering College : A high level of professionalism, particularly in the technical branches of the Air Force, is necessary, as the operational effectiveness of the IAF is highly dependent on the machines as much as on the men who fly and operate them. The operational preparedness of all support systems for the flying branch is also a crucial factor. To ensure that the IAF has adequate professionally competent technical officers, the Government has approved a proposal, in principle, for establishing an Air Force Engineering College.

To ensure that the IAF has adequate professionally competent technical officers, the Government has approved a proposal, in principle, for establishing an Air Force Engineering College.

5.42 Recognition of IAF Training Institutes by DGCA : To bring out greater synergy in aviation in the country all defence pilots are also required to meet the commercial pilot requirements. DGCA has recognized IAF training institutes and conducts bi-annual examination at the Air Force Academy. Recognition of military aircraft IL-76, An-32 and Mi-17 for conduct of civil license skill test is under progress.

5.43 Air Force Awareness Campaign : The youth of our nation, especially those in the outlying parts of the country, are not adequately aware about aviation and a career in the Air Force. In order to attract bright, talented and motivated youth to join its ranks, IAF has launched awareness campaigns in all parts of the country. The response to these campaigns has been overwhelming.

5.44 Air Race 2003 : Year 2003 was centenary year for powered flying. The first aircraft took off on its maiden flight on December 17, 1903. To commemorate this event in India, an air race was organised by the Indian Air Force along with the Aeronautical Society of India.

5.45 Utilization of Trained Defence Manpower : To infuse greater harmony among military and civil organizations and

utilize highly trained and disciplined defence manpower towards nation building, IAF has written to various civil organizations such as Pawan Hans, Airports Authority of India and Indira Gandhi Rastriya Udan Academy for lateral absorption of IAF personnel.

5.46 Training of IAF personnel abroad : IAF is presently participating in various courses abroad. These courses are conducted in USA, UK, France, Australia, South Africa, Japan, Indonesia, Malaysia, Thailand, Bangladesh, Netherlands, Germany and China. In addition, one IAF officer is currently on deputation to United Sates Air Force (USAF) on Qualified Flying Instructor (QFI) exchange programme.

5.47 Training of Foreign Students in IAF : Foreign students are availing training facilities in IAF establishments. Ministry of External Affairs (MEA) offers the training slots under Indian Technical and Economic Co-operation-I (ITEC-I), ITEC-II, Self Financing Scheme (SFS) and Aid to Sri Lanka programmes. The Government funds training for personnel from Nepal and Bhutan. Officers and airmen from Myanmar, Bangladesh, Sri Lanka, Mauritius, Malaysia and Botswana have undergone training at various training establishments in India during the year. In addition, training slots have been offered to Nigeria as well.

DEFENCE COOPERATION

5.48 Combined joint exercises were undertaken by the IAF with various countries to strengthen bilateral relations. These exercises, besides building up goodwill between the countries, have given an exposure to our personnel on the latest developments in the field of aviation. Details of the exercises are enumerated in the succeeding paragraphs.

5.49 Exercises led by Army : Exercise 'Vajra Prahar 03-1' / Ex 'Balance Iroquois 03-1'. Ex 'Vajra Prahar 03-1', a joint exercise was conducted at Vairengte and surrounding areas during April, 2003. The exercise was conducted with the US Special Operations Pacific Command. The Indian participation included two An-32 and six Mi-17 aircraft of IAF and a team of Ex 21 Para Strike Force (SF) of the Indian Army. The US participation comprised 21 troops and civil affairs personnel.

5.50 The Special Forces Joint exercise in High Altitude Area (HAA) operations Ex 'Balance Iroquois 03-4' / Ex 'Vajra Prahar 03-3' was conducted at Leh in September 2003. The exercise included rock craft and cliff assault technique, ground training and friendship jumps. The IAF participated with one An-32 for paradrop. Friendship jumps from An-32 were carried out over Stakna Drop Zone (DZ). Seventeen US troops along with Indian troops took part in the friendship jumps.

5.51 Exercises Led by Navy: Indo-US Joint Naval Special Forces exercise was conducted at Ganpatiphule (Ratnagiri) in March 2004. The scope of the exercise included para jumps, combat free falls and duck drops from 2 x An-32 aircraft and Special Heliborne Operation (SHBO) and Combat free fall from 2 x Mi-8 helicopters.

5.52 Exercises led by Air Force : Exercise

'Cooperative Cope Thunder-03' (CCT-03), a multilateral exercise, was conducted in Alaska during June, 2003. Exercise CCT is conducted every year in Alaska during the period June-July. IAF participation in CCT-03 comprised one IL-76 and 31 crew/ observers. The three observers included one each from flying, fighter controller and metereological branches. IAF also participated in the executive level observer programme, which provided an opportunity to interact with observers from other countries and witness conduct of multilateral operations from close quarters. This was the first ever participation by an IAF aircraft in a multilateral exercise. The IL-76 sorties included airdrop mission, participation in air power, orientation ride for executive observers and North Pole flights. Training objectives for the participation in the exercise included successful integration in multilateral combat exercise, key involvement and cooperation in the mission planning process with multiple nations and use of grid navigation without magnetic compass backup. The IL-76 Polar flight and endurance flight of 09:36 hrs was a good achievement.

IAF participated in a multilateral exercise in Alaska in June 2003 in which one IL76 and 31 crew/ observers participated.

5.53 Ex Cope India-04: Ex Cope India-04, a bilateral exercise was conducted at Gwalior with USAF and IAF fighter aircraft. This was the first exercise when frontline fighter aircraft of both sides participated. The Dissimilar Air Combat Training (DACT) Ex was conducted from February 14 to 26, 2004. Six F-15 aircraft of USAF flew 52 sorties against Mirage, Mig 21, Bison, MiG-27, MiG-29 and SU-30 aircraft of IAF. The objectives - to learn about each other's operational and maintenance procedures - were achieved to a great extent.

5.54 Indo –Tajikistan Joint Exercises : A joint airborne exercise was carried out in Tajikistan during July-August, 2003. The exercise was conducted on the occasion of Tajikistan Air Force raising day on August 05, 2003. The Indian participation comprised three An-32 aircraft, paratroopers and Para Jumping Instructors (PJIs). Paratroopers of Indian Army Para Brigade and 7 Assault Brigade of Tajikistan Army participated in the exercise, which culminated in a paradrop at Fakrabad DZ.

SPORTS AND ADVENTURE

5.55 Achievements of IAF in Sports : Warrant Officer Ram Mehar Singh, Ground Training Instructor [GTI(Sports)] was conferred 'Arjuna Award' for excellence in the field of Kabaddi. The President of India presented the award on August 29, 2003. Ram Mehar Singh was also conferred 'Bhim Award' by Government of Haryana in October 2001.

5.56 Skydiving : A Basic skydiving course was conducted in June, 2003 at the Air Force Station Hindon, where 55 personnel successfully completed five jumps each and earned para wings in a record time of six days.

6

Coast Guard

Coast Guard Naviks on Parade at Daman

The Coast Guard is responsible for keeping India's Exclusive Economic Zone measuring over 2.02 million square kilometers under regular surveillance.

6.1 The Coast Guard was set up as an Armed Force of the Union in 1978 for the preservation and protection of our Exclusive Economic Zone (EEZ). The Coast Guard is responsible for keeping India's EEZ measuring over 2.02 million square kilometers under regular surveillance to prevent poaching, smuggling and other illegal activities. Besides, Coast Guard's charter of duties also include pollution response at sea, search and rescue (SAR) and protection of marine environment.

ORGANISATION

6.2 The Command and Control of the Coast Guard is exercised by the Director General, from the Coast Guard Headquarters at New Delhi. It has three Regional Commands with the Regional Headquarters at Mumbai, Chennai and Port Blair. The entire coastline of India and the maritime zones are divided into three Regions. The Regions are further divided into Coast Guard Districts, each representing a coastal state, under a District Commander. There are two Air Stations at Daman and Chennai and four Air Enclaves at Goa, Mumbai, Kolkata and Port Blair.

FORCE LEVEL

6.3 From a small beginning in 1978, the Coast Guard has made a steady progress in developing its force levels with regular induction of ships and aircraft. Consequent to commissioning of 1 Advanced Offshore Patrol Vessel, 1 Interceptor Boat and 1 Advanced Light Helicopter during the period November 2003 to March 31, 2004, Coast Guard now has a total force level of 38 ships, 20 Interceptor Boats/ Crafts, 6 Hovercrafts, 24 Dornier Aircraft, 17 Chetak Helicopters and 3 Advanced Light Helicopters.

COMMISSIONING/ACTIVATION OF SHIPS/ AIRCRAFT/STATIONS

6.4 Following Ships/Aircraft/Stations were Commissioned/Activated during the period:-

a) Coast Guard Ship Durgabai Deshmukh built by M/s Goa Shipyard Limited, Goa was commissioned in the service in April 2003.

b) Acquisition of 4th Advanced Offshore Patrol Vessel(AOPV): 4th AOPV CGS Sagar was commissioned on November 3, 2003 at Goa. This ship is based at Mumbai and has strengthened the surveillance capabilities of the Coast Guard Region (West).

c) Interceptor Boat (IB): The 10th Interceptor Boat (IB) constructed by M/s Anderson Marine Private Limited, Goa was commissioned on November 15, 2003 and based at Goa.

d) 3rd Advanced Light Helicopter (ALH): The third ALH CG 853 indigenously built by M/s HAL Bangalore has been inducted into service on March 30, 2004.

e) CGS Kavaratti: Coast Guard station Kavaratti in the Lakshadweep and Minicoy Islands was activated on January 15, 2004 by the DGCG.

Coast Guard interceptor boat crossing the Pamban Viaduct

NEW ACQUISITIONS

6.5 Coast Guard has made following progress on the cases of new acquisitions:-

(a) Interceptor Crafts (ICs): The contract has been signed on March 22, 2004 for acquisition of eight Interceptor Boats at a total cost of Rs. 3.74 crores. These boats are being constructed by M/s Bristol Boats, Kochi and are expected to be delivered within two years. These boats will be highly advantageous in carrying out patrol duties in shallow water areas near the coastline.

(b) Advanced Offshore Patrol Vessel (AOPV): A contract has been signed with M/s Goa Shipyard Limited, Goa on March 18, 2004 for the construction of 5th AOPV at a total cost of Rs. 228.13 crores. This ship is capable of 24 knots speed and will be equipped with the state of the art systems and designed for adequate crew comfort for extended operations. The ship is designed to carry an Advanced Light Helicopter (ALH) and will be equipped with superior fire fighting and pollution control capabilities.

(c) Pollution Control Vessels (PCVs): A contract has been signed with M/s ABG Shipyard, Surat on March 31, 2004 for construction of three Pollution Control Vessels at a total of Rs. 424.07 crores. With this, the long outstanding requirement of dedicated and sophisticated pollution control ships to meet disasters of oil spill in our waters will be met effectively. These ships are the best

of their kind in the world and will equip the Coast Guard to handle any eventuality in our waters.

(d) Fast Patrol Vessels (FPVs): Approval has been accorded for construction of five Fast Patrol Vessels by M/s Goa Shipyard Limited, Goa at a total cost of Rs. 222.85 crores. These are follow-on series ships of the two FPVs acquired during 2002-2003 and will enhance the capabilities of Coast Guard. These ships are capable of a maximum speed of 35 knots and rank among the best ships of its class world over.

ACHIEVEMENTS

6.6 (a) Operational Achievements: During the period the following operational achievements have been made by the Coast Guard.:-

(i) Poaching boat apprehended - 31
(ii) Smuggling Vessels apprehended - 1
(iii) Contraband confiscated - worth Rs. 7 Lakhs
(iv) Lives saved at sea - 169
(v) Ships saved from distress - 13
(vi) Sea pollution averted - 5
(vii) Sea pollution combated - 4

(b) Ship Reporting System 'INDSAR': An advanced computer aided ship reporting system "INDSAR" for search and rescue services has been brought into operation by the Coast Guard with effect from February 1, 2003 and is being operated through the Maritime Rescue Coordination Centre at Mumbai. Participation of merchant vessels of more than 300 GRT operating or transiting through the Indian Search and Rescue Region, in the INDSAR is voluntary and the ships do not have to incur any charges or additional responsibilities than already existing under Safety of Life and Property at Sea (SOLAS) 74 and Search & Rescue (SAR) 79.

(c) National Search and Rescue Board: The second meeting of the National Search and Rescue Board was held on April 22, 2003 under the chairmanship of Director General Coast Guard. The meeting was attended by the representatives Ministry of Shipping, DG(Shipping), Shipping Corporation of India, Indian Navy, Department of Telecommunication, Customs, Department of Space and National Fish Workers Forum. The Chairman of the Board released the first edition of the National Search and Rescue Manual and also promulgated National Search and Rescue Plan-2003 for providing guidance to the members for effective coordination of search and rescue resources.

Protection of Tamil Nadu coast against infiltration by militants has been entrusted to the Indian Navy and the Coast Guard. Coast Guard ships and aircraft remain on continuous patrol/ surveillance duty in the Palk Strait and Gulf of Mannar.

6.7 Operations:

(a) Operation Tasha: Protection of Tamil Nadu coast against infiltration by militants has been entrusted to the Indian Navy and the Coast Guard. Coast Guard ships and aircraft remain on continuous patrol/surveillance duty in the Palk Strait and Gulf of Mannar.

(b) Operation Swan: In the year 1993, consequent to the Mumbai serial bomb blasts, Operation Swan was launched in coordination with the Indian Navy to prevent landing of contraband and infiltration of illegal immigrants on Maharashtra and Gujarat coasts. The Coast Guard is contributing maximum in the joint operation, as far as outer layer and intermediate layer patrolling is concerned.

(c) Operation Nakabandi: In order to check the influx of refugees and to curb the clandestine activities in Palk Bay and Gulf of Mannar, Operation Nakabandi was launched in August, 1996 and is continuing.

(d) Anti-smuggling Operations: Based on intelligence inputs from Customs and Department of Revenue Intelligence, the Coast Guard undertakes anti-smuggling operations. In addition, random anti-smuggling patrols are also conducted. Due to patrolling by the Coast Guard, incidents of smuggling contraband have come down drastically.

(e) Anti-poaching Operations: Anti-poaching operations are conducted on a

Coast Guard ship and aircraft maintaining vigil in the Exclusive Economic Zone .

regular basis in the Indian Exclusive Economic Zone. Due to the Coast Guard efforts, the incidents of poaching have reduced compared to previous years.

(f) Search and Rescue Operations: Distress situations at sea demand rapid response. Coast Guard ships and aircraft undertook various Search and Rescue missions and were instrumental in saving 169 lives at sea. The major search and rescue operations are as given below:-

(i) The Coast Guard deployed one Interceptor Craft IC-134 and a helicopter on April 15, 2003 for the timely assistance in the rescue of 18 tourists out of 23 travelling in a boat which capsized near Anjuna beach off Goa. The bodies of the remaining missing tourists were also recovered.

(ii) MV Segitega Biru: An Indonesian Merchant Vessel 'MV Segitega Biru' carrying 4327 tonnes of soda ash and 1000 tonnes of Dolomite cargo, on passage from Porbandar to Chittagong encountered rough seas due to cyclone on May 14, 2003 and developed crack in the hull. Subsequently, the vessel sank off Sagar Islands on May 18, 2003. Coordination by Coast Guard Rescue Centres resulted in saving all 22 crew of the vessel.

(iii) MV Yujia: The Coast Guard Maritime Rescue Coordination Centre (MRCC), Port Blair, coordinated rescue of 28 Chinese crew on August 11, 2003 from a merchant vessel MV Yujia of Xiamen Chengyi Shipping Company, China, which was in distress north-west of Diglipur. The vessel, with a cargo of 14,500 tonnes of chrome ore, on passage from Paradip to Yangon, was experiencing heavy flooding. On receiving the distress message, the Coast Guard identified two merchant vessels MT CHM Piru Singh and MV Chieftain II in the vicinity to render assistance to the distressed vessel. As the ship crew was unable to control the flooding, all 28 crew members had to abandon the vessel and started drifting at sea in two life rafts and three dingies. The Maritime Rescue Coordination Centre, Port Blair, guided both the merchant vessels towards the survivors and finally MV Chieftain rescued all the 28 crew.

(iv) MSV Cutty Sark: The Coast Guard at Port Blair received a report of a motor sailing vessel with red hull, MSV CUTTY SARK registered at New Mangalore, adrift seven nautical miles East of Taralit Bay (North of Maya Bunder). The vessel which had seven Indian crew onboard

had an engine failure on June 15, 2003. The vessel was located 15 nautical miles of Taralit Bay by Coast Guard Ship Akka Devi and towed to safety.

(v) MV Fortune Carrier: On June 10, 2003, authorities at the Kolkata Port Trust intimated the Coast Guard Headquarters at Haldia that Belize registered vessel "MV Fortune Carrier" was in distress because of flooding in the engine room. Assistance of the Coast Guard for search and rescue was sought. A Coast Guard hovercraft was rushed to the site.

(vi) Assistance to MV Gulf-5: Coast Guard Ship Vijaya, while on patrol on August 1, 2003 received a distress message from "MV Gulf-5" off Porbandar on passage from Mangolia to Mumbai, for scrapping. The vessel had 13 crew on board. It was flooding at the rate of 40-50 tonnes/hr. from stern gland and had total power failure. All the 13 crew were evacuated and agents were directed to mobilise pumps for arresting the flooding. Agents also arranged Tug Akash from Mumbai to tow the vessel. Once the flooding was brought under control, the crew were transferred to the Tug. The vessel was towed to Mumbai for further repairs thereafter.

(vii) Assistance to MV Vadulu Valley: A distress call was received on July 30, 2003 from Capt. Sahi of M/s. Sahi Operations, Mumbai reporting flooding at the rate of 70 tonnes/hr in the engine room of "MV Vadulu Valley" on passage from Baharin to Mumbai. The vessel was anchored off Porbandar. The vessel was brought to inner anchorage and with the help of commercial divers and Coast Guard team, the flooding was controlled.

(viii) Ditching of MI-172 near Neelam Heera Ratna oil Fields: The Maritime Rescue Coordination Centre (Mumbai) of Coast Guard received a distress on August 11, 2003 from ONGC control room at Mumbai informing that a Helicopter with 29 persons onboard ditched near Rig Sagar Kiran. Immediately, the Coast Guard directed CGS Sarang with integral helicopter and a Dornier aircraft ex-Daman with air droppable liferafts in search and rescue mode. The Coast Guard coordinated the operations for five days.

(ix) Crash of Pawan Hans Dauphin off Agatti: A Pawan Hans Dauphin Helicopter with five persons on board (including two pilots) had ditched about 1.3 Kms north-west off Agatti islands on October 30, 2003. The ill-fated aircraft was bound for Agatti after taking off from Bingaram Island. On receipt of information from Air Traffic Control, Coast Guard Ship Samar pro-

Coast Guard ships and aircraft undertook various Search and Rescue missions and were instrumental in saving 169 lives at sea.

ceeded for the rescue of the Helicopter and the crew. Maritime Rescue Sub-centre (MRSC) (Kochi) and Maritime Rescue Coordination Centre (Mumbai) were intimated for further co-ordination. The CG ships and aircraft conducted a successful search and rescue operation which resulted in saving of life of four persons out of five present on board the aircraft.

(x) Rescue from MSV Jal Jyoti: Coast Guard Maritime Rescue Coordination Sub-Sub Centre, Okha received an information on February 20, 2004 from authority of Mandavi Port, Gujarat that MSV Jal Jyoti has sunk in position about 22 nautical miles North West of Okha on February 19, 2004. Ten crew members had abandoned the vessel and were adrift at sea in a life raft. Within 15 minutes of receipt of the distress message, a hovercraft H-184 sailed from Okha and another Coast Guard Vessel C-141, which was operating along IMBL, was also diverted for search and rescue. H-184 began carrying out a planned search pattern based on the life raft's most probable position. The crew of MSV Jal Jyoti was located and taken to Okha for medical assistance.

(xi) MV Nand Kawas: Coast Guard Regional Headquarters (East), Chennai received a distress message from MV Nand Kawas of ESSAR Shipping on December 15, 2003. The vessel was caught in the fierce tropical cyclone and was adrift in position 50 kms off Machillipatnam in Andhra Pradesh. 13 people onboard were preparing to abandon the ship. On receipt of their distress message, the Coast Guard Maritime Rescue Centre (MRCC), Chennai was activated. A quick assessment of approaching weather situation vis-à-vis threat to the 13 lives was carried out at the MRCC, Chennai. Despite cyclonic weather, CGS Vijaya from Chennai was dispatched immediately for search and rescue mission. All thirteen people of MV Nand Kawas were rescued by the Coast Guard Ship and brought to Vishakhapatnam.

(xii) Assistance to Drifting Barge: The Coast Guard Regional Headquarters (West), Mumbai received telephonic information from M/s British Gas that one barge has been observed adrift 40 miles west-north-west off Daman with four to five people onboard requesting assistance. The information was immediately passed to the Coast Guard Air Station at Daman. CGAS (Daman) launched a Dornier within five minutes of the receipt of information. The Dornier located the barge adrift with two crew members in waters nearby. Dornier located a tug belonging to ONGC in the vicinity and vectored it to pick up the crew from water. The barge was being towed by a boat from Belapur (Mumbai) to Alang when it parted. The tug Malviya-VI carried the rescued crew to Kandla.

Coast Guard responsibilities require a wide variety of equipment.

(xiii) Assistance for Missing Vessel-MSV Jalaliya The Coast Guard Rescue Sub Centre (MRSC) located at Kochi, Kerala received an information from Port Officer, Kavaratti regarding a missing vessel. According to the information MSV Jalaliya had sailed from New Mangalore on February 7, 2004 and was expected to arrive at Kavaratti on February 8, 2004. The vessel could not arrive at the stipulated time and was also not in communication. Immediately a Search and Rescue mission was initiated by MRSC, Kochi and a Dornier was launched on February 10, 2004. The aircraft located her position. MSV Jalaliya was thereafter brought to Androth port in Karnataka under tow by a tug engaged by port officer Kavaratti.

OTHER OPERATIONS

6.8 Oil Spill Response Operations :

(a) The vessel "MV Segitega Biru" sank off Sagar Islands on May 18, 2003 posing threat to the marine environment due to the presence of 145 tonnes of Furnace Fuel Oil (FFO) onboard the vessel. CG ships and aircraft with Pollution Control (PC) equipment were kept stand by to meet any eventuality. On May 23, 2003, an oil slick was observed near the vessel and the Coast Guard ordered "Operation Saf Samunder" and deployed an Advanced Offshore Patrol Vessel (AOPV) (Coast Guard Ship Sarang, with helo), a Dornier/Air Cushion Vessel (ACV) to monitor and neutralise the spill by spraying of dispersant. 17 Dornier sorties and five shipborne

helicopter sorties were undertaken to monitor and neutralise the slick by spraying 1350 litres of Oil Spill Dispersant (OSD). The operation terminated on May 27, 2003 after nullifying threat to the coast.

(b) The underwater pipeline carrying crude oil from Bombay High to Uran was ruptured on August 10, 2003 and the oil was leaking out. Based on the request received from ONGC, Mumbai, the Coast Guard Oil Spill Response Team at Mumbai was activated and Coast Guard Ship Samar with response equipment and a Dornier ex-Daman with aerial spray pod were despatched to the site. Coast Guard Ship Vijaya in operation nearby was also diverted to augment the effort. The Coast Guard Ship Dornier commenced surveillance of oil spill at first light on August 11, 2003 followed by aerial spray. The Coast Guard used more than 100 litres of oil spill dispersant. Approximately 90% spill was broken down in thin sheen and 10% in isolated patches within 24-30 hrs and naturally faded. The timely spray of dispersant neutralised the spill quickly.

Medical Evacuation:

6.9 (a) Coast Guard Ship Veera carried out medical evacuation on April 10, 2003 of a crew member of Merchant Vessel Asir Saudi. The patient, an Indian national, was suffering from cardiac arrest and he was brought to Kochi for further medical treatment.

(b) The Maritime Rescue Coordination Centre (Mumbai) of the Coast Guard received an urgent message on August 1, 2003 from the agents of Ashapur Shipping requesting for medical evacuation of an Indian deck cadet with fractured right shin, from "Merchant Vessel Asha Himani". The vessel was on passage from Jebel Ali to Tuticorin carrying limestone and was 420 nautical miles off Goa. The vessel was directed to Goa and the patient was evacuated by the Coast Guard Interceptor Boat, C-134 on August 4, 2003. The cadet was later admitted in a hospital at Goa.

6.10 Apprehension of Vessels :

(a) As a result of sea-air coordinated operation by Coast Guard on May 4 and 5, 2003 in Andaman & Nicobar Islands, an Indonesian fishing vessel "KM Famili", with five Indonesian crew was apprehended by Coast Guard Ship Gangadevi on May 5, 2003 for poaching in our Exclusive Economic Zone. The vessel was escorted to Port Blair for joint investigation and handed over to local police.

(b) A Chinese fishing mother vessel "MV Hai Feng 838", with 20 Chinese crew was apprehended on June 5, 2003 in the Indian Exclusive Economic Zone for illegal mid-sea bunkering of 122 tonnes fish from Fishing Vessel Angel I and Angle III. The vessel was brought to Goa for legal action.

OVERSEAS DEPLOYMENT

6.11 (a) Visit of Coast Guard ships to Bangladesh: Coast Guard ships Vajra

with integral helicopter and Raziya Sultana was deployed to visit Chittagong, Bangladesh from April 7 to 10, 2003 to develop regional cooperation and working relations between the Coast Guard of India and Bangladesh. The ships departed from Paradip on April 5, 2003 and returned on April 12, 2003.

(b) Visit of Coast Guard ships to Myanmar: Coast Guard ships Varad with integral helicopter and Bhikhaiji Cama were deployed to visit Yangon, Myanmar from May 12 to 15, 2003 to develop regional cooperation and working relations between Indian Coast Guard and Myanmar maritime Law Enforcement Agencies. The ships departed Port Blair on May 10, 2003 and returned on May 16, 2003.

(c) Indo-Japan Coast Guard Joint Exercise: Coast Guard Ship Sangram with Integral helicopter was deployed to visit Japan to participate in the fourth Indo-Japan Coast Guard joint exercise from September 16 to 20, 2003. During the onward passage the ship visited Manila, Philippines from September 7 to 11, 2003 for logistic replenishment as well as to interact with the Maritime Law Enforcement agencies of Philippines. The ship reached Kobe, Japan on September 16, 2003. A joint exercise on Maritime Search and Rescue was conducted on September 18, 2003 wherein apart from Coast Guard Ship Sangram, 8 Japan Coast Guard ships participated. During the return passage Sangram visited Ho-Chi-Minh City, Vietnam for replenishment of logistics and interact with their Maritime Law Enforcement Agencies.

(d) CGS Varaha and CGS Kanaklata Barua visited Port Belawan, Indonesia from December 20 to 22, 2003. The visit was planned to develop working relationship in the fields of maritime search and rescue, pollution response and anti-piracy efforts with the maritime law enforcement agencies of Indonesia. The visit of the ships was overseen by the commander, Coast Guard Region Andaman & Nicobar.

(e) Two Coast Guard ships visited Mauritius from January 26-29, 2004 for joint exercise with Mauritius Maritime Law Enforcement Agencies.

(f) Coast Guard Ships CGS Varuna with integral helicopter, CGS Sarojini Naidu and one Dornier were deployed to Male (Maldives) for the Seventh Indo-Maldives Coast Guard Joint Exercise – Dosti VII scheduled at/off Male from February 23-27, 2004. The Director General Coast Guard was present at Male during the period of the exercise.

The Government has now approved free ration and equalized the ration scale of enrolled Coast Guard personnel at par with naval sailors.

GENERAL ACHIEVEMENTS

6.12 Government has approved the following allowance to the Coast Guard Officers and Enrolled Personnel:-

(a) Sea Duty Allowance: The Government has approved Sea Duty Allowance in line with Navy at the following rates:-

Rank	Allowance per Month
(i) Commandant (JG) and above	Rs. 2080/-
(ii) Deputy Commandant	Rs. 1920/-
(iii) Assistance Commandant	Rs. 1760/-
(iv) Subordinate Officers	Rs. 1440/-
(v) Pradhan Navik	Rs. 960/-
(vi) Uttam Navik and below	Rs. 800/-

(b) Ration Allowance: Ration was only entitled to the enrolled personnel at all times and to officers when posted onboard ship during sailing. However, enrolled personnel of Coast Guard were entitled to 85% of the naval sailors ration scale. The Government has now approved free ration and equalized the ration scale of enrolled personnel at par with naval sailors. Officers posted onboard ship and establishment are also entitled for free ration at par with naval officers ration scales.

7

Defence Production

Launching of 'INS Shivalik' at the Mazagon Docks

The vision of the Department of Defence Production is to make India's defence industry globally competitive while ensuring self-reliance in key areas.

7.1 The Department of Defence Production was set up in 1962, in the aftermath of the Chinese aggression, with a view to strengthen the indigenous defence production capability. In 1965, a separate Department of Defence Supplies was formed to tap the potential of the Indian industry for supplementing the defence production effort. The two departments were subsequently merged in 1984 into a unified Department of Defence Production and Supplies. From January 2004, the department has been renamed as the Department of Defence Production.

7.2 The vision of the Department is to make India's defence industry globally competitive while ensuring self-reliance in key areas of defence production. The immediate objectives of the Department are to:

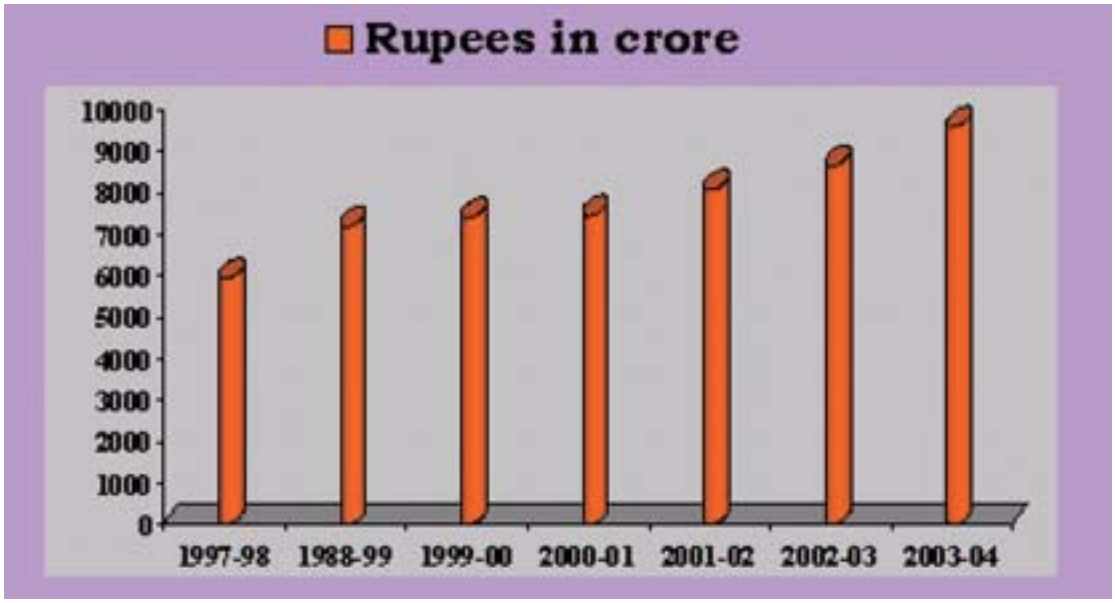
- Equip the armed forces timely, with a wide range of quality products at competitive prices;
- Create a diversified, self-reliant and self-sufficient production base through indigenisation, involvement of the private sector, co-development and co-production through international cooperation where required;
- Diversify the customer base with emphasis on growth of exports.

7.3 To achieve these objectives, the Department of Defence Production oversees the following:

i. 39 Ordnance Factories—one more Ordnance Factory is being set up at Nalanda (Bihar)—under the Ordnance Factory Board (OFB);

ii. 8 Defence Public Sector Undertakings (DPSUs):

- Hindustan Aeronautics Limited (HAL)
- Bharat Electronics Limited (BEL)
- Bharat Earth Movers Limited (BEML)
- Mazagon Dock Ltd (MDL)
- Goa Shipyard Limited (GSL)
- Garden Reach Shipbuilders and Engineers Limited (GRSE)



Total sales of Defence Public Sector Undertakings

- Bharat Dynamics Limited (BDL)
- Mishra Dhatu Nigam Limited (MIDHANI)

iii. Quality Assurance (except naval armament):
- Directorate General of Quality Assurance (DGQA)
- Directorate General of Aeronautical Quality Assurance (DGAQA)

iv. Directorate of Standardisation;

v. Directorate of Planning and Coordination;

vi. Defence Exhibition Organisation (DEO)

vii. Indigenisation;

viii. Private Sector Participation in Defence Production;

ix. Defence Production Board

ORDNANCE FACTORIES

7.4 The Indian Ordnance Factories (OFs) organisation has a 200-year old history. Starting with the first factory in 1801 at Cossipore, near Kolkata, the 40th factory is presently being set up with state-of-the-art technology at Nalanda, Bihar. These factories are geographically distributed at 25 different locations in the country. The pre-independence factories had capacities not only for the production of finished stores, but also for the supply of basic and intermediate materials, for which indigenous industrial infrastructure in the civil sector was then inadequate. With the gradual development of civil industrial infrastructure, both in the public and private sectors, the factories set up after independence progressively did away with the concept of backward integration. The emphasis shifted from production of basic, intermediate inputs to production of finished stores by drawing upon supplies from the civil sector for raw materials, components and semi-finished goods to the extent practicable.

7.5 The 39 Ordnance Factories form a strategic and dedicated production base for both lethal and non-lethal defence stores. They form an integrated base for the indigenous production of defence hardware and equipment that include highly specialized, complex and large variety of ammunition and explosives, weapons vehicles and

The Main Battle Tank Arjun manufactured at Avadi

equipments, materials and components, armoured vehicles and ordnance equipment. They also produce rockets, grenades, mines, transport vehicles, optical and fire control systems, bridges, parachutes, clothing and personal equipment for the armed forces.

7.6 Products for the Defence Forces have to be safe, reliable, consistent and capable of operating under varying terrains as well as under extreme climatic conditions. Accordingly, the required technologies cover a wide spectrum of engineering, metallurgy, chemical, textile, leather and optical areas, they must ensure high quality and productivity, apart from meeting the important objective of self-reliance. The Ordnance Factories also fulfill certain requirements of the paramilitary and police forces for arms, ammunition, clothing and equipment thereby ensuring that their capacity is optimally utilized, not only by securing work from the defence forces, but also by diversification into non-defence customers and by exports.

7.7 Organisation: The Ordnance Factory Board (OFB) was set up in 1979 to impart greater flexibility and efficiency. Ordnance Factories are divided into operating divisions, based on the main products/ technologies employed. The factories are grouped into 5 divisions as follows:

i. Ammunition & Explosives - 10 Factories
ii. Weapons, Vehicles & Equipment- 10 Factories
iii. Materials & Components - 9 Factories
iv. Armoured Vehicles - 5 Factories
v. Ordnance & Equipment Group-5 Factories

7.8 A member of the Board/Additional DGOF heads each of the above group of factories. The four remaining Members of the Ordnance Factory Board are responsible for staff functions, viz. Personnel, Finance, Planning & Material Management, Projects & Engineering and Technical Services. A Special Ordnance Factory Board has been constituted by the Government with representation from the Army, Defence Research & Development Organisation and Ministry

of Defence. The Special Board meetings are held periodically to provide appropriate inputs and perspectives for planning resources, upgrading technology of products and process and on various other critical issues necessary for the efficient functioning of OFB.

7.9 Product Profile and Technology: The Ordnance Factories continuously upgrade their products and the manufacturing technologies to meet the emerging needs of the Defence Forces. They produce a wide range of arms and ammunitions for the Infantry, Artillery, Air Defence Artillery and Armoured Corps of the Army. Ordnance Factories produce ammunition for Navy and Air Force and are now taking up indigenous development of Naval armaments. The factories produce Military Transport Vehicles, Infantry Combat Vehicles, Armoured Vehicles, Optical and Opto-electronic Instruments, summer & winter uniforms, Parachutes, miscellaneous Leather Goods and General Stores. The product profile of the Ordnance Factories is as follows:

7.10 Ammunition & Explosive: Artillery Ammunition 155, 130 & 105mm calibre, T-72 Tank ammunition FSAPDS/HE/HEAT, medium calibre and small calibre ammunition

7.11 Armoured vehicles : T-90 and T-72 Tank, MBT Arjun, BMP-II

7.12 'B' Vehicles: Stallion 7.5 T and LPTA 2.5 T

7.13 Weapons : Artillery Guns, Mortars, Insas Rifles and LMG, medium calibre weapons, Sporting Rifles, Pistols, Revolvers

7.14 Ordnance Equipment : Clothing, General Stores, Military Uniforms, Blankets, Boots, Extreme climate clothing

7.15 Growth: The sales of the Ordnance Factories have been steadily growing over the years. A record total sale of Rs.6641 crore was achieved during 2003-2004 representing an increase of about 116% in a span of six years (Rs.3071 crore in 1997-98).

7.16 In 2004-05, the sales of Ordnance Factories are expected to be higher at about Rs. 6800 crore. The Ordnance Factories

T-90 Tank manufactured at Heavy Vehicles Factory, Avadi is a new addition to the Armoured Corps.

A record total sale of Rs. 6641 crore was achieved in 2003-04 by the Ordnance Factories, representing an increase of about 116% in a span of six years.

have endeavored to keep pace with the development in arms, ammunition and other equipment by updating/upgrading technology either through the Defence Research and Development Organisation or through the transfer of technology (TOT) route.

7.17 The Ordinanace Factories try to achieve optimum capacity utilization only by securing increased workload from the Defence Forces but also through sustained efforts in diversification to non-defence customers and exports. Similarly, thrust is also being given to strengthen the in-house R&D capability aimed at product and process development.

7.18 The Ordnance Factories have also steadily increased their sales to non-defence customers, including exports. During 2003-2004, 15% (Rs 992 crore) of the total sales of the Ordnance Factories were to non-defence customers. This represents a 13.5% growth over the previous years' sales to non-defence customers (Rs 874 crore). In 2004-2005, the sales to non-defence customers are expected to be higher at about Rs.1015 crore.

7.19 Significant Achievements : Some of the significant achievements of the Ordnance Factories in last few years have been as follows:-

(i) All Ordnance Factories have switched over to Quality Management Systems as per the new version of ISO-9001: 2000. The IS/ISO-9001: 2000 Quality System is an upgraded version of IS/ISO 9000:1994 and gives special emphasis on customer satisfaction and continued improvement in Quality and Process Control.

(ii) Ordnance Factory, Ambajhari (OFAJ) has indigenised extruded profiles required for Ramp Girder for KM Bridge (Army item) successfully. The quality of the Profile has been found to be at par with the imported Profiles and 55 Nos. of such Profiles have been used to produce Ramp Girders.

(iii) Opto Electronics Factory Dehradun (OLF), took up the job of manufacturing of Aspheric Lens and Cylindrical Lens required for metal finishing by CO2 Laser System. Both types of Lens have been successfully manufactured and supplied, thereby establishing an indigenous source for KW Class Laser Optics.

(iv) Ordnance Factory Ambajhari (OFAJ) has achieved the unique distinction of manufacturing one set of Manually Launched Assault Bridge Military Load Class–60 (MLAB-MLC-60). The Bridge has been manufactured by using a lightweight High Strength Aluminum Alloy – RDE – 40 and issued to the Indian Army.

(v) The Tungsten Heavy Alloy Granules for use of main rotor blades of the Advanced Light Helicopter, were developed and manufactured for the first time at the Heavy Alloy Penetrator Project, Tiruchirapalli (HAPP) through the

powder metallurgy route by using end-cutting pieces, which arises as waste during production of 125 mm Fin Stabilized Armour Penetrating Discarding Sabot (FSAPDS) Tungsten heavy alloy blank.

(vi) Ordnance Factory, Medak (OFPM) has successfully modernized BMP-II K to BMP-II M in association with KBP Tula, Russia. The system was integrated by modifying an existing BMP Turret, Missile System, Main Gun, Grenade Launcher and Secondary Weapon are the main features of modernized BMP–II M vis-à-vis the existing BMP–K.

(vii) Cordite Factory, Aruvankadu (CFA) has developed/productionised advanced casting powder for Rocket Propellant for making bigger rocket grains for Akash Booster, containing sensitive ingredients like aluminum powder (20%) and ammonium perchlorate (30%) which have been extruded safely for the first time in CFA for supply to HEMRL, Pune against their order.

(viii) Ordnance Factory, Nalanda is a green field project conceived for manufacture of Propellant charges for 155 mm weapon systems at Rajgir in Nalanda district of Bihar. An area of 2898.75 acres out of total 2962.58 acres required has been acquired and civil works have commenced at the site. Action to position the plant and machinery is also progressing.

(ix) The production of .32" Revolver has been increased substantially to a level of 20,000. To enhance customer satisfaction, an after-sales service centre has been planned for operation at the Ordnance Cable Factory, Chandigarh.

7.20 Self Certification : Continuing their commitment to quality, and in line with the practices prevailing in industry, both within and outside the country, the Ordnance Factories have started self-certification since April 2002, thereby, standing guarantee to the products supplied by them to the Defence Forces. 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 course of time, many more items will be covered under self-certification.

7.21 In-house Research and Development : In-house Research and Development activities towards product and process improvements are receiving due attention in the Ordnance Factories. Techniques of solid modeling and sensitivity analysis are adopted to meet the design needs of defence stores. Some of the major achievements in the field of in-house R&D are: a) Development of Ordnance 155 mm FH Gun System; b) Development of Shell for illuminating M1A19 Naschem; c) Development of components/chemicals for shell155 mm illuminating (24km) M1A1; d) Productionisation of 155 mm ERFB Shell based on Naschem; e) DRDO development Projects such as Tail Fuze FBT-3I for 250 kg. HSLD Bomb, Multi Barrel Rocket System (PINAKA), 120 mm HESH Ammuni-

Arms and ammunition, weapon spares, chemicals and explosives, leather and clothing items have been exported by Ordnance Factories to thirty countries.

tion for MBT Arjun, 120 mm FSAPDS Ammunition for MBT Arjun and Heavy Destruction Charge and Charge Linear Cutting.

7.22 Diversification into Civil Trade and Exports : Ordnance Factories produce a large variety of chemicals for commercial use by industries in the civil sector. They also manufacture a wide range of textiles, leather goods and sporting arms and ammunition for the civil sector. The sales towards civil trade during 2003-2004 were Rs. 278 crore as compared to Rs. 266 crore in the preceding year, which represents a growth of 4.5%. The production of .32" Revolvers has been substantially increased to 20,000 during 2003-2004. Similarly, .32" Pistols are available off the shelf. Sporting arms and ammunition have been a major contributor to civil trade sales. A new sporting weapon .3006" Rifle is also being developed.

7.23 Arms & Ammunition, Weapon Spares, Chemicals & Explosives, Leather and Clothing items have been exported by Ordnance Factories to thirty countries worldwide. Ordnance Factories are making vigorous marketing efforts to boost exports by participating in international exhibitions, product promotion through advertisements in the international media, interaction with visiting delegations from target countries, agents and customer's representatives, both in India and abroad. Product catalogue Compact Discs (CDs) have been developed to enable customers immediate access to the desired information. Online Internet ID has been set up to cut down response time to a few hours.

7.24 The major items exported are Rifle 5.56 mm and Mine Protected Vehicle to Nepal and Bhutan, Cartridge Case 5.56 mm to USA, Tetryl to Germany and Sights (T-72) to Poland. To boost exports further, the following measures have been taken:

(i) Joint Projects for higher-end products and services required by the international market and establishing them within a short lead-time through synergy of competence of the partner(s) involved;

(ii) Building up brand equity by association with leading partners;

(iii) Resorting to strategic pricing based on marginal costing for improving cost competitiveness;

(iv) Procedural simplification to improve responsiveness.

7.25 Modernisation of Ordnance Factories: A modernisation plan for all Ordnance Factories has been finalized. The plan envisages upgrading technology, augmenting capacities and replacement of old/obsolete plant and machinery with those having state-of-the-art technology. Modernisation and automation of the infrastructure in the Ordnance Factories is being done to meet the quantitative and qualitative demands of the end products. The product technology, as well as the process requirements and capabilities, are kept in mind during the

process of modernisation. The technologies and machines being planned are flexible so as to cater to a wide range of products. During the Tenth Plan period, an investment of Rs. 1804 crore is envisaged for modernisation. During 2003-04 Rs. 250 crore have been invested for the modernisation of the Ordnance Factories.

7.26 Energy Conservation: Efforts aimed at energy conservation are a continuous process in the Ordnance Factories. The conservation measures encompass all spheres of activities. Consequent to the energy conservation measures adopted by the Ordnance Factories, there has been a reduction in the cost of energy consumption and cost of production. Economy in energy consumption is achieved through improved efficiency, better capacity utilization and by upgrading technology.

7.27 Safety : The safety policy was reviewed during 1996 to bring in stringent safety standards, safety consciousness and vigilance in the Ordnance Factories. The safety manuals and standing instructions supplement safety policies. A disaster management plan has been also prepared for contingent measures and Safety Committees have been constituted at central and shop level. Accident prone and hazardous areas have been given special attention.

Computerized Design Centers are being set up in the Ordnance Factories to modernise their drawing and design offices

7.28 A three-tier safety audit and monitoring system ensures strict implementation of the laid down safety norms. Monthly safety audits are carried out at level-I by the factory. At level-II a team of officers from other factories carry out safety audit on a half-yearly basis. Finally, at Level-III the Regional Controllerate of Safety (RCS) carries out the audit. Rectification of the deviations reported in the audit is closely monitored by the respective RCS and at the Corporate level by the Controller of Safety (COS).

7.29 Computerisation in Ordnance Factories : Information Technology (IT) is being used as an instrument for providing Management Information and Decision Support Systems at appropriate levels, improvement of design capabilities, improvement in accounting and analysis and for reduction in paper work. The present infrastructure consists of independent SCO-Unix based servers at each Ordnance Factory with INFORMIX RDBMS. Custom built on-line Production Planning Control System, Personal Information System and Payroll systems are operational at each Ordnance Factory. The integrated on-line MIS will provide information on Standard Management Ratios, Key Performance Indices and Control Parameters for efficient and effective management.

7.30 The computerized Design centers are being set up in the Ordnance Factories to modernise their drawing and design offices to enhance the design and development capabilities and to increase the efficiency in the area of product design and development. The software includes drafting software, high-end modeling software and analysis software.

7.31 Quality Management: Implementation of Total Quality Management (TQM) concepts has been given a major thrust in all Ordnance Factories. Efforts are being made towards continuous improvement as per guidelines of ISO–9004: 2000 to meet the needs and expectations of the end users.

7.32 The quality of products in the Ordnance Factories are monitored through various mechanisms that include working to pre-determined process schedules and quality plans, introduction of Statistical Process Control—Statistical Quality Control techniques for controlling the processes/ products towards improving the products and minimizing the rejection in processes, testing in Ordnance Factory Laboratories, Internal Quality Audits and monthly interaction meetings with Quality Assurance establishments. The Quality enhancement drive launched by the Ordnance Factories Board has been extended to grass root level teams to analyse the defects and take remedial measures for their elimination in the manufacturing process itself.

Teams from the Ordnance Factories regularly visit depots and forward areas to attend to customer complaints, and understand the problems faced by the users

7.33 Customer Satisfaction: To get feedback from customers, teams from the Ordnance Factories regularly visit depots and forward areas to attend to customer complaints, understand the problems faced by the users and their expectations from the product. Joint teams comprising officers from the Ordnance Factories Board and the Directorate General Quality Assurance (DGQA) also visit forward areas to get user feedback to improve quality.

7.34 Pollution Control : The pollution control activities in the Ordnance Factories are given due importance. The factories obtain statutory consent orders from the respective State Pollution Control Boards for discharge of liquid effluents and gaseous emissions and have fully operational Effluent Treatment Plants. The factories also submit annual Environmental Statements to the respective State Pollution Control Boards in the specified format within the stipulated time frame.

7.35 Afforestation: In line with the Government policy for protection of the environment, afforestation is undertaken in all the Ordnance Factories as an ongoing process. 30,00,000 new samplings were planted during the year 2003-04.

7.36 Rajbhasha: Progressive use of Hindi is given due importance in the Ordnance Factories. Separate Official Language Implementation Committees (OLICs) are functioning at each unit. Quarterly meetings are being held regularly to review the progress of Rajbhasha in various units as well as the Ordnance Factory Board.

7.37 Hindi Workshops were organized for employees in the OFB Headquarters during the year. The objective of the workshops is to provide an opportunity to the participants to understand the use of Hindi in day-to-day office work. Facilities for Hindi Praveen and Pragya and Hindi Typewriting/ Stenography to the officers/employees are available at all offices/factories. Adequate manual/electronic typewriters are available at all units. Efforts are being made to provide

bilingual software on most of the computers. Most of the Factories bring out their own publications in Hindi.

7.38 Welfare Schemes for the benefit of persons with disabilities: A reservation of 3% is provided to the physically challenged persons. This reservation is equally distributed between persons for various categories of disabilities, for whom the posts have been identified as suitable. Further, age relaxation for recruitment of persons under such category is also provided as per rules.

7.39 Physically challenged persons belonging to Group 'C' and Group 'D' posts, as far as possible, are given posting near their native places. Request for transfer to or near their native places are also given preference in the case of such employees.

7.40 Productivity Bonus : The formula for payment of Productivity Linked Bonus (PLB) to civilian employees of Defence Production Establishments has been revised. Based on the revised formula, PLB equivalent to 41 days wages was paid to the eligible employees for the year 2003-2004.

'Kiran' aircraft developed by HAL being flown by 'Surya Kiran' aerobatics team.

DEFENCE PUBLIC SECTOR UNDERTAKINGS

HINDUSTAN AERONAUTICS LIMITED

7.41 Hindustan Aeronautics Limited (HAL) was formed in October 1964 by merging of Hindustan Aircraft Limited and Aeronautics India Limited. The company has 16 divisions located in six states.

7.42 HAL has evolved into a large Aeronautics Complex. It has built up comprehensive skills in design, manufacture and overhaul of Fighters, Trainers, Helicopters, Transport Aircraft, Engines, Avionics and System Equipment. Its product include 10 types of Aircraft and Advanced Light Helicopter (ALH), Dhruv, from in-house Research and Development and 13 types by licence production inclusive of 8 types of Aero Engines and over 1000 items of Aircraft System Equipment (Avionics, Mechanical and Electrical).

7.43 HAL's major supplies/services are to the IAF, the Navy, the Army, the Coast Guard and the BSF. Transport aircraft and helicopters have been supplied to commercial airlines as well as to State Governments. The Company also supports the Space Vehicle programme of Indian Space Research Organisation (ISRO) and participates in the missile development and manufacture programmes.

7.44 The HAL has developed into a large multi-disciplinary aeronautical complex. In order to meet the challenges of the 21st century, the company has redefined its mission as follows: "To become a globally competitive Aerospace industry while

HAL has undertaken several new projects, such as series Production of Advanced Light Helicopter(ALH) Dhruv, Licence Production of SU-30MKI, Development of Intermediate Jet Trainer and Limited Series Production of Light Combat Aircraft.

working as an instrument for achieving self-reliance in design, manufacture and maintenance of Aerospace Defence equipment and diversifying to related areas, managing the business on commercial lines in a climate of growing professional competence."

7.45 Significant achievements:

(i) The Company recorded an all time high turnover and profit before tax of Rs. 3120 crore and Rs.433 crore respectively during the year 2002-2003.

(ii) HAL has undertaken several new projects, such as Series Production of Advanced Light Helicopter (ALH) Dhruv, Licence Production of SU-30MKI, Development of Intermediate Jet Trainer (IJT) and Limited Series Production of Light Combat Aircraft (LCA) apart from several upgrade programmes such as MiG-21 BIS, MiG-27M, Jaguar and HS-748.

(iii) The indigenously developed Advanced Light Helicopter (ALH), Dhruv participated in the Paris Air show held in June 2003. It received professional acclaim and positive indications for being suitable for global market. The civil variant of the ALH received DGCA certification in October 2003.

(iv) HAL being a prime contractor for the Design and Development of Light Combat Aircraft has contributed by way of structural design, systems design and integration, development of prototype and also design and development of a large number of electrical hydro-mechanical and advanced avionics items. While the first flight of indigenously designed Technology Demonstrator-I (TD-I) of LCA took place in 2002, the prototype Vehicle-I (PV-I) of LCA, the first all-composite aircraft made its maiden flight in November 2003. TD-I and TD-II have achieved supersonic speed during test flights.

(v) HAL has developed a new Intermediate Jet Trainer aircraft (HJT36) as a replacement to the Kiran stage II trainer, which has better performance and maneuverability with lesser weight and lower operating cost and modern systems and avionics. The first flight of the first prototype was successfully carried out in March 2003.

(vi) The HAL has undertaken the upgradation of Jaguar aircraft for integration of latest avionics systems for improving navigation and weapon aiming performance.

(vii) HAL achieved exports of Rs.215.21 crore for the financial year 2003-2004 which is an all time high. In order to give a further boost to exports, an MOU was signed with IAI, Israel for joint marketing of ALH fitted with State-of-the-art IAI avionics for the international market. HAL signed a contract with SNECMA Moteurs, France for supply of forgings, rolled rings and precision blade forging to SNECMA.

HAL also signed a contract with M/s Roll Royce, UK for supply of steel rolled rings for Rolls Royce's engine programme. A contract has been signed in November 2003 with Mauritius Coast Guard for supply of one DO-228 aircraft in Maritime role.

7.46 Popularising use of Hindi for Official Purposes: To popularize the use of Hindi for official purposes, training was imparted to employees. As on 30 June 2003, the percentage of employees having working knowledge of Hindi stood at 85% and typists having knowledge of Hindi Typing increased to 86%.

7.47 Schemes for the benefit of the persons with disabilities: HAL is committed to follow the provisions of the Persons with Disabilities (Equal opportunities, Protection of Rights and Full Participation) Act, 1995 in order to enable the persons with disabilities to avail the benefits of reservation. Suitable posts have been identified for employment of persons with disabilities in Category A, B, C, & D based on the nature of work carried out in HAL.

7.49 In addition, HAL on its own volition has instituted a number of schemes for persons with disabilities such as enhanced transport allowance to employees who are blind and orthopaedically handicapped and special casual leave for disabled Ex-servicemen requiring artificial limb replacement/treatment.

7.50 'Vatsalya' a school for persons suffering from Cerebral Palsy is supported through contributions from the HAL employees and the annual grants and infrastructure facilities provided by the company.

BHARAT ELECTRONICS LIMITED (BEL)

7.51 Bharat Electronics Limited, established in 1954 with its corporate office at Bangalore, has nine units in the country. It is engaged in the design, development and manufacture of sophisticated state-of-the-art electronics equipment/components for the use of defence services, para-military organizations and other governmental users like All India Radio, Doordarshan, Department of Telecommunications, Police Wireless and Meteorological Department. BEL is focusing on Research and Development within the company to generate business for the company using the state-of-the-art manufacturing and testing facilities available. On line computerization for materials management, state-of-the-art test facilities, facilities for carrying out environment and reliability checks, electro-magnetic Interference/Electro Magnetic Compatibility Testing facility, antenna testing facility, back-up support from standardisation, technical information and documentation, and computer-aided design and manufacture have made BEL a modern professional electronics company.

7.52 Significant achievements:

(i) BEL is playing a significant role in the civilian 'Professional Electronics' sector of the country particularly for the Ministry of Information and Broadcasting by supplying it with bulk of its infrastructural requirements for Radio and TV Broadcasting, like Studio Equipment, Transmitters, Satellite Uplinks, OB Vans etc.

BEL is engaged in the design, development and manufacture of sophisticated electronics equipment/ components for the use of defence services, para-military organizations and other governmental users.

(ii) BEL has executed a Satellite Communication System Network for Andhra Pradesh covering the entire state and is in the process of executing a Satellite System Network for the police in the entire country.

(iii) BEL pioneered the growth of the electronic 'Components' industry in the country by setting up the manufacture of electron tubes [TV picture tubes for the consumer electronics industry, transmitting tubes for All India Radio/Doordarshan and the Industrial needs, Microwave Tubes, X-Ray Tubes, Vacuum Interrupters], Semiconductor Devices, Integrated Circuits, Hybrid Micro Circuits, Liquid Crystal Displays, Solar Cells and systems, passive components like Crystals & Capacitors etc.

(iv) BEL has indigenously developed the Short Range version which has been taken up for production (2003-2004).

(v) Some Units/Divisions of BEL have got the ISO 9001:2000 (Upgraded version of ISO 9001:1994) certification.

(vi) Electronic Voting Machines were customized and successfully demonstrated in Singapore and Mauritius by BEL.

(vii) The company continues its endeavour in sustaining and improving the standards of quality through continuous training and TORQUE (Total Organisational Quality Enhancement), Quality Circles (QCCs), Six Sigma programs.

(viii) BEL has played an important role in the modernisation of the Airports through supply of Primary/Secondary Surveillance Radars to the Airports Authority of India. Some of the other recent additions to BEL's product-mix in the Civil Sector include Integrated Fish Finder and Navigation Guidance System, Solar Traffic Signals, Electronic Voting Machine [EVM] and Simputer.

7.53 Schemes for disabled : Physically challenged employees have been given preference while allotting company accommodation and they have been allotted quarters on the ground floor. Management has granted grace time for registering attendance for IN/OUT punch ranging from 5 to 15 minutes depending upon nature / extent of handicap, on a case-to-case basis to these employees. Special conveyance allowance is also being paid to the persons with disabilities. Hearing aid assistance, foldable walking sticks, calipers with special shoes, wheel chairs and special toilets have been provided to such employees, wherever necessary. They have been encouraged for sports and cultural activities. An amount of Rs.1,67,073/- has been allocated under the schemes for the benefit of the persons with disabilities. 210 persons were benefited by the introduction of these schemes.

BHARAT EARTH MOVERS LIMITED (BEML)

7.54 Bharat Earth Movers Limited (BEML) was established in May 1964 and commenced its operations from January 1965. With the disinvestments of shares,

Bridging equipment manufactured by Bharat Earth Movers

Government of India is still the major shareholder in the company with a holding of over 61.23% of equity shares as of end March 2004.

7.55 BEML's manufacturing divisions are located at Bangalore, Kolar Gold Fields (KGF) and Mysore. All the production units are fully equipped with necessary general purpose machines and special purpose machines like heavy duty lathes, Computer Numerically Controlled machines (CNC machines), CNC bevel generating systems, flexible manufacturing system, heavy and large size fabrication facility, welding robots, etc., to manufacture transmission and axles, Hydraulic control valves, cylinders and pumps, diesel engines, railway coaches, rail buses, railway wagons, Alternating Current Electrical Multiple Units(ACEMUs), heavy duty all terrain multi axle trucks, earth moving machinery and Tracked military vehicles like armoured recovery vehicles, self propelled gun, tanks and other military vehicles like heavy recovery vehicles, bridge laying tank, truck based mobile bridge system, mounted gun system on truck chassis and rocket launcher systems.

Bharat Earth Movers Limited achieved a sales turnover of Rs. 1770.61 crore during the financial year 2003-04, as compared to 1681.17 crore during the preceding year.

7.56 Significant achievements:

(i) The Company has successfully developed the proto type BH100 Dumper, which was displayed in the World Mining Congress in November, 2003, at New Delhi.

(ii) BEML has launched Disaster management equipment like the Radio Control Dozer, developed with the financial assistance of M/s Technology Information Forecasting and Assessment Council (TIFAC).

(iii) BEML manufactured high-speed stainless steel metro coaches for Delhi Metro Rail Corporation (DMRC), in collaborations with M/s ROTEM of South Africa.

(iv) BEML supplied standard EM equipment like Dozers, Loaders, Motor Graders, to the Border Road Organisation and other agencies.

(v) The Company, Bharat Arth Movers Limited, achieved a sales turnover of Rs.1770.61 crore during the financial year 2003-2004, as compared to 1681.17 crore during the preceding year.

(vi) The Company's Profit Before Tax (PBT) during 2003-2004 stood at Rs.52.50 crore as compared to Rs.37.87 crore during the previous year.

MAZAGON DOCK LIMITED (MDL)

5.57 Mazagon Dock Limited was taken over by Government of India in May 1960. It is a leading shipyard in the country and builds a variety of ships for the defence and civil sectors. Its product range includes, destroyers, frigates, missile boats, corvettes, submarines and patrol vessels for the defence sector and merchant vessels, dredgers for the civil sector. MDL has also diversified its product range to cater to the needs of the oil exploration sector by producing and installing well head platforms of the Oil and Natural Gas Corporation.

7.58 Significant achievements:

(i) First Ship of Project 17 'Shivalik' was launched in April, 2003.

(ii) Keel of first ship of P-15A and third ship of P-17 were laid on 26th September 2003 and 30th September 2003 respectively.

(iii) 4th Floating Border Out Port (Seema

Mazagon Dock manufactures modern ships for the Indian Navy and Coast Guard

Prahari Bajrang) delivered to Border Security Force (BSF) alongwith two of Fast Patrol Boats in October, 2003.

7.59 Schemes for disabled : The various guidelines issued by the Government from time to time on employment for persons with disabilities are being followed. At present, there are 46 such employees on the rolls of the Company in Group C & D in the identified posts reserved for persons with disabilities. In Group A & B there are six such employees.

GOA SHIPYARD LIMITED (GSL)

7.60 Goa Shipyard Limited was taken over by the Government of India in 1967 as a Public Sector Undertaking under the Ministry of Defence. The company builds a variety of medium size, special purpose ships. Its product range includes survey vessels, missile boats, patrol vessels, offshore supply vessels, oil tankers, passenger ferries, tugs and barges.

7.61 Significant achievements :

(i) One Fast Patrol Vessel was delivered to the Indian Coast Guard in April 2003.

(ii) The Company has augmented its ship repair facilities by renovating and modernising two slipways with a view to obtain large repair and shipbuilding orders for marine and naval vessels.

(iii) The Company has been awarded ISO 9001 Certification for 'Design, Construction and Repair of various types of ships and crafts'. The Company is also in the process of transition to the requirements of ISO 9001-2000 standards.

(iv) The Company has embarked on an export promotion drive through bidding for global tenders and participating abroad in exhibitions, seminars and presentations relating to shipbuilding capacities of the Company.

(v) One Advanced Offshore Patrol Vessels was delivered to Indian Coast Guard in October 2003.

(vi) The company delivered an Extra Fast Attack Craft to the Indian navy in January 2004, six months ahead of the schedule.

GARDEN REACH SHIPBUILDERS AND ENGINEERS LIMITED (GRSE)

7.62 Garden Reach Shipbuilders and Engineers Ltd was acquired by the Government of India in 1960 as a public sector undertaking under the Ministry of Defence. The company builds and repairs warships and auxiliary vessels for the Indian Navy and the Coast Guard. Its product range includes frigates, corvettes, oil tankers, patrol vessels, attack craft, high technology ship borne equipment, portable bailey type steel bridges, turbine pumps for the agricultural sector, main sewage treatment plants, diesel engines.

7.63 Significant achievements:

(i) The Company has paid dividend of Rs. 7.49 crore being 35% of the Profit after tax (6.05% on equity paid up capital of Rs.123.84 crore) for 2002-03.

(ii) One Corvette (Yard-2042) was commissioned into the Navy on 4th February 2004.

(iii) Two Frigates (Yard 3010 & 3011),

Khukhri Class Missile Corvettes

being constructed for the Indian Navy, are in advance stage of construction and are likely to be delivered early next financial year.

(iv) The company has orders for construction of three Landing Ship Tank (Large) [LST(L)s], four First Attack Crafts (FACs) and four Anti-submarine Warefare (ASW) Corvettes, scheduled for delivery between 2005 to 2011.

BHARAT DYNAMICS LIMITED (BDL)

7.64 BDL was set up in 1970 for the 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. Besides the indigenous Prithvi missile, it produces Milan and Konkurs missiles along with their launchers and other in-house developed products like Flame launchers and Simulators. The Company is working hand in hand with the DRDO for technology absorption of other missiles under Integrated Missile Development Programme.

7.65 The significant achievements:

(i) The Milan, Konkurs, Prithvi and Information Technology Divisions of the company have ISO-9002 certification. BDL attaches utmost importance to customer satisfaction.

(ii) The company regularly participated in field firings conducted by the users. BDL implements regularly various improvements in manufacturing process, inspection procedures. Efficiency in the process has increased by way of computerization. These have resulted in increasing value addition per employee steadily.

(iii) As part of its efforts to increase exports, BDL exported sub-assemblies worth Rs.44 lakh in 2002-2003. In the areas of new products, the Company has started manufacture of Konkurs-M and 3 UBK-20 Gun Launched Missiles. BDL has been nominated production agency for Naval Decoy – C303 launched from Sub-Marine that is to be produced under transfer of technology from M/s Wass, Italy.

(iv) The Company has paid a dividend of Rs. 23 crore for the year 2002-03.

MISHRA DHATU NIGAM LIMITED (MIDHANI)

7.66 Mishra Dhatu Nigam Limited (MIDHANI) was incorporated as a Public Sector Undertaking in 1973 to achieve self-reliance in areas of super-alloys, titanium alloys and special purpose steels required for strategic sectors like Aeronautics, Space,

Armaments, Atomic Energy, Navy, Special products like molybdenum wires and plates, titanium and stainless steel tubes, alloys for electrical and electronic application like soft magnetic alloys, controlled expansion alloys and resistance alloys.

7.67 The significant achievements:-

(i) Flawless performance of large size Maraging steel hardware supplied by MIDHANI for rocket motor casing application to the Indian Space Research Organisation (ISRO) contributed to the successful launch of Polar Satellite Launch Vehicle (PSLV-C4), the commercial version of the PSLV carrying the Meteorological Satellite (METSAT).

(ii) Successfully developed and supplied special materials required by the Light Combat Aircraft (LCA).

(iii) MIDHANI continued to extend special materials support to programmes of national importance such as LCA, PSLV/GSLV, Armaments in the Defence, Aeronautical, Space and Atomic Energy sectors.

(iv) Designed, developed & fabricated armoured trucks for Defence using MIDHANI Armour sheets, which successfully met the specifications and requirements of Defence.

(v) Successfully productionised a wide range of high quality bio-medical implants numbering 135 in 1060 variants made of Titanium as low-cost import substitutes.

(vi) Successfully established state-of-art Super plastic Forming (SPF) technology practiced by only a handful of metallurgical establishments over the globe, bulk quantities of titanium Gas Bottles were supplied using this technology against major orders received during the year from Aerospace Sector.

(vii) Large size titanium alloy bars manufactured by MIDHANI were successfully converted into closed die forgings at an overseas work centre, proving that they meet the best of international standards. This has been a rewarding benchmarking exercise, paving the way for bulk usage of MIDHANI materials in demanding aero engine applications.

(viii) Indigenous supply of specialized Titanium Fasteners has commenced with supplies made to DRDO and ISRO during the year. While technologies developed in the context of strategic sectors have been employed for manufacture of world-class biomedical implants, the technology developed for manufacture of specialized screws for orthopaedic surgery has in turn been used for making titanium fasteners to meet the needs of strategic sectors. Work has commenced on development and supply of Superalloy and special steel fasteners to several discerning customers.

(ix) MIDHANI successfully productionised and supplied weld consumables required for critical applications of Indian Navy using in-house facilities meeting all specifications duly approved by Russian consultants.

Schemes for the benefit of the persons with disabilities.

Sales of Ordnance Factories and Defence PSUs

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

(Rupees in crore)

Year	Ordnance Factories Total Sales	Public Sector Undertakings Total Sales	Grand Total
2001-2002	6031.00	7918.38	13949.38
2002-2003	6508.20	8788.31	15296.51
2003-2004 (Prov.)	6641.00	9609.62	16250.62

7.69 Defence Public Sector Undertakings and Ordnance Factories have exported items worth Rs. 439 crore for the year 2003-2004.

Supply Wing

7.70 In the quest for self-reliance in the crucial sector of Defence, continuing efforts are 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 equipment. There has been a shift in the role of private sector/civil trade in the field of indigenisation. 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. The defence industry sector, has now been opened for participation by the Indian Private sector. The Indian companies are now eligible to set up defence industry for manufacture of all types of defence equipment under license. Such companies could also have foreign direct investment, upto 26% of the equity. Detailed guidelines have already been issued by the Department of Industrial Policy & Promotion (DIPP) in consultation with Ministry of Defence regarding the modalities for consideration of applications for grant of license.

There has been a shift in the role of private sector/civil trade in the field of indigenisation. 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.

7.71 For indigenisation of the spares of the Defence Equipment, an institutional framework has been in existence in the form of 8 Technical Committees, consisting of officers from the Directorate General of Quality Assurance. A Technical officer of the rank of Major General/Brigadier or equivalent heads each Committee. 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. During the year 2002-2003, Supply Orders of Rs. 38.67 crore for ab-initio development and indigenisation of 1101 items were placed. During 2003-2004 supply orders of Rs. 210.81 crore for ab-initio development and indigenisation of defence items were placed. Since February, 2002, in line with Government decision, Production Agencies like Ordnance Factories, Defence Public Sector Undertakings and Air Headquarters are doing indigenisation work themselves.

7.72 To help the civil sector familiarize itself with the requirement of Armed forces, permanent sample rooms are maintained in four metropolitan cities. For ensuring enhanced & meaningful interaction, conferences/exhibitions are held from time to time with civil industry. In order to encourage civil industry for indigenous development of Defence stores, a scheme of National Award for excellence in indigenisation was introduced in the year 1993-94. The efforts made by the industry in substituting the inputs of defence equipment & stores are duly recognized and deserving units presented with suitable awards.

7.73 After the opening up of the Defence Industry Sector for private participation, 15 Letters of Intent have been issued 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. have obtained letters of intent to enter the Defence Industry Sector as a full fledged manufacturers and suppliers of Defence equipment. The Government, on its part, has intensified its efforts to create greater awareness in the private sector about the requirements of the Defence Sector. Three Defence Industry Partnership Meets have been held in collaboration with the Confederation of Indian Industry (CII) in Kolkata, Mumbai and Chennai during the year. Besides, Six Defence Specialist Groups have been constituted in which various Defence establishments and private industry are represented, to discuss and identify the Defence equipment, which can be manufactured in the private sector.

OTHER ORGANISATIONS IN DEPARTMENT OF DEFENCE PRODUCTION

DIRECTORATE GENERAL OF QUALITY ASSURANCE (DGQA)

7.74 Directorate General of Quality Assurance (DGQA) is an inter- service organization functioning under the Department of Defence Production. 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 users items for the Air Force procured from all sources viz Private Sector, Public Sector Undertakings and Ordnance Factories. It has therefore a vital role to play in the defence preparedness of the Country.

7.75 Organisational Structure and Functions: DGQA Organisation is structured into seven Technical Directorates, each of which is responsible for a distinct range of equipment. The Technical Directorates are vertically structured in three-tiers for functional purposes, comprising their respective Headquarters, Controllerates, Field Quality Assurances Establishments & Proof Establishments (in case of Armament Discipline only). The tasks performed by them are complementary and are integrated to achieve maximum efficiency.

7.76 The major achievements of DGQA Organisation are as follow: -

(a) Inspection of Stores: DGQA are ensuring that stores accepted are strictly as per laid out specifications and performance parameters. The value of stores inspected during the last three years is given below: -

Year	Value of Stores Inspected (Rs. in crore)
2001-2002	13778
2002-2003	16001
2003-2004	14692

(b) Quality Assurance of Imported Equipment: DGQA is performing a vital role of inspection of Imported Equipment & Weapon System being acquired by the Armed Forces.

(c) Self Certification: DGQA Organisation has been awarding Self-Certification status to Quality Conscious Firms/ Manufacturers who have well established Quality Management System and demonstrate consistent product quality during the execution of successive Defence Supply Orders. 42 firms have been awarded Self-Certification status during the year 2003-2004.

(d) Exhibitions: DGQA in association with Department of Small Scale Industries, organized 15 exhibitions at different locations all over the country during the year. In addition to displaying the samples by various disciplines, Vendor Awareness Programmes were organized by Defence Institute of Quality Assurance, Bangalore.

(e) Training Initiatives: The Defence Institute of Quality 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 Organizations like Defence PSUs, OFB etc. Details of Officers trained in the last two years are as follow: -

Sl. No.	Year	DGQA	Other Organisations
1.	2002-2003	363	63
2.	2003-2004	391	92

DIRECTORATE GENERAL OF AERONAUTICAL QUALITY ASSURANCE (DGAQA)

7.77 DGAQA has its Headquarters at New Delhi with Resident Inspection Establishments at various production centres in the country. Its main functions inter-alia include quality assurance during design/ development, production, overhaul and repair of military aircraft and accessories, technical association with DRDO and participation in standardization activities etc.

During the year 2003-2004, DGAQA inspected Aeronautical Stores of the value of Rs.3284.07 crore. DGAQA also actively associated in the QA of various sophisticated indigenous projects and also participated in Integrated Guided Missile Development Programme (IGMDP) and non-IGMDP Projects like Prithvi/Akash/Trishul Missiles, both as the overall Nodal Agency and Quality Assurance Agency for most of the major systems.

DIRECTORATE OF STANDARDISATION

7.78 Directorate of Standardisation was constituted in 1962 with the objective to control items proliferation within Defence Services. Nine Standardisation Cells and six Detachments have been located at nodal Stations in the country to give boost to the Standardisation activity. 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. This objective is sought to be achieved through: -

a.) Preparation of Standardisation documents such as Joint Services Specifications, Joint Services Preferred Ranges, Joint Services Rationalized Lists, Joint Services Guides, Joint Services Policy Statements & Joint Services Qualitative Requirements;

b.) Codification and Cataloguing of Defence Inventory; and

c.) Entry Control.

7.79 Standardisation activities are done through 13 Standardisation Sub – Committees, Panels/Working Groups under these Sub – Committees, several Specialist Technical Panels (STP) and Defence Equipment Codification Committee (DECC).

7.80 Achievements :

(i) 1343 items were considered for variety reduction under 30 Joint Services Rationalized Lists. This quantity was reduced by 468 items thus bringing 34.7% reduction.

(ii) 375 documents, which had completed 5 years life, have been revised against yearly target of 367 revision.

(iii) 682 Standard documents were formulated.

7.81 Codification and Cataloguing

During the year 23,246 items have been codified against yearly target of 29,000.

7.82 Information technology: The official website of the Directorate has been made more user friendly with addition of various features and facilities. The Centre for Advanced Computing & System Application (COCOSA) Group of Directorate of Standardisation has coordinated the software development project for automation of the codification process at the various levels. Standardisation Enterprise Network established leased line connectivity to various Defence Standardisation Cells.

7.83 Training: The Institute of Standards Training, Pune, conducts courses on Standardisation, Codification, Management Development programme, Total Quality Management & Database Management System. The Institute has conducted following important courses: -

(i) Course on Metropolitan Area Network (MAN) functioning and utilization of 'Standardisation Intranet'.

(ii) Course on Basics of e-Governance and Information Security.

(iii) Orientation course on Standardisation and Codification.

(iv) Foundation course on Standardisation.

DIRECTORATE OF PLANNING & CO-ORDINATION

7.84 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 like the Arjun and T-90 Main Battle Tanks, product improvement of various artillery guns and armoured vehicles, augmentation of overhauling capacity of tanks and engines. Development programme of armaments for the army and navy are other key activities of the Directorate. The Directorate also monitors the critical projects in the electronics sector for the three services.

7.85 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 Bi-lateral Defence Policy Groups and Joint Working Groups with other countries.

7.86 The Directorate represents the Department for Defence Production in the General Staff Equipment Policy Committee, Standardisation Committee, Task Forces and various monitoring committees.

7.87 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 Acquisition Council (DAC). It also assist the DAC to arrive at optimum decisions regarding licence production, transfer of technology (TOT) and ab-initio production/development.

DEFENCE EXHIBITION ORGANISATION

7.88 The Defence Exhibition Organisation (DEO), established in 1981, is primarily responsible for organising and coordinating defence exhibitions in India and abroad. It maintains the permanent defence pavilion at the Pragati Maidan, New Delhi, which peaks out during Indian International Trade Fair (IITF) held every year from 14 to 27 November. Products manufactured/developed by Ordnance Factories, Defence Public Sector Undertakings (DPSUs) and Defence Research and Development Organisation (DRDO) are displayed at the pavilion. In addition, the Armed Forces, Directorate General of Quality Assurance (DGQA), Coast Guard and the National Cadet Corps

(NCC) are also represented in the exhibition. More than six lakh visitors visited the Defence Pavilion during IITF 2003 generating trade inquiries for the DPSUs/DRDO/ DGQA/OFB besides aiding in inculcation of defence consciousness among the citizens. The Pavilion remained activated for three additional days, from 28 to 30 November, 2003 to enable school-children, NCC cadets and Defence personnel to see the Pavilion in detail.

7.89 As a part of export promotion effort, DEO organizes international defence exhibitions in India and co-ordinates participations of DPSUs in exhibitions abroad. During the financial year 2003-2004, DEO co-ordinated participation in the Latin America Defentech Exhibition (LAD) 2003 held at Rio de Janeiro, Brazil from 22 to 25 April, 2003.

DEFEXPO INDIA 2004

7.90 DEFEXPO INDIA 2004-the third biennial International Land & Naval Systems Exhibition, was held at Pragati Maidan, New Delhi from 4 to 7 February, 2004. The Department of Defence Production, Ministry of Defence and the Confederation of Indian Industries organized the exhibition jointly. The exhibition covered an area of more than 12,000 sqm showing a growth of over 50% from the last event.187 foreign companies from 19 countries, along with 163 domestic companies including Defence Public Sector Undertakings (DPSUs) and Ordnance Factories participated in the exhibition. For the first time the permanent Defence Pavilion at Pragati Maidan was integrated with the exhibition. Raksha Mantri inaugurated the exhibition on February 4th, 2004. High-level official delegations from 32 countries attended the exposition. In addition, there were five non-official delegations, bringing the total to 37 as against 23 in the last event.

More than six lakh visitors visited the Defence Pavilion during IITF 2003 generating trade inquiries for the DPSUs/DRDO/ DGQA/OFB besides aiding in inculcation of defence consciousness among the citizens.

7.91 Approximately 35,000 visitors came to the exhibition including senior officials from various government departments, armed forces, as well as trade visitors. The feedback from the participants has been encouraging and nearly 3,300 sqm of space (more than 25% of total space for DEFEXPO INDIA 2004) is already booked by the exhibitors for the next show, scheduled to be held at the same venue from January 31 to February 3, 2006.

7.92 Discussions on issues of bilateral cooperation in the field of defence production were held with different official delegations as well as delegations from foreign companies who participated at DEFEXPO INDIA-2004. An International Seminar on "Outsourcing" and "Offsets" besides a Defence Industry Summit on FDI and optimizing R&D were organized concurrently as part of DEFEXPO INDIA 2004.

7.93 Following are details of investment, value of production and profits after tax of eight Defence Public Sector Undertakings.

INVESTMENT

(Rs in Crore)

Name of the PSUs	2001-2002		2002-2003		2003-2004	
	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	-

WORKING RESULTS

VALUE OF PRODUCTION AND SALES

(Rs in Crore)

Name of the PSUs	2001-2002		2002-2003		2003-2004(Prov.)	
	Value of Production	Value of Sales	Value of Production	Value of Sales	Value of Production	Value of Sales
HAL	2963.44	2774.81	3477.84	3120.42	3655.02	3690.29
BEL	2029.98	1941.99	2536.39	2508.02	2802.80	2791.37
BEML	1436.10	1424.15	1740.16	1681.17	1706.76	1770.61
MDL	582.65	737.83	539.52	569.27	464.44	80.10
GRSE	488.79	498.44	523.09	153.69	491.57	392.17
GSL	220.43	153.50	232.14	386.50	177.80	238.95
BDL	251.44	283.36	330.38	277.72	507.96	521.02
MIDHANI	107.17	104.30	93.50	91.52	105.07	125.11
TOTAL	8080.00	7918.38	9473.02	8788.31	9911.42	9609.62

PROFIT AFTER TAX

(Rs. in crore)

Name of the PSUs	2002-2003	2003-2004 (Prov.)
HAL	389.96	307.20
BEL	260.61	302.92
BEML	26.10	33.00
MDL	(-)24.13	(-) 12.90
GRSE	21.33	31.50
GSL	17.83	5.75
BDL	56.69	40.87
MIDHANI	(-)2.16	4.51
TOTAL	746.23	712.85

8

Defence Research and Development

Brahmos, the supersonic cruise missile, developed by the DRDO

DRDO has progressively enhanced the combat effectiveness of our Armed Forces through induction of latest technologies in indigenous defence systems.

8.1 Defence Research and Development Organisation (DRDO) was formed in 1958 by amalgamation of then already functioning Technical Development Establishments (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO). DRDO laboratories are engaged in ever-widening spectrum of defence technologies covering various disciplines like aeronautics, armaments, electronics, combat vehicles, engineering systems, instrumentation, missiles, advanced computation and simulation, special materials, naval systems, life sciences and agriculture, to name a few.

8.2 Mission: The Department of Defence Research and Development came into existence in 1980. It is dedicated to the mission of progressive enhancement of self-reliance in defence systems and state of the art defence technologies. To facilitate accomplishing this mission, there is a mission-mode structure headed by the Scientific Adviser to Raksha Mantri, who is also the Secretary, Department of Defence Research & Development and Director General, Research and Development.

ORGANISATIONAL STRUCTURE

8.3 DRDO Headquarters is organized in two different types of Headquarters Directorates. The Technical Directorates act as 'single window' to facilitate laboratories under their area of work in obtaining various approvals and in co-ordinating information with laboratories and Headquarters. Corporate Directorates like Directorate of Personnel, Human Resource Development, Material Management, Planning and Coordination, Management Services, Rajbhasha/ O&M, Budget Finance and Accounts, Security and Vigilance, Civil Works and Estates and Extramural Research and Intellectual Property Rights (ER & IPR) assist the laboratories in getting Government approvals for taking up projects and creation of facilities in their respective areas. Recruit-

ment and Assessment Centre (RAC) and Personnel Assessment Centre (PEACE) undertake fresh recruitments and assessment on periodic basis for promotions of scientists for all laboratories and Headquarters of DRDO under Defence Research Development Service (DRDS) Cadre and Defence Research Technical Cadre (DRTC) respectively.

DRDO LABORATORIES

8.4 The programmes and projects, undertaken by the Department, are executed through a network of R&D laboratories/ establishments. These laboratories are situated all over India from Tezpur in the East to Jodhpur in the West and Leh in the North to Kochi in the South of India.

8.5 The programmes/ projects are executed in close partnership with User Services. In order to harness best available resources in terms of talent, expertise and resources, on as required basis, DRDO interacts and involves defence public sector undertakings, academic institutions, research laboratories and private enterprises, to execute its projects and programmes. The 'concurrent engineering' approach is followed, in technology intensive projects, to reduce the time lag between design, development and production.

8.6 Review Mechanism: DRDO has institutionalized a mechanism to monitor and review programmes/ projects on a regular basis. There is an in-house apex level body called 'DRDO Research Council' (DRC), chaired by Scientific Adviser to Raksha Mantri, to review progress of major projects of all the laboratories. In addition, Corporate Reviews covering techno-managerial aspects are also carried out by a high level committee. The staff projects for Army are reviewed by the Vice Chief of Army Staff (VCOAS), 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 Programme Management Boards periodically monitor and review the programmes and give mid-course directions.

8.7 Consequent upon the acceptance of recommendation of the Group of Ministers (GOM) on National Security regarding Rationalisation of DRDO Laboratories, the Government had constituted a Group of Officers headed by Secretary, Defence Production. The recommendations of Group of Officers addressed synergy of effort amongst DRDO laboratories, closer interaction between DRDO and the Services and DRDO and Production Agencies. The recommendations of the Group, duly approved by the Raksha Mantri, are under implementation.

CONTRIBUTION OF DRDO TO SERVICES

8.8 The Organisation has made great strides, since 1980, towards making our Armed Forces self reliant. On the one hand this has enabled our Armed Forces to face

the arms export control regimes of advanced countries, whereas on the other hand, DRDO has progressively enhanced the combat effectiveness of our Armed Forces through induction of state-of-the-art indigenous defence systems. During last few years, a number of defence systems and equipment have been productionised. These include :

- Pilotless Target Aircraft –LAKSHYA (aerial target practice system)
- Radar Warning Receiver (RWR) for MiG 23 aircraft– TRANQUIL
- Radar Warning Receiver and Self Protection Jammer (RWR & SPJ) for MiG aircraft – TEMPEST
- CATCH - An airborne Signal Intelligence Systems
- Aircraft Arrester Barrier

Surface-to-surface Missile Agni-I

- Aircraft Weapon Trolley – BHEEMA
- Relocatable Balloon Barage System
- Parachutes for various types of Aircrafts
- Surface-to-surface Tactical Battlefield Missile : PRITHVI
- Surface-to-surface Missile : AGNI-I and AGNI-II
- Main Battle Tank : ARJUN
- Multi-barrel Rocket System - PINAKA (waiting for indent)
- Armoured Engineer Recce Vehicle (AERV) for crossing of water obstacles
- Bridge Layer Tank on T-72 chassis
- Bridge Assault Mechanically Launched: SARVATRA
- Mat Ground Surfacing, a track-way expedient for smooth movement in marshy terrain, shallow water and soft soil
- Containerised Operation Theatre Complex and Wards on Wheels
- Mobile Decontamination System for decontaminating Nuclear, Biological and Chemical (NBC) agents and personnel, equipment and terrain
- Muting system for deactivating remotely controlled explosive device – SAFARI [Mk-I]
- Remotely Piloted Vehicle RPV – NISHANT (for aerial surveillance)
- Bulk secrecy equipment with high grade digital secrecy : SANSAR
- Avalanche Victim Detector
- Meals-ready-to-eat (MREs) etc.
- Combat Improved T-72 tank – AJEYA
- Data Concentrator

- Battle-Field Surveillance Radar – Short Range (BFSR-SR)
- Weapon Locating Radar
- Artillery Combat Command and Control System - SAMVAHAK
- HUMSA – Hull Mounted Sonar System
- USHUS Sonar System
- Processor Based Moored Mine (PBMM) and Processor Based Exercise Mine (PBEM)
- Advanced Torpedos
- SANGRAHA
- Electronic Support Measure (ESM) System for Kamov/ Chetak Helicopter – KITE
- ESM System for Kamov/Chetak Helicopter – EAGLE
- Submarine based ESM – PORPOISE
- MIHIR -Helicopter based dunking sonar
- NAGAN – Towed Array Sonar
- SECTEL - Speech Secrecy Telephone
- Mission Computer (MC) for Jaguar.
- Mission Computer (MC), Display Processor (DP) and RWR for Sukhoi aircraft.

The Light Combat Aircraft Tejas has completed 202 flight tests. The Kaveri engine for the Tejas has successfully completed phase I and II of high altitude testing and undergone more than 1300 hours of development test.

PROGRESS MADE IN R&D PROGRAMMES

8.9 Maiden flight of Technology Demonstrator (TD1) of Light Combat Aircraft (LCA) 'TEJAS' took place on January 4, 2001 at Bangalore. Analysis of the test flight results have indicated a reasonably good match between flight tests and design objectives. Since then, two technology demonstrators and prototype vehicle (PV1) of LCA are undergoing flight testing.

8.10 The Second Technology Demonstrator (TD2) was flown for the first time on June 6, 2002. The Prime Minister has christened the LCA as "TEJAS" on May 4, 2003 and the same day formation flights of both the Tejas aircrafts were demonstrated. TD1 has successfully crossed the sound barrier on August 1, 2003 and super-sonic flights up to 1.15 Mach have been carried out. The reduced weight standard LCA prototype vehicle (PV1) Tejas has also undergone its maiden flight on November 25, 2003. LCA has completed 202 flight tests. The equipping of the fourth Tejas aircraft (PV2) is the progress, which is the production standard. Design activities on LCA Trainer Variant LCA (PV5), ensuring commonality with LCA (Navy), has been initiated. Jet Fuel Starter (JFS) system for starting LCA has been indigenously developed with assistance from Gas Turbine Research Establishment (GTRE), Bangalore by HAL.

8.11 The Kaveri engine for the Tejas is undergoing development trials. As on date two Kabini prototypes (C1, C2) and five Kaveri engine prototypes (K1 to K5) 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. Kaveri engine has undergone

The Army has decided to go in for induction of Nishant (Remotely Piloted Vehicle).

development test of more than 1300 hours. K5 engine of Kaveri has successfully completed phase I & II of high altitude testing at M/s CIAM, Russia. K9 engine is presently under testing at GTRE, with an aim to integrate it with LCA ahead of post-production clearance. General arrangement for the new layout (K10 configuration) addressing various issues, like improved surge margin in fan, better structural integrity of compressor and improved combustor pressure loss, is being made with the objective to realise the weight budgeted engine and to firm up this configuration for production release. The spin-off project ''Kaveri Marinisation' has been taken up and detailed design of the sub-systems have been completed. Fabrication and manufacturing work are under progress.

8.12 The limited series production of Pilotless Target Aircraft (PTA) – 'Lakshya', a reusable aerial target system, remotely operated from ground to provide training to gun and missile crew and to air defence pilots is in progress for training of all the three Services. Delivery of the five Lakshya to Air Force has been completed. All three Lakshyas have been delivered to the Navy along with the Ground Control and Support System. Two aircraft have been delivered to the Army and rest of the three aircraft will be delivered by September 2004.

8.13 Remotely Piloted Vehicle (RPV) 'Nishant', has been developed as per General Staff Qualitative Requirement (GSQR) issued by the Army. The objectives of the project are battlefield surveillance, reconnaissance, real time engagement of targets by artillery fire, laser designation, limited electronics intelligence/ gimbaled payload assembly (GPA) with control mechanism in azimuth and elevation has been developed for acquisition and target tracking. The field configuration of Nishant system comprise - air vehicles, ground control stations, antenna tracking system, launcher and mission support vehicle. More than 84 development flights have been carried out. Army has thereafter decided to go in for induction of the Nishant through limited series production. Summer trials have been successfully conducted by DRDO for Army evaluation. These include two shake down sorties and 12 user trial flights in realistic operational conditions at Pokhran.

8.14 The Center for Airborne Systems (CABS), Bangalore, has designed and developed Bheema-1000 Weapon Loading Trolley, which was productionised by Bharat Earth Movers Ltd. (BEML). After successful trials, IAF has placed an order for 55 trolleys on BEML. Recently, the trolley was airlifted for demonstration and weapon fitment trials at the Sri Lankan Air Force (SLAF) base at Colombo. The trials were successfully completed on SLAF fighter aircraft. Sri Lankan Air Force has indicated a requirement of 5 Bheema -1000 trolleys.

8.15 The Center for Military Airworthiness and Certification (CEMILAC) is dealing with airworthiness functions related to military aircraft and airborne systems. It also provides continued airworthiness support to

production and overhaul activities of aircraft/ aero-engines. There are 14 Regional Centres for Military Airworthiness (RCMA) spread all over the country to ensure airworthiness during design, manufacture and overhaul of aircraft/ helicopters and its systems built by HAL and operated by IAF. Life extension and support to Services for flight safety is another prime activity of RCMAs. They also participate in the Accident Investigations. This year RCMAs participated in 400 Defect Investigations at various centres.

8.16 Defence Advanced Research Establishment (DARE), Bangalore has developed Electronic Warfare Systems comprising of Radar Warning Receivers (RWR) and Self Protection Jammer (SPJ) for different fighter aircraft of IAF like Jaguar, MiG-23, MiG-27 and Mig-21 Bis. The laboratory has also designed and developed Automatic Test Equipment (ATE) and Ground Support Equipment (GSE) to test and maintain the developed EW Systems. Also, work is in progress in respect of Radar Warning and Jammer (RWJ). DARE has undertaken design and development of avionics of Sukhoi aircraft for integration.

8.17 Development and field trials of Communication segment of Samyukta (an Electronic Warfare Programme for Army) have been completed and production orders for Samyukta com Segment has been placed. First Control Center Block of Com Segment was handed over by the President of India to the Chief of Army Staff.

8.18 Development of Sangraha [an indigenous Electronic Warfare(EW) Programme for the Navy] has been completed and various EW Systems developed under

Samyukta Electronic Warfare Systems

this programme are at different stages of production and induction.

8.19 Preliminary trials of Electro Optical Fire Control System (EOFCS) for naval ship have been completed. System optimization is being carried out in the ship.

8.20 BrahMos, a supersonic cruise missile, has a range of upto 290 kms and has so far gone through six successive successful tests. The recent flights were conducted on October 29, November 9 and November 23, 2003 in various modes, meeting all the mission requirements. In the last trial on November 23, 2003, which was assisted by the Indian Navy, the missile was fired from a warship cruising at a speed of about 12 to 15 knots an hour at a drifting decommissioned vessel, and the missile hit the hull of the decommissioned vessel. Development of anti-ship version from land and ship has been completed successfully. Indian Navy has placed letter of interest.

Nine development flight trials of surface-to-air missile - Akash - have been undertaken between January 2003 and March 2004. Production facilities have been established at Bharat Dynamics Limited.

8.21 Dhanush, a naval version of the Prithvi missile system, with a range of 250 kms has been designed and developed and is under induction. Weaponisation on ships is under progress. Longer range version of Prithvi (P-II), tactical battlefield surface-to-surface missile system has been successfully flight tested during March 2004 with Inertial Navigational System-Global Positioning System (INS-GPS) in integrated mode to enhance the accuracy.

8.22 Nine development flight trials of surface-to-air missile (SAM) - Akash have been undertaken between January 2003 and March 2004. Consistent performance of propulsion, control and guidance system were demonstrated against simulated targets. The miss distance achieved in all these flights was within specifications. Production facilities have been established at Bharat Dynamics Limited (BDL), Hyderabad and the missiles are being integrated and checked out at BDL. For Akash, the Rajendra Radar has been integrated with Battery Control Center (BCC-II), Battery Surveillance Radar (BSR) and Akash Self Propelled Launcher (ASPL-II). Further, 3D Central Acquisition Radar (3D-CAR) has also been demonstrated to the Air Force and Naval Users at Ambala, Barnala and Goa. All radars have shown consistent performance. All the ground systems support vehicles have also been realized.

8.23 Nag, the third generation anti-tank guided missile with 'Fire & Forget' and 'Top Attack' during 'Day and Night' were established through three consecutive flight tests with Imaging Infra Red (IIR) Seeker in which direct hits were scored on targets. The reconfigured Nag Missile Carrier 'Namica MK-II' was successfully field tested in desert terrain during this summer.

8.24 Trishul is a low level, quick reaction and guided surface-to-air missile system developed for all the three Services. It has been successfully test fired against remotely piloted flying targets. Four flight tests have

been carried out in June 2003 and February and March 2004 demonstrating the accuracy of guidance, reliability of performance and functioning of the warhead in integrated node.

8.25 125 mm Fin Stabilised Armour Piercing Discarding Sabot (FSAPDS) ammunition is a primary anti-tank ammunition of the T-72 tank. It is therefore important to give the crew maximum practice in FSAPDS shots. Practice ammunition will not only reduce cost but can be fired at any short range available, as the maximum range is less than 6 km. User trials were conducted successfully in March 2003 and users are considering their requirement for training purposes.

8.26 State of the art Influence Mine Mk-I to provide a full width attack to immobilize a present day battle tank has been developed by DRDO. Mk-II version of this mine with higher reliability is in an advanced stage of development.

8.27 Existing in service, Grad BM-21 rocket has a maximum range of 20.4 km. DRDO has undertaken a project for increasing its maximum range to more than 35 km. Development of extended range Grad Rocket 122 mm is in advanced stage of evaluation trials.

Production of Combat Improved tank 'Ajeya' (CIA) has also commenced at HVF, Avadi.

8.28 Production of Combat Improved tank 'Ajeya' (CIA) has also commenced at HVF, Avadi. The various modernisation schemes are being incorporated in phases. Transfer of Technology and integration of other improvement schemes in CIA tanks are taking place smoothly.

8.29 Ordnance Factory, Medak, has produced and delivered 137 Carrier Mortar Tracked, out of 198 ordered by the Army. Remaining vehicles are in different stages of assembly.

8.30 DRDO is developing futuristic Infantry Combat Vehicle (ICV) 'Abhay' as a technology demonstrator for replacement of BMP-II vehicle which are presently in Service. Various systems of this vehicle are in advanced stage of development.

8.31 Two prototypes of amphibious floating bridge and ferry system (30 T Class) have been developed. The system acts as a bridge carrier vehicle on road while on reaching wet gaps, the inflatable floats and aquatic mobility system enable the equipment to function as a ferry/ bridge with 28.4m span and 3.6m width.

8.32 A 10 kw wind electric generator for producing power from wind energy has been successfully installed at Sasoma in Siachen area to meet an urgent requirement of the Army.

8.33 Naval Physical and Oceanographic Laboratory (NPOL) has completed successful technical trials of the first airborne Sonar System MIHIR. During the development phase of the system, important technologies in the field of Sonobuoys, VHF Receivers, Lightweight Winches have been mastered by the Laboratory.

8.34 The ocean environment is well known to critically influence the design and

performance of the Sonar Systems. It is therefore, imperative to augment the tactical information base for our coastal waters in order to fully exploit optimum performance of our sonars. Accordingly, a Consolidated Oceanographic and Marine Acoustic Programme (COMAP) is under execution to collect the vital oceanographic data.

8.35 Under the project Akhila, technological advancements have been made to achieve self-reliance in transducers technology specially in the areas of development of transducer elements for handling high power and frequency and new generation hull mounted HF transducer.

Naval Material Research Laboratory (NMRL), Ambernath, has developed Flameless Room Heater (Bukhari) which works on the principle of catalytic flameless burning of fuel grade cheap alcohol

8.36 Project Sipra is basically a competence building research project wherein advance signal processing techniques are developed to improve the performance of the sonars. Exploratory studies have been undertaken, which has resulted in practical demonstration of various algorithms.

8.37 Research and development work is in progress to develop a sonar simulator system called Darpan, which is capable of near real time simulation of one or more sonars whose specifications are currently available, under realistic environmental conditions, and selected operational scenarios.

8.38 A single frequency Under Water Telephone (UWT) developed by NPOL and M/s Keltron has been converted to a dual frequency version for communication with both NATO & Russian standard platforms. Subsequent to the successful trials, the new version is being supplied by Keltron to Navy.

8.39 The portable life-detecting device Sanjivani for use in emergency rescue mission to detect live human beings or animals trapped under debris of collapsed buildings/ landslides has been developed and a total quantity of 200 units have been manufactured. It is proposed to distribute these units to State Government authorities.

8.40 Two units each of the Harbour Deterrent Sonar (Hanet) has been given to Eastern and Western Naval Commands. The technical details of Hanet has been given to M/s Bharat Electronics, Bangalore for productionisation. Navy's request for additional 10 units will be met by the production agency.

8.41 Naval Material Research Laboratory (NMRL), Ambernath, has developed Flameless Room Heater (Bukhari) which works on the principle of catalytic flameless burning of fuel grade cheap alcohol like methanol, ethanol etc. to liberate heat. Thermal capacity achieved so-far is around 5 kw. Toxic emission is negligible. Heat output is controllable. This flameless room heater does not pose any fire hazard.

8.42 Naval Science and Technological Laboratory (NSTL), Vishakhapatnam has developed Advance Experimental Torpedo (AET). AET is a light weight, anti-submarine torpedo launched from ships and helicopters. This torpedo is a very effective system against surface as well as submerged targets. User evaluation trials with R&D model of

Multi-barrel rocket system PINAKA will supplement the existing artillery guns.

AET have been completed. Five development and engineering (D&E) models of AET under fabrication by Bharat Dynamics Limited (BDL) will be subjected to further trials, after which it will enter bulk production phase.

8.43 Wire Guided Torpedo (WGT) is a heavy weight torpedo launched from submarine. The technical evaluation of the system has been completed successfully and the system is in final stage of user evaluation.

8.44 Indian Navy required floating container buoys to be dropped from TU 142 M / IL 38 fixed wing aircrafts for delivery of emergency stores to the ships in distress. The store has been developed and named as "Sahayak".

8.45 NSTL has developed three variants of "Sahayak" having different payloads and offered the same to Navy after successful completion of user-associated trials. Navy is also committed to productionise Sahayak-I for service exploitation. NSTL has completed the development of the store in one year's time.

8.46 Defence Materials Research Laboratory (DMRL) has established an indigenous process for producing Aeronautical grade Titanium Sponge. DMRL is ready for transfer of the technology to the industry.

8.47 Blast Protective Suit (BPS) has been developed for mine clearing operation. The suit is light weight and provides comfort, mobility and maximum protection against the blast of anti-personnel mine from a distance of even 30 cm. The suit has been designed as per the inputs received from the Army.

8.48 Transgenic tomato plant, using Osmotin gene through agro-mediated genetic transformation has been developed. These plants can thrive in hostile environ-

ments. Besides, appropriate technologies for protected cultivation (Solar Greenhouse) of vegetables in Ladakh have been carried out. These have the potential of augmenting the local production of fresh vegetables in high altitudes as well as cold desert.

8.49 Clinical trials using 2-deoxy-D-Glucose (2-DG) to improve the efficacy of radio therapy of cancer in patients with malignant brain tumor has yielded very encouraging results with enhanced survival and improved quality of life. Scientists have also produced an indigenous 2-DG which is being tested.

8.50 A herbal ultra-violet (UV) screen which is 15-20% more effective than popular commercial brands has been developed by DRDO for use by Defence Personnel posted in Glaciers and high altitude areas experiencing high UV radiation. They have also developed a herbal radio-protector which offers significant protection against ionizing radiation.

Snow and Avalanche Study Establishment is using the snow and met observations from 35 surface observatories and 16 Automatic Weather Stations covering J&K including Siachen and part of Himachal Pradesh

8.51 DRDO has been carrying out several studies on thyroid disorders of clinical and epidemiological interest. The prevalence of Iodine deficiency in school children of Delhi was identified by goiter survey followed by the promotion of salt iodination leading to a reduction in such cases. DRDO has established state-of-the-art micro estimation facilities and a protocol for management of all kinds of thyroid diseases.

8.52 During the Winter 2002-2003, the Avalanche Forecast warnings were regularly issued by Snow and Avalanche Study Establishment (SASE), Chandigarh for the use of Army deployed in snow bound areas of J&K and the civil population. These warnings resulted in saving of many lives. For this purpose SASE is using the snow and met observations from 35 surface observatories and 16 Automatic Weather Stations (AWS) covering Jammu and Kashmir including Siachen and part of Himachal Pradesh. In order to increase the observatory network over Western Himalayas, work on installation of additional AWS is in progress.

8.53 SASE is using a versatile meso-scale model for predicting weather three days in advance over Western Himalayan Region. State-of-the-art radiosonde upper air equipment have been installed at Jammu, Sasoma (Siachen) and Manali. Regular observations using the Meso-scale model are being taken for weather prediction.

8.54 SASE has developed a methodology to monitor snow cover in Western Himalayan Region using different satellite imageries to help in planning of operational moves, road alignment and other activities including troops education. In addition these satellite imageries have been converted into fly-through models as a training aid to the troops deployed in field areas.

TECHNOLOGY DEVELOPMENT/ INNOVATION

8.55 Feasibility of development of the advanced technology for manufacture of Combustible Cartridge Case (CCC) incor-

Hand-held laser warner for detecting and warning enemy laser radiation has been developed and field evaluated

porating resin as a binder in the nitro cellulose matrix has been established. The newly developed CCC has excellent tensile strength without any penalty on its combustibility. These CCCs are also dimensionally stable when stored/ handled under extreme environmental conditions.

8.56 Gallium Arsenide Enabling Technology Centre (GAETEC) produced and delivered Monolithic Microwave Integrated Circuit (MMIC) amplifier modules in various frequency bands for various defence and space systems. The centre has also produced S-Band Receive Beam Former and Digital Attenuator and single pole double throw (SPDT) switch MMIC chips for L-Band Trans-receive module for use in state-of-the-art radar systems.

8.57 Variants of Central Acquisition Radar (CAR) for Navy and Air Force are under development for air surveillance requirements of the users.

8.58 Combat Net Radio - a frequency hopping radio for data and voice communication used in armoured fighting vehicles has been developed and user trials have been completed successfully.

8.59 Development trials of Maritime Patrol Radar (for Naval use) on KAMOV helicopter platform have been completed. The system has been installed on Advance Light Helicopter (ALH) for user trials. The system is under evaluation.

8.60 Thermal Imagers based on second generation Mercury Cadmium Telluride (MCT) array have been developed and are under evaluation.

8.61 Hand-held laser warner for detecting and warning enemy laser radiation has been developed and field evaluated.

8.62 A single board computer (SBC) is developed by Advanced Numerical Research and Analysis Group (ANURAG) by using ANURAG's microprocessor for on board computing (OBC) requirements.

8.63 The self-heating pouch based system for ready-to-eat (RTE) foods has been found to be shelf stable upto 6 months at ambient temperature conditions. Development of suitable self-heating system for chapaties and water (for the preparation of tea) is in progress. The quantity of exothermic chemical mixture (approx. 100g) and the package dimensions required to heat the product from -10^{0}C to 50^{0}C has been standardized. Further efforts are on to reduce the quantity of chemical mixture required and raise the final temperature.

8.64 Vegetable varieties/ hybrids (viz. capsicum, garlic) developed by DRDO Scientists have been recommended for release by All India Coordinated Vegetable Improvement Programme Committee at National level. Herbal drugs such as anti-leucoderma, anti-eczema, anti-toothache, cold and anti-sunburn cream have also been developed and are presently under clinical trials.

8.65 A herbal tea based on local medicinal plants (seabuckthorn, rose root, yarrow, salam panja, kala jeera, wild rose etc) has been formulated and tested.

8.66 Bio-engineering scientists have

successfully developed the Line Replacement Units (LRUs) of the integrated life support system for 'Tejas' (LCA) and prototype submarine escape set consisting of a hydro suit and breathing bag. The LRUs are ready for simulation trials. They have also integrated an AC powered Automatic Control Unit with the modified High Altitude Pulmonary Odema (HAPO) chamber for automatic inflation. They have also successfully designed a backup oxygen system for Combat Free Fall Parachute system.

8.67 Mark II of the indigenously developed Nitric Oxide delivery system tailor-made to be used at extreme and remote high altitude areas for early treatment of High Altitude Pulmonary Edema (HAPE) patients, is under development. Scientists have also achieved the indigenous production of nitric oxide and calibration gas used in the delivery system thus lessening the dependence on import of these gases.

8.68 DRDO scientists have also developed cold radio-pharmaceutical kits for bacteria-specific infection imaging, soft tissue (breast) and bone metastasis imaging. These kits have successfully undergone multicentric trials and technology transfer to private entrepreneur is in progress.

8.69 The availability of pure drinking water is a serious problem in the North-Eastern region due to presence of high iron contents. DRDO has developed an iron removal unit for treatment of water to bring down the level of iron content conforming to WHO Standards. Recently, 200 of these Iron Removal Units have been supplied to HQ Eastern Command.

BASIC RESEARCH

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

8.71 The Aeronautics Research & Development Board (AR&DB) started functioning in Feb 1971 and has funded around 1250 projects to 35 institutions since inception. It is currently funding 120 projects at 25 academic & research Institutions. It has a ceiling of Rs.5.00 crores per year in up stream areas of aeronautics R&D. Three Centres of Excellence have been set up at Indian Institute of Technology (IIT) Mumbai, National Aerospace Limited (NAL) Bangalore and Indian Institute of Science (IISc), Bangalore in the area of systems design and engineering, composite structures technology and computational fluid dynamics (CFD) with linkages at other expert organizations. AR&DB has also recently launched its website, which can be accessed through drdo.com.

8.72 Under Armament Research Board (ARMREB) 43 projects have been sanctioned, covering the field of High Energy Materials, Sensors, Ballistics, Combustion & Detonics, Modeling/ Simulation and other

Diagnobact developed by the DRDO can differentiate sterile from infectious inflamation.

fields related to Armaments, to various academic institutions and other R&D Organisations. Out of these, 17 projects have been successfully completed and remaining are being pursued.

8.73 Life Sciences Research Board (LSRB) continued its spirit of supporting, expanding and deepening the knowledge base of life sciences. A total of nine projects have been sanctioned to academic institutions taking the total number of sanctioned projects to 47. Some of the projects supported by LSRB are for rapid diagnosis of infectious diseases, engineering resistance to pod borer in pigeon-pea, mycorrhizal technology for tropical Tuber crops, Hospital waste and Anti-fouling strategies of marine organisms.

To accord selective protective legal cover to intellectual property generated by research activities of DRDO, sixty-four IPR applications were filed.

8.74 Naval Research Board (NRB) continued to support the basic research applicable to naval technologies. Five new grants-in-aid projects were sanctioned to academic institutions and 19 out of 44 projects have since been accepted.

Extramural Research & Intellectual Property Right (ER & IPR)

8.75 Truly indigenous solutions to military problems and the related technologies can be developed only if judicious investments are made in expanding and deepening the foundations of basic scientific knowledge and the technological validation of new concepts that emerge from such knowledge.

8.76 During the financial year 2003-04, 59 new projects with an aggregate value of Rs. 16.5 crores were researched upon in various academic institutions in the country. Grant-in-Aid worth Rs. 30 lakhs was also provided to various scientific and academic institutions and societies for holding national and international conferences and seminars/ workshops.

8.77 To accord selective protective legal cover to intellectual property generated by research activities of DRDO, 64 IPR applications (including 10 filed in foreign countries) were filed on products/processes in the field of materials, electronics, bio-medical sciences and food technology.

8.78 50 patents (including two in foreign countries) were granted and 30 patents were accepted for grant. In addition, one design patent was granted in USA and one copyright was registered in India. To promote IPR awareness, six awareness programmes/workshops/patent-clinics were held during the period in different laboratories.

SUPPORT TO SERVICES

8.79 DRDO has developed a variety of software for simulator training of Army personnel on Air Defence Combat and Reporting of enemy aircraft & missiles.

8.80 The indigenous brake parachute for

SU-30 aircraft has been successfully developed and five such parachutes have been delivered to the Air Force against their first indent.

8.81 DRDO has developed and standardized a set of intelligence test consisting of verbal and non-verbal tests along with norms for the Directorate of Recruitment, Army Headquarters for the selection of personnel to the Commissioned ranks.

DRDO maintains close liaison with Industry by way of transfer of technology. The problems faced by industries in the processing and production of various products are solved by giving proper advice and guidance.

8.82 Five thousand survival rations were supplied to Army and five hundred Meals Ready to Eat (MRE) rations to INS Abhimanyu, Mumbai. Besides, two thousand test kits developed for the detection of cold slaughtered meat were supplied to different units of Army. DRDO has developed technology for enhancing shelf life of meat by application of permissible acid spray.

8.83 More than 200 water purification systems for removal of excessive iron are being supplied to the Armed Forces in the North-eastern region. Water purification plants for removal of salinity (to give potable water) have been installed at various locations in Rajasthan.

8.84 Facilities for fishery, green house cultivation of off-season vegetables and mushroom production have been established by the DRDO at mountaineering brigades of Army. The research and development efforts of DRDO have resulted in meeting approximately 45% of the total vegetable requirement of Army locally in 'L' Sector.

8.85 DRDO agricultural laboratories are conducting regular training programmes on agriculture and animal husbandry for the Services.

8.86 Carbogen Breathing Assembly, used as protection against noise induced hearing loss, has been developed by DRDO scientists in collaboration with IIT Mumbai, and was successfully tried by the Indian Navy. The Navy has decided to acquire 12 such assemblies for induction in the engine room of the ships. Efforts are on to design a multi-user breathing system to maximize efficiency.

8.87 Temperature-controlled bio-digestors (for human waste) have been installed at various places for use by the Armed Forces.

8.88 Both spray and cream formulations of DEPA - a multi-insect repellant - have been developed for protection against blood-sucking insects and are being evaluated in the field.

8.89 Scientists have conducted several training programmes on the management of chemical and biological casualties for the benefit of the Armed Forces, Parliament Security Staff and Junior and Senior Commands of the Border Security Force.

8.90 DRDO psychologists have conducted focused studies on security forces developed in low intensity conflict environments with respect to their psycho-social adjustment. Efficacy of interrogation techniques, role of organizational support and climate in enhancing the efficiency and

commitment of these forces has been investigated. Training programmes are also being developed for enhancing the military leadership effectiveness.

INTERACTION WITH INDUSTRY

8.91 DRDO maintains close liaison with Industry by way of transfer of technology. The problems faced by industries in the processing and production of various products are solved by giving proper advice and guidance. Analytical facilities available at the laboratory are also being extended to Industries.

8.92 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. Technology of 'Typhigen Kit' developed by DRDO scientists has been transferred for commercial use. Anthrax kits have been provided to the World Health Organization for their regular use.

8.93 The nuclear, biological and chemical (NBC) respiratory mask, NBC leak tester, integrated hood mask and NBC resuscitator developed by DRDO have led to production and have been supplied to the Army. Canisters, personal decontamination kits and three colour detector paper is also being produced for supply to the Army.

DRDO has identified a village- Ahom Gaon-as a model village to study the psychological impact of socio-economic development in the North East.

8.94 Defence Food Research Laboratory, Mysore has transferred the technology for freeze drying of fruit juices and hurdle preservation of pineapple to M/s Transindia, Kolkata. The firm is setting up a multi-fruit-processing unit at Bodhjungnagar, Agartala.

8.95 DRDO has established a Germplasm Centre of German Angora Rabbit at Village Munisiyari in Pithoragarh under the aegis of UNDP. The germplasm has been maintained and multiplied by farmers under the technical guidance of DRDO. The farmers have been given theoretical and practical training on feeding, breeding, management, record keeping, shearing of wool and health cover aspects. Good progress has been made at the Germplasm Centre both in terms of multiplication of rabbits and marketing of adult rabbits and angora woollens.

8.96 DRDO has also identified a village - Ahom Gaon, as a model village to study the psychological impact of socio-economic development in the North East. Social-economic support was provided in terms of materials like computers, sewing machines, water pumps, and accessories for library and recreation centre. The support resulted in a positive change in attitude of the villagers.

8.97 Field Research Laboratory (FRL), Leh and Defence Agricultural Research Laboratory (DARL), Pithoragarh have provided affordable agro-animal technologies for rural upliftment in their respective areas.

8.98 DRDO has also established water purification systems for removing of various impurities like iron and salinity in various

An advanced Anti-Submarine torpedo which can attack targets at 540m depth

rural areas of north eastern region and Rajasthan.

HUMAN RESOURCE DEVELOPMENT

8.99 Manpower Planning Board has been constituted in the DRDO to look after management and induction of scientific, technical and administrative manpower. The manpower requirement in all categories for various DRDO projects has been reviewed, through various mechanisms like rationalization of cadre structure, incentive schemes, training policies, enhanced promotional opportunities, exit interviews. The organization has endeavoured to ensure optimum utilization of human resource, apart from attracting and retaining best talents. DRDO's two training institutes - the Institute of Armament Technology (IAT) and the Institute of Technology Management (ITM) are also engaged in conducting specialized courses. To make the exercise more effective and result-oriented HRD cells have been set up in all laboratories/establishments of DRDO. DRDO is sensitive to the need with regard to empowerment and welfare of its women employees. Government instructions and directives issued on the subject are being followed in this organization in letter and spirit. It is ensured that women employees are accorded equal opportunities for enhancement of their skill and knowledge, fulfillment of their potential and advancement in careers through various mechanisms of human resource development. As per Government orders, laboratories of DRDO have already been advised to set up Women's Cells to look after the welfare of women employees. A similar cell has also been constituted at DRDO Headquarters for the purpose.

9

Inter-Service Organisations

The National Defence College is a centre of excellence on National Security and Strategic Studies

Fourteen Inter-Service Organisations function directly under the Ministry of Defence. They include diverse establishments like the Armed Forces Medical Services and the National Defence College.

9.1 The following Inter-Service Organisations function directly under the 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

9.2 Military Engineer Services (MES), the largest construction agency of the country provides works cover in 450 stations in peace areas as well as in forward areas. It is the premier engineering arm of the Ministry of Defence which provides works services to the three Defence Services and other related departments, such as Defence Research and Development Organisation, Directorate General of Quality Assurance, Ordnance Factories, Coast Guard, Kendriya Vidalaya Sangathan and Central and State Government undertakings.

9.3 MES has a long and eventful history and has grown along with the engineering profession and the needs of the modern hi-tech armed forces of independent India. Today it handles annual workload, exceeding Rs.3300 crores.

9.4 MES functions under the overall control of the 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 through contracts under the supervision of Officers and staff consisting

of both civilians as well as combatants from the Corps of Engineers. It has an integral multi-disciplinary team of architects, civil, electrical and mechanical engineers, structural designers, quantity surveyors and contract specialists for planning, designing and supervision of works. While the officers' cadre has an All India Service liability, the subordinates are restricted to area-based requirements.

9.5 MES has specialized in wide spectrum of civil works, ranging from conventional buildings and factories to sophisticated complex laboratories, marine works, jetties, dockyards, wharves, workshops, slipways, airfields, roads, blast pens, etc. It also provides sophisticated infrastructural services like air-conditioning, cold storage, water supply, compressed air, sewage treatment plants, lifts and crane for the Defence Services.

9.6 Married Accommodation Project: Under this project, a total of 1,98,012 dwelling units have been planned for construction in four phases. In the first phase, 60,789 dwelling units are to be constructed for Army, Navy and Air Force in 79 stations at an approximate cost of Rs.5320 crores. The works have been allotted to CPWD, DRDO and three PSUs viz. NBCC, IRCON, and RITES at 38 stations and the balance stations have been allotted to DG MAP. Concept Project Reports(CPR) for 42 stations and Detailed Project Reports(DPR) for 10 stations have been approved.

A total of 1,98,012 dwelling units have been planned for construction under Married Accommodation Project.

ARMED FORCES MEDICAL SERVICES

9.7 The Armed Forces Medical Services (AFMS), consisting of the Army Medical Corps (AMC), the Army Dental Corps (ADC) and the Military Nursing Services (MNS) provide comprehensive health care to the serving Armed Forces personnel, their families and dependents, numbering approximately 6.6 million. In addition, ex-servicemen and their families are also entitled to free medical treatment from Services sources and so are para-military organisations like Assam Rifles, Rashtriya Rifles, Coast Guard, DRDO and Border Road personnel, while posted in the field.

9.8 Armed Forces Medical Services are also activated to aid civil authorities during epidemics, natural calamities and internal security duties, especially in inaccessible and difficult areas. In addition to this, care is also provided to all civilians by the establishments of AFMS in an emergency.

9.9 Infrastructure: The Armed Forces Medical Services are the largest and amongst the best organized health care delivery systems in the country. There is a network of Regimental Aid Posts manned by doctors. These are supported by 89 Field Ambulances, which are mobile 45 bedded hospitals. Besides the facilities made available in combat zones, the AFMS has 127 hospitals of varying sizes in different parts of the country. While the peripheral hospitals have basic specialist facilities, the eight Command/Army Hospitals have super

The Armed Forces Medical Services are the largest and amongst the best organized health care delivery systems in the country.

specialist centers with state-of-the-art equipment and facilities.

9.10Conferences and Continuous Medical Education:

(a) Conference of the APMMC (Asta Pacific Military Medicine Conference) was held in Thailand, Bangkok. Specialist Officers attended the conference and presented scientific papers.

(b) DGAFMS attended the Cardiology Conferences at USA and Washington.

(c) 47 in-house CMEs (Continuous Medical Education), Updates, Workshops and Seminars were organized.

(c) Approximately 1244 Armed Forces Medical Officers attended various Conferences/Workshops of 127 approved civil bodies all over the country.

9.11 Admission to MBBS Course at AFMC, Pune: 87,245 candidates applied for the written examination for admission to the 2003 session for the MBBS course at Armed Forces Medical College, Pune. Based on their merit 939 candidates were called for interview out of whom 130 have been admitted for the MBBS Course 2003. All candidates have liability to serve as commissioned officers in the Army Medical Corps on completion of the course.

9.12 Advanced Course: Medical Officers of the Armed Forces Medical Services, on the basis of a competitive examination, are selected for Advanced Courses during which they acquire Post-Graduate qualification from Pune and other Universities. 99 officers have been detailed for the purpose during the year 2003.

DIRECTORATE GENERAL OF DEFENCE ESTATES

9.13 The Directorate General, Defence Estates is the nodal executive agency of the Ministry of Defence for procurement of immovable property for defence purposes by way of acquisition, transfer, requisitioning and hiring. There are a large number of acquisition/transfer of land projects in different states.

9.14 An amount of Rs.1518.74 lakh has been allotted by Ministry of Defence for acquisition of land for the three Services during the year 2003-04.

9.15 Ex-gratia compensation has been given to the farmers living in the border areas of the states of Punjab, Jammu and Kashmir and Rajasthan for the damages occurred to their crops during the preparatory state of "Op Parakram". An amount of Rs. 10415.79 lakhs has been placed with the respective Commands during the year 2003-04.

9.16 There are 62 Cantonments in India. These are located in 19 States and the National Capital Territory of Delhi. The Cantonment Boards are autonomous bodies functioning under the overall control of the Ministry of Defence as per the provisions of Cantonments Act, 1924. Cantonment Boards comprise elected representatives besides ex-officio and nominated members. Parity is maintained between elected and official members. The Station Commander is the President of the Cantonment Board.

Supervision and control over the working of these bodies is exercised through the General Officer-in-Chief of the Commands at the intermediate level and by the Central Government through Director General Defence Estates(DGDE), Ministry of Defence, at the apex level.

9.17 The resources of the Cantonment Boards are very limited as the bulk of the property in the Cantonment is Government owned on which no tax can be levied. Boards however receive payment of Service Charges in respect of Central Government properties. The nature of the Cantonment is such that neither industries can come up nor trade and business can achieve any significant growth. The Central Government provides financial assistance by way of Grant-in-aid to a certain extent to balance the budget.

There are 62 Cantonments in India. These are located in 19 States and the National Capital Territory of Delhi

9.18 To improve the overall performance and to inculcate spirit of unity, a Cultural Meet of all Cantonment Board Schools was organized during the year in which children from different parts of the country studying in Cantonment Board Schools participated.

9.19 Most of the Cantonment Boards are maintaining hospitals or dispensaries to cater to the needs of civil population of the Cantonment. Total Hospitals/Dispensaries maintained are 69 in number. Cantonment Boards also maintain primary and Higher Secondary Schools and Intermediate/Junior colleges. Total schools and colleges maintained by Cantonment Boards are 189 in number.

9.20 The Director General, Defence Estates functions as an adviser to the Ministry of Defence on land and Cantonment Board matters. DGDE is an attached office of Ministry of Defence responsible for executive functions relating to hiring, requisition or acquisition of land and buildings to meet the defence requirements. The defence land considered temporarily/permanently surplus is also disposed of by the Service by way of license, lease or transfer to other Central Government Departments/State Government/PSUs or reputed schools/ institutions or ex-servicemen. While the functions of the Directorate General, Defence Estates, in regard to the Cantonment Boards relate to the municipal administration of the Cantonments through Principal Director/Directors, the Command and Cantonment Executive Officers, its management of land, custody of land records, procurement of immovable property is carried out through Defence Estates officers. Out of 17.31 lakh acres of defence land holding 0.68 lakh acres of land is under the direct management of DGDE.

OFFICE OF THE CHIEF ADMINISTRATIVE OFFICER

9.21 The office of the 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 the Ministry of Defence. Joint Secretary (Training) dis-

charges the functions of the Chief Administrative Officer and Director (Security) as well. In relation to security, he oversees the work of the Chief Security Officer.

9.22 The functioning of CAO's Office is discharged by 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 Divisions and (vi)Estates and Works Division.

9.23 The Administration Division provides administrative cover to about 10,000 civilian employees employed in the Army Headquarters and Inter-Service Organisations. A Grievances Cell is functioning within the Administration Division to examine the grievances of serving/retired Armed Forces Headquarters civilian employees and to ensure their speedy settlement.

9.24 The Personnel Division provides civilian manpower to the Service Headquarters and Inter- Service Organisations and deals with the management of this manpower.

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

9.26 Finance and Materials Division provides material support which includes procuring and provisioning of office equipment, stores, furniture and stationery to all offices of Army Headquarters and ISOs.

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

9.28 Estates and Works Division performs the estate functions in respect of residential accommodation of Service Officers posted at Armed Forces Headquarters.

9.29 The CAO also looks after the welfare of civilian employees in Service Headquarters and the Ministry of Defence. Armed Forces Headquarters/Inter-Service Organisations Welfare Fund and Defence Civilian Medical Aid Fund (DCMAF) provide financial help to the employees during acute distress.

9.30 The Chief Security Officer and the personnel under his command ensure the physical security of office buildings in the Defence Security Zone under the supervision of JS (Trg) & CAO. Security of the buildings has to be ensured to preclude breach of physical security in the zone. Efforts are also made through briefings to sensitise officers and personnel on maintaining security of information.

DIRECTORATE OF PUBLIC RELATIONS

9.31 In a democratic polity such as ours, the media plays a pivotal role in disseminating information to the public. Revolutionary changes in the field of communication technology have opened new opportunities and challenges in the field of information dissemination. The Directorate of Public Relations with its Headquarters in

New Delhi and 25 regional offices across the country is the nodal agency for providing media support and services to the Ministry of Defence, the three Services and Inter-Service Organisations under the Ministry of Defence. It also facilitates media interaction with the leadership and senior officials of the Ministry of Defence and Armed Forces. The Directorate brings out a fortnightly journal, 'Sainik Samachar', for the Armed Forces in 13 languages (Assamese, Bengali, English, Gorkhali, Hindi, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telegu and Urdu), and coordinates the preparation of a radio programme "Sainikon Ke Liye", a popular 40-minute daily programme broadcast over the All India Radio, for the benefit of the Armed Forces personnel. The Directorate has a Photo Section that provides photographs of defence-related events to the print media.

9.32 Among the events covered by the Directorate during the period 2003-04, were relief operations for earthquake affected victims of Bam, Iran, by the Army and Air Force, and flood relief operations in Sri Lanka by the Navy which demonstrated the Armed Forces disaster management response and international assistance and solidarity. Major events pertaining to the Indian Army ranged from coverage of the major anti-terrorist operation in Surankot region of J&K in May 2003, the Army Commanders' Conference held in October 2003, the Army Day function on January 15, 2004, and flood-relief operations in aid of civil authorities in Bihar. In regard to the activities of the Indian Navy, the Directorate enabled media coverage of important events such as the commissioning of Talwar-class frigates, goodwill visits by the Indian naval ships abroad, the round-the-world circumnavigation voyage by Indian Navy sail training ship, INS 'Tarangini', and joint naval exercises with Russia off Mumbai and Visakhapatnam in May 2003, with France ('Varuna'), off Mumbai in August 2003, the US ('Malabar') off Kochi in October 2003, the first ever India-China naval exercise held off Shanghai in November 2003 and with Singapore in March 2004. Navy's assistance in the flood-relief operations in Orissa were also covered. For the Air force, IAF participation at Ex-Cope Thunder in Alaska in July 2003 and a joint display of IAF 'Surya Kirans' and the Royal Air Forces' 'Red Arrows' at Hindon in October 2003 were given good publicity. Visits of Defence Ministers and Chiefs of Staff and Services, were suitably projected. The DPR also facilitated coverage of the successful test flights of the supersonic cruise missile Brahmos jointly developed by India and the Russian Federation, the Pilotless Target Aircraft, 'Lakshya', tests of the Agni-I, Prithivi, Nag and Akash missiles conducted by DRDO, flight trials of the Light Combat Aircraft (LCA) 'Tejas', and the entry into production of systems such as the Combat Net Radio, serial production of the 'Arjun' Main Battle Tank (MBT), EW systems for naval platforms and 'Sarvatra' bridging systems.

ARMY PURCHASE ORGANISATION

9.33 Army Purchase Organisation (APO) in the Ministry of Defence is entrusted with

the responsibility of the procurement and timely supply of dry ration items for the consumption of the Defence Forces. APO procures rice and wheat through the Food Corporation of India; sugar is allotted by the Directorate of Sugar out of levy quota allocated to various sugar mills. Other items like pulses, animal rations, edible oils, vanaspati(hydrogenated edible oil), tea and milk products are purchased from the Central and State Public Sector Undertakings, and various National/State-Level Cooperative Consumer Federations. Whole milk powder, skimmed milk powder, butter and ghee are purchased through negotiated contracts from National Cooperative Dairy Federation of India. Tinned items like vegetables, fruits, jams, tinned milk, meat and fish products, coffee, egg powder etc. are procured from registered suppliers including private parties/dealers through open tender. The indented quantities are procured specially during the flush season when availability of the items is high and prices are low.

9.34 During the year 2003-04, a budget provision of Rs. 754 crore was provided to the Army Headquarters for procurement of the above items by this Organisation. The said budget provision has been fully utilized.

9.35 The quality control of the contracted items is ensured by the Composite Food Laboratories under the charge of the Army Headquarters, who, after inspection and acceptance of the tendered commodities, also supervise dispatches of the goods to different Supply Depots as per requirement.

SERVICES SPORTS CONTROL BOARD

9.36 Services Championships : The Services Sports Control Board (SSCB) conducts and co-ordinates various sports activities in the three Services. A total of four teams (Army Red, Army Green, Navy and Air Force) participate in 19 Services championships conducted under the aegis of SSCB. During the year 2003-04, Army Red were overall champions winning 14 out of 19 events. The Navy was second followed by Army Green and Air Force.

9.37 National Championships : SSCB is affiliated to 28 National Sports Federations and participates in 38 National Championships including 10 Junior sections. In the National Championships held during 2003-04, Services stood first in 11, Runner-up in 5, third in 5 and fourth in 3 events.

9.38 International Championships : During this period, Services sportsmen participated in the following International Championships:-

(i) 1st Afro-Asian Games: The 1st Afro-Asian Games were conducted at Hyderabad from October 24, 2003 to November 1, 2003. 24 Services sportsmen were part of the Indian contingent and won 1 Gold, 4 Silver and 3 Bronze medals.

(ii) 3rd Military World Games: Indian Armed Forces contingent consisting of 18 players and 8 officials took part in the 3rd Military World Games, organized by the International Military Sports Council (CISM) held in Catania, Italy from December 4 to 11, 2003. One Bronze medal was awarded to the Boxing Team.

In the National Championships during 2003-04, Services stood first in 11, Runner-up in five, third in five and fourth in three events

9.39 Best Services Sportsman: On the basis of performance in the Services, National and International Championships of the preceding year, one best sportsman is selected from the three Services. Company Havildar Major (CHM) Sanjay Ghosh of 1 Signal Training Centre, Jabalpur was adjudged "Best Services Sportsman" for the year 2002-03 and the trophy was presented in November, 2003. The Athlete won two Gold medals in 4 X100 Mtr relay and 100 Mtr run in 32nd National Games and won Bronze medals in 4th Asian Grand Prix Athletic Meet at Manila (Philippines) in 4 X100 Mtr relay and 100 Mtr run in the same events, secured 5th position in 14th Asian Athletic Championship and 4th position in Asian Games at Busan (Korea).

9.40 Arjuna Awardees: Two Services sportsmen Warrant Officer Ram Mehar Singh and Naib Subedar Inderpal Singh were awarded Arjuna Awards in August 2003 in Kabaddi and Rowing respectively.

ARMED FORCES FILMS & PHOTO DIVISION

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

9.42 AFFPD has a very rich collection of rare films and photographs of pre-independence period of great historical value. It is maintained and preserved in the Central Defence Film Library of the Division. The photographs depict, Indian forces in action in the various theaters of Second World War, ceremonial functions, personalities and training activities. Some important film titles preserved include Battle of Britain, Battle of Russia, Battle of China, Desert Victory, Japanese Surrender, Nazis Strikes, Burma Campaign, Churchil the Man and London Victory Parade.

9.43 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 570 titles in 35 mm sizes, 1010 in 16mm sizes and 310 in Video formats. During the year, 4031 training Films/Video Cassettes have been distributed to the troops. This year CRPF has also made use of 17 training films on various subjects for training of their personnel.

9.44 This year three films have been specially made for High Altitude Warfare School to train troops how to deal with the enemy occupying cliff tops in high altitude mountain terrain and operations in glaciated terrain. The films also teach how to negotiate glacier, carry out crevasses rescue and operate in inhospitable snow bound areas

and impart working knowledge of the causes of different types of avalanche and methods of avalanche rescue.

9.45 The Mobile Cinema Unit of this Division also procures/distributes Documentary films/News Magazines of information, cultural and family welfare values to the troops in the forward areas.

SCHOOL OF FOREIGN LANGUAGES

9.46 The School of Foreign Languages (SFL) has been a pioneer in foreign language teaching in India since 1948. At present, the School of Foreign Languages is engaged in imparting training in 16 foreign languages to personnel of the Armed Forces. It also caters to the needs of the other Ministries of the Government of India, such as the Ministry of External Affairs, the Cabinet Secretariat and the Central Police Organizations.

9.47 The languages taught on regular basis at the SFL are - Arabic, Bhasa Indonesia, Burmese, Chinese, French, German, Persian, Pushto, Russian, Spanish, Sinhala, Tibetan and Thai. The courses offered by the SFL are as follows:- (a) Interpretership Course, (b) Certificate of Proficiency Course, (c) Advanced Diploma Course and (d) Short-term Course /Adhoc Course

9.48 The Interpretership Course is a full time Course. The students are sponsored by the Ministry of Defence, the Cabinet Secretariat and other Government Departments. This course trains the students to become experts in the highly skilled work of interpretation and translation. Furthermore, they are trained in writing and speaking the language with utmost fluency. The course is need-oriented and has been designed and formulated solely to meet the specific needs of the Armed Forces.

9.49 The Certificate of proficiency Course is followed by the Advanced Diploma Intensive Course. Both are part-time courses and each of one year duration. Together, this 2-year course is equivalent to the 3 year Diploma Courses of the universities.

9.50 Short-term courses are purely need-based programmes. They are conducted as and when necessary, especially for designated Military Attaches and officers being sent on UN Missions.

9.51 The SFL is the controlling organization for other defence institutions namely National Defence Academy, Pune and Army Education Centre and Training College, Pachmarhi, where foreign languages are taught. It conducts their examinations and issues diplomas to the successful candidates. For the Indian Foreign Service probationers, it is obligatory to pass Advanced Diploma examination conducted by this Institute.

9.52 Capsule courses in Czeck, Hebrew, Japanese, Malay, Thai and Vietnamese languages are being imparted on specific demands of Service Headquarters and also as on requirement basis by various security organizations. In addition, the following technically intensive courses in Russian languages have been successfully conducted by the SFL:-

(a) At INS Hansa, Goa for Naval Aviators under the aegis of Indian Navy;

(b) At Controller of Quality Assurance (Heavy Vehicles), Avadi for Army per-

sonnel under the aegis of Director General of Quality Assurance.

HISTORY DIVISION

9.53 Historical Section was created after the end of World War II to prepare a detailed official history of the War with particular reference to the operations conducted by the Armed Forces of undivided India. After partition, it served as the Combined Inter-Services Historical Section (India and Pakistan). The official history of the Armed Forces of undivided India in World War II (1939-45) was brought out in 24 volumes by the Combined Inter-Services Historical Section (India and Pakistan). On completion of the work it was wound up in 1963.

9.54 In the meanwhile, Historical Section (India) was established on October 26, 1953 to write and publish the official account of the post independence military operations of the Indian Armed Forces. 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 redesignated as History Division with effect from April 1, 1992.

9.55 The History Division functions as the military archives and reference organization of the Ministry of Defence and the Indian Armed Forces. It also provides expert advice to the Ministry of Defence and the three Services Headquarters on matters relating to heraldry and ceremonials. During the year, about 4,200 operational records were received from the Services Headquarters, Units and Formations for permanent retention in the History Division. About 350 service officers and scholars visited the record room to consult records and books in connection with research assignments pertaining to military history. This Division has provided information relating to military history in respect of over 275 queries received from various Units and Formations, and scholars from India and abroad.

9.56 This Division also provides two Research fellowships for conducting research in military history under the Research Fellowship Scheme of the Ministry of Defence.

9.57 The Heraldic Cell of the History Division has been assisting 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 and Formations.

NATIONAL DEFENCE COLLEGE

9.58 The National Defence College (NDC) was inaugurated on April 27, 1960 by the first Indian Prime Minister, Pandit Jawahar Lal Nehru. Located in the heart of Delhi, the College has grown from strength to strength in the last 43 years and has established a name for itself as a center 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.

9.59 The NDC runs a 47-week course every year for selected Senior Defence and

The NDC runs a 47-week course every year for selected Senior Defence and Civil Service Officers from India and friendly foreign countries.

Civil Service Officers from India and friendly foreign countries. The endeavour is to prepare the future policy makers for increased responsibility through a programme of studies in National Security and Strategies. The course is structured to cover socio-political, economic, technological, diplomatic and military dimensions of national security. The alumni of the NDC have risen to high positions in India as also in foreign countries.

9.60 In October 2003, the 7th ASEAN Regional Forum (ARF) Meet of Heads of National Defence Universities/Colleges/ Institutions was hosted by the NDC on behalf of the Ministry of Defence. The event was spread over three days and was a resounding success. It has contributed towards fulfillment of the ARF objectives of peaceful cooperation in the South East Asian region.

COLLEGE OF DEFENCE MANAGEMENT

9.61 Institute of Defence Management, Secunderabad, was established in 1970. It was renamed as the College of Defence Management (CDM) in 1980. The CDM conducts training programmes oriented towards the application of management concepts and techniques to defence situations in all facets : operations, logistics, intelligence and training. The prominent programmes conducted by CDM are Long Defence Management Course, Senior Defence Management Course, Defence Management Seminar and Assignment Oriented Management Training Programme. The college also undertakes management consultancy studies. The college is equipped with modern and state-of-the-art training aids.

DEFENCE SERVICES STAFF COLLEGE

9.62 The Defence Services Staff College (DSSC) is one of the oldest military institutions which 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. The training enables the officers to effectively perform any staff/ operational appointment as Major/ Lieutenant Colonel and equivalent ranks in other Services.

MINISTRY OF DEFENCE LIBRARY

9.63 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. The reading material for the library is selected by Book Selection Sub-Committee. During the year, the library added 2128 books, subscribed to 110 journals and 23 Newspapers.

10

Recruitment and Training

Passing Out Parade at the National Defence Academy (NDA), Khadakvasla

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 to 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 to the Armed Forces provided he meets the laid down physical, medical and educational criteria.

RECRUITMENT BELOW OFFICER RANK

10.2 The Army has 11 Zonal Recruiting Offices, 58 Branch Recruiting Offices, 1 Gorkha Recruiting Depot, Kunraghat and an Independent Recruiting Office at Delhi Cantonment. In addition 47 Regimental Centres are also entrusted with the task of recruitment to the Army.

RECRUITMENT OF AIRMEN

10.3 Unmarried male Indian citizens irrespective of caste, creed and religion and domicile (subject of Nepal) are eligible for recruitment to the Indian Air Force provided they meet the laid down physical, age and educational criteria. The selection of suitable candidates for enrolment in the IAF is carried out through a centralized selection system on All India basis.

RECRUITMENT OF SAILORS

10.4 Naval Recruitment Organisation (NRO) of the Directorate of Manpower Planning and Recruitment at Naval Headquarters is responsible for recruitment of sailors in the Indian Navy. Recruitment of sailors is carried out for the following entries:- (a) Direct entry artificers with three years diploma (DEDH), (b) Artificer apprentices (AA) – (10 + 2), (c) Matric entry recruits (MER), (d) Non-matric entry recruits (NMER), (e) Direct entry petty officers (outstanding Sportsmen)

10.5 Recruitment Procedure: Recruitment into the Navy is carried out on All-India basis. The recruitment tests are carried out at 30 centres located throughout the country. The number of personnel recruited

depends on the number of eligible applicants who are able to qualify in the written examination, physical fitness test and medical examination. No preference is given on the basis of caste, religion or area.

10.6 Improvement in Educational Qualifications: The educational qualification for Soldier Clerk/Store Keeper Technical, Soldier Technical and Nursing Assistant has been enhanced from existing 10th/Matric to 10 + 2/Intermediate pass with effect from April 1, 2003. Detail are as under:-

Young aspirants keen to join the Air Force

(a)	Soldier Clerk/* Store-Keeper/ Technical	(i)	10 + 2/Intermediate examination pass from any stream (Arts, Commerce, Science with English) with minimum 50% marks in aggregate.
		(ii)	Individual should have secured minimum 40% marks in each subject.
		(iii)	Individual with proficiency in Computer and typing will be given additional weightage of 20% as bonus marks on the marks scored by the candidate in written examination (Common Entrance Examination only)* Graduates have been exempted from the above minimum marks stipulation.
(b)	Soldier: Technical	(i)	10 + 2/Intermediate exam pass in Science with Physics, Chemistry, Mathematics and English with minimum 50% marks in aggregate.
		(ii)	Individual should have secured minimum 40% marks in each subject specified for the trade.
(c)	Soldier: Nursing Assistant	(i)	10 + 2/Intermediate exam pass in Science with Physics, Chemistry, Biology and English with minimum 50% marks in aggregate.
		(ii)	Individual should have secured minimum 40% marks in each subject.

COMMISSIONING OF OFFICERS

10.7 Recruitment of Commissioned Officers in the Armed Forces is mainly done through the Union Public Service Commission (UPSC). Recruitment is made directly through the respective Recruiting Directorates for the Army, the Navy and the Air Force for Technical Branches, Women Special Entry Scheme, NCC Special Entry Scheme and service entries.

Commissioning ceremony of new officers at the Indian Military Academy

RECRUITMENT THROUGH THE UPSC

10.8 The UPSC holds an examination for entry into the National Defence Academy (NDA) twice a year. Candidates on completion of the 10+2 Examination or while in the 12th standard, are eligible to compete. Successful candidates are put through the Service Selection Board (SSB) interviews. Finally selected candidates join the NDA. On completion of the NDA course, they are sent to the respective Services academies for their pre-commission training.

10.9 The UPSC holds an all-India competitive examination, known as the Combined Defence Services Examination (CDSE), twice a year. University graduates including those studying in the final year, are eligible to appear in the examination. Successful candidates are put through the Service Selection Board (SSB) interviews. Finally selected candidates join the respective training academies, viz., the Indian Military Academy (IMA)/Officers Training Academy(OTA) for the Army, the Naval Academy for the Navy and the Air Force Academy for the Air Force.

RECRUITMENT THROUGH SELECTION BOARDS

10.10 Recruitment through Service Selection Boards/Air Force Selection Board is made for the following branches of the Army, the Navy and the Air Force:-

ARMY	All Arms and Services except Army Medical Corps and Army Dental Corps
NAVY	Electrical Engineering, Engineering (Naval Architects),Logistics, Law, Education, Air Traffic Control, Executive, Hydro, Naval Armament Inspection
AIR FORCE	Flying Pilot (FP), Aeronautical Engineering (Electronics), AeronauticalEngineering (Mechanical), Education, Administration,Logistics, Accounts and Meteorology.

AERONAUTICAL ENGINEERING COURSE (AEC)

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

10.12 University Entry Scheme: Final/pre-

Government has approved the creation of a 6,000 strong Support Cadre of Special Commissioned Officers to be filled by eligible Junior Commissioned Officers and Other Ranks

final year students in the notified Engineering disciplines are eligible to apply for commission into the technical Arms/Services of the Army under the University Entry Scheme. Finally selected candidates are required to undergo one year training at IMA, Dehradun, before being Commissioned.

TECHNICAL GRADUATES (TG) ENTRY

10.13 Engineering graduates from Notified disciplines of Engineering including those studying in the final year are eligible to apply for commission into the Army through TGC Entry. Selected candidates are commissioned after one year training at IMA, Dehradun.

Short Service Commission (Technical)

10.14 Engineering graduates from Notified disciplines of Engineering including those studying in the final year are eligible to apply for Short Service Commission into Technical Arms/Services through this entry. Selected candidates are commissioned after 11-months training at OTA, Chennai.

RECRUITMENT OF WOMEN OFFICERS

10.15 Women Special Entry Scheme (WSES-O) is open to eligible women in three streams, namely, Technical, non-Technical and Specialist. On selection they undergo six months training at OTA Chennai and are commissioned as Short Service Commissioned Officers in the following Arms/Services of the Armed Forces:

ARMY	Corps of Electrical and Mechanical Engineers, Corps of Signals, Army Education Corps, Army Ordnance Corps, Army Service Corps, Corps of Military Intelligence and Judge Advocate General's Branch
NAVY	Engineering(Naval Architects), Logistics, Law, Education, Air Traffic Control
AIR FORCE	Flying, Aeronautical Engineering (Electronics), Aeronautical Engineering (Mechanical), Education, Administration, Logistics, Accounts and Meteorology

NCC SPECIAL ENTRY

10.16 University graduates possessing NCC 'C' Certificate with a minimum 'B' grade and 50% marks in graduation are eligible to apply for commission into the Navy and the Air Force as Regular Commissioned Officers and as Short Service Commissioned Officers in the Army. They are exempted from appearing in the written exam (CDSE) and are directly put through the SSB interview. Finally selected candidates undergo 11 months training at OTA, Chennai, before being Commissioned.

SPECIAL COMMISSIONED OFFICERS

10.17 Government has approved the creation of a 6,000 strong Support Cadre of Special Commissioned Officers to be filled by eligible JCOs and ORs. Under this entry, JCOs/NCOs/ORs in the age group of 30-35 years, with an Army Senior School Certifi-

cate Pass (Class XI CBSE Pattern) qualification, are eligible for Commission after screening/selection through Service Selection Board and a Medical Board. They have to undergo a 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 ERE appointments upto the rank of Major. They retire at the age of 57 years after serving about 20-25 years as officers. 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.

10.18 SNCO Commissioning in IAF: Under this entry, serving personnel with minimum 10 years of service (of technical and non-technical trades) of the rank of Sergeant and above upto the age of 36 years and minimum educational qualification as 10 + 2, are eligible for Commission in the Indian Air Force after screening at unit level followed by AFSB selection tests and medical examination. However, candidates possessing higher education qualification are preferred. Service personnel of technical trades are inducted in the Technical Branch and personnel from non-technical trades are inducted in the Ground Duty Branches.

10.19 Branch Commissioning: Under this entry, serving personnel of technical and non-technical trades of the rank of Sergeant and above in the age group of 37 to 42 years with minimum educational qualification as 10th pass, are eligible for Commission in the Indian Air Force after clearing a written exam, followed by AFSB selection tests and medical examination. Service personnel of technical trades are inducted in the Technical Branch and personnel from non-technical trades are inducted in the Ground Duty Branches.

10.20 Technical Entry Scheme (10 + 2 TES): Qualified 10+2 CBSE/State Board candidates with Physics, Chemistry and Maths are eligible for commission in the Army under the Technical Entry Scheme (TES). On selection, they undergo one year basic training at IMA Dehradun and thereafter undergo three years Engineering degree course. On being commissioned they are further put through one year specialized training. Though technical entrants, they are liable for commissioning into any Arm/ Service of the Army.

10.21 10+2 Technical Entry Scheme Of The Navy: Under the scheme, candidates with PCM in class XII are selected through the Services Selection Board, and are sent to INS Shivaji for four years B.Tech degree course in Marine Engineering/Electrical Engineering. 12 cadets from each batch are nominated for Naval Architecture degree course at Cochin University of Science and Technology (CUSAT). These cadets are granted Permanent Commission (PC) as Sub Lieutenants. The aim of this scheme is to provide well trained technical officers to meet the requirement of PC officers in the Technical Branch.

RECRUITMENT OF MEDICAL AND DENTAL OFFICERS

10.22 Medical graduates from the Armed Forces Medical College, Pune are directly inducted as Permanent Commissioned Medical Officers in the Armed Forces. For recruitment of Regular Commissioned/Short Service Commissioned Medical Officers from the Graduates/Post Graduates of Civil Medical Colleges, the Directorate General of the Armed Forces Medical Services conducts an all-India competitive examination.

PUBLICITY FOR RECRUITMENT

10.23 Measures have been taken to make the youth of our country more aware of the opportunities in the Army for the officers cadre. The means of publicity adopted to attract better talent are as follows:

(a) Press Advertisements: Advertisements are released through the Directorate of Advertising and Visual Publicity (DAVP) in the Employment News/Rozgar Samachar and in newspapers in different languages for various entries viz –UPSC and non-UPSC entries. UPSC entries include the National Defence Academy(NDA), Indian Military Academy(Direct Entry) and Officers Training Academy{Short Service Commission(Non-technical)}. Non-UPSC entries include Technical Graduate Commission(TGC), University Entry Scheme(UES), 10+2 Technical Entry Scheme(TES), Short Service Commission(Technical), Women Special Entry Scheme (Officers), Short Service Commission(NCC Special Entry) and Judge Advocate General(JAG) Branch for law graduates. Advertisements are also released for Other Rank categories viz. Havildar Instructors and Junior Commissioned Officers (Catering and Religious Teachers) etc. Concerned Zonal Recruitment Offices (ZROs)/Branch Recruitment Offices (BROs) also publish advertisements on recruitment of Other Ranks in the local regional newspapers. Advertisements are also published in journals brought out by educational institutions.

(b) Hoardings: Hoardings are erected at selected places in the country to attract young men and women to join the Armed Forces.

(c) Printed Publicity: Information folders, leaflets, brochures, data cards, posters and blow-ups, prepared through the DAVP and private professional agencies, are widely distributed in schools and colleges.

(d) Exhibition and Fairs: Every year, at the Defence pavilion at the India International Trade Fair, New Delhi, a stall is established where information regarding recruitment is provided to visitors. This is also done in other organized fairs, which are career oriented and meant for students.

(e) Image Projection Campaign: To make young persons aware of the opportunities available as commissioned

Image Projection Campaigns were launched in print, audio, visual and audio-visual media to make young persons aware of the opportunities available as commissioned officers.

officers, the following Image Projection Campaigns (IPC) were launched in print, audio, visual and audio-visual media :-

(i) IPC-I - September 1997 to March 1998
(ii) IPC-II - August 1999 to August 2000
(iii) IPC-III - June 2002 to May 2003

Based on the inputs received from the above three campaigns, the fourth phase of the Image Projection Campaign (IPC-IV) is to be launched shortly.

TRAINING FOR DEFENCE SERVICES

Several features distinguish Human Resource Management in the Defence Sector. Training aims to equip the officers and soldiers with necessary inputs to make them efficient fighting men and also well-informed on national and international developments.

10.24 Several features distinguish Human Resource Management in the Defence Sector. Training being imparted aims to equip the officers and soldiers with necessary inputs to make them efficient fighting men and also well-informed on national and international developments. The environment in which the defence officers have to work, demand a holistic approach to training. The training requirements are properly matched for the freshly recruited officers, for officers in need of advanced and specialized 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.

SAINIK SCHOOLS

10.25 The Sainik Schools were established as a joint venture of the Central and State Governments. These are under the overall governance of the Sainik Schools Society. At present there are 20 Sainik Schools, including the two Sainik Schools which were inaugurated on October 12, 2003 at Nalanda and Gopalganj in Bihar. The Sainik Schools prepare boys academically, physically and mentally to enter Armed Forces through the National Defence Academy (NDA).

10.26 The objectives of the Sainik Schools is to bring quality public school education within the reach of common man, all round personality development of a child and to remove regional imbalace in the officer's cadre of the Armed Forces. Sainik Schools have been fulfilling their objective for which adequate and varied infrastructure/equipment have been provided.

10.27 Sainik Schools admit students 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 on the basis of an Entrance Examination held in February each year. Admission is further subject to the candidates being found medically fit according to medical standards prescribed for entry to National Defence Academy (NDA). The Sainik Schools are affiliated to CBSE. As on date, about 6000 officers of the Defence forces are alumni of Sainik Schools.

MILITARY SCHOOLS

10.28 The five Military Schools in the country at Ajmer, Bangalore, Belgaum,

The National Defence Academy is a premier Joint Services Institution for training of young cadets as future officers of the Defence Services.

Dholpur and Chail are affiliated to CBSE. The Military Schools admit boys in class VI, based on an all India Entrance Examination. In the Military Schools, 67% seats are reserved for the wards of JCOs/ORs called "entitled category". Out of the 33% non-entitled category seats, 20% are reserved for wards of service officers and 13% for wards of civilians.

10.29 The aim of the Military Schools is to impart quality education to enable the students to take All India Secondary School Examination and Senior Secondary Certificate Examination conducted by CBSE and also to facilitate their entry into the NDA.

RASHTRIYA INDIAN MILITARY COLLEGE, DEHRADUN

10.30 Rashtriya Indian Military College (RIMC) was founded on March 13, 1922 with the object of providing preliminary training for boys of Indian birth or domicile, wishing to become officers in Indian Armed Forces. The institution now serves as a feeder institution to the National Defence Academy, Khadakwasla (Pune), wherein cadets of the Army, Navy and Air Force receive their initial training. The aim of this College is to train suitable candidates for admission to the NDA. Selection for the RIMC is through a written examination-cum-viva-voce conducted through the State Governments. Seats for respective States are reserved based on their population. Intake into the RIMC is biennial in January and August, 25 cadets per term with maximum strength of RIMC being 250. The intake of boys is at Class VIII in the age group of 11 ½ to 13 years. The college runs classes from 8th to 12th on 10+2 CBSE pattern.

NATIONAL DEFENCE ACADEMY, KHADAKVASLA

10.31 The National Defence Academy (NDA) is a premier Joint Services Institution for training of young cadets as future officers of the Defence Services.

10.32 Entry into NDA is based on a competitive examination conducted by UPSC. Cadets of all the three Services viz. Army, Navy and Air Force undergo combined training at NDA for three years. After passing out from the NDA, the cadets go to their respective Service academies for specialised training before being commissioned in the Armed Forces. The Academy is a unique institution wherein Inter Service aspects are developed right from the formative stages of an officer, thus developing a bond of friendship and respect for each other's service.

10.33 The academic curriculum of NDA is in tune with the national educational format of 10+2+3. The syllabus of the Academy has been approved by the Jawaharlal Nehru University for grant of B.A. or B.Sc. degree at the time of passing out from the Academy. The present strength of NDA is 1788 including cadets from friendly foreign countries. Presently cadets from Bhutan,

President Dr. A.P.J. Abdul Kalam inspecting the Guard of Honour at the National Defence Academy, Khadakvasla.

Maldives, Lesotho, Krygstan and Palestine are undergoing training at NDA.

10.34 Indian Military Academy, Dehradun: The Indian Military Academy (IMA), founded in 1932, has a glorious and colourful history. Aim of the IMA is to train Gentlemen Cadets (GCs) for commission into the Army. It also has a wing for training service cadets selected for commission in the Army. The IMA also imparts training to Gentlemen Cadets from friendly countries.

10.35 The various modes of entry into IMA are: -

(a) on graduation from NDA; (b) on graduation from Army Cadet College, which is a Wing of the IMA itself; (c) direct entry graduate cadets, who join on qualifying in the Union Public Service Commission Examination and the Services Selection Board; (d) Technical Graduates; (e) University Entry Scheme for engineering college students in Final/ Pre-Final year of studies; and (f) 10+2 Technical Entry Scheme for candidates who have passed 10+2 with more than 70% marks in Physics, Chemistry and Mathematics.

OFFICERS TRAINING ACADEMY, CHENNAI

10.36 The Officers Training Academy (OTA) was established in 1963 as 'Officers Training School' to meet increased demand of officers in the Army. It was re-designated as 'Officers Training Academy' from January 1, 1988 on completion of 25 years of its existence. Its main task was to train Gentlemen Cadets for grant of Emergency Commission but from 1965 onwards after which the Emergency Commission was dispensed with, the Academy started training cadets for

Since September 21, 1992, the Indian Army has opened up its portals for entry of women as commissioned officers. Approximately 100 Lady Officers get commissioned from Officers Training Academy every year.

Short Service Commission.

10.37 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 Ordnance 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.

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

(a) Short Service Commission(Non-Technical) for Graduates, (b) Short Service Commission(Technical) for Engineering Graduates and (c) Short Service Commission (Women) for Graduate/Post Graduate Lady Cadets.

ARMY WAR COLLEGE, MHOW

10.39 Army War College, earlier known as College of Combat was created out of the Infantry School and established as an independent institution on April 1, 1971. It is a premier All-Arms-Tactical-Training Institution for officers and performs the important functions of evaluation of new concepts and doctrines in the fields of tactics and logistics.

10.40 Courses: The Higher Command (HC) Course aims at training officers for higher command, with particular reference to a Division and for holding senior staff appointments. Senior Command(SC) Course is to train selected Majors/Lieutenant Colonels of all arms and services in the tactical employment of a Battalion/Combat Group as a part of a Brigade or Combat Command in cooperation with air and other arms and services, as also, in the training and administration of a unit in peace and war. To train officers of all arms and services with not less than six years of service in the tactical employment of a Rifle Company/Combat Team, the College imparts Junior Command(JC) Course. For potential Grade-I and above logistics staff officers in operational and peace time logistics and administration, there is All Arms Logistics Course (AALC). To prepare potential divisional commanders for command of their formations in field and peace. The college also undertakes Formation Commanders Orientation Programme (FCOP).

JUNIOR LEADERS WING, BELGAUM

10.41 The Junior Leaders Wing, Belgaum trains junior officers, JCOs and NCOs in Sub Unit level Tactical and Special Mission technique to make them capable to carry out assigned operational missions in varied terrain conditions under severe stress and strain and be able to command and administer their Sub Units effectively in war and peace. It prepares them in commando type operations and make them capable of

tactical and administrative handling of the sub-unit, forming part of special mission groups and leading independent missions in all types of terrain and operational environments.

JUNIOR LEADERS ACADEMY, BAREILLY

10.42 The Junior Leaders Academy (JLA) imparts institutionalised leadership training for our Junior Leaders i.e. JCOs and NCOs. The following two types of JL courses are conducted for the JCOs/NCOs of all arms and services :-

(a) Junior Leaders Course (JLC) : A six week course is conducted for newly promoted JCOs and NCOs approved for promotion to the rank of the JCO. Six courses are conducted annually to train 3240 JCOs;

(b) Potential Subedar Majors Orientation Course (PSM) : Newly promoted Subedar Majors or Senior Subedars approved for promotion to Subedar Majors undergo a four week course. Six courses are conducted annually to train 640 JCOs.

Junior Leaders are trained at Bareilly and Ramgarh

JUNIOR LEADERS ACADEMY, RAMGARH

10.43 A second adhoc Junior Leaders Academy was raised at Panagarh in July 2001. The Academy was moved to Ramgarh in January 2002. The Academy was fully raised at Ramgarh with one company and become the Second Junior Leaders Academy with effect from November 1, 2002. This Academy too, is an all Arms and Services training institution like JLA Bareilly, with the sole aim of training Junior Leaders (JCOs/ORs) of Indian Army in leadership, resource management, decision making and communication skills.

DEFENCE SERVICES STAFF COLLEGE, WELLINGTON

10.44 The Defence Services Staff College (DSSC) is a premier tri-service training establishment imparting training to middle level officers of the three wings of the Indian Armed Forces, friendly foreign countries and the Indian civil services. The alumni of this college have risen to great eminence in the country and abroad.

10.45 The college was established in 1905 in Deolali and has been functioning at Wellington since 1950. The College conducts a 45- week training programme from June to April every year, sub-divided into six tutorial periods each of five to nine weeks. The aim of the course is to train selected officers of the three Services in command and staff functions in inter-service and joint service environment.

10.46 Award of M.Sc. (Defence and Strategic Studies) Degree : The DSSC

Training at 'Siachin Battle School'

awards the symbol of PSC (passed staff course) on successful completion of training. The DSSC is affiliated to the University of Madras which awards M. Sc. in Defence and Strategic Studies degree to all students who qualify the course. Officers on the faculty of the College, with aptitude for academic research, can register for M Phil degree.

HIGH ALTITUDE WARFARE SCHOOL, GULMARG

10.47 The Aim of the School is to train selected personnel in all aspects of high altitude warfare, mountain warfare and develop techniques for fighting in such terrain. The School functions as the Army's nodal instructional facility for specialised training and dissemination of approved doctrines in High Altitude, Mountain and Snow Warfare.

10.48 HAWS conducts two series of courses i.e. Mountain Warfare(MW) and Winter Warfare (WW) at Sonmarg and Gulmarg respectively. All courses are combined for officers, JCOs and NCOs. The training periods are broadly from January to April (WW Series) and May to October (MW Series).

COUNTER-INSURGENCY & JUNGLE WARFARE SCHOOL, VEIRANGTE

10.49 The Counter-Insurgency & Jungle Warfare (CIJW) School, Veirangte evolves and reviews tactical doctrine and techniques regularly for operations in Counter Insurgency & Jungle Warfare and keeps abreast of all tactical and technical aspects of insurgency in all parts of the world. The School conducts Counter-Insurgency Techniques course; language courses in Assamese, Bodo, Nagamese and Manipuri/Tangkhul for Officers, JCOs/NCOs; and Pilot Counter Terrorism (CT) course.

10.50 A number of students from paramilitary forces and friendly foreign countries like Sri Lanka, Nepal, Singapore, Kenya, Iraq and USA also attend the courses conducted by CIJW School. With the present capacity, the school is training 120 Officers and 460 JCOs/NCOs.

COUNTER-INSURGENCY-PRE-INDUCTION TRAINING

10.51 Due to continuation of the 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, due to peculiar operational situation and administrative problems of movement of units, it was necessary to impart training to units in areas closer to their operation areas. To overcome these problems, three Theatre Battle Schools were established at Kheru for units moving into the Kashmir Valley; at Sarol for units moving into Chamba and adjoining areas 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 in high altitude areas

Pre-induction training is given to all units inducted into counter-insurgency environment

INFANTRY SCHOOL, MHOW

10.52 The Infantry School, Mhow, is the largest and the oldest military training institution of the Indian Army. The origin of the institution can be traced back to the year 1885. The present Infantry School owes its origin to a decision taken shortly after independence to amalgamate the country's various tactical and weapons training institutions into one single school of instruction at Mhow.

10.53 Eleven courses are conducted at Infantry School (including Junior Leaders Wing) viz. Young Officers Course, Ghatak Course, Platoon Weapon Course, Mortar Course, Anti-Tank and Guided Missile Course, Platoon Commanders Course, Medium Machine Gun and Automatic Grenade Launcher (J/N) Course, Section Commanders Course, Automatic Data Processing Course, Sniper Course and Battalion Support Weapon Course.

10.54 The institution trains Officers, JCOs and ORs of not only infantry but other arms and services besides Para-Military Forces and Civil Police Organisations. A number of friendly foreign countries make use of the facilities. During the current training year, 90 Officers and 160 JCOs/NCOs from friendly foreign countries are likely to attend courses. The institution is presently training 1195 Officers and 5900 JCOs/NCOs in a year. The School also has on its establishment Army Marksmanship Unit which has produced a large number of champion shooters at national and international level.

COLLEGE OF DEFENCE MANAGEMENT

10.55 The College of Defence Management is one of the few institutions of its kind in the country imparting training in modern Management concepts and techniques to officers of the Defence Services. Osmania

University recognizes the core course of CDM, namely the Long Defence Management Course for the award of the degree of Master of Management studies (MMS).

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

(a) Long Defence Management Course (LDMC)- This is of 44 weeks duration and is attended by 90 officers of the rank of Col/Lt Col and equivalent from other Services.

(b) Senior Defence Management Course (SDMC) – This is of six weeks duration and is attended by 33 officers of the rank of Brig/Col and equivalent from other Services.

(c) Defence Management Seminar (DMS) - This is of two weeks duration and is attended by 20 officers of the rank of Maj Gen/ R Adm/ AVM.

(d) Assignment Oriented Management Training (AOMTs) - CDM conducts four AOMTs on Project Management Resource Management, Financial Management, Operational Research / Systems Analysis Workshop of one week's duration and Quantitative Aids to Decision Making for middle level officers, of two weeks duration.

MATERIALS MANAGEMENT COLLEGE, JABALPUR

10.57 The college owes its lineage to 'Indian Army Ordnance Corps (IAOC) School of Instruction' established in October, 1925. The School was later re-designated as 'IAOC Training Centre' in 1939. In January, 1950, it became the 'AOC School'. With the changing doctrine of training and the advanced concepts introduced, the AOC School was renamed as the College of Materials Management (CMM) in 1987.

10.58 The College was affiliated to the University of Jabalpur (Rani Durgavati Vishwa Vidyalaya) in 1987 and its proven excellence earned it an autonomous status in 1990. The college is also registered as a 'Government College' with the University Grants Commission. The approval of All India Council of Technical Education (AICTE) was another achievement of the College.

10.59 The College provides structured training in Ordnance Management, Munitions, Technical Stores, Ordnance Logistics Support, Computer Technology and Management Studies.

SCHOOL OF ARTILLERY, DEOLALI

10.60 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 officers, JCOs and NCOs of the Regiment of Artillery on artillery weapons and systems including training of pilots for Air Observation Post duties. Besides the review of doctrines, study and trials of artillery equipment, both Indian and foreign, is also carried out.

10.61 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 various foreign countries were also imparted training.

ARMY AIR DEFENCE COLLEGE, GOPALPUR

10.62 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 foreign countries in Air Defence related subjects.

10.63 The Army Air Defence College conducts a number of courses of instruction. Some of the important courses are Long Gunnery Staff Course (Officers), Young Officers Course, Electronic Warfare Course, Senior Command Air Defence Course, Long Gunnery Staff Course, Junior Commissioned Officers (JCOs)/Non-commissioned Officers (NCOs), Technical Instructors Fire Control Course, Aircraft Recognition Course, Unit Instructors and Crew Based Training and Automated Data Processing Course.

Gunnery training at the School of Artillery, Deolali.

ARMY SERVICE CORPS (ASC) CENTRE AND COLLEGE, BANGALORE

10.64 Consequent to the merger of ASC School, Army School of Mechanical Transport (ASMT) and ASC Centre (South), the ASC Centre and College came into existence at Bangalore in 1999. The ASC Centre and College has become a premier institution for imparting training in logistics related facets. The institution has nine decades of nurtured intellectual wealth of all the three elite training sets, which have united to give a sound foundation to this newly created organization. Since 1992, the ASC College is recognised and affiliated to the Rohilkhand University, Bareilly for award of diplomas/degrees in Logistics and Resource Management.

ARMY EDUCATION CORPS TRAINING COLLEGE & CENTRE, PACHMARHI

10.65 With the 'Mashal' (Torch) as its emblem, symbolizing its worthy goal of the pursuit of knowledge, Army Education Corps Training College & Centre fulfils a triple role in its capacity as Category A and B Establishment and also as an autonomous college of the Barkatullah University, Bhopal. As an Autonomous College, it designs its course, conducts training and examinations and awards degrees and diplomas in education. Apart from it, its various courses include map reading, foreign languages, computer applications and military music,

which are subscribed to by all ranks of all Arms and Services of the Indian Army. Para Military Forces Personnel, as well as those from friendly foreign countries also attend the courses.

MILITARY MUSIC WING, PACHMARHI

10.66 The Military Music Wing (MMW) was raised in October 1950 as a part of the Army Educational Corps Training College & Centre and is the only one of its kind in Asia. The Wing has not only been prolific with over 200 musical compositions to its credit, but has also excelled in maintaining the standard of Military Music in India through its diverse range of courses designed to take recruit bandsmen, pipers or drummers, from a rudimentary stage of music to enviable musical proficiency.

REMOUNT AND VETERINARY CORPS CENTRE AND SCHOOL, MEERUT

10.67 The Remount and Veterinary Corps (RVC) Centre and School, located in Meerut, is the alma mater of all RVC personnel. The aim of the Scool 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

10.68 To restore national pride in the hearts of our fellow countrymen and to project a winning image of the Army, Raksha Mantri has approved the establishment of an Army Sports Institute at Pune and Army Sports Nodes in selected disciplines at various places in the country. Appropriate funds have been earmarked for state-of-the-art infrastructure and equipment coupled with food habitat, foreign exposure and training under foreign coaches.

ARMY SCHOOL OF PHYSICAL TRAINING

10.69 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)

10.70 Combat Army Aviator Training School (CAATS) has been raised at Nasik Road in May 2003. Aim of CAAT School is to train aviators in aviation skills and handling of aviation units in various operations of war and also to train aviation instructors, develop Standard Operating Procedures (SOPs) and assist Army Training Command

in development of Aviation Tactical Doctrine in synergy with ground troops. The courses identified to be run in the School are Pre-basic Pilot Course, Basic Army Aviation Course, Pre-qualified Flying Instructor Course, Aviation Instructor Helicopter Course, Helicopter Conversion on type, Flight Commander's Course and New Equipment Course.

THE COLLEGE OF MILITARY ENGINEERING, PUNE

10.71 The College of Military Engineering (CME) 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. Besides, personnel from friendly foreign countries are also trained. CME is affiliated to Jawahar Lal Nehru University (JNU) for the award of B. Tech and M. Tech degrees. All India Council for Technical Education (AICTE) also recognizes the graduate and post graduate courses run by the CME. The College trains on an average 1500 officers and 800 Personnel Below Officer Ranks every year.

MILITARY COLLEGE OF EME

10.72 The aim of Military College of Electronics and Mechanical Engineering (MCEME), Secundrabad is to provide technical education in engineering and in various weapon systems and equipment with special reference to their maintenance, repairs and inspection to all ranks of EME including civilians. MCEME is organized into four Faculties, namely, Faculty of Electrical and Mechanical Engineering, Faculty of Electronics, Faculty of Industrial Engineering Tactics and Faculty of Aeronautical Engineering. A Cadets Training Wing for Gentleman Cadets of 10 + 2 Technical Entry Scheme also functions directly under HQ MCEME. MCEME also provides technical and administrative support to the Simulator Development Division. The College trains approximately 1200 officers and 4000 Personnel Below Officers Ranks (PBOR) every year.

CORPS OF MILITARY POLICE CENTER AND SCHOOL, BANGALORE

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

MILITARY COLLEGE OF TELECOMMUNICATION ENGINEERING, MHOW

10.74 Military College of Telecommunication Engineering (MCTE), Mhow is the Alma Mater of all Signal officers. They are trained in Combat Communication, Electronic Warfare, Communication Engineering, Computer Technology, Regimental Signal Communications and Cryptology. Besides the five Training Faculties and Wings, the College has a Department of Administration to provide administrative and logistic support to the staff and the students, a Conceptual Studies Cell to evolve communication doctrines and produce training material, a

modern and well-stocked library, and an in-house printing press. Trainees are given an opportunity to study and train in a formal setting with a view to imbibe and inculcate in them the requisite skills, knowledge and abilities necessary to perform tasks at their current and future levels of responsibility.

MILITARY INTELLIGENCE TRAINING SCHOOL AND DEPOT

10.75 The Military Intelligence Training School and Depot (MINTSD) is a premier establishment responsible for imparting training in 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 from friendly foreign armies. Apart from the above, civilian officers of the Directorate of Revenue Intelligence are also trained at this establishment.

ELECTRONICS AND MECHANICAL ENGINEERING SCHOOL (EME SCHOOL) VADODARA

10.76 Consequent to the re-designation of the Corps of Electrical and Mechanical Engineering (EME) to Corps of Electronics and Mechanical Engineers, the EME School has been re-designated as 'Electronics and Mechanical Engineering School' with effect from June 1, 2001.

10.77 The EME School conducts post-graduate level courses for officers and diploma and certificate level courses for PBOR. A number of foreign officers and PBOR from friendly foreign countries have been attending various courses conducted at EME School.

INSTITUTE OF MILITARY LAW (IML), KAMPTEE

10.78 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, decision of these Tribunals are not appealable. It is, therefore, essential to judiciously exercise these powers and adhere to the laid down procedures. With this background, the Institute of Military Law was established at Shimla. On August 26, 1989, the institute was shifted to Kamptee.

10.79 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

10.80 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 from 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 specialized training in these disciplines.

TRAINING OF FOREIGN ARMY PERSONNEL AT ARMY TRAINING ESTABLISHMENTS

10.81 After Operation VIJAY and Operation PARAKARAM, the interest of foreign armies for training in Indian Army establishments has increased tremendously. Over 3200 Army personnel from neighbouring countries, South East Asia, Central Asian Republics, African continent and a few developed countries are being trained in India this year. The Government of India provides assistance to the developing and under developed nations under the International Technical and Economic Cooperation (ITEC) programme of Ministry of External Affairs. Under this programme, personnel from friendly foreign countries get training in service institutions free of cost or at subsidized rates. Developed Western countries also send their officers for training to our institutions on reciprocal basis and on self financing basis by paying cost of training and other related charges.

10.82 For 2003-04, a total of 4,506 vacancies have been demanded by 41 countries against which 3230 vacancies have been allotted to them. Para Military Forces and State Police Organisations have demanded 4156 vacancies for the year 2003-04. A total of 3750 vacancies have been allotted.

11

Resettlement and Welfare of Ex-Servicemen

Vocational training for disabled Ex-servicemen

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

11.1 In order to maintain a youthful profile of the Armed Forces, approximately 60,000 service personnel retire or get released every year at a comparatively young age. At the time of retirement majority of service personnel are at an age where they have numerous unfinished responsibilities which necessitate their taking up a second occupation. As per statistics a total of 18,31,863 Ex-Servicemen (ESM) and 3,83,012 widows have been registered and reported to be surviving as on 31 December 2003. The Ex-Servicemen population is mainly concentrated in the States of Uttar Pradesh, Punjab, Haryana, Maharashtra, Kerala, Tamil Nadu, Rajasthan and Uttaranchal. Kendriya Sainik Board (KSB) under the Chairmanship of the Raksha Mantri lays down general policies for the welfare of Ex-Servicemen and their dependents, for the administration of welfare funds, and also for coordinating the work of the Sainik Boards in the country. Similarly, at the State level the Rajya Sainik Boards (RSBs) and at the district level the Zila Sainik Boards (ZSBs) have been established. The Govt of India bears 50% of the expenditure incurred on the organisations of Rajya Sainik Boards while the remaining expenditure is borne by the respective State Governments. The Directorate General of Resettlement (DGR) under the Ministry of Defence looks after all matters connected with the resettlement and welfare of Ex-Servicemen and their dependants.

11.2 Resettlement: The Central Government constantly makes efforts to explore various avenues for employment of Ex-Servicemen. The following are some of the steps taken by the Government:-

(a) Training programmes to re-orient retiring Defence personnel for civil employment;

(b) Reservation of posts for providing employment opportunities in Government/semi-Government/public sector organizations; and

(c) Schemes for self-employment.

11.3 Training Programmes: 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. The emphasis of the programmes run by the DGR has been able to organise employment/self employment oriented training programmes so as to provide viable options for commencing a second career after retirement to officers as well as for other ranks. The programme includes courses on managerial science, technology oriented technical skills and agro based industry. Constant endeavour is made to improve the quality of training by regular monitoring. The programme to impart courses is reviewed every year to include courses in new fields based on the participation in current requirements of civil market and corporate world and also to delete obsolete courses.

11.4 Officers Training: The Resettlement Training Programmes range from vocational courses of three months duration to degree/diploma courses in Information Technology, Security Services, Entrepreneurship Development, Business Administration, Personnel Management, Hotel Management, Tourism and Human Resource Development of one to three years' duration. While the three-month courses are full-time, one to three year courses are based on distant learning programmes.

The Directorate General of Resettlement has been able to organise employment oriented training programmes for commencing a second career after retirement

11.5 JCOs/Ors Equivalent Training: Resettlement Training Programme for JCOs/ ORs and their equivalents from the three services are carried out under three different schemes viz. Vocational Training, On Job Training (OJT) and ITI Training. Under Vocational Training programmes, courses in diversified fields are conducted for a duration up to one year in Government, semi-Government and private institutes spread all over the country. Courses are conducted in fields like Security Services, Management Services, IT Services, Travel and Tourism including Adventure Tourism, Entrepreneurship Development, Technical (including Medical) trades, non-technical trades, Secretarial Support Services, Agro-based industry and many other miscellaneous trades. Under this scheme more than 350 courses are conducted in a year. Under ITI Training Scheme, 4000 seats are reserved in 400 ITIs in different states in the Country. Under "On the Job" Training (OJT), retiring Servicemen are trained in more than 60 workshops of 27 Public Sector Undertakings. This training is provided in nine different trades for a period of nine months. On completion of this training successful candidates are awarded National Trade Certificate (NTC).

11.6 Vocational Training: Under this scheme funds are allotted to Rajya Sainik Boards (RSBs) for conduct of vocational training for Ex-Servicemen (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 the ESM.

11.7 The details of the personnel imparted training in various fields during the last six years, till 31st March, 2004 as are follows:-

SCHEME	1998-99	1999-2000	2000-01	*2001-02*	*2002-03*	*2003-04*
Offrs Training	606	431	387	409	353	583
PBOR Training	5824	4563	5718	3518	2958	4019
On the Job Trg	1419	1847	1452	1363	1027	1027
ITI Training	1292	1847	2675	1510	1510	2821
ESM Training	333	385	58	421	856	-

11.8 Re-employment: 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 and relaxation in age and educational qualifications, exemption from payment of application/examination fees, priority employment to disabled Ex-Servicemen and dependants of deceased service personnel on compassionate grounds.

11.9 Reservation in Government Jobs: The Central Government has reserved 10% of vacancies in Group 'C' posts and 20% in Group 'D' posts for Ex-Servicemen. Central Public Sector Undertakings and Nationalised Banks provide 14.5% reservation in Group 'C' and 24.5% in Group 'D' posts. Besides 10% vacancies of Assistant Commandants in Para-Military Forces are also reserved for Ex-Servicemen. In addition, most of the State Governments, except for the States of Arunachal Pradesh, Assam, Bihar, J&K, Kerala and Meghalaya, are providing reservations to Ex-Servicemen in the State Government jobs. It has, however, not been possible to have statutory backing to the reservations being provided to them inter alia due to the overall ceiling of 50% imposed by the Supreme Court and 49.5% reservation already having been provided in the Government jobs for SC/ST/OBCs. Therefore, the reservation being provided to Ex-Servicemen is not of a vertical nature as in the case of reservation for SC/ST/OBCs. It is of horizontal nature, which implies that Ex-Servicemen selected against the vacancies reserved for them are subsequently adjusted against the relevant category i.e., SC, ST, OBCs or General to which they belong. There is also no carry forward of unfilled reserved vacancies under horizontal vacancies.

SECURITY AGENCIES

11.10 The Directorate General of Resettlement (DGR) registers/sponsors Security Agencies for providing Security Guards to various Public Sector Undertakings and industries in private sector. The Scheme offers self-employment opportunities to

Government has formulated several schemes for encouraging and giving financial support by way of loans to ex-servicemen intending to set up small and medium industries

retired Defence Officers and employment opportunity to ex-Service Personnel Below Officers Rank (PBOR). The Department of Public Enterprises (DPE) had issued instructions to the PSUs to get security personnel through DGR sponsored Security Agencies. The Scheme has shown good results. The Director General Resettlement has also written to Chief Secretaries of all States urging them to issue suitable instructions to all concerned under their jurisdiction to obtain security cover through DGR empanelled agencies, thereby furthering the cause of resettling Ex-Servicemen. A case has also been taken up with the Government of Maharashtra to exempt Security Agencies operating in that State from the Maharashtra Security Guard Regulations of the employment and Welfare Act 1981.

11.11 Placement of JCOs/ORs: The details of Ex-Servicemen, provided employment through DGR and Zila Sainik Welfare Offices in the States during the last six years is as follows:

11.12 Officer's Employment: During the year *2003-04*, a total number *of 737* officers were registered with the DGR for employment assistance. Till date, 3187 officers have been sponsored for various employment opportunities. To spread the awareness about potential in ex-defence personnel, Seminars were organised in conjunction with the Confederation of Indian Industries at Pune, Bangalore, Indore, Delhi and Kochi.

11.13 Schemes for Self-employment: 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 intending to set up small and medium industries. Important self employment schemes are SEMFEX-I, SEMFEX-II, National Equity Fund Scheme and SEMFEX-III. Applications for sanction of loans are submitted by Ex-servicemen directly to concerned Zila Sainik Boards in the States. The applications are scrutinised and those who satisfy eligibility criteria and other terms and conditions are recommended for sanction of loan through Small Industries Devel-

	1998	1999	2000	*2001*	*2002*	*2003**	*2004*
Central Govt	5188	3992	4035	*4982*	*5153*	*5503*	**
State Govt & State Govt. PSUs	2825	2540	2219	*2136*	*2162*	*3092*	**
Private Sector	3304	3068	2766	*3221*	*3051*	*3064*	**
Security Agencies	7140	13810	8717	*5650*	*8679*	*9543*	*2534*

(upto 31.3.2004)
*UPTO 31st December 2003
** Data not yet available

A handicapped ex-serviceman receiving a wheel chair at the Paraplegic Rehabilitation Centre, Kirkee.

opment 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 KVIB and Banks aided by the Khadi and Village Industries Commission (KVIC).

11.14 CNG Stations in National Capital Region (NCR): The scheme for management of CNG stations belonging to Indraprasta Gas Ltd was launched as a pilot project in July 2001. The scheme has been extended to retired officers. As on date, there are 57 retired officers managing 70 CNG stations. Three ex-lady officers have also been allotted the CNG stations in Delhi.

EX-SERVICEMEN COAL TRANSPORTATION SCHEME

11.15 DGR sponsors Ex-Servicemen Coal Transport Companies for the execution of 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 ex-Servicemen Coal Transport Companies and are sponsored to respective coal subsidiaries for five years, extendable by another four years. Presently, nearly 94 such companies are operating under the various coal subsidiaries of CIL.

11.16 Coal Tipper Scheme: The widows of defence personnel who died while in service due to causes attributable to military service can be sponsored by DGR for attaching one tipper truck in their name with an Ex-Servicemen Coal Transport Company. Eligible widow/disabled soldier is required to make a deposit of Rs. 85,000/- with any of the nominated coal transport company. The company will pay them Rs. 3000/- p.m. for a period of five years and thereafter the

deposited amount of Rs. 85,000/- is paid back to widow/disabled soldier. At present 232 widows and 42 disabled soldiers are availing the benefit of this scheme.

ALLOTMENT OF OIL PRODUCT AGENCIES

11.17 Ministry of Petroleum and Natural Gas have reserved Eight percent of the Oil Product Agencies, i.e. LPG dealership, petrol pumps, kerosene distributorship etc in the marketing plan for widows and dependents of those who died in war/peace with death attributable to Military service and disabled soldiers with disability of 50 percent 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 Director General Resettlement sponsors eligible candidates by issuing Eligibility Certificates 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. This year 521 eligibility certificates have been issued by DGR since January 2004 till date.

ALLOTMENT OF ARMY SURPLUS VEHICLES

11.18 Ex-Servicemen/widows of Defence personnel who died while in service are eligible to apply for allotment of an Army Surplus/phased out Class V-B vehicle. The application forms are routed through Zila/ Rajya Sainik Boards in the case of retired personnel and through Units for those in last six months of service to DGR for registration and onward transmission to Army Headquarters for allotment on the basis of depot wise seniority maintained by them.

RESERVATION IN CSD

11.19 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 the Ex-Servicemen Entrepreneurs under the Defence Purchase Programme for which Ex-Servicemen manufacturing units alone are eligible.

MOTHER DAIRY MILK AND FRUIT & VEGETABLE SHOPS

11.20 Junior Commissioned Officers/ Other Ranks are allotted Mother Dairy Milk Shops and Fruit & Vegetable shops in National Capital Region. As on date 684 Milk Shops and 280 Fruit and Vegitable shops are being operated by Ex-Servicemen. Dependent sons (where the ex-Servicemen is not eligible) are also considered for allotment of Mother Dairy Fruit and Vegetable Booths in Delhi.

PUBLICITY

11.21 Wide publicity of policies and various schemes sponsored by Directorate General Resettlement is of paramount importance. This aim is achieved by the DGR by means of publication of periodical magazines, brochures, leaflets, articles in Sainik Samachar and Baatcheet.

11.22 The DGR had put up an impressive stall at Aero-India 2003 at Bangalore and Defexpo 2004 at New Delhi to spread awareness about schemes concerning Ex-Servicemen.

11.23 The film on Armed Forces Flag Day was telecast on the National Channel of Doordarshan on 6th and 7th December, 2003 and the film on activities of DGR was telecast on 3rd April and 5th April, 2004.

WELFARE

11.24 The Kendriya Sainik Board (KSB) under the Chairmanship of Raksha Rajya Mantri, is the nodal agency to look after the welfare of ex-servicemen and their families in liaison with Rajya/Zila Sainik Boards. The performance of the KSB is reviewed in the periodical meetings. The KSB also administers various welfare activities through the Armed Forces Flag Day Fund, which are financed from interest earnings of the fund. The Fund has a corpus of Rs 106 crores as on date. Financial assistance is provided to institutions such as Paraplegic Homes at Kirkee and Mohali, the Red Cross Society, Cheshire Homes, Military Hospitals, St. Dunstan's After Care Organisation and Homes for taking care of old and physically handicapped ESM and their dependents. Financial assistance is also provided to individual ESM and their families who are in a state of penury to meet their specific needs.

ASSISTANCE FROM RAKSHA MANTRI'S FUND

11.25 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, daughters' marriage, house repair and education of children. Monthly financial assistance upto a period of two years is also provided to old and infirm Ex-Servicemen and widows of Ex-Servicemen living in penury.

11.26 Concessions and Facilities: Under-mentioned 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 recognised by the Central or State Governments.

(b) 28 Seats in the MBBS, one seat in BDS and one seat in engineering stream are available through Kendriya Sainik Board to dependants/wards of certain categories of defence personnel through the Ministry of Health and Family Welfare.

(c) 25% seats are reserved for the wards of serving and Ex-Service 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 of Rs 600/- and Rs 300/- per month are provided to wards of war bereaved, disabled attributable and non attributable peace time casualties, respectively. They are granted to those housed in 35 War Memorial

A new medical scheme for providing medical care to ex-Servicemen, War widows and their dependents on the pattern of Central Government Health Scheme(CGHS) has been introduced with effect from 1.4.2003

Hostels to enable them to pursue their studies.

(f) Medical Facilities to Ex-Servicemen: Presently, Ex-servicemen, their families and families of deceased Service personnel drawing pension of any kind are entitled to free out-patient treatment in 127 Military Hospitals and more than 1000 Medical Inspection(MI) Rooms including 24 exclusively reserved for ex-servicemen. In-patient treatment is also provided subject to availability of beds. Ex-servicemen who are not availing medical facilities from Military Hospitals may choose to draw Rs. 100/- every month for medical treatment. Ex-Servicemen/dependents are also provided financial assistance from Armed Forces Flag Day Fund and Group Insurance Schemes for treatment of specified serious diseases.

(g) Ex-Servicemen Contributory Health Scheme (ECHS) : A new medical scheme for providing medical care to ex-Servicemen, War widows and their dependents on the pattern of Central Government Health Scheme(CGHS) has been introduced with effect from 1.4.2003. The details of the scheme are as under:-

i) The facilities existing at 104 military stations is being augmented at a capital cost of Rs. 49 crores and annual recurring expenditure of Rs. 52 crores;

ii) Fresh medical facilities in the nature of poly-clinics/medical inspection rooms is being set up at 123 stations where the population of ex-Servicemen is more than 2,500. This will involve a capital cost of Rs. 69 crores and annual recurring cost of Rs. 98 crores;

iii) The Ex-Servicemen, war widows and their dependents at other stations where ex-Servicemen population is less than 2,500 will be attached to the existing poly-clinics/medical inspection rooms as mentioned in (a) above or with poly-clinics/medical inspection rooms to be created at 123 stations vide (b) above.

iv) The ex-Servicemen, war widows and their dependents will also be reimbursed the cost of medicines not provided by the poly-clinics/medical inspection rooms, fee of the specialists to whom they are referred to, the charges of laboratories for pathological or other diagnostic tests and also the cost of hospitalization.

v) The ex-servicemen and their dependents will be required to make a contribution at the same rate at which the Central Government pensioners are required to make contribution for availing medical facilities under the CGHS after retirement. To ameliorate the financial hardship of ex-servicemen/ widows, the Government has decided to allow remittance of contribution in three consecutive yearly installments.

vi) The war widows have been exempted from making contribution under ECHS.

The war widows have been exempted from making contribution under ECHS.

vii) The reservation for ex-servicemen for contractual employment of staff for ECHS polyclinics would include ex-servicemen and widows of deceased service personnel including war widows.

viii) The scheme will be implemented in a phased manner in five years.

(h) Travel Concession: The following concessions are available to War Widows/Gallantry Award Winners, which can be availed on production of identity card issued by the Kendriya Sainik Board:-

(i) Rail Travel Concession: 75% concessions in rail fare for travel in II Class is available to war widows, including the widows of IPKF casualties. Besides, recipients and widows of posthumous recipients of Chakra series of gallantry awards, along with a companion, are entitled to free rail pass for traveling in Class I/II AC Sleeper.

(ii) Air Travel Concession: Certain categories of personnel are eligible to 75% concession in fare for air travel in domestic flights of the Indian Airlines. These are:-

- 75% concession to recipients of Gallantry Awards of level I and II namely Param Vir Chakra, Maha Vir Chakra, Ashok Chakra and Kirti Chakra.
- 50% concession to Permanently war disabled officers who have been invalided out of service and the dependent members of their families.
- 50% concession to War widows of post-Independence era.

(i) Reservation for House Sites/Houses: Majority of States have made reservations for serving/retired Armed Forces personnel in allotment of house sites/houses.

(j) Grant for Repair of Houses: Financial assistance is provided especially to War Widows/War-disabled for repair of houses on 50% cost sharing basis with State Governments upto an extent of Rs 10,000/-.

(k) Sainik Rest House Facilities : Over 252 Sainik Rest Houses have been created in the country, which provide transit facilities to Ex-Servicemen and their dependants at nominal rates.

(l) Cash Award/Annuity/Cash, in lieu of Land for Gallantry/Non Gallantry Award Winners: The State/UTs provide Cash Award/Annuity/Cash in lieu of Land for Gallantry/Non Gallantry Award Winners.

PENSION TO ARMED FORCES PERSONNEL

11.27 The service conditions of Armed Forces personnel differ greatly from civilians owing to exigencies of service and the need to work in difficult geo-climatic conditions, such as, desert in the west, glaciers in the north, rain forests in the east and the high seas in the south. Service in Armed Forces also involves periods of separation from the family. In the event of hostilities, they are also expected to make the supreme sacrifice of life to maintain the territorial integrity of the country. The Armed Forces are required

to maintain a youthful profile at all times and display the highest degree of combat efficiency. Hence, they are retired/ released at a younger age as compared to civilian employees and are granted pensionary benefits at a somewhat liberal scale as compared to their civilian counterparts. The nature of retirement/ release from service determines the admissibility of the type of pension in the case of Armed Forces Personnel. The eligibility conditions, rates etc. of the different types of pensions are detailed in the succeeding paragraphs.

RETIRING/SERVICE PENSION

11.28 Retiring/ Service pension, admissible to the Armed Forces Personnel is calculated at 50% of the average reckonable emoluments drawn during the last ten months. In the case of Personnel Below Officers Rank (PBOR), it is calculated with reference to the maximum of scale of pay of the rank and Group, held for 10 months preceding retirement. In the case of retirement/ death, Dearness Allowance (DA) admissible on the date of retirement/ death shall also be treated as emolument. Retiring pension shall be subject to a minimum of Rs.1275/- per month and maximum of upto 50% of the highest pay, applicable to Armed Forces Personnel. As per formula evolved under the modified parity, in the case of past pensioners, with effect from January 1, 1996, pension would not be less than 50% of the minimum pay in the revised scale of the pay introduced with effect from January 1,1996 for the rank, rank and group (in the case of PBORs) held by the pensioner. While in the case of commissioned officers of the Army, Navy and Air Force, the minimum period of qualifying service (without weightage) required for earning retiring pension is 20 years (15 years in the case of late entrants), in the case of PBOR it is 15 years {20 years in the case of Non-Combatants Enrolled (NCsE)}. However, keeping in view their early retirement, Armed Forces personnel are given the benefit of weightage ranging from 9 years for Captains and below to 3 years for Generals. Personnel Below Officers Rank are given uniform benefit weightage of 5 years. For calculating gratuity, a uniform weightage of 5 years service is given to all ranks. Armed Forces Personnel are also permitted higher commutation of their pension at 43% for officers and 45% for PBORs as compared to 40% for civilians.

Pension, admissible to the retired Armed Forces Personnel, is calculated at 50% of the average reckonable emoluments drawn during the last ten months

11.29 Army Reservists, who did not opt for grant of pension and have not availed the benefits of Rehabilitation assistance granted by the Government and are not in receipt of any other pension, are sanctioned an ex-gratia payment of Rs. 600/- per month plus dearness relief with effect from November, 1997, provided they had rendered minimum qualifying service to earn pension.

CATEGORISATION FOR PENSIONARY BENEFITS

11.30 On the basis of recommendations of the 5th Central Pay Commission, for determining the pensionary benefits for

death or disability under different circumstances due to attributable/ aggravated causes, the cases have been broadly divided into 5 categories as indicated below :-

CATEGORY A : Death or disability due to natural causes.

CATEGORY B : Death or disability due to causes attributable or aggravated by military services.

CATEGORY C : Death or disability due to accidents while performing duties.

CATEGORY D : Death or disability due to acts of violence/attacks by terrorists whether or not on duty.

CATEGORY E : Death or disability due to war or war-like situation.

11.31 Disability Pension: A person, who is released/ retired from service, on account of a disease/ injury/ wound attributable to or aggravated by military service (Categories B and C), is entitled to disability pension provided the disability assessed by the Medical Board is 20% or more. Disability Pension consists of Service element and Disability element. The Service element is related to the length of service rendered by the individual and the Disability element is paid in the form of compensation for the disablement and depends on the degree of disablement. The amount of service element is equal to the normal retiring/ service pension. With effect from January 1, 1996 the service element subject to a minimum of Rs.1275/- per month is also payable when the length of service rendered is less than the minimum pensionable service. Personnel with 100% disability are also paid a Constant Attendant Allowance at the rate of Rs. 600/- per month on the recommendations of a Medical Board. In all other cases, where the personnel are invalided out of service with a disability, neither attributable to nor aggravated by military service, invalid pension is granted, if the service, actually rendered is 10 years or more. If the service is less than 10 years, such Service personnel are paid invalid gratuity depending upon the length of service. Pursuant to the implementation of the 5th Central Pay Commission, the rates of disability pension have been revised with effect from January 1, 1996 as under:

(a) On Invalidment : Where an individual is invalided out of service on account of causes attributable to or aggravated by military service, he/ she is entitled to disability pension as under :-

(i) Service Element - Equal to normal retiring/ service pension for the length of service actually rendered plus weightage as admissible. With effect from January 1, 1996, the service element subject to a minimum of Rs.1275/- per month is admissible. There is no condition of minimum qualifying service for earning this element.

(ii) Disability Element - The rates of disability element for 100% disability for various ranks admissible with effect from January 1, 1996 are as under:-

- Commissioned Officers/ Honorary Commissioned Officers - Rs. 2600/- p.m.
- Junior Commissioned Officers (JCOs) & equivalent - Rs. 1900/- p.m.
- Other Ranks - Rs 1550/- p.m.

(iii) Broad-banding of disability- In case of invalidment on or after January 1, 1996, the extent of disability or functional incapacity is determined as under for the purpose of computing disability element :-

Disability less than 50%	-	50%
Between 50 and 75%	-	75%
Between 76 and 100%	-	100%

Where permanent disability is not less than 60%, the disability pension (service element plus disability element) is payable at not less than 60% of the reckonable emoluments last drawn by the individual.

(b) Retention Despite Disability: Where an individual is retained in service despite disability and retires/ is discharged on attaining the age of retirement or on completion of tenure, with effect from January 1, 1996 he / she is entitled to disability element at the following rates (for 100 % disability):-

- Commissioned Officers/ Honorary Commissioned Officers - Rs. 2600/- p.m.
- Junior Commissioned Officers (JCOs) & equivalent - Rs. 1900/- p.m.
- Other Ranks - Rs 1550/- p.m.

- For disabilities less than 100% but not less than 20%, the above rates are proportionately reduced. No disability element for less than 20% disability is admissible.
- Retiring/ service pension or retiring/ service gratuity as admissible is also payable in addition to the disability element from the date of retirement/ discharge.

On the basis of the recommendations of the 5th Central Pay Commission, the procedure regarding acceptance of attributability pertaining to disability and special family pension and assessment of degree of disability has undergone change. As per the revised instructions the procedure of periodical reviews by Re-Survey Medical Board for re-assessment and continuance of disability pension has also been dispensed with. In injury cases, the percentage of disability as recommended by Invaliding/ Release Medical Board and as approved by the next higher medical authority is treated as final unless the individual himself requests for a review. Likewise in cases of diseases of a permanent nature, the assessment of degree of disability as recommended by Invaliding Medical Board (IMB)/ Release Medical Board (RMB) and as adjudicated by Medical Adviser (Pensions) [MA(P)] in case of PBOR and Service Headquarters in respect of Officers is treated as final unless the individual himself requests for a review. In case of disabilities which are not of a permanent nature, there will be only one review which will be final and for life unless the individual himself asks for a review.

(c) Lumpsum disability compensation: If an individual is found to have a disability which is assessed at 20% or more for life but is retained in service despite such disability, he/she is paid a compensation in lump sum (in lieu of disability element) equal to the capitalised value of disability element on the basis of disability actually assessed. In cases of casualties occurring on or after January 1, 1996 the rates for disability element are applicable for calculating the capitalised value. Once a compensation has been paid

in lieu of the disability element, there is no further entitlement to the disability element for the same disability.

11.32 War Injury Pension: War Injury Pension is sanctioned to an individual, who sustains injury/ disability in war or war like operations (Category E) and are invalided out of service due to it. War Injury Pension consists of service element and war injury element. Service element is calculated equal to retiring/ service pension to which he/ she would have been entitled 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 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. Pursuant to the implementation of the recommendations of the 5th Central Pay Commission relating to disability pension/ liberalised pension/ war injury pension etc. the rates of disability element in respect of war injury are taken as double the amount as mentioned above at para 11.31(a) (ii). The extent of disability or functional incapacity for the purpose of computing war injury element in the cases of invalidment is determined as in para 11.31(a) (iii).

11.33 With effect from January 1, 1996, Armed Forces Personnel sustaining disability due to acts of violence/ attack by terrorists, anti social elements , bomb blasts in public places or transport, indiscriminate shooting incidents etc. (Category-D) are entitled to the same pensionary benefits (i.e. service element and retirement gratuity) as admissible to war injury cases on invalidment/ retirement/ discharge including lumpsum compensation in lieu of disability, as mentioned above, except that on invalidment they would be entitled to disability element instead of war injury element.

11.34 Family Pension: Ordinary Family Pension: Families of Armed Forces Personnel who die during service or after retirement with pension, are granted family pension at a uniform rate of 30% of the reckonable emoluments. The amount of minimum family pension, which, earlier was Rs.375/- per month, has been raised to Rs.1275/- per month, with effect from January 1, 1996 on the basis of the recommendation of the 5th Central Pay Commission. As per orders issued with regard to modified parity, past family pensioners are entitled to get at least 30 % of the minimum of revised pay scale which came into force with effect from January 1, 1996 for the rank and group, last held by the pensioners/ deceased individuals. If the deceased personnel had rendered a minimum continuous qualifying service of 7 years or more and dies while in service or after retirement with a pensionable service, the family is given family pension at enhanced rate for the first 7 years or upto the time the deceased would have reached the age of 67 years, whichever is earlier. The amount of enhanced family pension will, however, not be more than 50% of the reckonable emolu-

ments or the amount of retiring/service/ invalid pension/service element of disability pension/special pension (before commutation) admissible, if the death takes place after retirement but before 67 years of age.

11.35 With effect from January 1, 1996 Ordinary Family Pension is admissible also to (i) the parents who were wholly dependent on the Armed Forces Personnel when he/ she was alive, provided the deceased had left behind neither a widow nor a child and (ii) widowed/ divorced daughter till she attains the age of 25 years or upto the date of her remarriage whichever is earlier. The income criteria, in respect of parents and widowed/ divorced daughter, is that their earning is not more than Rs. 2550/- per month. Pensionary benefits to the eligible Next-of-Kin (NoKs), as defined above were made applicable from January 1, 1998 and as such, all past cases are also to be considered on merits for grant of family pension from January 1, 1998.

11.36 With effect from July 27, 2001, family pension admissible under the Employees Pension Scheme, 1995 and the Family Pension Scheme, 1971 has been allowed in addition to the family pension admissible to the Armed Forces Personnel under the relevant Pension Regulation.

11.37 Special Family Pension: If the death of a service personnel has occurred on account of causes attributable to or aggravated by Service (Categories B and C), the family is paid Special Family Pension. There is no condition of minimum service on the date of death for grant of Special Family Pension. In the case of Commissioned Officers, Special Family Pension is payable to the widow. The families of Short Service Commissioned Officers and Emergency Commissioned Officers are also entitled to Special Family Pension. In the case of PBORs the rules provide for nominating anyone from the eligible members of the family (except dependant brothers/ sisters) for the first life award and for transfer of the same in full to the widow regardless of her financial position in the event of death of parents where they were nominated as original awardees.

11.38 With effect from January 1, 1996, Special Family Pension is calculated at the uniform rate of 60% of reckonable emoluments drawn by the deceased, subject to a minimum of Rs.2,550/-per month irrespective of whether widow has children or not. There is no maximum ceiling on Special Family Pension. In case the children become beneficiary, the Special Family Pension is payable at the same rate to the senior most eligible child till he/ she attains the age of 25 years or upto the date of his/ her marriage whichever is earlier. Thereafter, Special Family Pension passes on to the next eligible child. Widowed/ divorced daughters upto the age of 25 years or re-marriage, whichever is earlier, are also eligible for the purpose of Special Family Pension. In case the eligible child is physically or mentally handicapped and unable to earn a livelihood, Special Family Pension is admissible for life. In the absence of wife and children, dependent pension at the prescribed rates is admissible to the parents of the deceased. Widows who got remarried on or after

January 1, 1996 are also eligible for Special Family Pension subject to certain conditions.

11.39 Liberalised Family Pension: In the event of death of Armed Forces Personnel [including Short Service Commissioned Officers (SSCOs) & Emergency Commissioned Officers (ECOs)] in war or war like operations, counter-insurgency operations or in an encounter with or in an incident involving armed hostilities, terrorists/ extremists, anti-social elements etc.(Categories D and E), their families are granted liberalised family pension equal to the reckonable emoluments last drawn by the deceased personnel at the time of their death. Pension at this rate is payable to the widow in the case of officers and to the nominated heir in the case of PBOR until death or disqualification. If the personnel is not survived by widow but is survived by child/ children only, all children together are eligible to Liberalised Family Pension (LFP) at the rate equal to 60% reckonable emoluments last drawn by the deceased. Liberalised Family Pension is payable to the senior-most eligible child till he/she attains the age of 25 years or upto the date of his/her marriage, whichever is earlier, and thereafter the LFP passes on to the next eligible child. Widowed/ divorced daughters upto the age of 25 years or re-marriage, whichever is earlier, are also eligible for the purpose of LFP. In case the eligible child is physically or mentally handicapped and unable to earn a livelihood, LFP is admissible for life. No children allowance is payable in addition to Liberalised pension.

11.40 On re-marriage of a widow, both in the case of Commissioned Officers as also in the case of PBOR in whose case LFP is sanctioned as first life award to widow, full liberalised family pension would continue to the widow if she continues to support children after re-marriage or has no children. However, if the widow does not support the children after re-marriage, Special Family Pension at the rate of 60% will pass on to the children and Ordinary Family Pension at the rate of 30% to the widow. In the absence of wife and children, dependent pension (Liberalised) at the prescribed rates is admissible to the parents of the deceased without reference to their pecuniary circumstances.

EX-GRATIA AWARDS IN CASES OF DEATH OF CADETS

11.41 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 in addition to (a) above.

11.42 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 11.41(b) above, is admissible to pre August 1, 1997 cases also, with financial effect w.e.f. 1.8.1997.

EX-GRATIA AWARDS IN CASES OF DISABILITY OF CADETS

11.43 The following ex-gratia awards are payable subject to certain conditions in the event of invalidment of a 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.

11.44 The ex-gratia disability awards are applicable with effect from August 1, 1997. However, the same benefits are admissible to pre August 1, 1997 cases also, with financial effect w.e.f. 1.8.1997.

DEATH WHILE PERFORMING MILITARY DUTY

11.45 In pursuance of the recommendations of the 5th Central Pay Commission, in addition to Special Family Pension/ Liberalised Family Pension, Ex-gratia is granted to the family of a deceased service personnel in the event of death occurring on or after August 1, 1997 as under:-

(a) Death occurring due to accidents in the course of performance of duties - Rs. 5.00 Lakh

(b) Death occurring in the course of performance of duties attributable to acts of violence by terrorists, anti-social elements etc. - Rs. 5.00 Lakh

(c) Death occurring during (i) border skirmishes and (ii) Action against militants, terrorists, extremists etc. - Rs. 7.50 Lakh*

(d) Death occurring during enemy action in international war or such war like engagements which are specifically notified by the Government. - Rs. 10.00 Lakh*

*(with effect from 1.5.1999)

REVISION OF PENSION IN RESPECT OF PRE 1996 ARMED FORCES PENSIONERS

11.46 Necessary orders for regulation/ consolidation with effect from January 1, 1996 of pension/ family pension of all pre January 1, 1996 pensioners/ family pensioners were issued. Further, in pursuance of the 5th Central Pay Commission's recommendations relating to modified parity in pension, necessary orders have been issued by the Government for revision of Disability Pension/ Special Family Pension/ Liberalized Family Pension/ War Injury Pension etc. in respect of pre-January 1, 1996 Armed Forces Pensioners. For the widows who were in receipt of Liberalized Family Pension (LFP), the consolidated pension shall be not less than the reckonable emoluments calculated on the minimum pay in the revised scale of pay introduced with effect from January 1, 1996 of the rank, rank and group (in the case of PBORs) held by the deceased personnel at the time of death, irrespective of the date of award of the pension. For the special family pensioners, the consolidated pension shall not be less than 60 % of the

minimum pay in the revised scale of pay introduced with effect from January 1, 1996 of the rank, rank and group (in case of PBORs) held by the deceased personnel at the time of death, subject to a minimum of Rs. 2550/-per month. The rates of Disability Pension, War Injury Pension (except invalidment cases), Constant Attendant Allowance as applicable to post January 1, 1996 pensioners have also been extended to pre January 1, 1996 pensioners who are in receipt of Disability Pension, War Injury Pension, Constant Attendant Allowance etc., with effect from January 1, 1996.

11.47 Defence Pension Adalat: In order to address to the legitimate grievances of the Defence pensioners near to their place of work/residence, Defence Pension Adalats are organized in different parts of the country. These Aadalats are becoming quite popular.

11.48 As the Adalat consists of representatives from various agencies concerned with pensionary matters of Armed Forces, emphasis is on redressal of grievances on the spot. During the financial year 2003-04, Defence Pension Adalats have been held at Chennai, Chandigarh, Jammu, Agra, Dharamshala, Kottayam, Mumbai and Vishakhapatnam.

11.49 In the last Defence Pension Adalats, held during 2003-04, the response was encouraging. Of the 2307 representations received, 1920 have been settled and the remaining 387 are being pursued for finalisation.

11.50 Delegation of Powers to Service Headquarters: Government has delegated administrative powers to Service Headquarters with effect from 14.8.2001 on certain pension matters mainly regarding division of family pension, initial award of special family pension/ ex-gratia/ disability pension in respect of officers, first appeal cases, time bar sanction for filing appeals beyond 12 months, grant of pension in dismissal from service cases and implementation of judgements delivered by various courts.

11.51 The number of Defence Pensioners is estimated to be about 20.51 lakh. Approximately, 55,000 service personnel retire every year. Pension to Defence Pensioners is disbursed through 35,000 branches of Public Sector Banks, 534 Treasuries, 61 Defence Pension Disbursing Offices and 5 PAOs, scattered all over India. The annual expenditure on Defence pensions, during last three years and estimated for (2003-04) and (2004-05) is as follows:-

Year	Pension Disbursed (Rs. Crore)
2000 - 2001	10538.93
2001 - 2002	10487.92
2002 - 2003	10092.07
2003 - 04 (BE)	11000.00
2003 - 04 (RE)	11000.00
2004 - 05 (BE)	11250.00

12

Cooperation Between the Armed Forces and Civil Authorities

Naval teams rescuing villagers in flood-hit Orissa.

Besides guarding the borders, the Armed Forces assist the civil authorities for maintenance of law and order, essential services and in rescue and relief operations during natural calamities

12.1 Besides ensuring inviolability of the borders of our country, the Armed Forces are also mandated to assist the civil authorities for maintenance of law and order, essential services and in rescue and relief operations during natural calamities. While providing actual relief, the Armed Forces continue to maintain regular liaison with the civil authorities to refine contingency planning and ensure timely response. The details of assistance provided by the Armed Forces during the period are outlined in the succeeding paragraphs.

ARMY

MILITARY CIVIC ACTION PROJECTS

12.2 An important ingredient of the Army's counter-insurgency strategy has been to win the hearts and minds of the local populace, to wean them away from militants and assist the Civil Administration in ensuring that the fruits of development reach the grassroots. Army's Civic Action Programmes have been generously supported by grants from the Central Government. Some of the major Civic Action Programmes undertaken by the Army in Jammu and Kashmir and in the North-eastern States are as follows: (a) Renovation of school buildings. (b) Establishment of computer training centres and science laboratories. (c) Excursion for school children to places of historical importance in India. (d) Organising adventure sports. (e) Construction of ancillaries. (f) Implementing drinking water schemes. (g) Construction of bridges. (h) Employment generating schemes such as Training apprentice cadres, vocational training, handloom and weaving. (i) Organising medical camps in remote areas, running nursing courses for women and distributing medicines. (j) Organising veterinary camps in remote areas. (k) Organising pre-recruitment training for the youth.

12.3 Flood Relief Operations In Sri Lanka (Op Denim): Consequent to unprecedented floods afflicting the districts of Ratnapura,

Girls learn knitting at a Army Unit in Jammu and Kashmir.

Kalutara, Matara and Hambantota in central and southern regions of Sri Lanka, the Government of Sri Lanka had requested Government of India on May 18, 2003 for medical-cum-humanitarian assistance for approximately 15,000 flood victims.

12.4 Indian Army Disaster Management teams comprising 20 doctors and approximately 200 para-medics, engineers and administrative support personnel were airlifted by the Indian Air Force from Allahabad and Secunderabad to Colombo on May 20, 2003. The Indian Army troops established medical camps in Ratnapura, Galle and Matara besides a number of Medical Aid Posts in the affected villages on May 21, 2003, where a total of 16,957 victims were provided medical relief. Special medical supplies were sent to fight outbreak of epidemics such as typhoid and other deadly diseases like dengue fever and malaria. The teams were de-inducted on June 6, 2003.

12.5 Medical Aid to Earthquake victims in Iran: Consequent to heavy devastation caused by the earthquake measuring 6.3 on Richter scale at 0530 hours on December 26, 2003 at Bam in Iran, an Indian Army Medical team comprising 68 persons (15 doctors and 47 para-medics and also four persons from the Corps of Engineers and two from the Corps of EME) was airlifted to Iran (Kerman) in four aircraft on December 30 and 31, 2003 and January 1, 2004 for relief and rescue work. The team established a 75-bed hospital at Bam. The OPD facilities commenced on January 2, 2004 and the hospital became fully functional with

effect from January 3, 2004. A total of 50,699 OPD and 5716 surgical patients were treated till March 20, 2004. The Indian Army Medical Team returned to India on April 4, 2004.

FLOOD RELIEF OPERATIONS IN INDIA

12.6 Orissa: Due to heavy release of water in the Mahanadi system on August 29, 2003, low-lying areas in the districts of Cuttack, Kendrapara, Jagatsinghapur, Khurda, Puri and Jajpur were flooded. Accordingly, five Army columns were deployed in the affected areas from August 30 to September 12, 2003. Army carried out rescue and relief operations on a massive scale. 175 marooned persons were rescued and 9430 persons were provided medical aid. The Army assisted the civil administration in the distribution of a large quantity of relief material.

12.7 Bihar: Consequent to heavy rains and rise of water level in Ganga and its tributaries, the districts of Patna, Saran, Munger and Samastipur were flooded in September 2003. Five Army columns were deployed in the flood-affected areas from September 11 to 22. During the rescue and relief operations, 886 persons were evacuated and 3395 persons were provided medical aid. The Army also assisted in the distribution of a large quantity of rations and other relief material.

An Indian Army medical team comprising 68 persons established a 75 bed hospital at Bam in earthquake - hit Iran in January 2004.

12.8 Uttar Pradesh: One Army column was deployed from August 27 to September 5, 2003 to plug a 75-meter breach in the Bundh on Ghaghara River in Azamgarh district on August 27, 2003 and to carry out rescue and relief operations. During the flood-relief operations the breach was successfully plugged and 2698 persons were rescued and 4724 persons were provided medical aid. In another breach on a Bundh on River Ganga in the district of Ballia, one Army column was deployed from September 13 to 19, 2003 to plug the breach and assist the Civil Administration in rescue and relief operations.

12.9 Madhya Pradesh: During the month of September 2003, heavy rains caused floods in the districts of Rewa and Satna. One Army column provided aid to the flood ravaged victims from September 10 to 14. A total of 66 persons were evacuated, 523 persons were provided medical aid and 1500 food packets were helidropped.

12.10 West Bengal: Heavy rains in Jalpaiguri district resulted in the flooding of large parts of village Matigara on Bagdogra–Siliguri road on July 8, 2003. One Army column was deployed at the site to provide aid to flood-ravaged victims from July 8 to 10.

12.11 Assam: Due to incessant rains in Sibsagar district in July 2003, Army assistance was requisitioned for flood relief operations. One Army column was deployed from July 9 to 13 and again on July 23, for rescue and relief operations.

12.12 Uttaranchal: Consequent to flash floods in River Ganga in Haridwar on August 5, 2003, 10 civilians were drowned. One

Army Jawans re-construct a bridge washed away during floods at Baijnath

Army rescue team was made available to recover the bodies.

OTHER TYPES OF ASSISTANCE

12.13 Fire in Chemical Factory in Agra: Consequent to fire breaking out in Nice Chemical Factory, Agra, on May 5, 2003, one Army column was deployed for rescue and relief operations.

12.14 Fire in Mumbai – Amritsar Mail: Three bogies of Mumbai –Amristar Frontier Mail caught fire at Ladowal in Punjab on May 15, 2003. One Army column was made available to provide immediate medical assistance to the victims. A few Army personnel travelling in the train displayed exceptional bravery and presence of mind when they de-coupled the three bogies engulfed by the inferno from rest of the train and thus prevented fire spreading to other bogies and averted a major disaster.

12.15 Fire in Paper Mill in Gurdaspur District: Consequent to fire breaking out in a Paper Mill in Gurdaspur district on May 19, 2003, one Army column was tasked for rescue and relief operations on May 19 and 20.

12.16 Karwar-Mumbai Holiday Special Train Accident: Consequent to the derailment of Karwar-Mumbai Holiday Special Train near Ratnagiri in Maharashtra on June 22, 2003, two Army columns rushed to the site and provided humanitarian assistance to the victims of the train accident till June 24.

12.17 Construction of Bridge: Narsinghpur (MP): In response to a request of Government of Madhya Pradesh, one Army Engineer platoon was deployed for construction of a 172-meter span pedestrian bridge over Narmada River near Barman Ghat in Narsinghpur District of MP for use during Makarasankranti Mela.

Fresh water being transported by Naval personnel to flood-hit villages in Orissa.

12.18 Construction of Bridge: Ujjain (MP): Three bridges, approximately 100-meter span each, were launched by the Army over Shipra River in Ujjain (MP) for use during Simhastha (Ardh Kumbh Mela), 2004 at Ujjain from March 31 to May 15.

NAVY

12.19 Coastal Regulation Zone (CRZ) Surveys: A major survey of the Coastal Regulation Zone was undertaken for the Government of Karnataka at a cost of Rs. 56.56 lakhs. Phase two and three of the survey are in progress. The Navy also undertook the CZM survey of Greater Mumbai during January 2003. These surveys were aimed at demarcating the Coastal Regulation Zone as part of Environment Protection Project in which Hydrographic parameters are of relevance to Coastal Planning and development.

12.20 Fire Support: INS Rajali fire-fighting team provided aid to civil authorities for fighting the fire in a train compartment at the Arakonam Railway Station on January 16, 2003.

12.21 Medical Camp: With a view to provide aid to the poor and needy villagers and to create health awareness amongst them, a medical camp was organised at Fatarkativillai village on September 27, 2003. This programme benefited around 135 villages.

12.22 Supply of Fresh Water to Villages: The Navy has been providing fresh drinking water to villages near Tirunelvelli, particularly during ceremonial occasions in temples and mosques.

12.23 Flood Relief Operations / Aid to Civil Power: One Prahar (a unit of Marine Commandos) was deployed during floods in Marshaghai villages, Kandrapada district of

Orissa in early September 2003. The Prahar extensively travelled the flood-hit area using Geminis and distributed food materials, offered medical assistance and rescued people from the submerged villages. One Chetak was deployed at Icchapuram on October 8 and 9, 2003 on request of the State Government of Andhra Pradesh for flood relief operations and dropping of food packets.

12.24 National Security Environment: During the year the Southern Naval Command held a series of discussion sessions with heads of villages in the neighbourhood of Naval bases to apprise them of the overall security requirements.

AIR FORCE

12.25 Flood Relief: During the floods in Bihar eight IAF sorties were undertaken by IL-76 and An-32 aircraft to airlift 35 tons of load, 183 passengers, Army personnel and boats from Bareilly to Patna. Flood relief operations were also undertaken in Orissa. Two sorties were undertaken by IL-76 to airlift 4327 tons of load and 152 passengers from Gwalior to Bhubaneswar. A total of 141.73 tons of load and 182 passengers in 154 sorties were airlifted to Bihar and Orissa.

12.26 Op DENIM: Two IL-76 aircraft were pressed into service in Sri Lanka for flood-relief operations. The aircraft carried engineering equipment and Army personnel. One An-32 aircraft also airlifted 4.5 tons of blankets.

12.27 Casualty Evacuation: Casualty evacuation was undertaken on many occasions in the northern sector of Jammu & Kashmir and eastern sector of Arunachal Pradesh. A total of 176 sorties were flown involving 134:35 hrs of flying to airlift 246 passengers from January 1, 2003 to March 31, 2004.

Indian Navy Sailors rescue marooned villagers in Sri Lanka.

An Air Force Helicopter with food packets for flood victims.

12.28 Courier Operations: Kargil courier commenced operations from January 26, 2003 for the civilians of J&K. The An-32 flight operates once a week on route Kargil-Srinagar-Jammu-Srinagar-Kargil.

12.29 Special IL-76 flights for earthquake relief to Iran were undertaken by the IAF in December 2003 and January and February 2004. 93878 kgs of relief material and 50 passengers were airlifted.

13

National Cadet Corps

NCC girl cadets at the Republic Day Camp.

The National Cadet Corps strives to provide the youth of India opportunities for 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 55 years of its existence. The NCC strives to provide the youth of this country opportunities for all-round development with a 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.

13.2 The total sanctioned strength of NCC cadets is 13 lakhs. The Wingwise distribution of the enrolled cadet strength is as under :-

(a)	Army Wing	9,46,964
(b)	Air Wing	65,350
(c)	Naval Wing	66,300
(d)	Girls Wing	1,72,473

The NCC has units in 8,243 schools and 4,967 colleges in almost all the districts of the country.

TRAINING OF CADETS

13.3 Training Camps: Camp Training is an important part of NCC Curricula. The camps help in developing camaraderie, team work, dignity of labour, self confidence and inculcate unity and discipline. The various types of camps conducted are as listed below:

(a) Annual Training Camps (ATC): Annual Training Camps are conducted at the State Directorate level. A minimum of 50% of enrolled strength of cadets numbering approximately 6.5 lakhs attend at least one camp per year. Approximately 900 such camps are conducted in a training year.

(b) National Integration Camps(NIC): 37 National Integration Camps were held during the year in which over 23,000 cadets from all States and Union Territories participated. In addition, Special NICs were conducted at the following places:-

23000 cadets from all States and Union Territories participated in the National Integration Camps held during the year.

(i) NIC Leh: A special NIC was conducted at Leh from June 10 to 21, 2003 wherein a total of 200 cadets from all parts of the country participated.

(ii) NIC Dibrugarh: The special NIC in the North-East was conducted at Dibrugarh (Assam) from October 9 to 20, 2003 with the participation of 200 cadets from the North East Region and 600 cadets from the rest of India.

(iii) NIC Port Blair: A special NIC was conducted at Port Blair (Andaman & Nicobar Islands) from February 9 to 20, 2004 with the participation of 130 cadets including 80 cadets from the mainland.

(c) Vayu Sainik Camp (VSC): An All India Vayu Sainik Camp for Air Wing SD/SW cadets was conducted at Air Force Station Jalahalli (Bangalore) from October 10 to 21, 2003. 420 Senior Division (SD) and 180 Senior Wing (SW) cadets participated.

NCC Cadets examining a Gun at the Republic Day Training Camp .

(d) Nau Sainik Camp (NSC): 400 SD cadets and 160 SW cadets attended the Nau Sainik Camp at Visakhapatnam from October 29 to November 9, 2003.

(e) Thal Sainik Camps (TSC): Two Thal Sainik Camps are conducted at the Republic Day Parade ground, Delhi Cantonment every year, one for Senior Division and Junior Division boys and other for Senior Wing and Junior Wing girls. 640 Boy and 640 girl cadets take part in these camps. The camps were conducted from October 10 to 21, 2003.

(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 2950 boy and girl cadets and were conducted during the months of September and October 2003.

(g) Rock-Climbing Camps: Eight rock-climbing camps are held every year to expose the cadets to the basics of rock-climbing and to inculcate the spirit of adventure. Four of these camps are held at Gwalior in Madhya Pradesh and other four camps at Neyyar Dam near Trivandrum in Kerala. 1080 boy and girl cadets attended these camps from October to December 2003.

(h) Republic Day Camp-2004: Republic Day Camp – 2004 was conducted from January 1 to 29, 2004 at

Delhi. The Camp was attended by 1800 cadets from all over India. Cadets of friendly foreign countries with whom we have a Youth Exchange Programme also participated in the Republic Day Camp. 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. The camp was inaugurated by the Vice-President of India on January 8, 2004. As a regular feature, Prime Minister's Rally was held on January 27. The Camp culminated with the tea for selected cadets hosted at the Rashtrapati Bhawan.

13.4 Attachment Training: The NCC cadets derive first hand experience of immense value on brief attachment to the Armed Forces units. During the year, attachments conducted were as under:-

(a) 440 Officers and 20,000 cadets were attached to the regular Army units. This included 560 Women Officers and SW Girl Cadets.

(b) 120 boy cadets were attached to Indian Military Academy, Dehradun during June 2003 and 48 girl cadets with Officers Training Academy, Chennai during September 2003. Both attachments were for the duration of two weeks.

(c) 1000 girl cadets were attached with various Military Hospitals.

(d) 38 SD and 12 SW cadets of Air Wing were attached to the Air Force Academy, Dundigal from October 13 to 24, 2003.

(e) Naval Attachment-IND Mandovi: Third attachment training camp for Naval Wing(SD) cadets was conducted at Naval Academy, INS Mandovi, Goa, for a duration of 12 days from December 15 to December 26, 2003. 25 SD cadets from all 16 Directorates attended the training.

13.5 Gliding and Microlite Flying: Gliding facilities are provided at 38 NCC Air Squadrons. Despite the fact that the serviceable holding of gliders has fallen to as low as 25% of the authorization, the NCC Air Squadrons have carried out 18818 launches during the past year. Microlite flying is being conducted in NCC as an adventure activity to give air experience to the Air Wing NCC cadets (SD). A total of 3262 hrs of microlite flying was undertaken during the past year.

13.6 Sea Training: NCC cadets of the Naval wing, during their sea training and attachment, are imparted intensive training in Naval subjects like Navigation Communication, Gunnery, Seamanship, Damage Control and Ship Safety, First Aid, and Ship's Husbandry. This year 295 cadets were attached to ships of the Eastern and Western Naval Command and Coast Guard, for sea training.

13.7 Screening Courses at OTA: Two SSB Screening Courses for Senior Division (SD) cadets aspiring to join the Armed Forces were held at OTA Kamptee from May 17 to 26, 2003 and from September 29 to October 8, 2003. 192 SD cadets from all

State Directorates attended the course. SSB Screening Course to train SW cadets was held at OTA, Gwalior, from January 19 to 29, 2004. 94 SW cadets from all State Directorates attended this course.

13.8 Foreign Cruise: The following foreign cruises were undertaken during the year:-

(a) Coast Guard Cruise:

(i) Five Naval SD cadets attended the cruise from April 5 to April 12, 2003. The route of cruise was from Paradip to Chittagong(Bangladesh) and back.

(ii) Six Naval SD cadets attended the cruise from May 10 to May 16, 2003. The cruise was from Port Blair to Yangon and back.

(b) Naval Cruise:

(i) Eight Naval SD cadets attended the programme held from March 7 to April 18, 2003 from Goa to Palermo (Italy), Alexandria (Egypt) and back to Mumbai.

(ii) Eight Naval SD cadets attended the cruise from October 8 to October 31, 2003 from Mumbai to Bandar Abbas, Al Fujairah, Muscat and back.

(c) INS Tarangini: Two Naval SD cadets joined in INMS Tarangini World Cruise from Montreal to Washington from September 1 to October 3, 2003.

NCC Cadets prepare the model of an Aircraft Carrier at the Republic Day Camp.

13.9 Adventure Training: Adventure activities are organized to develop special qualities of courage, leadership team work, spirit of adventure and sportsmanship among the cadets.

(a) Mountaineering Courses: NCC nominates Boy and girl cadets from all NCC Directorates to the Nehru Institute of Mountaineering, Uttarkashi, Himalayan Mountaineering Institute, Darjeeling and Directorate of Mountaineering and Allied Sports, Manali, every year for various courses. 186 cadets were nominated for various courses during 2003-04.

(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. Since 1970, the NCC has conducted 52 Mountaineering Expeditions, of which 28 were for boys and 24 for girls. This year the boys expedition team successfully climbed the Jogin Peak III (19,971 ft) in May-June 2003 and girls team climbed Gangotri Peak (6590M) in September-October 2003.

(c) Cycle and Motor Cycle Expeditions: These expeditions are organized

both at the national and state levels. During the current year, Sadbhavana Motor Cycle Rally was organized by Punjab Directorate from May 15 to June 11.

(d) Trekking Expedition: A total of 10 Trekking Expeditions were conducted during the year 2003-04 with the participation of 10,000 cadets. Seven expeditions were for boy cadets and three for girl cadets.

(e) Para Sailing: Para Sailing is conducted at each Group level as a part of adventure activity for boy and girl cadets of the NCC. During the past year 65,904 cadets have been trained in this activity.

(f) Para Basic Courses: During the last year 20 boy cadets and 20 girl cadets of NCC were trained at Army Airborne Training School, Agra.

(g) Slithering Demonstration: 10 SD and 10 SW cadets took part in slithering demonstration during PM's Rally in January 2004.

(h) Desert Camel Safari: Desert Camel Safari involving NCC cadets and cadets from Singapore was conducted from November 17 to November 28, 2003.

(i) White Water Rafting: White Water Rafting Node has been established at Raiwala (Haridwar). NCC is in the process of finalizing establishment of three more white water nodes in Punjab, West Bengal and Gujarat.

(j) Sailing Expeditions: The following major Whaler sailing expeditions were conducted during the year:-

	Dte	From	To	Distance	Date	No. of Cadets
1.	AP	Visakhapatnam	Ichchapuram	405 Kms	May 5 to 14, 2003	44SD & 16SW
2.	Bih	Allahabad	Patna	659 Kms	Sept 29 to 9 Oct, 2003	20 SD
3.	Del	Yamuna River		432 Kms	Sep 26 to Oct. 9, 2003	40 SD & 8 SW
4.	Guj	Darudeshwar	Bhadboot	405 Kms	Sep 17-28, 2003	36SD
5.	Kar	Karwar	Udupi	450 Kms	Dec 5 to 21, 2003	40 SD
6.	Mah	Ambegaon	Pandaripur	450Kms	Sept 19 to 30, 2003	32 SD & 08 SW
		Madhyameshwar	Vishupuri	478 Kms	Sep 26 to Oct 7, 2003	40 SD & 20 SW
7.	MP	Brahmangat	Hoshangabad	230 Kms	Oct 17 to 23, 2003	30 SD
8.	WB	Farakka	Kolkata	450 Kms	May 5 to 24, 2003	40SD
9.	TN	Pondicherry	Kodiakarai	436 Kms	June 20 to 30, 2003	36 SD & 10 SW
10.	Pb	Govindsagar Lake		420 Kms	Sep 8 to 19,2003	20 SD
11.	Raj	Jai Samand Lake	430 Kms		Aug 25 to Sep., 5,2003	30 SD
		Bilaspur Dam		420 Kms	Sep 15 to 16, 2003	30 SD

YOUTH EXCHANGE PROGRAMME(YEP)

13.10 The following visits were undertaken during the year as part of YEP:-

(a) Visit by DGNCC to Bangladesh from March 24 to 27, 2003 and to UK from July 23 to August 3, 2003.

(b) Visit of one officer and twelve cadets to UK from July 22 to August 10, 2003.

(c) Visit of two officers and ten cadets to Russia from September 29 to October 8, 2003.

(d) Visit of one officer and six cadets to Sri Lanka from October 15 to October 22, 2003.

(e) Visit of two officers and twelve cadets to Bhutan from November 10 to November 16, 2003.

(f) Visit of two officers and twenty cadets to Vietnam from November 17 to November 30, 2003.

(g) Visit of two officers and eight cadets to Singapore to participate in Camp Pinnacle from December 4 to December 14, 2003.

(h) Visit of one officer and two cadets to Nepal from February 12 to February 22, 2004 to participate in Nepalese NCC Camp and Army Day Parade.

(i) Visit of one officer and twelve Cadets to Bangladesh from March 20 to March 31, 2004.

(j) Visit of ADG(A) & DDG, PHHP & C Directorate to Bangladesh from March 24 to March 27, 2004.

13.11 In-Coming YEP Visits : The following in-coming Youth Exchange Programme visits by foreign delegations were undertaken during the year as part of YEP:

(a) One officer and six cadets from Singapore for Nau Sainik Camp at Visakhapatnam from October 29 to October November 9, 2003.

(b) One officer and two cadets from Singapore for Desert Safari at Jaisalmer from November 17 to November28, 2003.

(c) 9 Officers and 69 cadets from nine countries during Republic Day Camp January 2004.

(d) One officer and eight cadets from Bangladesh NCC attended All India Yachting Regatta from January 8 to January 18, 2004 under the ageis of NCC Directorate, Orissa.

NCC has adopted community development activities with the aim of imbibing selfless service to the community, dignity of labour, importance of self-help, need to protect the environment and to assist weaker sections of the society in their upliftment.

SOCIAL SERVICE AND COMMUNITY DEVELOPMENT

13.12 NCC has adopted community development activities with the aim of imbibing selfless service to the community, dignity of labour, importance of self-help, need to protect the environment and to assist weaker sections of the society in their upliftment. This is envisaged through programmes involving adult education, tree plantation, blood donation, visit to Old Age Homes, 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.

(b) Blood Donation: Cadets donate blood as voluntary service whenever needed by Hospital/Red Cross. Approximately 2,85,000 cadets have donated blood this year.

(c) Old Age Homes: Old Age Homes in the country are patronized 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 track improvement, well cleaning etc.

(f) Disaster Relief: NCC has extended its helping hand during natural and other calamities and accidents. Over the years, NCC cadets have rendered outstanding service during floods, earthquake, cyclones, train accidents etc. and have provided the healing tough in riot affected areas.

(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 also participates actively in the AIDS awareness programme. The NCC is working alongwith UNAIDS and DG AFMS in carrying out Aids Awareness programmes throughout the country.

(i) Cancer Awareness Programme: NCC Cadets actively participate in Cancer Awareness Programmes organised at various cities.

SPORTS ACTIVITIES AT NATIONAL LEVEL

13.13 The NCC cadets also participated in the following activities conducted at the national level:-

(a) Jawahar Lal Nehru Tournament : During the year 2003 four teams viz two junior (boys), one junior (girls) and one sub junior (boys) from NCC participated in the tournament. Junior (girls) team from Kar & Goa Directorate won the Fair Play Trophy.

(b) Subroto Cup Football Tournament: NCC has been participating in this tournament for the last 25 years. Two NCC teams, one each from Kar & Goa Directorate participated in the tournament held from November 25 to December 21, 2003 at New Delhi.

(c) All India GV Mavlankar Shooting Championship: The XIII All India GV Mavlankar Shooting Championship was held at Chennai from August 22 to 28, 2003. 32 NCC Cadets (16 Boys and 16 Girls) took part in the event. This year the NCC Cadets won four Gold, four Silver and four Bronze medals. In addition, eight NCC Cadets qualified for the National Shooting Competition conducted by NRAI at Hyderabad. The XIV All India GV Mavlankar Shooting Championship will be conducted at Coimbatore in the month of September 2004.

(d) National Shooting Championship Competition: The 47th National Shooting Championship Competition (NSCC) was conducted at Hyderabad from December 7 to December17, 2003. Eight cadets from NCC participated in the event. The cadets performed commendably well and two cadets qualified to participate in the National Shooting Trials likely to be conducted during the current training year.

(e) All India NCC Yachting Regatta: All India NCC Yachting Regatta was conducted at INS Chilka from January 20 to January 27, 2004. 48 SD and 48 SW cadets from all the NCC Directorates participated. In addition, 6 cadets from Bangladesh also participated in the event.

(f) XIV National Inter State Kayaking and Canoeing Competition: XIV National Inter State Kayaking and Canoeing Championships were conducted from January 23 to January 26, 2004 at Hyderabad. Cadets from NCC Directorates AP, MP and Mah participated in this event.

(g) National Team Sailing Championship: NCC team participated in the National Team Sailing Championship-2003 held at Rishi Konda Beach, Vishakhapatnam from November 2 to November 8, 2003 conducted by Yachting Association of India (YAI).

(h) Equestrian Competition: NCC participated in Shivalik Horse Show, Chandigarh from November, 2003 and won one Gold, one Silver and three Bronze Medals. NCC team from Orissa Directorate also participated in Junior National Equestrian Championship, Pune from December 22 to December 31, 2003 and won one Gold Medal and Rs.4000/-.

13.14 Training of Staff: The following courses with vacancies as indicated were conducted for training of Associated NCC Officers (ANOs) and Permanent Instructions(PI) staff during the year 2003-04:-

(a) Refresher Course for ANOs: 16 Courses are conducted every year at Officer Training Academy (OTA) Kamptee for 1135 ANOs.

(b) Orientation Courses for PI Staff: 26 courses at OTA Kamptee for 2810 PI Staff.

(c) Pre-Commission Courses: Four PRCN courses are conducted at OTA Kamptee for 500 ANOs.

(d) Refresher Courses for Lady ANOs: Four courses 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) PRCN 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: 29 SD and 82 JD ANOs attended Refresher Course from September 1 to September 18, 2003 at INS Circars Vizag.

(g) Orientation Course for Naval PI Staff: 36 Naval PI Staff attended Refresher Course at Seamanship, Kochi from August 26 to September 13, 2003.

(h) Pre- Commission Course for Naval ANOs: Naval SD/JD ANOs underwent Pre-Commission Training at Seamanship School, Kochi from July to September 2003 as follows:-

(i) 12 SD - July 14 to September 26, 2003

(ii) 37 SD - August 18 to September 26, 2003

(i) Orientation Course for Air PI Staff: 40 Air PI Staff undertook Orientation Course of 5 days duration at OTA Kamptee from January 12 to January 16, 2004 and February 23 to February 27, 2004.

(j) Civil Defence Management Courses: A total of 27 Officers/JCO/ANOs were detailed to attend various courses conducted at National Civil Defence College (NCDC), Nagpur during the year.

(k) Life Saving Capsule for ANOs: To impart instructions in life saving techniques, a life saving capsule was conducted at OTA Kamptee from June 9 to June 12, 2003 by Rashtriya Life Saving Society India {(RLSS) (I)} Pune. Members of faculty and fifty selected ANOs from all State Directorates were trained. Similarly a capsule of four days duration was conducted for selected Lady ANOs at OTA Gwalior from November 14 to November 17, 2003.

Nearly thirty percent of those getting admitted to National Defence Academy, Indian Military Academy and the Officers Training Academy are from the National Cadet Corps.

LOGISTICS

13.15 The following improvements were carried out in the field of Logistics during the year under review:-

(a) Additional Light Vehicles for North-Eastern Region and J&K: The minor units in the North-Eastern Region have been issued 22 light vehicles. In addition, three additional light vehicles have been provided to NCC Directorate (J&K).

(b) Procurement of Service Rifle 7.62 mm in lieu of .303 Drill Practice (DP) Rifles: To meet the deficiency of Rifles for training activities, 18396, 7.62 mm rifles have been procured to replace the existing obsolete .303 Drill Practice Rifles.

(c) International Competition Rifles: Thirty-two. 22 International Competition Rifles have been provided to all the sixteen State NCC Directorates at the scale of two per Directorate to train the cadets for participation in shooting championships.

13.16 The National Cadet Corps has come up a long way from its modest beginning in 1948 as is evident from the achievements during 2003. More NCC Cadets have succeeded in getting admitted to the National Defence Academy/ Indian Military Academy/ Officers Training Academy. Their number has steadily increased to nearly 30% of the total cadet strength. Today the NCC armed with the motto of 'Unity and Discipline' is steadily marching forward to groom tomorrow's leaders.

14

Defence Relations With Foreign Countries

Russian Defence Minister Sergai Ivanov inspecting the Guard of Honour at South Block, New Delhi.

Major changes have taken place in recent years in the global security, political and strategic environment. India has responded by developing an expanding web of defence relations with a wide-range of countries.

14.1 A closer security dialogue and strengthening of defence cooperation with friendly countries remain an important objective and component of our overall defence and foreign policies. These have been reinforced by the major changes that have taken place in recent years in the global security, political and strategic environment. The emergence of a new and virulent brand of international terrorism, as one of the primary threats to domestic and international security, has brought about a greater convergence in security perceptions among nations and prompted closer security and defence-related contacts, exchanges and cooperation with a widening group of countries. Concerns about the leakage and proliferation of weapons and technologies that can be used for mass destruction and threats to the security of transport, travel and the sea lanes, have also served to bring countries closer and cooperate for their mutual security.

14.2 India too has reacted to these developments by developing an expanding web of defence relations with a wide-range of countries. These have taken the form of increased defence diplomacy in the form of exchanges of high-level defence-related visits and dialogue on security challenges, port calls etc. and defence cooperation in the form of training exchanges, combined exercises, sourcing, development, production and marketing of defence equipment, and other forms of cooperation.

14.3 Since March 2003, the Defence Ministers of France (April 2003), Japan (May 2003), Tanzania and Singapore (October 2003), Mongolia (November 2003), Brazil, South Africa and Sudan (December 2003), Russia (January 2004), Mozambique (February 2004) and China (March 2004) have visited India on bilateral visits. Outgoing visits have included the landmark visit of Raksha Mantri Shri George Fernandes to China in April 2003, his visit

to Brazil in July 2003, Ukraine and the Czech Republic in October 2003, Kyrghyzstan and Kazakhstan in November 2003, and South Africa in February 2004 for the 1st meeting of Defence Ministers of the India-Brazil-South Africa (IBSA) Forum. Raksha Mantri's participation in "Shangri La Dialogue" in Singapore in May-June 2003 also provided an opportunity for him to meet his counterparts and security experts from many countries.

14.4 Defence relations and cooperation also formed the agenda of high-level, Heads of Government/ State visits from Poland, South Africa, Sri Lanka, Hungary and Djibouti, amongst others, and outbound visits at the level of the President to Sudan, Vice President to Seychelles and of the Prime Minister to Russia, Tajikistan, Turkey and Thailand. Defence cooperation also featured during incoming and outgoing visits by Foreign Ministers and/or Ministers dealing with the defence-related industries of a large number of countries notably, Eritrea and Armenia (May 2003) and Ukraine (August 2003) as also Congressional and parliamentary representatives from the US and Russia. Defence agreements or MoUs on defence cooperation were signed with Armenia (May 2003), UAE (July 2003), Seychelles (September 2003), Tanzania, Singapore and the Czech Republic (October 2003), Hungary (November 2003) and Brazil (December 2003).

14.5 Over the years India has developed robust institutionalized security dialogues and defence consultative mechanisms at the Defence Secretary's level with a growing number of countries. Those who have met since April 2003 included the India-UK

Indian and US Navy personnel duirng a joint-exercise in Arabian Sea

Over the years India has developed robust institutionalized security dialogues and defence consultative mechanisms with a growing number of countries

Defence Consultative Group (June 2003), the India-Italy Joint Defence Committee (July 2003), the India-US Defence Policy Group (August 2003), the 1st India-Vietnam Security Dialogue, the India-France High Committee on Defence Cooperation (November 2003) and the India-South Africa Joint Defence Committee and the India-Israel Joint Working Group on Defence Cooperation (December 2003). Other incoming visits at the level of Defence Secretary took place from Nepal (August 2003) and Sri Lanka (January 2004). During the course of the year, the Ministry of Defence also participated in security dialogues led by the Ministry of External Affairs with Australia, Japan, Nepal, and the Philippines, and Joint Commissions with Indonesia, Mauritius, Myanmar, Nigeria and Oman. Defence-related visits at other levels from the Ministry of Defence also took place with Sri Lanka, Ukraine, Poland, Belarus, the Republic of Korea and Mongolia.

14.6 Visits at the level of Chiefs 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. Chiefs of Defence/ General/ Joint Staff of the Lesotho (June 2003), UAE, Thailand and US (July 2003), UK and Djibouti (October 2003), Sri Lanka (December 2003) and Vietnam (March 2004) visited India during this period. The Deputy Chief of the German Armed Forces visited in October 2003, and a Deputy Chief of General Staff from China in December 2003.

14.7 Visits at the level of Service Chiefs included the visits of the Chiefs of Army of Russia (April 2003), Israel (November 2003), Sri Lanka (December 2003) and Afghanistan (January-February 2004); Chiefs of Air Force from Iran (May 2003), Myanmar (September 2003), Kenya (January 2004), Israel (February-March 2004) and Sri Lanka (March 2004); and Chiefs of Navy of Singapore (March 2003), the UK (November 2003), and Nigeria and Kenya in February 2004 for DEFEXPO 2004 in Delhi. In addition, the Commander of the US Pacific Air Force (PACAF), the Chief of Naval Operations of the US, and the Commander of the US Pacific Fleet visited India in March-April 2003, October 2003 and January 2004 respectively.

14.8 From India, the Chairman, Chiefs of Staff Committee and Chief of Naval Staff visited the UK in July 2003, Myanmar in September 2003, France in October 2003, Vietnam in December 2003 and Thailand in March 2004 on bilateral visits; to Russia and Canada in connection with activities of the Indian Navy in June 2003, and to Singapore in November 2003 to attend the Singapore Maritime Defence Exhibition, IMDEX. The Chief of Air Staff undertook bilateral visits to Algeria in March 2003, Maldives in July 2003, South Africa in August 2003, Russia in October 2003 and Bangladesh in February 2004. He also attended the Latin American Defentec

Exhibition and Air Show at Rio de Janeiro in April 2003, participated in the Global Air Chiefs Conference in the US in September 2003 and presided over the major IAF participation at the Singapore Air Show in February 2004. The Chief of Army Staff visited Bhutan in March 2003, Nepal in April 2003, Russia in June 2003 and Singapore and Philippines in September-October 2003, Botswana and South Africa in February 2004 and the US in March 2004. Vice-Chief of Army accompanied Raksha Mantri to China in April 2003, and visited South Africa and Botswana in July 2003 and Malaysia and Indonesia in March 2004.

14.9 India has been a traditional contributor to UN peace-keeping missions and activities. Currently, India has major deployments in Lebanon (UNIFIL) since 1998, Ethiopia-Eritrea (UNMEE) since 2001 and Congo (MONUC) since July 2003 with a presence of 650 personnel, including the Force Commander, at the UNIFIL in Lebanon; 1,500 for the UNMEE at Ethiopia-Eritrea, presently the largest single Indian deployment for any UN PKO, and 243 Indian Air Force personnel and 90 others for the MONUC in Congo, constituting attack and utility helicopter units and support personnel.

India has been a traditional contributor to UN peace-keeping missions and activities. Currently, India has major deployments with the United Nations Forces.

14.10 Training cooperation and assistance, both incoming and outgoing, constitutes one of the bedrocks of our defence cooperation with a large number of countries. During the year, armed forces training institutions enrolled over 2000 trainees at various institutions of the Army, 343 at Indian Naval training establishments and 276 at Air Force training institutions. The Indian Armed Forces have military training teams at Botswana, Laos, Lesotho, Mauritius, Namibia, Seychelles, Tajikistan and Zambia.

14.11 Indian delegations have also participated in various security-related meetings on subjects such as peacekeeping operations, confidence building measures, disaster management, search and rescue, anti-piracy, counter-terrorism, etc., through mechanisms sponsored by various international organizations as also the ARF, the US, Japan and security think-tanks. Vice-Chief of Army represented the Indian Army at the Pacific Armies Management Seminar in September 2003. The GOC-in-C, Northern Command participated in a military conference in Australia in September-October 2003. The Quarter Master General (QMG) participated in an IISS-sponsored seminar on South Asian security in Oman in December 2003. The Ministry of Defence-CII organized DefExpo 2004 in February 2004 also witnessed participation by delegations from over 35 official/non-official countries including 12 at the level of Defence Minister.

14.12 A noteworthy feature in our defence cooperation with foreign countries this year has been increased frequency of activities such as joint and combined exercises with friendly armed forces. These

exercises are growing in scale and complexity. Prominent among them during the year have been combined exercises involving the Air Force with the US notably the Cooperative Cope Thunder–03 multilateral exercise conducted in Alaska in June 2003, and the Exercise Cope India–04 bilateral Dissimilar Air Combat Training (DACT) exercise at Gwalior in February 2004; joint and combined exercises involving army and air force in Tajikistan in July-August 2003; joint and combined counter-insurgency exercises led by the Army with the US at Vairengte, Mizoram in April 2003 and High Altitude Area Exercises at Leh in September 2003; and joint and combined exercises led by the Navy with US Special Forces at Ratnagiri in March 2004. Indian Navy has an institutionalized joint exercises with the US, France and Singapore. Naval exercises were conducted with Oman (April 2003), Russia (May 2003), US (October 2003), France (August 2003), UK (November 2003), China (November 2003) and Singapore (March 2004) during the course of the year. Joint exercises involving the Coast Guards of Japan and India were held off Kobe, Japan, in September 2003.

14.13 Naval goodwill visits are a conventional instrument of defence diplomacy. Major overseas deployments of the Indian Navy on good will visits during this period have included the deployment of INS Sharda to Seychelles and Mauritius in March 2003, Eastern Fleet units to Brunei and Cambodia in October 2003, the visit of the INS Ranjit and Kulish to Pusan and Shanghai in November 2003, ships to Phuket, Thailand (November 2003) and Ho Chi Minh City (December 2003), and other good-will visits to the Persian Gulf (Dubai, Doha and Kuwait in December 2003) and South China Sea areas. The Flag Officer and C-in-C, Eastern Command, visited Pusan and Shanghai to time with the visit of INS Ranjit and Kulish to these ports in November 2003. Indian naval ships participated in the LIMA-03 Exhibition at Langkawi, Malaysia, in September-October 2003, and the IMDEX 2003 at Singapore in November 2003. Coast Guard ships visited Chittagong, Bangladesh, in April 2003, Yangon, Myanmar, in May 2003, Manila, Philippines, and Ho Chi Minh City, Vietnam, in September 2003, Belawan, Indonesia, in December 2003, Mauritius in January 2004 and Maldives in February 2004.

14.14 Indian naval ships were also deployed on joint, cooperative or friendly assistance to neighboring littoral countries. The INS Nirdeshak carried out a hydrographic survey on behalf of Seychelles in November-December 2003. The INS Sharda was deployed at Galle from May 20-26, 2003 to provide relief for flood-affected areas of south and central Sri Lanka in mid-2003. Two Indian Naval Ships, Ranjit and Suvarna were deployed in Mozambique from June 23 to July 15, 2003 at the request of Mozambique Government, to provide coastal and maritime security during the African Union Summit held at Maputo from July 4-12, 2003 and provide training to over 100 personnel of the Mozambique

India's Sail Training Ship 'INS Tarangini' won admirers worldwide during her circumnavigation voyage.

Navy. A Mauritius Coast Guard ship, CGS Vigilant, was towed from Port Louis to Mumbai in April 2003 for repairs. Indian and Indonesian naval ships conducted the 3rd India-Indonesia Coordinated Patrol in March 2004. Navy-to-Navy meetings to discuss joint exercises and activities, or meetings of an operational nature were held with Sri Lanka, France, Thailand, Israel and the US.

14.15 The Indian sail training ship, INS Tarangini, had reached the last leg of its 15-month, round-the-world voyage that began at Kochi on January 23, 2003. By the end of its voyage of nearly 35,000 nautical miles touching 37 ports over 18 countries, foreign officer-trainees from 13 friendly countries including Australia, Egypt, France, Indonesia, Italy, Malaysia, Singapore, South Africa, South Korea, Spain, the UK and the USA would have participated in the voyage as part of the INS Tarangini's endeavour to 'build bridges of friendship' across the seas. The Tarangini also performed creditably at the Tall Ship Challenge Series in the Great Lakes of US and Canada. The President of India Dr. Abul Kalam welcomed INS Tarangini on its return to Kochi.

14.16 Military-level exchanges at other levels with the US, China, France, South Africa and Sri Lanka were noteworthy. With the US and France they took the form of joint exercises and training exchanges, with South Africa and Sri Lanka, mainly training and exchange of experiences, and with China they formed an important confidence-building measure. A synopsis of India's defence relations and military and security-

related exchanges and cooperation activities with individual countries, building on Chapter-I on 'The Security Environment', is summarized below.

14.17 India's historically friendly relations with China suffered a serious setback with the Chinese aggression of 1962. China has continued its occupation of Indian territory mainly in the Aksai Chin area and has claims in the Eastern Sector. Attempts to improve the bilateral relationship in the political, economic and defence-related spheres resumed after the visit of former Prime Minister Rajiv Gandhi to China in 1988. Defence exchanges with China, suspended after India's nuclear tests in May 1998, resumed in 2000 with a visit by an Indian naval ship to Shanghai in September that year.

14.18 Bilateral and defence relations received a major boost with the visits of Raksha Mantri George Fernandes to China in April 2003 and of Prime Minister Atal Behari Vajpayee in June 2003. Raksha Mantri's visit contributed to enhanced understanding and mutual confidence building and paved the way for an intensified exchange of military delegations. During Prime Minister's visit important steps were taken in addressing some of the root causes inhibiting relations, promoting trade, cooperation and bilateral relations as a whole and making a modest beginning in military cooperation. A 60-member delegation from the PLA Air Command College visited India in June-July 2003. A major training delegation visited India in September 2003, and in December 2003, Deputy Chief of General Staff, Lt. Gen. Wu Guanxu led a high-level delegation to India. From India, the GOC 4 Corps, Lt. Gen. Mohinder Singh, and an inter-services training delegation led by Air Marshal G.C.S Rajwar visited China in October and December 2003 respectively. The first India-China naval Search and Rescue Exercises were conducted off Shanghai in November 2003 during the visit of Indian naval ships INS Ranjit and INS Kulish in November 2003. Chinese Defence Minsiter, Gen. Cao Gangchuan visited India in end-March 2004, as part of a tour that also took him to Pakistan and Thailand.

14.19 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. Chief of Army Staff made a visit to Bhutan in March 2003. The existence of armed camps of the United Liberation Front of Assam (ULFA), Bodo (NDFB) and Kamtapur Liberation Organization (KLO) militants has been a matter of security concern to both Bhutan and India for some time and an issue on which the two countries has been in close touch. Attempts by the Bhutanese government to persuade these organizations to abandon their anti-India activities from Bhutanese soil and vacate Bhutanese territory did not bear fruit. In December 2003, the Royal Bhutanese Army commenced military action to close down and dismantle the camps in a determined effort to reassert its sovereignty over its territory and demonstrate good-neighborliness and sensitivity to India's

security concerns. The operations were successful in seriously disrupting the military infrastructure of hostile groups in Bhutan. Several militants were apprehended as they tried to escape the action and cross over to India.

14.20 With regard to India's other eastern neighbors, India's traditionally close defence ties with Nepal in the sphere of training, equipment supplies and cooperation in the sphere of security continued. The Chief of Army Staff of India visited Nepal in April 2003. The Defence Secretary of Nepal, Mr. Madan Prasad Aryal, visited India in August 2003. A new institutionalized bilateral forum for dialogue on defence and security-related issues under the Ministry of External Affairs, the Bilateral Consultative Group, was set up and had two meetings in 2003-04. India continues to support Nepal in its attempts to ensure peace and internal security and has endeavoured to render whatever assistance has been requested by Nepal for its security-related requirements.

Military-level exchanges with the US, China, France, South Africa and Sri Lanka were noteworthy. With the US and France they took the form of joint exercises and training exchanges, with South Africa and Sri Lanka, mainly training and exchange of experiences, and with China they formed an important confidence-building measure

14.21 Defence relations with Bangladesh continued in the form of participation in training courses and ship visits by ships of the Indian Coast Guards. Chief of Air Staff visited Bangladesh in February 2004 returning the visit of the Bangladesh Air Chief in 2003. With Myanmar, new areas of cooperation continued to be explored. Building on the port call by the Indian Navy to Myanmar in December 2002, the Chief of Naval Staff of India, Admiral Madhvendra Singh, timed a visit to Yangon with the visit of a naval ship in September 2003. Basic naval exercises were also conducted during the visit.

14.22 With Sri Lanka, mutual understanding of each other's security concerns at the political and military levels grew significantly during the year. The Chief of Air Staff of India, Air Marshal S. Krishnaswamy, had visited Sri Lanka in February 2003. Discussions on the security situation in Sri Lanka and the development of defence ties were prominent in high-level visits at the political level, including that of the Sri Lankan Prime Minister, Ranil Wikremesinghe to India, and at the military level, notably the visit of the Commander of the Sri Lankan Armed Forces, Lt. Gen. L.P.Ballagalle in December 2003. Cooperation in operational matters of mutual interest continued through institutionalized consultations such as the Operational Review Talks. The GOC-in-C, Southern Command visited Sri Lanka in October 2003. The Defence Secretary of Sri Lanka, Mr. L.D.C. Herath visited India in January 2004 for talks on ways and means to step up defence ties with India. Sri Lankan armed forces comprise the largest number of foreign trainees in Indian armed forces training institutions.

14.23 Defence and security cooperation with the Maldives continued on a steady course. The Chief of Air Staff visited the

Maldives in July 2003 on the occasion of the installation of a radar by the Indian Air Force to meet the Maldives' security needs. Training and other assistance continued.

14.24 The Central Asian Republics are an integral part of India's strategic neighbourhood. Developments in the region have a direct bearing on our security interests. India shares deep-rooted historical and cultural ties with these societies and was amongst the first to establish diplomatic relations in all the Central Asian States. During the year, it continued to expand defence ties and deepen understanding of security perspectives with individual Republics and build upon past initiatives.

14.25 Raksha Mantri's visit to Kyrghyzstan and Kazakhstan in November 2003, the first by a Defence Minister from India, building upon earlier visits to Tajikistan in April 2002 and Uzbekistan in February 2003, was an occasion to review ongoing cooperation on the supply of defence equipment and training, develop the Defence Cooperation Agreement signed during the visit of Prime Minister to Kazakhstan in June 2002 and explore prospects to stimulate and expand them further.

The Central Asian Republics are an integral part of India's strategic neighbourhood. Developments in the region have a direct bearing on India's security interests. India shares deep-rooted historical and cultural ties with these societies

14.26 Building upon the Defence Cooperation Agreement signed during Raksha Mantri's visit to Tajikistan in April 2002, defence ties with Tajikistan continued to grow in the form of training, joint exercises and technical assistance. As an expression of our growing bilateral relations, Prime Minister visited Tajikistan in November 2003. Defence relations with Uzbekistan began to gather momentum building on proposals initiated during Raksha Mantri's visit to Uzbekistan in February 2003. A Programme of Cooperation for the year drawn up during the visit of the Deputy Minister of Defence of Uzbekistan, Col. R. Niyazov, to expand defence cooperation was followed up by exchanges of visits at the military and military-technical level. The delivery of two contracted IL-78 air-to-air refueller aircraft marked a relationship with Uzbekistan that went beyond a training relationship to extend to procurements.

14.27 The Persian Gulf represents a vital part of India's extended and strategic neighbourhood, a source of energy and host to a large expatriate Indian population. Relations with Oman have been traditionally close and historically unique and extend to a desire on both sides for a deeper defence relationship. Raksha Mantri visited Oman in October, 2002. As before, training, naval interactions including joint exercises and ship visits, constituted the core of such cooperation during the year. An India-Oman joint naval exercise took place off the Western seaboard of India in April 2003. Defence cooperation featured as part of structured consultations between the two foreign offices in September 2003. Chief of Air Staff visited Oman in January 2004. A security dialogue at the level of the Secretary of the National Security Council of the Islamic Republic of Iran

A more intensive security dialogue and cooperation on defence and security matters form an important component of India's relations with countries of South-east Asia on account of their strategic location

continued with the visit of Dr. Hassan Roohani to India in February 2004.

14.28 A welcome development was growing defence interaction with the UAE. A UAE naval ship visited Kochi in March 2003. Indian defence enterprises and an Indian naval ship, INS Mumbai, participated in the IDEX defence exhibition held at Abu Dhabi in March 2003. An agreement on defence cooperation was signed during the visit of the Chief of Staff of the UAE Armed Forces, Sheikh Mohammed bin Zayed al Nahyan to India at the invitation of the Ministry of External Affairs in June-July 2003. Chief of Air Staff's visit to UAE in January 2004 has opened prospects for training cooperation between the air forces of India and the UAE.

14.29 Defence relations and cooperation between India and Israel, with an accent on defence equipment for India's security needs, has been diversifying and gaining momentum. The 2nd meeting of the India-Israel Joint Working Group on Defence Cooperation, formed to institutionalize such cooperation, was held in India in December, 2003. Israel was well represented at the DEFEXPO 2004 defence industry exhibition with a delegation headed by Israeli Deputy Defence Minister, Mr. Ze'er Boim. Other interactions between defence industries and the Armed Forces also continued.

14.30 A more intensive security dialogue and cooperation on defence and security matters forms an important component of India's relations with countries of South-east Asia on account of their strategic location, challenges posed by fundamentalist activism and terrorism in the region and India's 'Look East' foreign policy. India's increasing engagement with the ASEAN is manifest in increasing security interaction in the framework of the ASEAN Regional Forum (ARF), bilateral defence cooperation agreements, exchanges of visits, and joint activities including joint exercises and patrols with a growing number of countries of this region such as Singapore, Laos, Vietnam, Thailand, Malaysia, Indonesia and the Philippines. India hosted the 7th meeting of the Heads of National Defence Institutes and Universities of ARF member countries.

14.31 India and Singapore significantly stepped up their security dialogue and level of defence cooperation. Raksha Mantri, Shri George Fernandes, participated at the Asian Security Conference, the 'Shangri-La Dialogue' organized by the London-based International Institute of Strategic Studies (IISS) and hosted by Singapore in June 2003. A Defence Cooperation Agreement was signed in October 2003 during the visit of the new Defence Minister of Singapore, Rear Admiral, Teo Chee Hean, the first ever visit by a Singapore Defence Minister to India. The Chief of Army, General N.C Vij, paid a good will visit to Singapore in September 2003. Two Indian naval ships, the INS Brahmaputra and Kirch participated in the IMDEX 2003 at Singapore in November 2003. Chief of Naval Staff, Admiral Madhvendra Singh, also attended the event.

The Chief of Air Staff, Air Marshal S. Krishnaswamy, presided over the strong Indian Air Force participation by its 'Surya Kiran' aerobatics team and the 'Sarang' Advanced Light Helicopter (ALH) display team at the 12th Asian Aerospace 2004 exhibition and conference in February 2004. An equally vigorous level of visits at the operational level took place from Singapore as well. The latest, annual, India-Singapore joint naval exercises were held off Kochi in March 2004. The inaugural Defence Policy Dialogue presided over by Defence Secretary, Shri Ajay Prasad, and Singapore Permanent Secretary for Defence, Mr. Peter Ho, took place at Singapore in March 2004.

14.32 Defence cooperation with other countries in the ASEAN were advanced incrementally. Several important visits from and to Vietnam took place during the year. High-level delegations from the Vietnamese Navy and defence industry visited India in August 2003. CGS Sangram called at Ho Chi Minh City in September-October 2003. Senior Lt. Gen. Nguyen Huy Hieu, Vice-Minister of Defence represented Vietnam at the first India-Vietnam Security Dialogue held in India in November 2003. This was followed shortly after, in December 2003, by the visit of the Chairman, Chiefs of Staff Committee and Chief of Naval Staff, Admiral Madhvendra Singh, to Vietnam. Certain naval spares were gifted to the Vietnamese navy during the visit of INS Magar on the occasion. Sr. Lt. Gen. Phung Quang Thanh, Vice-Minister of Defence and Chief of General Staff visited India in March 2004.

14.33 Defence contacts and exchanges between India and the Philippines gained momentum the visit of the Philippines Defence Minister, Gen (retd) Angelo Reyes in February 2002 and the Philippines Chief of Army, Lt. Gen. Dionisio R. Santiago to India in August 2002. Chief of Army Staff visited the Philippines in October 2003. Indian naval and Coast Guard ships transiting through the Philippines were well received. Intelligence exchanges are becoming more regular. The potential of defence cooperation was further explored during the Ministry of External Affairs-led Security Dialogue in Manila, Philippines in March 2003 at which the Ministry of Defence also participated.

14.34 With Indonesia, defence cooperation featured in the 1st meeting of the India-Indonesia Joint Commission headed by External Affairs Minister, Shri Yashwant Sinha for India, in Jogjakarta, Indonesia, in August-September 2003. Two coast Guard ships, Varaha and Kanaklata Barua called at Belawan, Indonesia in December 2003. Indonesia was represented at the DefExpo 2004 by W.R. Argawa, Vice Chief of Naval Staff. The third, month-long India-Indonesia Coordinated Patrol, 'INDINDOCORPAT' was conducted along the Indian-Indonesia maritime border line from March 5, 2004.

14.35 Amongst other ASEAN countries, high-level visits to and from India, and ship visits from India to Thailand, increased. The Supreme Commander of the Thai Armed Forces, gen. Surayadh Chulanont visited India in July 2003. Indian naval ships Trinkat Tarasa and LCU 38 called at Phuket in November 2003. Working Groups from the

Indian and Thai navies met to negotiate an MOU on joint patrolling of the common international maritime border. Chief of Naval Staff, visited Thailand in March 2004. Malaysia evinced interest in stepping up cooperation in Air Force related training and equipment and medical training and services for its armed forces. The INS Delhi and Kora participated in the LIMA-03 Exhibition at Langkawi, Malaysia in September-October 2003. Following up on the signing of an Agreement on Defence Cooperation between India and Laos during the visit of Prime Minister Vajpayee to Laos in November 2002, Defence Secretary, Shri Subir Dutta's visit to Laos in March 2003 led to an enhanced level of military training for the Lao armed forces.

14.36 The year 2003-04 witnessed increasing contact with countries in The East Asia/Pacific region such as Japan, Mongolia, the Republic of Korea and Australia based on a realization of common security challenges arising from terrorism, proliferation of weapons of mass destruction and the security of sea-lanes in Asia. A growing appreciation of common interest in the safety and security of sea-lanes in the Indian Ocean, especially in relation to piracy and transnational crimes, built over high level visits in previous years, interaction within the framework of the ARF and other Japanese maritime security initiatives, has led to greater interaction between the Coast Guard organizations of India and Japan. These and other contacts have raised the level of familiarity with, and goodwill for, each other in the security and defence spheres. The Director General of the Japan Defence Agency, Mr. Shigeru Ishiba, visited India for talks with Raksha Mantri in May 2003. The Chief of Policy and Programme Division of the Japanese Defence Agency, Maj. Gen. Toshiro Miyashita visited India in October 2003. Japanese Maritime Defence Agency ships and Indian naval ships conducted basic exercises during a transit visit to Kochi in November 2003.

The year 2003-04 witnessed increasing contact with countries in the East Asia/Pacific region such as Japan, Mongolia, the Republic of Korea and Australia, based on a realization of common security challenges.

14.37 A beginning was made in developing defence relations with Mongolia and the Republic of Korea. The Defence Minister of Mongolia, Mr. Jugderdemid Gurragchaa, led a delegation to India in November 2003. A defence delegation also visited Mongolia and the Republic of Korea in September-October 2003 to explore scope for cooperation. Two Indian naval ships called at Pusan, ROK, in October 2003. The Republic of Korea was also represented by a delegation at the Defexpo 2004 in February 2004.

14.38 With Australia, defence relations and a security dialogue revived over high-level contacts since 2001, notably Raksha Mantri's meetings with the Australian Defence Minister at the Asia Security Conference at Singapore in June 2002 and 2003, the Australian Defence Secretary's visit to India in August 2002, the Chief of Naval Staff's visit to Australia in November 2002 and the India-Australia Strategic

Dialogue with participation by defence representatives last held in Canberra, March 2003, continued. The 3rd India-Australia Strategic Dialogue under the Ministry of External Affairs took place at New Delhi in March 2003 and drew up a road map for future visits and a framework for defence relations and cooperation.

14.39 India's strategic ties with Russia were manifest in four meetings at the level of Prime Minister Vajpayee and President Putin, including a tradition of annual summits, reflected in Prime Minister Shri Atal Bihari Vajpayee's bilateral visit to Russia from November 11-13, 2003, the Declaration on Global Challenges and Threats to World Security and Stability identifying 21st century challenges and threats such as international terrorism, illegal narco-business, extremism, developmental and environmental challenges, and reiterating a commitment to enhance bilateral cooperation and reinforce multilateralism and the role of the UN, a robust security dialogue at the level of heads of National Security Councils, mechanisms to deal with specific challenges such as terrorism and Afghanistan, the only ministerial-level mechanism for defence-industrial cooperation (the Indo-Russian Inter-Governmental Commission on Military Technical Cooperation), and a significantly large proportion of Indian army, navy and air force platforms being of Soviet/ Russian origin.

14.40 The tradition of high level defence-related visits and advanced defence acquisitions was maintained with the visit of the Russian Defence Minister, Sergei B. Ivanov to India in January 2004 and the signing of new contracts for the refurbishment and acquisition of the aircraft carrier, the 'Admiral Gorshkov' along with deck-based carrier aircraft. The Chief of Army visited Russia in June 2003 and the Chief of Air Staff in October 2003. Supplies and Transfer of Technology related to ongoing procurement contracts for the T-90 tanks and Sukhoi 30 MKI continued. In June 2003, Chief of Naval Staff presided over the commissioning of the INS Talwar, the first of 3 new frigates constructed at Russian naval dockyards. Progress on the joint development of the BrahMos cruise missile was highly encouraging.

14.41 Countries of Central and Eastern Europe have been traditional partners in the area of defence industries. Raksha Mantri's visit to Ukraine and the Czech Republic in October 2003 sought to update this relationship in the context of political and economic changes in Europe. A defence cooperation agreement was signed with the Czech Republic. Expert-level delegations from India also visited Ukraine (July 2003), the Czech Republic (October 2003) and Belarus and Poland (March 2004) to explore the possibilities for sourcing platforms, equipment, systems, spares and overhauling in these countries. The Polish First Deputy Minister of National Defence, Mr. Janusz Zemke represented Poland at the DefExpo in February 2004. An Agreement on Defence Cooperation was also signed with Hungary during the visit of the Prime Minister of Hungary to India in November 2003.

The Deputy Foreign Minister of Armenia, Mr. Tatoul Margarian signed an MoU on defence cooperation between India and Armenia during the visit to India in May 2003.

14.42 India has an active strategic and security dialogue with its principal interlocutors in Western Europe and a mutually beneficial defence relationship covering a widening range of activities including training exchanges, joint exercises and defence procurement, production and R&D. Institutional mechanisms for defence cooperation exist with France, U.K, Italy and Germany. Special emphasis was placed on long term stability of supply of equipment and technology, and on a transition from a 'buyer-seller' relationship to a partnership based on collaboration in design, R&D and production in a manner that optimally exploits complementarities for mutual benefit in our defence dialogue with these countries.

14.43 The Defence Minister of France, Mme. Michelle Alliot-Marie visited India in April 2003. A joint naval exercise, 'Varuna' witnessed by the French Navy Chief was conducted off Goa in May 2003 following up the major joint air exercise 'Garuda' conducted at Agra in February 2003 at which the French Chief of Air Staff was also present. A 90-member delegation from the French General Staff School (CSEM) visited India in May 2003. The Sixth meeting of the Indo-French High Committee on Defence was held in New Delhi in November 2003.

Royal Air Force Red Arrows aerobatic team performing at Hindon Airbase in October 2003.

14.44 The 7th meeting of the India-UK Defence Consultative Group was held in London in June 2003. General Sir Michael Walker, Chief of British Defence Staff visited India in September 2003. The First Sea Lord of the UK, Sir Alan West, visited India with Prince Charles in November 2003. The Indian Defence Secretary visited U.K. in November 2003. An MoU on the purchase of 66 Hawk Advanced Jet Trainer (AJT) from the UK was signed in March 2004 giving a major boost to the defence relationship. Lord Bach, the UK Minister of State fro Defence Procurement led a large UK delegation to the DefExpo 2004.

14.45 The first meeting of the India-Italy Joint Working Group on defence equipment-related matters met at Delhi in April 2003 prior to the regular meeting of the Joint Defence Committee in July 2003 at the level of Defence Secretary from the Indian side and Secretary General for Defence and Armaments Director of the Italian Ministry of Defence for Italy. Italian Deputy Minster for Defence, Mr. Salvatore Cicu, visited India in February 2004 for the DEFEXPO India 2004. Defence relations with other

Indo-US troops patrolling as 'buddy' during Indo-US Joint Exercises held at the Counter-Insurgency and Jungle Warfare School, Variengate.

West European countries like Germany also saw intensification. The Third Round of Indo-German Staff Talks were held from October 27–29, 2003 in New Delhi. The Inspector General of the Swedish Army, Maj.Gen. Alf Sandqvist visited India on the occasion of DefExpo 2004.

14.46 Indo-US relations have undergone a major transformation since 9/11 driven by shared values of democracy and realization of a convergence of security concerns related to terrorism, proliferation of weapons of mass destruction, security of sea-lanes in the Indian Ocean and peace and stability in Asia. India and the United States continued to pursue the goal, outlined by Prime Minister A. B. Vajpayee and President Bush in November 2001, of transforming bilateral relations aimed at imparting it a strategic content. India and the United States held regular high-level consultations on important global and regional issues continued their institutionalized dialogue on India's immediate and extended neighbourhood. In an important manifestation of the qualitative change in India-US relations, US President Bush and PM Vajpayee announced on January 12-13, 2004, steps towards engagement and cooperation in civilian nuclear, civilian space, and 'dual use' goods and technologies, and an expanded dialogue on missile defence. Although differences on proliferation issues were not fully resolved, understanding on security and strategic issues increased significantly. Differences in respective positions on the war in Iraq and the Indian decision not to contribute troops to Iraq did not have a material impact on the development of India US relations.

14.47 The two governments sustained the momentum in expanding defence cooperation. The Defence Policy Group (DPG) met in Washington in August 2003. Executive Steering Groups (ESGs) of the Air Forces, Navy and Army met in July, November and December 2003 respectively. A Master Information Exchange Agreement facilitating exchange of defence research and development information was signed by US Secretary of State, Mr. Donald Rumsfeld and Raksha Mantri, George Fernandes, in February 2004. A senior defence technology security group met in Washington in

February 2004. The 6th meeting of the Joint Technical Group on R&D cooperation met in Delhi in March 2004. The two countries stepped up training exchanges and conducted increasingly complex and sophisticated combined exercises in India and the US. US Special Operations Command Pacific (SOCPAC) participated in counter-terrorism and jungle warfare exercises in Vairengte, Mizoram, in April 2003. Indian and US forces participated in the exercises at Guam in June-July 2003 and Leh, J&K, in September 2003. The Indian Air Force participated in multilateral air exercises with transport planes at the Cooperative Cope Thunder 03-3 in Alaska in June 2003. US and Indian air forces also participated in the first bilateral Dissimilar Air Combat Exercise (DACT) at Gwalior in February 2004 with their fighter aircraft.

14.48 The continent of Africa has many countries with which India has had deep historical and political bonds, including those linked to India's stance against colonialism and apartheid and India's role in the Non-Aligned Movement. Countries in the South and West African regions have had close defence training interaction with Indian military training establishments though defence cooperation with countries in North Africa has so far been sporadic and below their potential despite some training exchanges with the Arab world in general. India is also providing troops for peace-keeping missions in Africa in Ethiopia and Eritrea (UNMEE) and Congo (MONUC). The largest number of India military training teams are deployed in Africa including helicopter training detachments in Mauritius and Namibia. 12 African countries were represented at the DefExpo 2004.

14.49 India has significant defence ties with South Africa as an important supplier of defence equipment as well as training and professional exchanges. South African Defence Minister, Mr. M.G.P. Lekota, was part of the South African President, Thabo Mbeki's official delegation to India during his state visit to India in October 2003. The 4th India-South Africa Defence Committee meeting was held in New Delhi in December 2003. Defence Minister Lekota visited India again in December 2003 to sign an Inter-Governmental Agreement of defence supplies. Defence Ministers of South Africa and India met once again in February 2004 in the context of the IBSA Forum meeting of defence ministers at Pretoria. The Chief of Air Staff visited South Africa in August 2003 and the Chief of Army Staff (COAS) in February 2004. The Vice-Chief of the Army (VCOAS) had visited earlier in June 2003. From South Africa, the Chief of the South African Army, Lt. Gen. Romano had visited India in March 2003 followed by a naval training delegation in July 2003 and the visits of the Chief of the South African National Defence Force's Command and Management System, Maj. Gen. A.C Hurribance, and the Inspector General of the South African Armed Forces. Maj. Gen. V.I. Ramlakan, in November 2003. COAS and VCOAS also visited Botswana where India has a training team.

14.50 The Defence Ministers of Tanzania, Philemon M. Sarungi and Sudan, Maj. Gen. Bakri Hassan Salih visited India in October 2003 and the Defence Minister of Mozambique, Tobias Joaquim Dai, in February 2004 timing his visit with DefExpo. An MoU on defence cooperation with Tanzania was signed during the visit of the Tanzanian defence minister. The Chief of the Tanzanian Defence Forces, Gen. G.M. Waitara attended DefExpo 2004. A Tanzanian delegation also visited India to study and develop relations of cooperation in the area of defence research and industries. The Indian Navy deployed two ships to Mozambique following a request by the Mozambique government for coastal security during the African Union Summit at Maputo in July 2003. The ships provided on-board training to the Mozambique navy during the deployment.

14.51 India's long-standing defence relations were refreshed with the visit of the Defence Minister of Sudan, opening the way for defence training and capacity building, including in the defence industries. The visit of the President of Djibouti, H.E. Ismail Omar Guelleh, followed by that of the Chief of defence Forces, Gen. Fathi Ahmed Hussein in October 2003 similarly opened prospects for defence relations, training and capacity building with Djibouti. These initiatives are to be developed.

14.52 India's traditional relationship with Mauritius, strengthened by the visit of the Mauritius PM to India in January 2003 and the visit of CNS to Mauritius in February 2003, continued in the form of defence supplies, technical support for Mauritius naval vessels and aircraft, Coast Guard related cooperation, training activities, etc. The Mauritius Coast Guard ship, CGS Vigilant, and a helicopter were repaired in India. Also in the Indian Ocean, Indian Armed Forces personnel also provide valuable training to the Seychelles security forces. Vice-President, Shri Bhairon Singh Shekhawat's visit to Seychelles in September 2003 provided an occasion for the signing of an MoU on defence cooperation with a view to promoting the relationship further.

14.53 As may be appreciated from the above, India's defence cooperation engagement with the countries of the world increased and diversified very significantly in 2003-04. The growth of defence cooperation with partners was driven by strategic, security, political and commercial considerations. They are also reflective of a perception by many nations of India as a force for peace, moderation and stability in the region and beyond. Defence relations and cooperation will remain an important aspect for our external and bilateral relations in the interest of peace.

15

Ceremonial, Academic and Adventure Activities

March Past at the Republic Day, New Delhi on January 26, 2004.

The Ministry of Defence promotes academic and adventure activities through autonomous institutions.

15.1 The Ministry of Defence encourages and promotes both academic and adventure activities through autonomous institutions which are provided regular financial assistance. These institutions are :-

(i) The Institute for Defence Studies and Analyses, New Delhi;

(ii) Mountaineering Institutes at Darjeeling and Uttarkashi; and

(iii) The Jawahar Institute of Mountaineering and Winter Sports (JIM) at 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 on problems of national security and the impact of defence measures on economic, political and social developments. 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) 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.

15.4 The Research Faculty: The Institute has a well qualified and a multi-disciplinary research faculty of over 50 scholars. They are drawn from the academia, the defence forces, the para military organisations and the civil services. Presently, there are 16 researchers under the 2002-03 fellowship programme who are engaged in individual research projects. 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 futuristic security environment. The Institute also offers facilities to foreign scholars for their research. To enrich the quality of research work of the scholars, IDSA has bilateral ties with a number of similar Institutes across the globe.

15.5 Activities: The Institute organized major international conferences such as the 6th Asian Security Conference on "United Nations, Multilateralism and International Security" from January 27-29, 2004. The conferences were attended by foreign participants including policy makers and opinion shapers from Asian countries and major powers. The 3rd India-Central Asia Regional Conference was organized by the IDSA and the Institute for Strategic and Regional Studies (ISRS) as co-sponsor in Tashkent during Nov. 06-08, 2003. The Institute organized 55 Round Table Discussions with visiting scholars, diplomats and foreign delegations/teams.

15.6 Bilateral and Multilateral Interactions: The Institute has bilateral ties and multilateral interactions with the Japan Institute of International Affairs (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 (Kazakhstan) and the Council for Security Cooperation in the Asia Pacific (CSCAP).

The Institute for Defence Studies and Analyses initiates studies and research on problems of national security

15.7 Research Orientation: The research output of the faculty is mainly published in the Institute's 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 the 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.

15.8 Books published during 2003: Books published by the IDSA during the period under review are titled "Iraq War 2003: Rise of the New Unilateralism", "Jihadis in Jammu and Kashmir: A Portrait Gallery" and "Navies of South Asia".

15.9 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 Foreign Service, the Armed Forces and the Para-Military Forces. During the year as many as three training capsules were conducted by the IDSA. The faculty members were often

invited as guest speakers at various training establishments and universities around the country.

15.10 Information Resources : The Institute is constantly upgrading its Information Resources Division, which has sizeable information resource base on national security and defence strategy subjects. It has a collection of over 48,273 books and a number of CD-ROM databases. In addition, more than 300 current journals are received, in print as well as electronic/online versions. Apart from its referred quarterly journals 'Strategic Analysis' and the monthly compendium 'Strategic Digest'. IDSA also publishes a monthly bulletin called 'Current Journal Contents' that lists the contents of about 140 core journals received in the Library. The Institute maintains a web-site (address: http://www.idsa-india.org). Details of new activities as well as progress in the ongoing activities are posted on the site.

MOUNTAINEERING INSTITUTES

15.11 The Ministry of Defence administers jointly with the concerned State Governments three Mountaineering Institutes namely Himalayan Mountaineering Institute (HMI), Darjeeling in West Bengal, Nehru Institute of Mountaineering (NIM), Uttarkashi in Uttranchal and Jawahar Institute of Mountaineering & Winter Sports (JIM), Aru (presently located at Pahalgam in J&K). The expenditure on the institute 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. A representative each of the Ministry of Defence and State Government acts as Secretary of the Institute.

Himalayan Mountaineering Institute imparts skills to negotiate different obstacles.

15.12 The HMI, Darjeeling, was founded in November 1954 by the then Prime Minister Pandit Jawaharlal Nehru to commemorate the historical ascent of Mount Everest by Tenzing Norgay along with Sir Edmund Hillary on May 29, 1953. With the establishment of this Institute, an impetus to mountaineering as a sport was provided 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. 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. However, in view of certain adverse reports regarding law and order, regular training courses conducted by the Institute were temporarily suspended from April 1996. The Institute is now conducting some courses on an ad-hoc basis. The Headquarters of the Institute has been shifted to Pahalgam since October 2003.

15.13 The broad objectives of the Mountaineering Institutes are:-

(a) to impart theoretical 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 Mountaineering Institutes conduct Basic and Advance Mountaineering Courses, Method of Instruction Course (MOI), Search and 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 Institutes detail their Instructors to conduct rock-climbing courses at the request of Mountaineering Clubs/ Organisations around the country. The Instructors also join various expeditions.

15.15 Trainees for 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 now permitted to join the courses. The Institutes conducted the following courses during the year upto March, 2004 :-

Courses	HMI	NIM
Basic	07	05
Advance	04	03
Adventure	06	05
MOI	01	01
S&R	-	01

15.16 The number of students trained in these courses in HMI/NIM are as under:-

Courses	Men	Women
Basic	495	138
Advance	154	37
Adventure	274	140
MOI	18	07
S&R	11	04

15.17 HMI also conducted five Special Adventure and four Rock Climbing Courses, in which 229 men and 44 women were trained during the period. NIM also conducted several special courses for various organizations in which 312 men including foreigners and 118 women were trained during the year. JIM has trained a total number of 10755 men and women in various ad-hoc training courses conducted by it during the period.

Budding Mountaineers : Rappelling down.

15.18 The Institutes at Darjeeling and Uttarkashi have separate stores of mountaineering equipment for loan to the Indian Mountaineering Expeditions on nominal hire charges. An Artificial Climbing Wall of international standard is under construction at NIM Campus. This would give boost to the training capability of NIM.

15.19 HMI Darjeeling conducted an expedition to Mount Everest from North Ridge (Tibet) side during April-May 2003 to commemorate the Golden Jubilee of the first successful ascent of Mount Everest in 1953. The expedition was led by the Principal of HMI, Col Vijay Singh. While all members reached upto North Col, the moment of glory came at 1230 hrs on May 21, 2003 when two members namely Shri Kushang Sherpa and Shri Nadre Sherpa, climbed the summit.

CEREMONIALS, HONOURS & AWARDS

15.20 The Ministry of Defence is responsible for organization of National functions like the Republic Day Parade, the Beating Retreat Ceremony, Martyrs' Day and the Independence Day. The Ministry also organizes Defence Investiture Ceremonies for presentation of Gallantry and Distinguished Service Awards at Rashtrapati Bhawan in association with the President's Secretariat. Following ceremonial functions were organized during 2003-2004.

15.21 Independence Day: On 15th August, 2003, the Prime Minister after inspection of Guard of Honour presented by

the three Services and the Delhi Police, unfurled the National Flag on the ramparts of the Red Fort, to the accompaniment of the National Anthem played by the Services Band. A 21 gun salute was also presented on this occasion. This was followed by the Prime Minister's Address to the Nation. The function began with the singing of patriotic songs by school children in different Indian languages and concluded with the singing of the National Anthem by the children and the NCC Cadets from schools of Delhi and release of balloons.

15.22 The following gallantry awards were announced on the Independence Day 2003:-

Ashoka Chakra	1	(Posthumous)
Kirti Chakra	7	(6 Posthumous)
Shaurya Chakra	37	(18 Posthumous)
Bar to Sena Medal (G)	7	(1 Posthumous)
Sena Medal(G)	202	(27 Posthumous)
Nao Sena Medal (G)	3	
Mention-in-Despatches	18	

15.23 Amar Jawan Ceremony: The Prime Minister laid a wreath at the Amar Jawan Jyoti Memorial, under the arch of the India Gate on January 26, 2004 to pay Homage to the memory of those who sacrificed their lives in safeguarding the freedom of the nation.

The Republic Day Parade, the Beating Retreat Ceremony, the Martyrs' Day and the Independence Day are the country's major National functions.

15.24 Republic Day Parade: The Republic Day Celebrations commenced with the unfurling of the National Flag at the Rajpath. The President's Body Guard presented the National Salute followed by the National Anthem played by the Service Bands. In a brief investiture ceremony at Rajpath, the President presented two Ashoka Chakra awards posthumously to the next-of-kin of the awardees. His Excellency Mr. Luiz Inacio Lula da Silva, President of Brazil, was the Chief Guest on the occasion.

15.25 Army's mounted columns of 61 Cavalry and ASC Cavalry led the parade. They were followed by mechanised columns comprising of T-90 and MBT-Arjun tanks, Prithvi and Agni-II missiles, Satellite Communication Vehicles marching contingents and bands of Services, Para Military Forces, Delhi Police, RPF and the NCC. The pilotless aircraft 'Lakshya', OSA Air Combat Vehicle, 'Indra-II' Radar were part of the Air Force Vehicular column. The DRDO equipment column included missiles like Agni-I, Akash, Brahmos, multi-barrel rocket system 'Pinaka' and communication system 'Samyukta'. National Bravery award winning children on elephants, tableaux and cultural items were other attractions of the parade. The tableaux and march past by children reflected the cultural diversity of the nation and presented glimpses of the progress made by the country in different fields. The parade ended with a dare-devil motor cycle display by the Border Security Force followed by a Fly-Past by aircraft of the Indian Air Force.

15.26 The following gallantry and distinguished service awards were announced on the Republic Day:

Gallantry and Distinguished Service Awards	Total	Posthumous
Ashoka Chakra	1	1
Param Vishisht Seva Medal	29	-
Kirti Chakra	2	1
Uttam Yuddh Seva Medal	5	-
Bar to Ati Vishisht Seva Medal	3	-
Ati Vishisht Seva Medal	48	-
Bar to Shaurya Chakra	1	1
Shaurya Chakra	30	14
Yuddh Seva Medal	13	-
Bar to Sena Medal (Gallantry)	4	-
Sena Medal / Nao sena Medal, Vayu Sena Medal (Gallantry)	123	25
Sena Medal / Nao sena Medal, Vayu Sena Medal (Devotion to duty)	73	3
Bar to Vishisht Seva Medal	3	-
Vishisht Seva Medal	119	1

In addition to the above, twenty awards of Mention-in-Despatches were announced on the Republic Day.

15.27 Beating Retreat Ceremony: The Beating Retreat Ceremony, organised at Vijay Chowk on January 29, 2004, brought the curtain down on the Republic Day festivities. Bands of the three Services participated in this Ceremony. The conclusion of the Ceremony coincided with illumination of the Rashtrapati Bhawan, North Block, South Block and Parliament House.

15.28 Martyr's Day Ceremony: On January 30, 2004, the President placed a wreath at the Samadhi of Mahatma Gandhi at Rajghat. Floral tributes were also paid by the Prime Minister, the Speaker of Lok Sabha and some of his Cabinet colleagues. This was followed by observance of two minutes' silence at 1100 hours as a mark of respect to the memory of the Father of the Nation.

OFFICIAL LANGUAGE DIVISION

15.29 Functions/Performance: The main functions of the Official Language Division of Ministry of Defence is to implement Official Language Policy of the Union and to ensure effective measures to promote use of Hindi in official work. The division also oversees the implementation of official language in various inter-service organizations, Defence Public Sector Undertakings as well as all other defence offices located throughout the country.

15.30 Targets/Achievements: During the year steps were taken:

(i) To reconstitute Hindi Advisory Committees - one for the Department of Defence and the Department of Defence Research and Development, and another for the Department of Defence Production under the chairmanship of the Raksha Mantri - and to organize meet-

Martyr's Day Ceremony at Rajghat

ings of these committees from time to time and implement the decisions taken therein;

(ii) To organize quarterly meetings of the two departmental Official Language Implementation Committees under the chairmanship of respective Joint Secretaries, in which representatives of three Service Headquarters and various Inter Service organizations based in Delhi participate;

(iii) To ensure implementation of the provisions of section 3(3) of Official Language Act and the rules made there under and to render translation of documents emanating from various offices, divisions and sections of the Ministry to ensure progressive use of Hindi in the official work of the Ministry.

(iv) To promote progressive use of Hindi by organizing Hindi workshops, seminars and conferences and by implementing various incentive schemes formulated by the Department of Official Language; and

(v) To nominate officers/officials for undergoing training in Hindi, Hindi stenography and Hindi typing under the Hindi Teaching Scheme of the Ministry of Home Affairs.

15.31 During the year the official language division organized Hindi workshops, official language inspections of various sections of the Ministry, nomination of 50 officials for training in Hindi, Hindi stenography and Hindi typing and also for holding meetings of the Hindi advisory committees and the departmental Official Language

Implementation Committees. Workshops were held to train officers and staff of the Ministry in noting and drafting in Hindi.

15.32 Translation: During the year under report, the requirement pertaining to translation from Hindi to English and vice-versa of various sections/divisions of Ministry of Defence were also successfully met by the Official Language Division. The translation material received in the division included general orders, notifications, resolutions, cabinet notes, documents relating to Public Accounts Committee, Republic Day/ Independence Day celebrations, investiture ceremony, audit paras, Consultative Committee and Standing Committee on Defence, annual report, papers to be laid in the Parliament and VIP references.

15.33 Hindi Fortnight: Hindi Fortnight was celebrated in the Ministry from 1st to 15th Sept. 2003. Competitions were held during the fortnight in which a large number of officers and staff participated. Cash awards and gifts were given to those who participated in various competitions. Similar fortnights were also organized in various Defence Undertakings, Inter-Service organizations and offices located throughout the country.

15.34 Monitoring/Inspection: Apart from conducting various Official Language activities within the Ministry (HQrs), the Division also undertook monitoring of such activities in the three Service Headquarters. Inter-Service Organisation, Defence Undertakings and various Defence establishments located all over the country. In addition, the implementations by various subordinate offices were also conducted.

15.35 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. For this purpose, the committee selected a number of Defence offices located at Delhi, Ghaziabad, Vishakhapatnam, Bangalore, Mysore, Wellington, Mumbai, Kolkata, Gangtok, Darjeeling and Siliguri. The Official Language Division ensured adequate cooperation from the offices concerned for these inspection meetings. The Joint Secretaries in charge of the Official Language divisions and the Director(Official Language) represented the Ministry in these meetings. Appropriate action on the issues raised/ decisions taken in these meetings was initiated and instructions issued to officers concerned for timely fulfillment of the assurances given by them to the Committee during such inspections.

16

Activities of Vigilance Units

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 and the Defence Research and 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). The Vigilance Division is responsible for regular and surprise inspection of sensitive spots, review and streamlining of procedures and initiating measures for combating corruption. The complaints received through the Prime Minister's Office and Raksha Mantri's Complaint Box are also being dealt by the Vigilance Division.

REDRESSAL OF PUBLIC GRIEVANCES

16.2 Public grievances pertaining to the Ministry of Defence as a whole are received by the Vigilance Division of the Ministry of Defence through the Department of Administrative Reforms and Public Grievances. These grievances are also received from the petitioners directly. All these grievances are reviewed on a fortnightly basis. The names of vigilance officers of various subordinate organizations of Ministry of Defence have been put on the website of the Ministry.

VIGILANCE AWARENESS WEEK

16.3 In accordance with the directives issued by the CVC, Vigilance Week was observed from October 31, 2003 to November 6, 2003 in the Ministry of Defence, all Public Sector Undertakings, the DRDO establishments and Attached and Subordinate Offices.

DEPARTMENT OF DEFENCE RESEARCH & DEVELOPMENT

16.4 DRDO observed Vigilance Awareness Week – 2003 by holding a Workshop at Aeronautical Development Establishment (ADE), Bangalore. In this, Vigilance Offic-

Public grievances pertaining to the Ministry of Defence as a whole are received by the Vigilance Division of the Ministry of Defence through the Department of Administrative Reforms and Public Grievances and also directly from petitioners.

ers, Administrative officers and other senior officers from the Southern Region participated.

DEPARTMENT OF DEFENCE PRODUCTION

16.5 Ordnance Factories: Ordnance Factories Organisation has given primacy to vigilance activity in all its units. At the corporate level a Chief Vigilance Officer (CVO) and two Group Vigilance Officers(GVOs) have been positioned at Kanpur and Avadi, Chennai. Further, each factory has got a part time vigilance officer to undertake surprise inspections, preventive vigilance measures and to aid and advise the General Managers and to act as a link with the CVO.

16.6 Hindustan Aeronautics Limited (HAL): During the year 2002-03, a detailed action plan was prepared covering all the departments with specific emphasis on sensitive areas. A total number of 1939 surprise/ routine inspections were conducted and 165 vigilance cases were instituted. 236 complaints were received and 192 were taken up for investigation.

16.7 Vigilance Manuals have been published and a Magazine "MARGADARSHAN' was released. A highly structured training course for the newly inducted 36 Vigilance Staff was conducted at HAL Technical Training Institute, Bangalore, in March 2003.

16.8 Bharat Electronics Limited (BEL): Various measures were taken to strengthen Preventive Vigilance by streamlining of procedures. Procedural Manuals such as work contract, administration and use of Website for online tendering of Work Contracts have been prepared/issued.

16.9 Bharat Earth Movers Limited (BEML): A full time Chief Vigilance Officer is in position in the Company. In all the manufacturing Units of BEML, a Vigilance Awareness Week was observed from October 31, 2003 to November 6, 2003.

16.10 Mazagon Dock Limited (MDL): MDL observed the Vigilance Awareness Week during November 2003. A Vigilance Exhibition, slogan competition on "Vigilance Awareness" and an Essay competition on "Corruption-Challenge to the Nation" were organized.

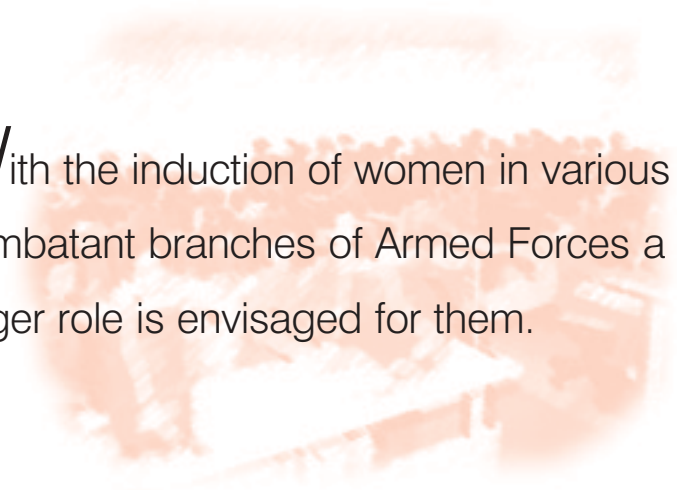
16.11 Garden Reach Shipbuilders and Engineers Limited (GRSE): GRSE carried out regular/surprise inspections of its files pertaining to various tenders and purchases for detection of irregularities.

16.12 The GRSE has published a Personnel as well as a Purchase Manual. A computerized vendor registration cell has been set up revising the system for blacklisting, installing proper measuring methods, having regular interaction with Quality Assurance Department and ensuring that officers of high integrity are put in-charge of sensitive posts. As a result, the GRSE has been awarded 10 in the scale of One to 10 of "PROBITY PERCEPTION INDEX-META PERCEPTION' published by CVC in the year 2002.

17

Empowerment and Welfare of Women

Women officers under training



With the induction of women in various non-combatant branches of Armed Forces a larger role is envisaged for them.

17.1 The role of women has been increasing steadily in the field of national defence. Women are employed in Defence Production Units, Defence Research & Development Laboratories and as Doctors and Nursing Officers in Armed Forces. With the induction of women in various non-combatant branches of Armed Forces like logistics and law, a larger role is envisaged for them.

17.2 Women Special Entry Scheme (WSES) has been introduced for women to join as officers in non-combatant branches of the Armed Forces. WSES has also been extended to widows of Service officers killed in action. Eligible women are recruited as officers on Short Service Commission basis in various branches of Army, Navy and Air Force.

17.3 Women candidates can be inducted in the Indian Army in certain identified vacancies in various Arms/Services through the Women Special Entry Scheme (Officers). The annual intake is 150 with effect from September, 2003. Presently, there are approximately 760 Women Officers serving in the Indian Army. The Government has recently sanctioned extension of their tenure upto a maximum of 14 years.

17.4 The Indian Navy first inducted women in 1992. As on date, a total of 179 (including 58 Medical Officers) women officers are serving in the various units of the Navy. These officers are assimilated into the mainstream and their promotion prospects, training as well as career progression are at par with their male counterparts.

17.5 Induction of women as Short Service Commission (SSC) officers in Flying, Technical and Non-Technical branches in the Indian Air Force also commenced in 1992. Presently there are 423 women officers in the IAF. Government has approved granting a second extension of Short Service Commission tenure upto 15 years on merit to all women officers.

17.6 In the Coast Guard Women officers are appointed to Coast Guard Headquarters,

Women officers at the Commissioning Parade at Officer's Training Academy.

Regional Headquarters and to various District Headquarters. They carry out the duties of Logistics Officers, Electronic Data Processing (EDP) Officers and various other duties, on par with male officers. Presently, lady officers are not appointed on board Coast Guard Ships.

17.7 The Ministry of Defence has taken several steps to ensure that conducive work environment and appropriate working conditions are provided to women. The manpower/ human resource development policies followed in the Ministry of Defence make no distinction/discrimination on grounds of sex.

17.8 The guidelines of the Supreme Court to prevent sexual harassment at workplace for working women are being implemented in the Armed Forces, Inter Service Organisations, Defence Public Sector Undertakings and Defence Laboratories/Establishments. 'Complaints Committees' have been constituted at the Headquarters as well as at Unit levels for redressal of complaints received from women employees and to review matters relating to the safety of women. Various rules and regulations have been amended as per guidelines laid down by the Supreme Court.

17.9 The guidelines of National Commission for Women (NCW) are also being implemented by the Women's Cell of Ministry of Defence, with assistance of 23 Nodal Women Cells spread all over the country.

17.10 Ministry of Defence has special pension schemes for the widows of Service personnel under which the widows of the Armed Forces personnel died in war/ war like operations/ counter-insurgency opera-

tions/ in incidents involving armed hostilities or on account of causes attributable to or aggravated by service, are granted Liberalised Family Pension/ Ordinary Family Pension/ Special Family Pension even after remarriage, subject to certain conditions.

17.11 Schemes for Civilian Defence Employees:

(i) For promoting the welfare of women civilian employees in the lower formations of Army, women cells have been established in Army units/establishments having sizable number of women, in accordance with guidelines issued by the National Commission for Women.

(ii) The women cells at the unit level undertake development activities for women employees as well as female family members of employees. Common room, crèche, ladies toilets manned by women safai karamcharis are provided in most of the Army units.

(iii) The work of the women cell at unit levels is monitored at the Command HQ level as well as at Army HQ. There is also a redressal mechanism for prevention of sexual harassment at work places.

(iv) For social and economic development of female members of employee's families, employment assistance, non-formal education of girls, health care measures, family planning assistance, sports and recreation facilities are also available in most of the Army units.

17.12 Financial Assistance on demise of a soldier:

(i) On the demise of a soldier, a grant of Rs.30,000/- from Army Central Welfare Fund (ACWF) and Rs.5,000/- from Army Wives Welfare Association Fund is released immediately to the next-of-kin. This grant enables the widow to overcome initial problems caused by the death of her husband. In cases where there is a dispute between the widow and her in-laws, the grant from ACWF is still given to the widow.

(ii) If an Officer/Personnel Below Officers Rank is married, his wife automatically becomes his next-of-kin even if the soldier had not published official details to this effect.

17.13 Financial Assistance – Fatal Battle Casualties of August 15, 1947 to April 30, 1999: As part of welfare measures, next-of-kin of all battle casualties during the period from August 15, 1947 to April 30, 1999 are being given Rs. 50,000/- each from the National Defence Fund and Army Central Welfare Fund. Even if the widow gets remarried, she continues to be eligible for the grant. Financial assistance upto Rs.25,000/- for Agro-based ventures/Dairy Development is provided to those war widows. Financial assistance of Rs.30,000/- is also provided for re-marriage of the widows.

17.14 Scholarship for Wards: Children of war widows are eligible for reimbursement of full fees and other expenses incurred for education. Education scholarships are provided to the children of widows of soldiers who die in harness as following:

(a) Class 1 to Class XII, Rs.5000/- per

A lady pilot of the Air Force

annum; (b)Graduation, Rs.10,000/- per annum; (c) Post Graduation, Rs.15,000/- per annum and (d) Professional Courses, Tuition Fee + Rs.5,000/- per annum maximum upto Rs.40,000/-.

17.15 Demise Grant: A demise grant of Rs.2,000/- is paid to next-of-kin of deceased Ex-Servicemen (Personnel Below Officers Rank only) through respective Record Offices. From August 1, 2004 this grant is being enhanced to Rs.3,000/-

DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DRDO)

17.16 Women are playing an important role in Defence Research and Development Organisation. Qualified women scientists and technical officers and staff are actively involved in various research projects. Many senior women scientists are heading important Research Divisions in the various Defence Laboratories/Establishments.

DEPARTMENT OF DEFENCE PRODUCTION

17.17 A separate forum of Women in Public Sector (WIPS) has been established in Defence Public Sector Undetakings (DPSUs) under the ageis of Standing Conference of Public Enterprises (SCOPE) to assist the DPSUs in harnessing the full potential of women employees, to play a catalytic role in improving the status of women in and around DPSUs. DPSUs have provided certain facilities to working women, such as crèches for the children of working women, lunch and rest rooms for them and grievances cells.

17.18 Some of the important steps taken by the DPSUs for empowerment and welfare of women are as follows:-

(i) Hindustan Aeronautics Limited (HAL): The strength of women employees in HAL as on March 31, 2003 was 1661. A sizable number of women employees are in supervisory and executive cadres..

(ii) Bharat Electronics Limited (BEL): BEL employs a large number of women in all their Units since electronic assembly work calls for a high level of precision work and women are generally considered to be the best exponents for meeting such demands.

(iii) Bharat Earth Movers Limited(BEML) : A Women Cell has been constituted at the Corporate Office comprising of one women representative from each unit. The cell is entrusted the task of looking after the grievances of women employees and to make necessary suggestions/recommendations. A Committee for protecting women employees from sexual harassment has also been constituted in the Divisions. About

Women Officers serving abroad - A lady doctor with UNIFIL Lebanon.

75 women officers and 234 women employees are working in the company as on August 31, 2003.

(iv) Mazagon Dock Limited(MDL) : A database has been 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. A Women Cell comprising of a senior Manager and lady employees has been set up to deliberate on measures to the growth and development of women employees.

(v) Bharat Dynanics Limited(BDL): There are 36 women executives and 178 women non-executives in the Company. Women employees are nominated to take part in various training and development programmes, both internal and external. Women also participate in Selection Committees and recruitment/ promotion boards.

ORDNANCE FACTORIES

17.19 Women, are actively involved in various activities of the Ordnance Factories Organisation at all levels. A number of senior women officers are presently holding important posts in the Organisation. At the shop floor level, women also operate machines, including sophisticated CNC machines, in many Ordnance Factories. A woman General Manager is in-charge of Ordnance Factory, Dehu Road.

Computer Training for Women Officers.

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, the Air Force.

3. Integrated Headquarters of the Ministry of Defence comprising Army Headquarters, Naval Headquarters, Air Headquarters and Defence Staff Headquarters.

4. The Reserves of the Army, Navy and Air Force.

5. Territorial Army.

6. The National Cadet Corps.

7. Works relating to Army, Navy, Air Force and Ordnance Factories.

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. Matters relating to ex-Servicemen including pensioners.

15. Defence Accounts Department.

16. Administration of :-

(i) the Pension Regulations for the Army, 1961 (Parts I and II);

(ii) the Pension Regulations for the Air Force, 1961 (Parts I and II);

(iii) the Navy (Pension) Regulations, 1964; and

(iv) the Entitlement Rules to Casualty Pensionary Awards to the Armed Forces Personnel, 1982.

17. Purchase of foodstuffs for military requirements and their disposal excluding those entrusted to Ministry of food and Civil Supplies (Department of Food).

18. All matters relating to Coast Guard Organisation, including :-

(i) Surveillance of maritime zones against oil spills;

(ii) Combating oil spills in various maritime zones, except in the

waters of ports and within 500 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;

(iii) Central; Coordinating Agency for Combating of Oil Pollution in the coastal and marine environment of various maritime zones;

(iv) Implementation of National Contingency Plan for oil spill disaster; and

(v) Undertaking oil spill prevention and control, inspection of ships and offshore platforms in the country, except within the limits of ports as empowered by the Merchant Shipping Act, 1958.

19. Matters relating to diving and related activities in the country.

20. The following inter-Service Organisations function under the 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 Sports Control Board.
(ix) Armed Forces Films and Photo Division.
(x) School of Foreign Languages.
(xi) History Division.
(xii) National Defence College.
(xiii) College of Defence Management.
(xiv) Ministry of Defence Library.

B. DEPARTMENT OF DEFENCE PRODUCTION

1. Ordnance Factory Board and Ordnance Factories.
2. Hindustan Aeronautics Limited (HAL).
3. Bharat Electronics Limited(BEL)
4. Mazgon docks Limited (MDL).
5. Garden Reach Shipbuilders & Engineers Limited(GRSE).
6. Goa Shipyard Limited(GSL)
7. Bharat Dynamics Limited(BDL)
8. Mishra Dhatu Nigam Limited(MIDHANI)
9. Bharat Earth Movers Limited (BEML).
10. Directorate General of Quality Assurance (DGQA) including Directorate of Technical Development & Production (Air).
11. Standardisation of defence equipments and stores including Directorate of Standardisation.
12. Development of aeronautics industry and Co-ordination among users other than those concerned with the department of Civil Aviation and the Department of Space.
13. Indigenisation, development and production of items required for defence purposes.
14. Procurement exclusive to the defence services.
15. 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 Sciences and Technology.

2. Rendering advice to Raksha Mantri and to the three services and inter-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 Government 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 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 & 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) arrangement with Universities, educational and research-oriented institutions or bodies corporate abroad to provide for foreign scholarships and the training of Indian scientists and technologies 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, 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 aspect of national security.

D. 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, 2003 ONWARDS

RAKSHA MANTRI

Shri George Fernandes	From October 15, 2001 to May 22,2004
Shri Pranab Mukherjee	From May 23, 2004 onwards

RAKSHA RAJYA MANTRI

Shri Chaman Lal Gupta	From July 1, 2002 to May 22,2004

RAKSHA UTPADAN RAJYA MANTRI

Prof. O. Rajagopal	From January 29, 2003 to May 22, 2004
Shri B.K. Handique	From May 23, 2004 onwards
Defence Secretary Shri Subir Dutta *From June 30, 2002 to July 4, 2003*	Chief of Army Staff General N.C. Vij, PVSM, UYSM, AVSM, ADC *From January 1, 2002 onwards*
Shri Ajay Prasad *From July 14, 2003 to June 30, 2004*	Chief of Naval Staff Admiral Madhvendra Singh,
Shri Ajai Vikram Singh From July 1, 2004 onwards	PVSM, AVSM, ADC *From December 30, 2001-July 31,* 2004
Secretary Defence Production Shri N.S. Sisodia *From October 1, 2002 to July 7, 2003*	Admiral Arun Prakash PVSM,AVSM.VRC,VSM,ADC From July 31, 2004 onwards
Ms. Uma Pillai *From July 9,2003 to August 1, 2004* *Shri Shekher Dutt* *From August 2, 2004 onwards*	Chief of Air Staff Air Chief Marshal S. Krishnaswamy, PVSM, AVSM. VM, and Bar, ADC From December 31, 2001 onwards

Secretary Dept. of Def. Res. & Dev. and S.A. to Raksha Mantri
Dr. V.K. Atre
From December 29, 1999 to August 31, 2004

Shri M. Natrajan
From September 1, 2004 onwards

Secretary (Defence Finance)
Shri Biswajit Banerjee
From August 1, 2002 to October 31, 2003

Financial Advisor (Defence Finance)
Ms. Somi Tandon
From October 31, 2003 to August 9, 2004
Secretary (Defence Finance)
Ms. Somi Tandon
From August 10, 2004 onwards.

SUMMARY OF LATEST COMPTROLLER & AUDITOR GENERAL (C&AG) REPORT ON THE WORKING OF MINISTRY OF DEFENCE

DEPARTMENT OF DEFENCE

Exploitation of Defence Lands: The Ministry of Defence is vested with the ownership of 4.47 lakh acres of land which are under custody, control and management of the three wings of Armed Forces and other Defence Organisations. Management of other categories of Defence Lands vests with the Defence Estates Department and Cantonment Boards. A review on the exploitation of Defence lands was carried out and salient features noticed in audit revealed that:

Revenue aggregating to Rs.1.71 crore realized from lease of Shopping Complex constructed out of Public Fund on Defence lands in 2 Commands was irregularly appropriated to Regimental Funds instead of Public Funds.

Defence Lands and buildings were under occupation by the Army Wives Welfare Association at Kolkata, a private Engineering College at Pune and Jawahar Training Ship at Mumbai without lease agreements being concluded resulting in non realization of revenue aggregating to Rs.3.58 crore.

Non-renewal of leases in respect of 510.20 acres of Defence lands occupied by two private clubs, a tea estate, several private parties and a Public Enterprise resulted in outstanding rent amounting to Rs.63.56 crore.

The Cricket Association of Bengal at Kolkata, Naval Institute of Technology at Mumbai, Army Public School at Kapurthala and two schools at Ranchi had been occupying Defence land aggregating to 64.685 acres without either paying any rent or paying rent at inappropriate rates leading to revenue aggregating to Rs.11.45 crore being forgone.

Contrary to the Rules which provide that rent of lands leased to private parties for commercial and lucrative purposes should be based on their market value, rents were fixed at levels not reflective of the market value by adopting different approaches on different occasions.

(Para 2 of Report No.6 of 2003)
Army and Ordnance Factories

Non-recovery of outstanding advance: Failure to ensure concurrent extension of bank guarantees furnished by a company with the extension of delivery period of supply of a Radio Trunk system to the Army led to non-recovery of Rs.1.75 crore as the firm had wound up in the meantime.

(Para 4 of Report No.6 of 2003)
Army and Ordnance Factories

Idle investment on manufacture of defective ammunition: Ordnance Factory Khamaria manufactured defective ammunition for a tank leading to stock piling in five Army commands thereby rendering the investment of Rs.607.43 crore on their manufacture unproductive.

(Para 8 of Report No.6 of 2003)
Army and Ordnance Factories

Accumulation of stocks of Grenades: A sizeable quantity of grenades valued at Rs.8.94 crore remained unutilized at various ammunition Depots, in absence of matching metallic detonators. Expenditure of Rs.22.08 crore on the production of these metallic detonators remained waste.

(Para 9 of Report No.6 of 2003)
Army and Ordnance Factories

Recoveries effected at the instance of Audit: An aggregate amount of Rs.1.56 crore was recovered at the instance of audit on omission to avail rebate on electricity consumed, mistakes in regulation of personal entitlements and incorrect appropriation of revenue realization to Regimental Fund.

(Para 11 of Report No.6 of 2003)
Army and Ordnance Factories

Irregular recruitment of personnel: Delay in communicating the Government's ban order on recruitment resulted in irregular recruitment of 1505 personnel by Military Engineer Services involving expenditure of Rs.12.65 crore on their pay and allowances.

(Para 14 of Report No.6 of 2003)
Army and Ordnance Factories

Unproductive expenditure on construction of residential accommodation: Delays in handing over an operationally essential site free from all hindrances to the firm entrusted with the task of construction of accommodation resulted in non-completion of work even after an investment of Rs.6.49 crore and the contract ultimately had to be cancelled.

(Para 15 of Report No.6 of 2003)
Army and Ordnance Factories

Unfruitful investment on an incomplete scheme: Inadequate soil surveys and investigations by a Garrison Engineer where sewage pipes were to be laid resulted in execution of the scheme being held up for over seven years after incurring Rs.5.36 crore besides an estimated cost over run of Rs.1.59 crore and unnecessary arbitration proceedings.

(Para 16 of Report No.6 of 2003)
Army and Ordnance Factories

Over-provisioning of Tippers: Directorate General of Border Roads failed to modify a supply order for tippers in terms of requirements and their subsequent decision to divert them to three other projects resulted in over-provisioning of 98 tippers valuing Rs.6.74 crore.

(Para 24 of Report No.6 of 2003)
Army and Ordnance Factories

Avoidable expenditure on construction of a border Road: Directorate General of Border Roads and the Chief Engineer concerned failed to suspend construction of a Border Road and sanctioned additional works even-though Army no longer required them resulting in avoidable expenditure of Rs.1.74 crore.

(Para 25 of Report No.6 of 2003)
Army and Ordnance Factories

Procurement of Laser Guidance Kits: On account of depletion of the War Wastage Reserve of Laser Guidance Kits, essential for effective bombing of targets, the Air Force had to resort to emergency purchases at higher prices from a single vendor involving an estimated additional expenditure of Rs.36.39 crore. Further, because of delay in the procurement of the related penetration bombs, the shelf life of these Kits would have reduced considerably by the time deliveries of the bombs are completed.

(Para 2 of Report No.7 of 2003)
Air Force and Navy

Mismatch in procurement of bombs and components: Expenditure aggregating to Rs.117.28 crore incurred on the procurement of a particular type of bomb and its related tail units notwithstanding, the compatible and essential fuzes had not been made available even after the lapse of considerable time. Failure to synchronize the procurement of the bombs and its integral components so as to ensure availability of adequate stocks necessitated alternative interim arrangements that were relatively less effective and reliable.

(Para 8 of Report No.7 of 2003)
Air Force & Navy

Avoidable additional expenditure on procurement of Ground Power Units: Continued procurement, without inviting open tenders, of Ground Power Units for IAF aircraft from the vendor who had been supplying these Units earlier even after identifying and approving an alternative source of supply resulted in these Units being procured at higher prices, involving avoidable additional expenditure of Rs.3.30 crore.

(Para 10 of Report No.7 of 2003)
Air Force & Navy

Procurement of unsuitable vehicles: Failure of the Air Force to properly evaluate the suitability of the vehicles procured for containerization of critical communication equipment necessitated additional purchases of alternative vehicles and transfer of the unsuitable ones costing Rs.2.70 crore to other units. This also had an adverse impact on the operational mobility of the communication equipment.

(Para 12 of Report No.7 of 2003)
Air Force & Navy

Avoidable expenditure on repairs attributable to negligence: Failure, attributable to negligence, of Air Force personnel to ensure that the correct Fuel control Units were installed on acro-engines fitted on a particular type of aircraft resulted in two of these aircraft being damaged necessitating repairs at a cost of Rs.1.88 crore.

(Para 14 of Report No.7 of 2003)
Air Force & Navy

Recoveries effected at the Instance of Audit: Recoveries aggregating to Rs.12.85 crore, representing erroneous payments to two shipyards and Hindustan Aeronautics Limited and over payments to Defence civilians of the Naval Hydrographic office, were effected at the instance of Audit.

(Para 16 and 19 of Report No.7 of 2003)
Air Force & Navy

Procurement of Sonobuoy Processing and Control Systems: The efficacy and acceptability of a sonobuoy Processing and Control System, indigenously developed at a cost of Rs.9.27 crore for processing of data relating to submarines were yet to be conclusively established to facilitate its approval and commencement of regular production to meet the Navy's operational requirements.

(Para 17 of Report No.7 of 2003)
Air Force & Navy

Avoidable additional expenditure on refit of a Naval Ship: Award, in violation of established tendering procedures, of a contract relating to the refit of a Naval ship to a firm which was not the lowest tenderer and even when its offer was not complete in all respects was prima facie biased and resulted in an estimated additional expenditure of Rs.1.42 crore.

(Para 18 of Report No.7 of 2003)
Air Force & Navy

DEPARTMENT OF DEFENCE PRODUCTION AND SUPPLIES:-

Machine Tool Prototype Factory: Machine Tool Prototype Factory at Ambernath is the designed factory for production of components of T-72 tanks/Infantry Combat Vehicles, production of items relating to trucks, weapons, machine tools and miscellaneous items. Review by Audit of the performance of the factory revealed a number of deficiencies in:

Sub-optimal utilization (weapon items: 40 to 66 percent, components of tanks and vehicles: 24 to 65 per cent and machine tools miscellaneous items: 41 to 83 per cent) of available man-hour capacity in production.

Gross under-utilisation of machine hours in the absence of matching manpower.

The factory offloaded jobs to trade valuing Rs.0.73 crore even though it had the capacity to do so.

Inspite of non-utilisation of available manhors, the factory deployed personnel on overtime involving payment of Rs.8.91 crore.

Production of sub-standard machines costing Rs.6.47 crore meant for sister factories resulting in their non-utilisation.

Shortfall in achieving targets in respect of civil trade ranged from 32 to 86 per cent.

(Para 28 of Report No.6 of 2003)

Army and Ordnance Factories

Defective Manufacture of Shells: Rejected lots of ammunition manufactured by Ordnance Factory, Chanda valued at Rs.7.18 crore were held in stock for over seven years without rectification. More shells worth Rs.10.89 crore manufactured during 2000-2001 were also rejected requiring urgent corrective action.

(Para 30 of Report No.6 of 2003)

Army and Ordnance Factories

Idle investment on procurement of defective navigation equipment: Ordnance Factory Medak failed to adhere to the storage, transportation and operational requirements of an import contract for a navigation equipment. This equipment was not rectified within the warranty period resulting in unproductive investment of Rs.2.54 crore.

(Para 32 of Report No.6 of 2003)

Army and Ordnance Factories

Procurement of defective Track Assemblies: Issue of bulk production clearances for manufacture of track assemblies worth Rs.1.33 crore for tanks even before establishing the acceptability of the pilot samples resulted in their rejection. Their replacement is doubtful.

(Para 33 of Report No.6 of 2003)

Army and Ordnance Factories

Bharat Earth Movers Limited and its subsidiary Vigyan Industries Limited included inadmissible items as part of 'emoluments' and applied incorrect formula for the payment of ex-gratia under voluntary retirement scheme. This resulted in an extra expenditure of Rs.13.52 crore from 1992-93 to 2001-02.

(Para 8.2.1 of Report No.3 of 2003

(Commercial)

DEPARTMENT OF DEFENCE RESEARCH AND DEVELOPMENT

Avoidable import of Directional Solidification furnace: Defence Metallurgical Research Laboratory imported a furnace for Rs.96.17 lakh despite prior knowledge of difficulty in developing technology on it in comparison to the efforts required to develop the technology on the existing old furnace thereby resulting in avoidable expenditure.

(Para 22 of Report No.6 of 2003)

Army and Ordnance Factories

Procurement of defective equipment: Equipment, essential for ensuring secrecy in communication, procured for the Air Force at a cost of Rs.4.47 crore remained unutilized for over four years because of several shortcomings noticed in the course of the evaluation trials that were conducted without reference to the Qualitative Requirements and had to be backloaded to the manufacturer.

(Para 11 of Report No.7 of 2003)

Air Force and Navy

Delay in installation of an underwater Optical Imaging System: An Underwater Optical Imaging System procured in the year 1992 for installation on board a Marine Acoustic Research Ship for the collection and study of data from the sea bed had not been installed and commissioned even after a decade, thereby defeating the objective of its procurement, besides rendering an investment of Rs.0.78 crore largely unproductive.

(Para 21 of Report No.7 of 2003)

Air Force and Navy

Establishment of Torpedo Test Facilities: Benefits expected by the establishment of a facility for the testing of developmental torpedoes in sheltered waters by a Laboratory of the Defence Research and Development Organisation had not been realized even after more than 12 years and investments aggregating to Rs.7.96 crore and the Laboratory concerned continues to depend on the Navy and foreign ranges for its testing requirements,

(Para 22 of Report No.7 of 2003)

Air Force and Navy