

DEFENCE**I. History of the Indian Armed Forces**

The present Armed Forces of India have evolved from the military forces created by the English in this country, first under the East India Company from about A.D. 1600 and later under the British Crown from 1858 to 1947. These forces are the Army, the Navy and the Air Force. The Army being the oldest service will be dealt with first.

The history of the Army of India from 1600 onwards falls into four periods, viz., (i) from 1600 to 1858 under East India Company; (ii) the history of the armies of Bengal, Madras and Bombay Presidencies from 1858 to 1895; (iii) from 1895 to 1947 and (iv) lastly the history of the Army of free India from 1947 onwards.

(i) Army under the East India Company (1600—1858) :

When the East India Company established factories or trading posts in India during the first half of the seventeenth century it enrolled guards for their protection and for adding to the dignity of the chief officials. Their organization was improved from time to time, and from them sprang the Company's Native and European troops. But the first regular enrolment of sepoys as such did not take place in Madras till 1748 when Major Stringer Lawrence recruited some Indians on behalf of the Company to fight against the French.

The French had enlisted some Indian soldiers as early as 1676 to supplement their scanty force of Europeans in Pondicherry and in 1740 they had a military force consisting of a body of European infantry and 4,000 to 5,000 Indians armed in the European fashion. Their successful use of this instrument of war led Robert Clive to emulate their example and to give to the Indian soldiers of the English Company a new discipline of the western type.

The Company had three separate trading organizations in the Presidencies of Bengal, Madras and Bombay, and communication between these by sea and land was long and tedious. Their geographical situation thus gave rise to local or Presidency armies, practically independent of each other. These armies had two portions each—the European and Indian or 'native' as it was called then. They were organized into infantry, cavalry and artillery units, the latter mostly

from companies of Royal Artillery transferred bodily from England to the service of the Company.

The Indian portion of the Presidency armies was recruited from the countless military adventures with whom India was swarming at the time. Clive organized his battalion of Indian troops, nicknamed *Lal Paltan*, on European model. After his success at Plassey, he raised a second battalion, his example being followed in Madras where six battalions on similar model were raised, and a little later in Bombay, where independent companies of Indian soldiers (later formed into battalions) were recruited. The notable difference between Clive's system and the one in vogue earlier lies in the fact that whereas hitherto the Indian troops organized in companies were under the command of their own Indian officers, he introduced a British element at the officer level, while still retaining the Indian officers, including an Indian Commandant. As the system gradually evolved, the Indian battalions came to have only British Commandants and British Company Commanders in due course.

The forty years following the Battle of Plassey saw the expansion of the Company's rule in every direction, and its Indian troops proved a formidable factor in the achievement of this result. The experience gained in these operations was constantly utilized for developing and improving the Company's armies in the three Presidencies. The Indian troops were formed into brigades, artillery was increased, a Commander-in-Chief was appointed for each Presidency and the military administration improved in various ways. By 1796, when a general reorganization of these armies was carried out the Company had about 13,000 European soldiers and 57,000 Indian troops.

The French had confined their recruitment chiefly to the people of southern India. The British cast a wider net and enlisted Pathans, Rohillas, Rajputs, Arabs, Abyssinians and in fact men from some other classes also which were later regarded as belonging to non-martial races of India. In Bengal, besides the mixed classes of adventurers who ranged themselves under British standard, the Company gradually drew recruits from Oudh (Avadh), and from 1776 onwards the Indian army in Bengal was almost entirely recruited from the tract of country between the Ganga and the Ghaghara, the men being described as mostly Brahmins and Rajputs, and as 'a brave, manly race of people'. Though their discipline and training was by no means perfect, both were infinitely superior to anything of the kind possessed by their opponents. With the passage of time, some Indian rulers tried to adopt the western system of training for their armies but could not copy it in entirety for want of sufficient number of European officers and equipment. After the defeat of the French by the British in India,

many French officers were available for employment by the Indian princes to train their armies to fight against the British. But for various reasons these forces never came to the standard attained by the Indian troops of the Company. Nevertheless, though not so well led, equipped or organized, the soldiers of the Indian princes were second to none in their courage, bravery and disregard for personal safety.

Reorganisation of 1796 : The first reorganization of the armies of the East India Company took place in 1796. As already remarked it had at this time only 13,000 European and 57,000 Indian troops. Of the latter Madras and Bengal had 24,000 each and Bombay 9,000. By this reorganization, the strength of the Indian troops was reduced, but the number of British officers per unit was increased. As a result of this, the authority and dignity of the Indian officers, which had already decreased under Clive's system was still further diminished.

Another important change was that in place of independent battalions then in existence, double-battalion regiments were formed for the first time in Indian infantry. This was far from satisfactory. The Colonel Commandant of the regiment, who had direct control over both battalions, was invested with excessive authority to the detriment of the power and initiative formerly exercised by the battalion commanders, and it was thought desirable that the battalion commanders should continue to exercise it.

These Indian infantry regiments were formed by linking existing battalions and amalgamating half battalions of reduced regiments with them. This naturally led to renumbering of units within their armies.

The next sixty years saw immense changes in India which were reflected in the Army. During this period, vast territories had been annexed, the larger part of India had become directly subject to the Company and paramountcy established over the princely states which were controlled by the Company's agents. These events necessarily resulted in large increase in the Presidency armies and changes in organization.

Reorganization of 1824 : The unsatisfactory nature of the organization of 1796 was realized and there was a further reorganization in 1824 by which double-battalion regiments were finally broken up into new single battalion regiments which were numbered according to the date on which they had been, originally raised. Another defect of the 1796 reorganization was, however, allowed to continue namely, the high proportion of British officers in Indian infantry and cavalry units. The enrolment of irregular cavalry was copied from the Indian rulers who always had levies of horse attached to their armies. These

horsemen were not clothed or armed by the state, but were on the *silledar* system, each furnishing his own horse and equipment. There were only two or three European officers with each of these corps. These irregular cavalry units (finally abolished in 1921) were in addition to the regular cavalry units officered on the full European scale.

Local Corps : Local corps, more rough and ready than the regular Army, were raised from time to time for service in their particular parts of the country. In 1846, a Frontier Brigade was raised in the Sutlej States for police and general purposes ; the Corps of Guides was formed, and in 1849 the Punjab Irregular Force was raised. Some other local forces were (i) a contingent raised in Nagpur on the annexation of that place in 1854, (ii) the Oudh Irregular Force raised after Oudh was annexed and (iii) a contingent maintained in Hyderabad by the Nizam but commanded by the Company's officers and available for service elsewhere. Besides these forces, many Indian states were under treaty obligations to maintain contingents of troops representing military aid they were supposed to render to the British Government.

On the eve of the Great Revolt of 1857 the Company's armies comprised the following :

BRITISH				
	Cavalry	Artillery	Infantry	Total
Bengal	1,366	3,063	17,003	21,432
Madras	639	2,128	5,941	8,708
Bombay	681	1,578	7,101	9,360
TOTAL	2,686	6,769	30,045	39,500

INDIAN					
	Cavalry*	Artillery	Sappers and Miners	Infantry**	Total
Bengal	19,288	4,734	1,497	1,12,052	137,571
Madras	3,202	2,407	1,270	42,373	49,252
Bombay	8,433	1,997	637	33,861	44,928
Local forces and contingents	6,796	2,118	..	23,640	32,554
"	(unclassified)	7,756
TOTAL	37,719	11,256	3,404	211,926	272,061

* Including Company's European troops.

** Including irregulars, and local units not in forces or contingents.

Of the total number of European troops in India about 24,263 were Royal Troops and the remainder belonged to the Company's service. The Indian troops outnumbered the Europeans by nearly right to one.

Revolt of 1857 : There had been some rebellions in the Indian Army on a small scale even before 1857, e.g., in 1794 the Bengal sepoys had revolted for higher pay and gratuity, two years later the European officers had combined to protest against the abolition of *bhatta*. In 1806 there was a revolt in the Madras Army and in 1809 European officers of the Madras Army were guilty of rebellious conduct. In 1824 the Bengal troops had revolted at Barrackpore. But the most important of all these was the rising of 1857 in which nearly the whole of the Bengal Army, regular and irregular, revolted.

We are not concerned here with the nature and causes of the Great Revolt excepting its political and military effects which were far-reaching. On November 1, 1858, at a *darbar* held in Allahabad by the Governor-General, a Royal Proclamation was issued in the name of the Queen by which the Crown assumed the direct control over the Government of India. Immediately after this, attention had to be paid to the military problems, namely the status, organization and proportion of the European and Indian forces of the late Company.

(ii) Presidency Armies, 1858-95. Reorganization of European Troops : As a result of the Royal Proclamation the Company's European troops were transferred to the service of the Crown, and the distinction between "Royal troops" and the "Company's European troops", which had existed for more than a hundred years disappeared. This reorganization of British forces (amalgamation of the Company's white troops with the corresponding units of the Royal army) was completed by 1860. It was decided that the number of such troops in India should not exceed 80,000. These were to be lent to and paid for by the Indian government. The Government of India was responsible not only for the pay and allowances of these troops for the period of their service in India, deferred pay or gratuity, transport charges and non-effective charges (pensions etc.) but also for a capitation rate which was based on the charges for enlisting and training the recruits in England, the pay of young officers before they went to India, a share of the cost of educational establishments and the expenses of men sent home after the expiry of their time or invalidation. It was mainly these charges that led to the accumulation of India's national debt in the coming years.

Reorganization of Indian Troops : The reorganization of Indian troops begun in 1861, reflected the British distrust of Indians. Some cavalry and infantry units were disbanded, others were amalgamated and all the Indian artillery, with a few exceptions, was abolished. The recruitment of *Poorbias* was completely stopped and the proportion of Europeans in the Army increased. The Madras and Bombay Armies, the Hyderabad Contingent and the Punjab Frontier

Force needed no reconstruction as they had remained loyal during the Revolt, but since reorganization was general, the principles accepted were applied to them also. All the cavalry was organized on the *silledar* system except in Madras. Cavalry and infantry regiments were given six European officers each instead of three in the pre-Revolt period.

The final result of these reforms which were completed by 1864 may be summarized as follows :

The armies in India were reduced in strength—whereas on the eve of the Revolt their strength was 3,50,538, it was now only 2,05,000 men of whom 65,000 were British. There was thus a decrease of about 40 per cent in the total strength but an increase of 60 per cent in the number of British troops. Before the outbreak of the Revolt, the Indian troops outnumbered the Europeans by 8 to 1, now they were just a little more than double of the European troops *i.e.* 2.15 to 1.

The question of officering the Indian armies was solved by the institution of three 'Presidency Staff Corps'. Hitherto, the British officers of Indian armies belonged to regimental cadres with a right to promotion in regimental succession but no claim to equality of promotion with officers of other regiments. To remove this cause of grievance, promotion in the new Staff Corps was to be governed by the length of service.

Although from 1860 to 1878 there were some expeditions on the north-west and north-east frontiers of India and a couple of small wars (the China War of 1860 and the Abyssinian War of 1867-68), the period was on the whole comparatively peaceful for the Indian armies and the new system worked successfully. A few reforms were, however, introduced, such as an increase in the emoluments of Indian officers and men, revision of pension rules, the issue of new types of rifles in 1874, and the introduction of certain changes in dress and uniform.

Army Organization Commission : The Afghan War of 1878-80, involving the employment of a considerably large army revealed many defects in the military system of India. In 1879, therefore, Lord Lytton constituted the Army Organization Commission to devise means for reducing military expenditure and for improving the efficiency of the armies for war. At this time the British troops numbered about 65,000 and the Indian troops about 1,35,000.

The immediate outcome of the Commission's recommendations was the reduction of four regiments of Indian cavalry, eighteen of Indian infantry and the addition of one British officer to each of the remaining regiments. Instead, the strength of cavalry and infantry regi-

ments was increased¹. Eleven batteries of British artillery were also reduced. The long-term recommendations related to the abolition of the Presidency armies and led eventually (in 1894) to the unification of the three armies into one Army of India. The principle of segregation by eliminating Punjabis from Hindustani regiments and *vice versa* and the replacement of mixed troops and companies was introduced.

Recruits were now enrolled for a group and in 1886 Indian Infantry battalions (hitherto called Regiments) were linked together in groups of two or three battalions with a permanent regimental centre at which it was intended that one battalion of the group should always be located.

In 1886-87, a reserve for the Indian armies was formed in which there were two classes—an active and a garrison reserve. The reserve system (based on voluntary service) introduced at first for the infantry, was later extended to cavalry, artillery and sappers and miners.

After the Great Revolt the accepted policy for about 25 years had been the reduction of Indian armies to a strength sufficient for internal security and local defence of the border. But the Panjdeh incident of 1885 led to the consideration of a contingency in which a war with a great European power like Russia might have to be undertaken. To provide for such a contingency, it was decided to increase the Army in India. The first measures adopted to this end resulted by 1887 in an increase in the British troops of 10,600 men and in the Indian troops of 20,000 men.

A considerable portion of the augmentation was absorbed in the increased garrison of Burma necessitated as a result of the annexation of Upper Burma, after the Third Burmese War in 1885. The Burmese War also resulted in the raising of levies and military police composed of Gurkhas, Punjabis and Hindustanis for service in Burma. Another measure consequent on the Burmese War was taken in 1893 when in order to improve the material of the Madras Army for service in Burma, local battalions were formed of Sikhs, Punjabi Muslims, Gurkhas and other classes till, in the course of time, eight battalions of the Madras Army were thus reconstituted.

Imperial Service Troops : In the Afghan War of 1878-80 contingents from some of the Indian states of the Punjab did good service in the Kurram valley, and when war seemed imminent in 1885, the native princes of India placed the resources of their states at the disposal of the Government of India. From this offer arose (in 1889) the body of 'Imperial Service Troops', which were under the

1. In cavalry regiments the strength was increased from 499 to 550 all ranks and in infantry from 712 to 832 in 1882.

control of the states furnishing them and were commanded by Indian officers, subject to the supervision of British inspecting officers responsible to the Foreign Department of the Government of India. Besides the execution and supervision of military works formerly carried out by the Department of Civil Public Works was transferred between 1882 and 1890 to a separate Military Works Department, and later in 1899 completely militarized as the Military Works Service.

(iii) **Indian Army from 1895 to 1947** : As recommended by the Army Organization Commission of 1879, the Presidency Armies were abolished with effect from April 1, 1895, by an order of the Government of India in the Army Department dated October 26, 1894. The Presidency Staff Corps had already been united in an Indian Staff Corps in 1881. The Army was divided into four territorial Army Commands as under:

- (i) Punjab (including the North-West Frontier and the Punjab Frontier Force).
- (ii) Bengal.
- (iii) Madras (including Burma).
- (iv) Bombay (including Sind, Baluchistan and Aden).

Each Command was placed under a Lieutenant-General who was directly under the Commander-in-Chief of India. All the work previously done by the Military Departments of the Presidency Governments was now to be done by the Military Department of the Government of India wherever it could not be disposed of by the Command Officer of a Command or by the Commander-in-Chief (C-in-C), India.

Each Command was divided into 2 or 3 First Class Districts and a number of Second Class Districts. The strength and distribution of the Army in India in 1895 after unification was as shown in the chart below :

Strength and Distribution of the Army in India in 1895

Command	Indian Troops				Approximate Strength of Forces in the Command		
	Cavalry Regiments	Artillery Battalions	Sappers and Miners	Infantry Battalions	British	Indian	Total
Punjab	15	5	..	37	19,109	42,384	61,493
Bengal	9	2	1	22	23,239	30,819	54,058
Madras	3	..	1 (& 1 Coy)	32	14,669	30,405	45,074
Bombay	7	2	1	26	15,556	30,055	45,611
TOTAL	34	9	3 (& 1 Coy)	117	72,573	133,663	206,236

The above figures do not include the following local corps which were directly under the Government of India and not under any Command :

The Hyderabad Contingent
 Regiments of Central India Horse
 The Malwa Bhil Corps
 The Bhopal Battalion
 The Deoli Irregular Force
 The Erinpura Irregular Force
 The Meywar Bhil Corps
 The Merwara Battalion.

The forces in the various Commands were to be localized for service in those Commands, and the Indian units included in them, did, in fact, retain the numbers and designations which they held in the old Presidency armies.

Thus, although the change effected in 1895 had brought all the forces under the direct control of the C-in-C, India, the new Commands were as separate from each other as the Presidency armies had been. The Command areas and District areas were fixed without any reference to a plan of adapting each formation to the requirements of war. More drastic measures were needed to bring about a complete unification of the Army and to make it fit for playing an effective part in a major war. These measures or at least some of them came in the time of Lord Kitchener who took up his appointment as C-in-C in India in November 1902, and immediately commenced consideration of a scheme for reorganization and redistribution of the Army in India. Some of the proposed changes of his scheme were of a long-term nature but he carried out the following important changes, in less than a year after his arrival in India. These were :

(i) In January 1903, the designation "Indian Staff Corps" as applied to the British officers with the Indian portion of the Army was abolished and they were more appropriately designated "Officers of the Indian Army", since most of them were employed on regimental rather than staff duties, henceforth the British officers and rank and file of Indian units all belonged to "the Indian Army".

(ii) In the same month, Burma was separated from the Madras Command and constituted an independent military charge called the Burma Command.

(iii) In April, the Hyderabad Contingent was broken up—its cavalry regiments were transferred to the Bombay Command while its infantry regiments were transferred to the Madras Command.

(iv) In April again, the Punjab Frontier Force and Frontier

district and its territorial area were distributed between Peshawar, Kohat and Derajat districts.

(v) From October 2, 1903, all units of the Indian Army were given new designations and numbers—the units being renumbered in one sequence according to their arms (excluding Gurkha battalions numbered separately) and all designations of the old Presidency armies were omitted.

These changes brought about an almost complete unification of the Indian Army, but more changes were to follow based on four great principles enunciated as under :

- (i) That the main function of the Army was to defend the North-West Frontier against an aggressive enemy.
- (ii) That the Army in peace should be organized, distributed and trained in units of Command similar to those in which it would take the field in war.
- (iii) That the maintenance of internal security was a means to an end, namely, to set free the Field Army to carry out its functions.
- (iv) That all fighting units, in their several spheres, should be equally capable of carrying out all the roles of an army in the field, and that they should be given equal chances, in experience and training, of bearing these roles.

In conformity with the above principles some changes were introduced by 1905 when the Army in India was distributed into the three Commands; Northern, Western and Eastern and the 9th Secunderabad Division, and the Burma Division. This organization was again replaced by a new one, and by 1908 we find the Army in India divided up as follows into two armies only :—

Northern Army—

- 1st (Peshawar) Division.
- 2nd (Rawalpindi) Division.
- 3rd (Lahore) Division.
- 7th (Meerut) Division.
- 8th (Lucknow) Division.
- Kohat, Bannu and Derajat Brigades.

Southern Army—

- 4th (Quetta) Division.
- 5th (Mhow) Division.

6th (Poona) Division.

9th (Secunderabad) Division.

Burma Division.

Aden Brigade.

At the head of each Army was a General Officer responsible for command, inspection and training only—all administrative duties were performed directly under Army Headquarters, there being little, if any, decentralization in such matters.

Lord Kitchener's scheme had not been completely carried out when the World War I broke out in 1914, but the reforms which he had set in motion and the principles enunciated by him and observed even after he had left, enabled the Indian Army to take up its responsibilities as promptly and efficiently as it did. The huge expansion which took place from 155,523 men in August 1914, to 573,484 in November 1918², speaks for itself. Large Indian armies served outside India in France, Gallipoli, Mesopotamia, Persia, Aden, Africa, Black Sea, China, Egypt, Salonika and elsewhere and fought the Empire's battles with great credit. Though India made enormous contribution to the war efforts in men, money and material, the cost of Indian troops sent abroad was met by His Majesty's Government.

From 1918 to 1939 : World War I revealed defects in the organization of the Army in India. The most serious of these perhaps was that the ancillary services of the Army were either non-existent or under-developed. For this reason, all Divisions were not capable of immediate mobilization. The lessons of the war were not lost upon the authorities and they prepared plans of reorganization and reform along with those for demobilization after the war. The task could not be commenced immediately after the armistice as large bodies of Indian troops continued to serve overseas in the mandated territories, while the Government of India was further pre-occupied with the outbreak of the Third Afghan War and operations in Waziristan.

However, by 1923, demobilization had been carried out and the strength of the Army brought down to its peace-time level of 75,924 British and 128,901 Indian troops.

In 1919 a strong committee had been appointed with Lord Esher as its president to enquire into and suggest changes in the administration and organization of the Army in India. As, however, the terms of the Committee were limited, a general scheme of reorga-

2. This number is for only combatants of the Indian Army as in November 1918, and excludes Indian combatants in British artillery and British Machine Gun Companies, and casualties during the period of the War. The figure for the total number of men supplied by India up to the armistice was more than 14 lakhs. (*India's Contribution to the Great War*, Calcutta, 1923, p. 295.)

nization having a wider scope than the recommendations of the Fisher Committee was evolved at the Army Headquarters under Lord Rawlinson as the Commander-in-Chief. Apart from many improvements in the terms of service of the Indian ranks, clothing and housing, and pay and pensions, calculated to secure contentment and efficiency, the following were some of the other important changes introduced in the Army reorganization from 1920 to 1923 :

(1) The abolition of the *silledar* system from the Indian cavalry. Henceforth every cavalry man was provided with his mount and equipment by the Army.

(ii) Indian infantry was reorganized on the lines of the British infantry with active and training battalions linked together and a new system of "Reserves".

(iii) During the Great War, an Indian Defence Force had been organized in which male European British subjects, resident in India, were enrolled. Indians were also allowed to join this volunteer force if they satisfied the prescribed standards. This was meant as a second line force ready to take the place of a portion of the Regular Army for local defence. The maximum number of enrolment in the European branch of the Indian Defence Force amounted to 44,500. The Indian branch had a maximum of 5,634 men enrolled, including men subsequently rejected, but this branch of the Defence Force as a whole never became effective. In 1920, the Indian Defence Force was split into two; a voluntary organization called the Auxiliary Force, India, for European subjects and the Indian Territorial Force for non-European British subjects. The University Training Corps was organized as a part of the Indian Territorial Force.

(iv) The Imperial Service Troops, provided by the Indian princely states, were renamed the Indian States Forces and divided into Class A, Class B, and Class C Troops according to their scale of equipment. **Indian Military Academy :** In November 1930, the Indian Round Table Conference met for its first session. It set up, *inter alia*, a Defence Sub-Committee, which recommended a substantial increase in the rate of Indianization of the officer rank of the forces in India; the establishment of a military college in India for the above purpose; and the reduction of the number of British troops in India "to the lowest possible figure."

The first recommendation was accepted by the British Government and resulted in the arrangement for Indianizing the equivalent of one complete division and a cavalry brigade. In pursuance of the second recommendation, the Indian Military Academy was opened at Dehra Dun on October 1, 1932. It was, however, not possible for the British Government to accept the third recommendation, *viz.*, to reduce the

British troops in India.

While political pressure accelerated Indianization, the financial difficulties resulted in the disbandment of some Indian units. Two Indian infantry battalions and two railway companies of Sappers and Miners, were reduced. Moreover, the Indian Pioneers, too, were disbanded with effect from October 1, 1932, on the initiative of the Secretary of State for India. It was calculated that their reduction would lead to a saving of rupees twenty lakhs per year, while effecting a greater homogeneity in the Engineer Services at the same time.

By 1937, the regular and irregular forces in India appeared, numerically, quite considerable, but as they had not attained mechanization they compared unfavourably with the armies of other countries whose mobility and speed had increased beyond recognition since 1918 owing to the use of mechanical transport. The acceptance of the obligation for despatch of troops to man the garrisons overseas had further weakened the potential of the Indian Army for the defence of the country. This was reflected in the scaling down of the plans for the defence of the North-West Frontier.

Tasks of the Army : There existed since 1931 the 'Pink Plan' for an advance into Afghanistan in the event of hostilities. This was later abandoned and its place taken by a new plan. The Plan of Operations 1938, envisaged only an active defence of the North-West Frontier. Under this Plan, the tasks allotted to the defence forces were :

- (i) To provide for the defence of the North-West Frontier against external aggression and to maintain the existing position *vis-a-vis* the tribes.
- (ii) To maintain law and order in India and to suppress disorder which, in the worst case, might amount to rebellion.
- (iii) To ensure the safety of strategic lines of communications in India.
- (iv) To defend the ports and coast of India against attack.
- (v) To provide a General Reserve at the disposal of the Army Headquarters.
- (vi) To provide forces which might, under certain conditions, be employed overseas at the request of His Majesty's Government.

Forces Available : The forces available for the defence of the North-West Frontier sectors were organized into brigades under the Northern Command and the Western (Independent) District, and amounted, roughly, to

- Seven cavalry regiments,
- Two light-tank companies,

Three and a half mountain artillery regiments,
 Five field artillery battalions, with a proportion of engineers
 and ancillary troops.

All the above were regular units ready, on mobilization, to take up their role. Battalions were throughout in the approximate ratio of four Indian to one British.

For internal defence, 29 regular battalions and 2 regular (horse) cavalry regiments were detailed in the first instance. Eleven regular battalions were earmarked for railway protection; and 8 regular battalions, 3 heavy batteries, and 17 non-regular units of varying strengths were assigned for port defence and internal security. As soon as their mobilization was complete, 13 territorial force battalions were to relieve the same number of regular battalions on railway protection and port defence duties. The regular units thus released were then to form part of the General Reserve.

In the Plan, three brigade groups were earmarked for overseas roles to be undertaken at the request of the British Government.

Modernization : Just on the eve of World War II, an important factor which intervened to affect the composition and strength of the armed forces was the desire to modernize them. A committee, known as Modernization Committee, was appointed by the Government of India under the chairmanship of Major-General Auchinleck. The report of this Committee formed the basis of the recommendations of the Chatfield Committee which was appointed by the British Government to examine and report on the feasibility of mechanizing the Indian forces and to determine their strength. These reports recommended a wider use of mechanization. The Chatfield Committee based its recommendations on the possible employment of the Indian armed forces in the background of the existing international situation and took full account of the overseas commitments.

No change was recommended in the existing structure of military Commands and Districts in India. The Army in India was, however, to be grouped into the following categories according to the tasks which it had to perform :—

- (i) Frontier Defence Troops : to maintain control over the frontier tribes and defend the frontier.
- (ii) Internal Security Troops : to maintain law and order in India, to suppress a possible rebellion and to safeguard the vital lines of railways.
- (iii) Coast Defence Troops : to defend the major ports of Karachi, Bombay, Calcutta and Madras against attacks from the sea or air and also to maintain local internal security.

- (iv) The External Defence Troops : (a) to reinforce the above categories of troops, if required, and for active warfare, and (b) to reinforce and defend the outposts ex-India, considered vital for India's security.

The last mentioned troops were to be an integral part of the forces in India and maintained out of the Indian revenues. As it was probable that they might have to meet the forces of a first class power in the field, they were to be equipped on a higher scale than the rest of the Army in India.

The above measures, if carried out, would render some troops surplus to the modernized army. Of these surplus units, the British were to be sent back to the United Kingdom, and the Indian units were to be disbanded except those required on permanent duty outside India. But for political reasons, none of the Indian units in the process of Indianization was to be selected for disbandment. Under the scheme no less than 24,000 well-trained combatants and some 1,200 technical personnel were to be thrown out of the Army, at a time when war was already on the horizon. In view of later difficulties in regard to technical personnel, it must be considered fortunate that most of these had not actually been disbanded when war broke out.

However, it was only about the actual outbreak of the war in September 1939 that the British Government finally approved the recommendations of the Chatfield Committee. The measures recommended had been only partly carried out when war broke out.

Equipment, 1923-1939 : The equipment of armies had naturally to keep pace with scientific and technical progress. But as a result of the retrenchment recommended by the Inchape Committee of 1923, the Defence Budget was reduced from Rs. 65 crores to Rs. 56 crores by 1928. This left little margin for renewals of equipment. The Army in India carried on with its comparatively old weapons, transport etc., while armies elsewhere had continued to improve theirs. In 1928, consequently, a special re-equipment programme costing Rs. 10 crores was found necessary, which, it was hoped, would be completed in four years. But the financial crisis of 1930 intervened with an inevitable second spell of retrenchment.

However, by 1933 some progress had been made in the re-equipment programme. First line animal transport in case of covering troops and most of the Field Army units was provided in full, but mechanical transport was yet incomplete. Medium artillery had been fully mechanized, but in case of cavalry brigade, field troops and some divisions only partial mechanization had been carried out. A couple of armoured car companies had been provided with light tanks also. Much, however, still remained to be done.

As the financial situation was still grave in 1933-34, another emergency budget, namely an allotment sufficient only to cover the bare cost of maintenance was accepted for that year. This was made possible by the development of economy schemes already in force and by the adoption of new measures of retrenchment. However, the main factor contributing to the reduction in expenditure was the contribution from the British Government in accordance with the report of the Capitation Rates Tribunal, commonly known as the Garran Award. The amount of this contribution towards the cost of India's defence expenditure was fixed at £1,500,000 per annum beginning from the year 1933-34.

Next, the Government of India proposed to substitute for the ten-crores programme a list of "Preparedness for war measures" indicating the progress made and the deficiency still continuing from year to year. This proposal was accepted by the Secretary of State for India. By November 1937, this list showed that rupees sixteen-and-a-half crores were still required to complete the defence preparations of the forces in India. Due to financial stringency, the deficiency was never made up. Protracted negotiations between the Government of India and His Majesty's Government took place regarding the provision of funds for the modernization of the forces in India. Early in 1938, the Chief of the General Staff in India and the Director of Military Operations were sent to the United Kingdom on deputation, and the Chatfield Committee also examined the problems in 1939. As a result the British contribution of £1,500,000 per annum under the Garran Award was now increased to £2,000,000 from the year 1939-40. This meant that when the war broke out in September 1939, the equipment of the forces had not yet been substantially improved or modernized.

The total strength of the Army, both in India and overseas as on July 1, 1939 was as under :—

(i) Regular Army in India	2,25,172
(ii) Regular Army Overseas	3,735
(iii) Auxillary Force India (European)	21,096
(iv) Indian Territorial Force	15,398
(v) Indian States Forces	46,947
(vi) Irregular Corps	20,532
	3,32,880

During World War II : When World War II began in September 1939, India was made a party to it without the consent of the Indian leaders of the Legislatures. The Indian National Congress and other nationalist parties, therefore, refused to cooperate with the government in its war efforts, notwithstanding the fact that they were in no way sympathetic to the totalitarian ideology of the Axis powers. This attitude

of the nationalists deterred many of India's best young men from joining the Services. Still owing to economic reasons and the generally anti-Axis feeling in the country the government was able to recruit as many men as it liked, and the period of the war saw a phenomenal expansion in all the three Services, but more so in the Army. On its part the government gave up the fiction of martial and non-martial classes and began to accept men from all classes and all parts of the country if otherwise found fit for the job. This expansion can be studied conveniently in three stages : (i) from September 1939 to about April 1940, (ii) from May 1940 to about the end of 1943, and (iii) from January 1944 to the end of the war.

(i) **September 1939 to April 1940** : This was the period of the so-called phoney war when although Poland had been overrun with lightening rapidity, there was a lull in the fighting throughout the winter, and Italy and Japan had not yet joined the war. Expansion in India during this period was not very notable but certain other steps towards preparedness were being taken, such as increasing mechanical transport in Army ; modernization of the equipment for which more funds had been sanctioned by the British Government (in addition to the Garran Award contribution); training of artificers ; opening of a new officers training school for British Emergency Commissioned Officers, calling up reservists of units which had proceeded overseas, embodying of some Indian Territorial Force (ITF) battalions etc. Some of the External Defence Troops were also sent to the Middle East and few Indian States Forces (ISF) contingents and a Nepalese Contingent were brought into British India. The strength of the Army in India on April 1, 1940 was as under :

Regular Army	227,648
ITF (embodied)	9,787
ISF in British India	5,830
Nepalese Contingent	8,204
Auxiliary Force India (not embodied)	21,537
ITF (not embodied)	7,674
ISF in Indian States	49,451
Irregular Corps	22,286
Overseas (Regular Army)	23,581
Total	375,998

Compared with the figures as on July 1, 1939 it shows a small increase of only 43118. Although there was no large scale expansion during this period, the decks were being cleared for further action in the following years.

(ii) **May 1940 to December 1943** : The second stage from May 1940 to December 1943 is the one which saw the fall of France, the coming into the war of Italy, Russia, Japan, the USA and other countries, which gave the conflict its global nature and revealed the magnitude of the task to the Allies. This period, therefore, saw the most unprecedented expansion in the Armed Forces of India in all directions, in spite of the Quit India Movement (1942) in the country. The figures of the strength of the Army as on January 1, 1944 are given below for comparison :—

In India		
Regular Army British	167,866	
Regular Army Indian	1,587,842	
Defence of India Corps	186,469	
Auxiliary Force India (embodied)	3,081	
Irregular embodied	4,611	
ISF in British India	23,040	
Nepalese Contingent	8,670	
Burma Army	19,149	
	20,00,719	
Auxiliary Force India (not embodied)	14,606	
ITF (not embodied)	7,328	
Irregulars (not embodied)	24,480	
ISF in Indian States	53,258	
	99,672	
In Ceylon		
Regular Army British	7,457	
Regular Army Indian	27,002	
	34,459	
Overseas		
Indian Army	214,506	
ISF	12,800	227,306
	2,362,156	2,362,156

During this period, the year 1942 saw the greatest expansion, necessitated by the gravity of the Russian situation and the resounding successes of the Japanese in the east.

New Formations : This period also saw the formation and development of new types of forces and corps. Of these the following four deserve a separate mention :—

(a) *Special Force or Chindits* : A new type of guerilla force, called the Special Force or Long Range Penetration Group or Chindits was formed to operate behind the Japanese lines in the forests of Burma. It was named the 77th Indian Infantry Brigade. Conceived and led by Brigadier O.C. Wingate, a remarkable young commander of adventurous spirit, it crossed the Chindwin into Japanese held territory early in 1943 and was supplied entirely from the air. Its spectacular success

in performing numerous acts of sabotage on the Mandalay to Myitkyina railway line, led the British Government to decide in favour of a considerable increase in these troops for the operations in 1943-44. The force was trained in the neighbourhood of Sagar in the Central Province (now Madhya Pradesh). In 1944, Wingate launched his second expedition into Burma, the force under him being known as the 3rd Indian Division this time. There are differing opinions about strategic and tactical achievements of the Chindits, but there is no doubt that they confused and harassed the Japanese considerably, cut their lines of communication at many places and even captured Nogaung and delayed the Japanese troop movements. Above all they destroyed the myth of Japanese invincibility and proved that Indian and British troops were, man to man, a match for soldiers of any other nationality.³

(b) *Indian Electrical and Mechanical Engineers (IEME)* : A Corps of Indian Electrical and Mechanical Engineers was formed in 1943 on the lines of the Royal Electrical and Mechanical Engineers (REME) in the British Army. To begin with the new Corps was entrusted with all the work that was formerly done by the workshop branch of the Indian Army Ordnance Corps.

(c) *Indian Army Medical Corps* : The Indian Medical Department and the Indian Hospital Corps were merged into a new and bigger organization called the Indian Army Medical Corps to which some members of the Indian Medical Service were also seconded.

(d) *Women's Auxiliary Corps (India) (WACI)* : Women's Auxiliary Corps (India) was created in April 1942, mostly to fill clerical jobs, but its members also undertook ciphering, censorship, store keeping, and worked as radiologists, motor drivers and mess caterers. It attained its peak strength in May 1945 when it had a total strength of 10933 including 1148 officers.

(iii) **January 1944 to end of War** : The third period, from January 1944 to the end of the war, saw no appreciable increase. The expansion had reached its peak in the second period, and the efforts during 1944-45 were directed more towards keeping the increased strength at maximum efficiency. This resulted in certain changes in the organization of formations in the light of experience and latest military doctrine. As more and better equipment became available, the modernization process was carried forward and war wastage was replaced by recruitment of more men and officers.

An important decision of this period was to complete the raising of an Indian Airborne Division. The composition of the Division as finally agreed upon was one air landing brigade (taken from the Special Force)

3. The Indian element in the Force was not large but the word Indian was introduced in the same for purposes of deception.

and two Indian para brigades, each of which comprised one British, one Indian and one Gurkha battalion.

It was during the last two years of the war that the Indian Army emerged finally as a well equipped force. Allied production of weapons and vehicles was in full swing by 1943 and India had no difficulty in getting its share. Thus, while in the beginning of 1943 many of the Indian units had deficiencies in items of artillery, signal, engineering and other equipment, by the middle of 1944 all deficiencies had been made good.

On October 1, 1945, the total strength of the Army in India and Overseas was as under :

In Indian Command (Regular, Defence of India Corps, Auxiliary Force (India) (embodied), ISF, Nepalese Contingent, Burma Army and Irregulars embodied	1,561,867
Not embodied Auxiliary Force (India), ITF and Irregulars	45,056
ISF in Indian States	58,063
In ALFSEA (Allied Land Forces, South-East Asia)	
(Regular, Para military, ISF and Burma Army)	816,961
Overseas (Indian Army & ISF)	162,376
	2,644,323

Theatres Where Indian Army Served : It is not possible here to give an account of the part played by Indian's Armed Forces during the Second World War in any detail. Only a brief enumeration of all the theatres of war in which they took part is given below with a few statistics.

Even before the war broke out there were some troops of the regular Indian army overseas for garrison duties, *e.g.*, in Aden, Malaya, Burma, Hong Kong, etc. From September 1939, more troops were despatched to these and other places, so that by 1945 they had served or were serving in the following places: France, UK, Italy, Greece, Egypt, Sudan, Eritrea, Persia, Iraq, Syria, East Africa, Hong Kong, Malaya, Burma, Ceylon, Aden, Seychelles, Bahrein, Borneo, Masira, Cocos Islands and Anchorage. In addition, a number of Indian Army officers had fought in Norway also in the British campaign that had ended disastrously in May 1940. These officers had been asked to instruct British troops in the art of mountain warfare but, as it turned out, they had actually to fight and lead independent companies against the advancing enemy formation instead of merely instructing the British

troops.

The total number of army personnel who went ex-India from August 1939 to October 1945 was 823,530 of which 241,049 belonged to the British Service. This figure includes 11,634 representing 'leave details', which gives a final figure of 5,70,847 as the total number of Indian Service personnel who left India during the war period.

A large number of awards were earned by the Indian Army personnel in this war, the figures from September 3, 1939 to November 30, 1945 being as under :—

Gallantry Awards (Including 31 Victoria Cross)	4,464
Meritorious Service Awards	3,220
Total	7,684

More than one lakh casualties were suffered by the officers and men of the Indian Army during this war as per the figures given below :

Killed in action	...	17,613
Wounded in action	...	58,692
Died of wounds or illness	...	30,528
Total :		106,833

This total does not include prisoners of war, or missing casualties except in NWFP and other parts of India excluding the Burma front.

Indianization : One happy result of the World War II and the consequent expansion of Indian Army was the Indianization of the officer ranks of the Army. From the beginning of the British rule the lower ranks of the Army had been largely Indian in its non-British units, but the commissioned ranks were recruited mainly from British sources, and after 1857 only from them.

The demand for Indianization of the higher ranks of the Indian Army was voiced from time to time from about the turn of the nineteenth century, but had met with scant response. In 1905, a special form of King's Commission, was instituted for India but it carried limited powers of command and the recipients could rise only to the rank of a Company Officer.

The World War I radically altered the position. Indian public opinion insistently demanded a better share in the officer cadre of the country's army and the foreign government also realized the need to conciliate the martial classes of India who were giving such a good

account of themselves wherever the Indian Army units were fighting. After the famous declaration of E. Montagu of August 1917, it was decided to reserve 10 vacancies for Indians at the Royal Military College, Sandhurst every year.

There was, however, no regular scheme for progressive Indianization, although even the moderates in the Legislative Assembly of 1921 passed a resolution calling upon the government to quicken the pace of Indianization. The question was, therefore, examined in detail by the Military Requirements Committee in 1921 and by the Shea Committee in 1922. Both laid down a regular pace for Indianization to be completed in a given number of years, and recommended the early establishment of a military college in India. But the government being apprehensive that large scale Indianization might adversely affect the efficiency or loyalty of the Army, decided to try Indianization, as an experiment, in only eight units of cavalry and infantry in the beginning. The Government of India's recommendation that Indian boys be allowed to compete with British boys for grant of commissions in the Royal Air Force and some other technical services was not agreed to by the UK Government as the measure was considered potentially dangerous for continued British supremacy in India. A college at Dehra Dun (Prince of Wales Royal Indian Military College) was, however, opened to give young Indians training to fit them for admission in the college at Sandhurst. The net result of efforts up to 1924, therefore, was that ten students were being sent every year to Sandhurst and eight Army units were set apart for Indianization.

The nationalist opinion in India protested vehemently against the 'eight unit scheme' as it meant 'segregation' of Indian officers into a few earmarked units. In 1925, the demand for a military college in India for preparing students to get commissions and for Indianizing the officer cadre in a fixed number of years was again made in a resolution of the Legislative Assembly. This led to the appointment of the Indian Sandhurst Committee (The Skeen Committee) in 1925 which made its report in 1927, and recommended the grant of commission to Indians in the Air Force, doubling of vacancies for Indians at Sandhurst, the abolition of the 'eight unit scheme' and dispersal of Indian officers throughout the Army as also the establishment of a military college on the lines of the Sandhurst College. These recommendations were accepted (except that about 'eight unit scheme') and in addition to the 20 seats at Sandhurst, it was decided to reserve six vacancies at Royal Air Force College at Granwell. The 'eight unit scheme' was continued as it was felt that dispersal of Indian officers throughout the Army might be unpopular with the British officers.

These proposals were unpalatable to Indian nationalist opinion. The

Defence Sub-Committee of the Round Table Conference of 1931, therefore, recommended the early establishment of a military college and declared that "the defence of India must, to an increasing extent, be the concern of the Indian people and not of the British Government alone."

The Government of India was now obliged to take further steps to meet the public demand. It, therefore, decided to extend Indianization to a complete division of Arms and a cavalry brigade (a force equal to one-eighth of the total Army) and for this purpose to increase the intake of Indian officers to sixty per year. The Indian Military Academy was inaugurated at Dehra Dun in the autumn of 1932 and from that time Indians ceased to be eligible for admission to Sandhurst and Woolwich.

With the first officers commissioned from the Academy, the form of commission was altered from "His Majesty's Commission in the Land Forces" to "His Majesty's Commission in the Indian Land Forces".

Thus the position on the eve of the war was that 60 Indians (from Dehra Dun Academy) and 120 British officers got commission in the Indian Army every year. The Indians got commission after $2\frac{1}{2}$ years training at the Academy, after which they were attached to some British unit, or sent to the School of Artillery, Kakul, or to Thomson Engineering College, Roorkee, or post-graduate training according to whether they were infantry, artillery or sapper officers. After the post-graduate training the young lieutenants were posted in replacement of Viceroy's Commissioned Officers (VCOs), to one of the Indianized units which were at that time fifteen in number (twelve infantry battalions and three cavalry regiments). This meant an addition of four new officers every year per unit. Since wastage at the top was far less, the fresh entrants' prospects for promotion were bleak. The war, however, changed all this. Whereas before the war, the nationalists were pressing the government for Indianization, after 1939 it was the government which was putting forth its best efforts to induce Indian gentlemen to apply for commissions. In view of the non-cooperative attitude of the Congress, many patriotic young men who otherwise might have offered themselves, refrained from doing so, and this affected the pace of Indianization to some extent, but those who did join or were already in service got rapid promotions.

Admission to the Academy at Dehra Dun for regular commissions was stopped in wartime and instead cadets were admitted for emergency or temporary commissions which were granted after a shorter training of 18 months, later still further reduced to 12 months. The number was not restricted to sixty, the old "segregation" of Indian

officers to the Indianized units only was given up and they began to be posted to any and every unit of the Army where they were needed. A new school for Indian officers, with a potential capacity of producing 1,200 officers per year was started at Mhow. There was still another officers' training school at Bangalore. The Viceroy's Commissioned Officers were reintroduced into the units from which they had been removed earlier to make room for the Indian King's Commissioned Officers.

The progress of Indianization in the Army can be judged from the following figures on October 1, 1939, and September 1, 1945 :

Date	British Officers including British Services Attached	Indian Officers	Total
Oct. 1, 1939	4,028	396	4,424
Sept. 1, 1945	34,590	8,340	42,930

It will be seen that whereas there were over ten British officers for every one Indian officer in the combatant arms of the Army in 1939, there were only four British officers for one Indian in 1945, and the number of Indian officers had gone up twenty-one times the pre-war figure.

Also, Indians held senior ranks with distinction. Whereas there was no Indian officer of the rank of Lt. Col., Wing Commander or Commander in 1939, in 1945 there were two Indian officers of equivalent ranks in the Navy, nine in the Air Force and even a larger number in the Army.

Soon after the war, it was decided by the British Government that in future permanent commission in the Indian Armed Forces would be given only to Indians. This brought to a glorious end the long struggle of Indian statesmen and soldiers to have the Indian Armed Force officered by Indians only.

After independence on August 15, 1947, it was considered desirable to replace all British officers as far as possible. In order that Indians may take their place, the old rules of promotion were drastically changed whereby the qualifying periods of service for most ranks were reduced. Thus while in 1940, an officer attained the substantive rank of a Lt. Col. after 24 years, after independence many got the acting Lt. Col's rank after only 6½ years of service. This and other

measures helped to complete Indianization rapidly. Thus, while in 1940 there were more than 10,000 British officers in the Indian Army and the British Army in India, on January 1, 1948, there were only 3000. An Indian (General K.M. Cariappa) even became the Commander-in-Chief in January 1949. When India became a Republic on January 26, 1950, Indian officers gave up their King's Commissions and received Commissions from the President of India who under the new Constitution is the Supreme Commander of all the Armed Forces of the union.

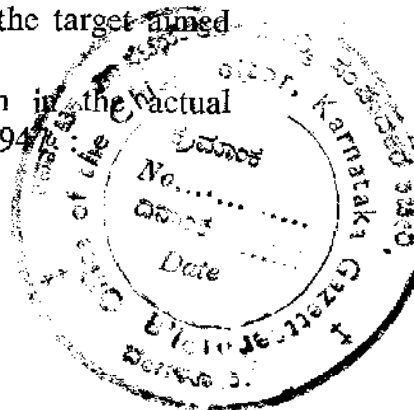
Demobilization (1945-47) : The only question of importance affecting the Armed Forces between the close of the war and the partition of the country was demobilization. From a peace time strength of 3,22,880 the Indian Army had increased to over 2½ millions in 1945. This growth was not confined to the Army alone but was general to all the Services. Hence demobilization was inevitable in peace for which plans had been made during 1944-45. These plans revised from time to time had fixed targets for demobilization based on the estimates of the strength of the forces that would be required for India's defence in the post-war period. The final target for demobilization in the Army in respect of Indian officers and other ranks in India and overseas was as under :—

Actual strength on October 1, 1945:	19,18,218
Release upto March 31, 1946	4,86,000
Release from April 1 to Sept. 30, 1946	5,29,000
Release from Oct. 1, 1946 to Apr. 1947	4,88,000
Strength in service on Apr. 1, 1947	4,15,218

The war came to an unexpectedly sudden end after the dropping of atom bombs on Japan and this found the provincial governments, the Indian states and some concerned departments of the Government of India unprepared to adjust their resettlement, re-employment and other plans to suit the demobilization policies of the War Department. It was, therefore, decided that demobilization should proceed slowly in the early stages and should commence about November 15, except for semi-trained recruits and certain other categories in training centres and depots in whose case it was to begin on October 1, 1945.

Thus although the original estimates of the rate and speed of demobilization proved to be too optimistic, demobilization on the whole worked smoothly and the discrepancy between the target aimed at and achieved by July 1947, was not considerable.

The following table shows the gradual variation in the actual strength of Armed Forces from July 1945 to July 1947.



Actual Strength Of Armed Forces: July 1945
to July 1947

	Indian Army	British Army	Royal Indian Navy	Air Forces in India and ALF-SEA (RAF and RIAF)	Indian States Force Units in India Command ALFSEA and Overseas
July 1, 1945	2,049,293	225,130	37,853	207,632	41,463
	100%	100%	100%	100%	100%
October 1, 1945	2,015,763	249,632	37,109	211,955	41,304
	98.3%	110.4%	98.0%	102%	99.6%
January 1, 1946	1,835,812	239,472	31,261	214,902	32,013
	89.5%	105%	82.5%	103.5%	77.2%
April 1, 1946	1,682,773	197,897	23,960	188,463	17,313
	82.1%	87.5%	63.0%	90.7%	41.7%
July 1, 1946	1,353,486	149,322	19,882	137,076	7,788
	66.5%	66.0%	52.5%	66.0%	18.7%
October 1, 1946	1,128,588	118,176	18,109	58,324	4,582
	55.0%	52.3%	47.8%	28.0%	11.0%
January 1, 1947	883,692	48,485	16,821	49,666	2,101
	43.1%	21.5%	44.4%	23.9%	5.0%
April 1, 1947	624,013	37,983	15,838	39,063	—
	30.4%	16.7%	41.0%	18.8%	—
July 1, 1947	507,422	29,972	15,001	33,463	—
	24.2%	23.2%	39.6%	16.1%	—

NOTE: The figures include Officers, BOR's, VCO's, WOs, or equivalent, non-combats enrolled, and all other categories e. g., Boys Nurses, WAC(1) and Civilians.

Army of Free India : The announcement on June 3, 1947 that the British power in India would be transferred to the successor dominions of India and Pakistan on August 15, 1947 led to the constitution of a Special Committee of the Interim Government to "conduct and coordinate detailed investigations at expert level on various problems arising from the partition of the country". Ten expert committees were set up under the Special Committee, one of which was the "Armed Forces Reconstitution Committee" for splitting up the Armed Forces. After the Punjab, Bengal and Sind legislatures had finally voted on June 26 in favour of partition, the Special Committee was replaced by a Partition Council with basically the same composition. This Council, the highest organ for settling all problems arising from the proposed partition, decided on June 30 that all matters relating to the division of the Armed Forces should be dealt with by a Joint Defence Council consisting of the two Governors-General, the two Defence Ministers and the Commander-in-Chief (of undivided India) after August 15. Till then the Partition Council itself would function as the Joint Defence Council. The Commander-in-Chief of

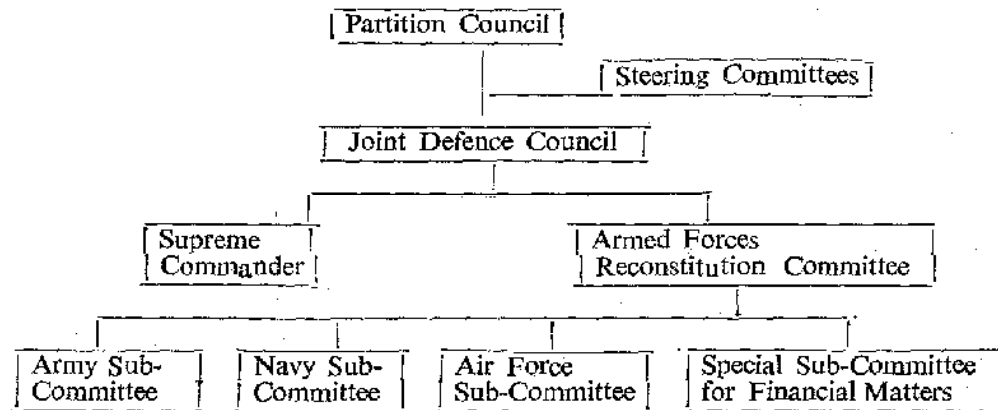
undivided India was renamed the Supreme Commander. Since Jinnah wished to absent himself from the Joint Defence Council to be able to attend to other matters relating to the birth of the new State of Pakistan, the composition of the Council was to be as under :—

- | | |
|--|---------------------------|
| (1) The Governor-General of India (Lord Mountbatten) | Independent Chair-
man |
| (2) The Defence Minister of Pakistan | } Members |
| (3) The Defence Minister of India | |
| (4) The Supreme Commander | |

The Defence Secretaries of the two dominions acted as joint secretaries of the Council to see to the implementation of its decisions. In case of disagreement in the Joint Defence Council, the Partition Council was to decide the matter.

The Joint Defence Council was thus in control of deciding all matters relating to division of the Armed Forces, their assets and installations etc., but was not concerned with military matters within the borders of either of the dominions. The Supreme Commander had no responsibility for law and order in either dominion, his main task being to supervise the work of reconstitution of the Armed Forces as decided by the Joint Defence Council. He was assisted by three Deputy Supreme Commanders for Army, Navy and Air Force matters respectively. Under the Joint Defence Council was one of the expert committees called the Armed Forces Reconstitution Committee under which in turn were four sub-committees to work out the details.

The machinery for division of the Armed Forces may be represented in the following chart :



The Sub-Committees worked smoothly and the work of the first three of them was finished within a few weeks after August 15, but the fourth Sub-Committee (for financial matters) continued a little longer.

Three separate military accounts offices were set up from October

1, 1947, and subordinate accounts offices which were functioning on territorial basis were appropriately allocated to each dominion. Thus the Controller of Military Accounts, Northern Command, went to Pakistan and those of Eastern and Southern Commands to India.

Division of Forces : The units were divided roughly on a communal basis—those with a Muslim majority being sent to Pakistan immediately. Those having a mixed composition were split up, the personnel being given the right to opt for either dominion, with the condition that Muslims belonging to Pakistan areas would not opt for India and non-Muslims from Indian areas would not opt for Pakistan. Those unwilling to join either dominion were allowed to resign and given compensation. The equipment and weapons in use were to be divided roughly according to the proportion of personnel going to each dominion. The huge stocks in reserve and in ordnance factories were, however, divided only after protracted dissension and argument. Fifteen infantry regiments were given to India and eight to Pakistan (excluding Gurkha Units). Twelve Gurkha battalions came into the Indian Army and eight chose to serve Britain. The other units (armoured, artillery etc.) were divided on the same lines. In the case of the Navy the strategic needs of each dominion were kept in view and in the case of the Air Force the special needs of Pakistan for controlling N.W. Frontier were taken into consideration. The final division in respect of the Army was as follows :

	India	Pakistan
Armoured Corps Regiments	12	6
Artillery Regiments	18	8
Infantry Battalions	76	33
		+ 12 Gurkha

Ordnance factories were left to the dominion in which they happened to be situated. Since all of them were in India, Pakistan was given a monetary compensation. Training institutions were split up where possible, otherwise personnel of India and Pakistan were to continue their joint training till training facilities became available in their own dominion. But on account of communal riots after partition, the joint training came to an abrupt end by October 1947.

Since there was an acute shortage of qualified Indian officers of requisite seniority, particularly in the technical service, due to the late Indianization, British officers were invited to continue serving in Indian or Pakistani forces on contract. Some 2,800 British officers volunteered to do so till December 31, 1947. The Supreme Commander's Organization ceased to exist from December 1. The work of the Joint Defence Council was completed in the first three months of 1948 and

it was wound up from April 1, 1948.

As a result of the country's partition, one third of the old combined Indian Army and a large number of training centres and cantonments went to Pakistan. The composition of the units suffered a drastic change and many of them remained under strength.

Integration of the Indian States Forces : Before independence the Indian States Forces were controlled by the Government of India through the Political Department with the help of a Military Adviser-in-Chief under whom were a number of military advisers for groups of states. The Indian States Forces consisted of three types of units in 1939 :

- (i) Field Service Units—equipped and trained almost like the Indian Army units and meant to be placed at the disposal of the Crown in time of emergency. These received free arms from the Government of India.
- (ii) General Service Units—not fully equipped but well trained and capable of field service if given the necessary equipment. Given arms at cost price by the government.
- (iii) States Service Units—trained and equipped for internal security duties only and having no modern weapons.

The whole position of the Indian States Forces had to be reviewed after independence in the context of the Instrument of Accession signed by the states. The Military Adviser-in-Chief's organization was abolished and from November 1, 1947 a Military Adviser for the states began to function at Army Headquarters as a temporary measure. But from April 1, 1948, the States Ministry (successor of the Political Department) took charge of the Military Adviser's Organization. On the total integration of the states' administrations with the rest of the India, the states' armies were also integrated with the Indian Army. The States Forces were subjected to a process of thorough screening, and re-equipment before being merged with the Indian Army. Those who were reduced or discharged were helped to find alternative employment. Due to widely different types of systems of organizations of the States Forces, the steps leading to integration varied from state to state but, by April 1951, the process was completed and there was only one unified army for the whole of India.

From that date onwards, organizational changes were carried out at various levels, deficiencies removed, training facilities improved from time to time to make the Armed Forces strong, more mobile and effective, particularly during the sixties. The result of all these improvements and augmentation is that in terms of military power India had, by 1972, the fourth largest Army, the fifth largest Air Force and eighth or ninth largest naval force in the world. As a conventional military

force the Indian Armed Forces are among the leading ones of the world today.

Navy : The East India Company necessarily began its existence as a maritime trading body, but its ships soon became vassels of war as well. The Company's naval force performed its duties with great efficiency and distinction. It fought with the Portuguese, the Dutch, and the French, and with pirates and slave traders in every eastern sea. It cooperated with the Royal Navy on various occasions ; and an Indian naval squadron was for some time associated with that Navy in the China seas.

Royal Indian Marine : The Indian Navy was abolished in 1862, for reasons of economy, and because it was thought that the naval defence of India should be entrusted to the Royal Navy. The Bombay Marine was then created, and was eventually amalgamated with the Bengal Marine in 1877 under the title of 'Her Majesty's Indian Marine', changed in 1892 to 'Royal Indian Marine'. Its duties consisted of the local transport of troops and stores, the guarding of convict settlements, the suppression of piracy, marine surveys, and the protection of the ports. In 1891, the turret ships, torpedo vessels, and gunboats belonging to the Indian Marine were transferred to the Admiralty. The Indian Marine developed in the course of years into a highly efficient force, which did admirable service in numerous expeditions overseas and in scientific surveys. Its officers were appointed by the Secretary of State, from qualified officers of the mercantile marine ; they held rank as in the Royal Navy up to that of Commander, and wore a somewhat similar uniform.

The fleet consisted, in 1904, of eleven sea-going vessels (troopships, surveying vessels, and a dispatch boat), four inland river steamers, and many smaller steamers and launches; and armaments were available for the equipment of the vessels for war and service. There were excellent dockyards at Bombay and Calcutta. The service had at its head a Director, usually a naval officer, with headquarters at Bombay, and a Deputy-Director at Calcutta. Officers of the Indian Marine were also employed as Port Officers at the various Indian ports. The trooping between India and England was carried out mainly by hired transports, Indian Marine vessels also being occasionally used. India paid a subsidy of £100,000 annually for the up-keep of certain ships of the East India squadron, which were not to be employed beyond particular limits except with the consent of the Government of India.

First World War : During the First World War (1914-18) the Royal Indian Marine ships carried troops and other war materials to Egypt, Iraq and East Africa. The Royal Indian Marine Ship, the *Hardinge* on patrol in the Suez Canal fought a gallant action when the

Turks attempted to block the canal. She was badly damaged but was able to prevent the blocking of the channel. The Royal Indian Marine also played a leading role in landing troops in Mesopotamia and its small river craft did very useful work on the Euphrates and Tigris rivers. The *Northbrook*, *Minto* and *Dufferin* were in the Red Sea on patrolling duty. The *Minto* called at Jeddah and brought the Haj pilgrims safely back to India.

Reversion to Non-Combatant Status : At the end of the First World War, the Royal Indian Marine reverted to its peacetime non-combatant role. After the war, when Admiral of the Fleet, Lord Jellicoe, was on a visit to India, the government asked him to draw up a scheme for the reorganization of the Marine. He made proposals which were considered too costly to be implemented. The Esher Committee which reported on the Indian Army strongly recommended the reorganization of the Royal Indian Marine as a combatant service. In 1920, the Government of India obtained Rear Admiral Mawby from the Admiralty, to draw up, as Director of the Royal Indian Marine, suitable plans for reorganization but his scope was limited and his scheme was finally rejected. Following the report of the Inchcape Committee, the drive towards retrenchment converted the service into a yacht squadron for high officials, with hydrographic, buoyage and lighting duties paid for by the local governments. The Inchcape Committee recommended the scrapping of troopships, the carrying of troops by contract and the virtual reduction of the Marine to a Survey Department and a dockyard. In this way, lack of appreciation by the government of necessity of building up a group of experienced officers and men by constant peacetime training and operations, was responsible for practically throwing away a number of experienced seamen ready at India's hand at the close of the war, upon which a sound and flexible system capable of rapid expansion in an emergency might have been built. This was an index of official indifference to the development of an Indian Navy and may be explained only by their complete dependence on the Royal Navy to guard the oceanic highway and the coast-line of India.

The Royal Navy continued to guard the coast-line of India for which as mentioned earlier, a sum of £ 100,000 was paid annually. It was not anticipated that the Royal Navy might some day be left alone to contend with the German and Italian fleets and to guard the seas of the world at the same time. It was also not foreseen that a war might threaten India from the east.

Rawlinson Committee : Following the rejection of his scheme of reorganization, Rear-Admiral Mawby resigned his appointment as Director of the Royal Indian Marine and returned to the United King-

dom, where he registered a strong protest. Subsequent to this, in 1925, a departmental committee was appointed by the Government of India with Lord Rawlinson, Minister of Defence and member of Council in-charge of the Defence portfolio, as its Chairman, with the purpose of submitting a scheme for the reorganization of the Service as a combatant force. The scheme put forward by the Committee was for (i) reorganization of the Service as a purely combatant force with the title of the Royal Indian Navy, (ii) an initial strength of four armed sloops or escort vessels, two patrol vessels, four mine sweeping trawlers, two surveying ships and a depot ship and (iii) the whole to be commanded at first by a Rear-Admiral of the Royal Navy. This was accepted by the Indian and British Governments and an Act was passed through both Houses of Parliament to permit India to have a Navy.

The Royal Indian Marine was thus restored to combatant status in 1928, but the full recommendations of the Rawlinson Committee could not be complete without the enactment of a new Indian Naval Discipline Act. Even then, the financial administration of the Royal Indian Marine left much to be desired. The sum at the disposal of the Defence Department, moreover, was barely sufficient for the defence requirements, with the result that any proposals from the Royal Indian Marine had to be considered not merely from the point of naval defence but *in the light of the money available for the total defence of India* in which the Army played a major role at the time.

Recruitment to the Royal Indian Marine at this stage was open both to the Indians and the British but, in practice, very few Indian officers joined the service.

The new Indian Naval Discipline Act was introduced as a Bill in February 1928, but failed by one vote to pass the Assembly. In February 1934, the Bill was introduced again with a few minor amendments, and was finally passed in August 1934, both by the Assembly and the Council of State.

Royal Indian Navy : On October 2, 1934, the Royal Indian Marine ceased to exist and the Royal Indian Navy (RIN) was inaugurated. Though progress in respect of various plans was painfully slow, yet during the five years before the outbreak of the World War II the RIN was gradually taking shape as an efficient, *albeit* small combatant naval force. It was also realized by 1938, in view of the worsening international situation, that absolute reliance for the defence of Indian shores on the Royal Navy in emergency would not be possible as the latter would have its hands full in the western waters particularly around the British Isles. The threat to the inviolability of the Indian seas from the East in case of war with Japan

was also not ruled out. Consequently, the British government agreed to forego the annual subvention of £ 100,000 and certain miscellaneous annual charges from April 1, 1938, on condition that India maintained a sea-going squadron of not less than six modern escort vessels to cooperate with the Royal Navy in defence of India, and that India would, in addition, undertake the responsibility for the local defence of Indian ports. India agreed and submitted a plan of extensive expansion to be completed in nine years. The Chatfield Committee (1939) adopted it with the recommendation that it should be implemented in five years. With these new developments, the stage was set for the building up of a real navy looking after the defence of the country, though to a limited extent, mainly to ward off local threats and as a subsidiary wing to the Royal Navy. The strength of the RIN as on October 1, 1939, was 5 sloops (three of them commissioned before 1922), 1 survey ship, 1 patrol vessel and 1 steam trawler, with a total personnel of 1,846 excluding civilians.

The World War II : The World War II came in 1939 and compelled extensive expansion, much of it without any previous planning or organization, to meet the immediate requirements. The Chatfield recommendation to arm the merchant ships was adopted and new types of vessels were added to the fleet for affording protection to the Indian ports and the sea alleys leading to them. The Eastern Fleet of the Royal Navy was there in the background, but the local naval defence was the responsibility of the Royal Indian Navy which was strengthened for the purpose. This Service did undertake combatant duties as well and rendered commendable service in the Middle East and the Bay of Bengal. Its vessels operated in the European waters also, both in the Mediterranean and the Atlantic. Perhaps the most important and earliest combatant assignment was in the Red Sea and the Indian ships took an active share in the capture of Massawa from the Italians and in fighting the Italian Navy on the coast of Somaliland. So also did they operate with success in the Persian Gulf, where their duties related largely to patrolling the coast and escorting the supply ships. In the period after the entry of Japan into the war, Burmese waters became the primary field of the activity of the Royal Indian Navy. It took part in patrolling, and cooperated effectively in combined operations and attacks against Akyab, Kaladan, Myebon, Kyaukpyu (Ramree Island), Cheduba Island, Ruywa, etc., during the Arakan campaign. Movements through tricky chunks and along the highly indented coastline of Arakan were full of hazard, but the Indian Navy did not flinch from duty and gave a magnificent display of valour and skill. Later, in the final assault on Rangoon from the sea in the beginning of May 1945, (operation Dracula) many vessels of the RIN took part. The

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Indian officers, though few in number, and the Indian ratings, all rose to the occasion.

Though Burma had been reconquered in May 1945, the Japanese were still in occupation of Malaya and certain other places in South-East Asia which covered the approach to Singapore and guarded the way to the Malacca Straits—the gateway to the South China Sea and the shortest route from India to Japan. Operations designed to liberate these territories had been planned in which a considerable number of ships and minesweepers of the RIN were also to take part. In fact some preliminary moves were well underway in the waters between the Nicobar Islands, the Malay Peninsula and the northern tip of Sumatra in July 1945 when Indian minesweepers were active in the area and personnel of the Landing Craft Wing having undergone strenuous training were looking forward to the D-Day which, however, never came, as the war against Japan was brought to a sudden end on August 15, as a result of the dropping of atom bombs on Hiroshima and Nagasaki.

Before the war the Indian Navy had suffered from the apathy of the rulers and had a very secondary role in the defence of the country. Indianization of the officer ranks was a slow process. But the exigencies of the war had placed heavy responsibilities on its young shoulders and in the process of fulfilling the obligations, the Service had developed and acquired experience. Indianization had proceeded and many other important changes and improvements had been effected, so that by the end of the year, the Navy had attained maturity and built up a structure which made it worthy of playing a vigorous role in the future. The Royal Indian Navy as on July 1, 1945, had a total personnel strength of 30,478, excluding civilians. The officer position (borne strength) of Indian and British Commissioned and Warrant Officers as in September 1939, and September 1945, was as under :

3-9-1939: Indian 76; British 122	} Regular and Reserved
1-9-1945: Indian 1,542; British 1,439	

It is clear from these figures that Indianization had made substantial progress in the RIN during the war years. Whereas at the beginning of the war the number of Indian officers was a little over half of the British, at the close of war there were more Indian officers than British. But this satisfactory position was due largely to the predominance of Indians in the warrant officers rank. The number of Indians in the senior ranks of the Service (Commander and above) was still woefully small, only two Indians having reached that rank throughout the war years.

Naval Headquarters : In 1939, when the war began, the Headquarters of the tiny RIN was confined to the dockyard area in Bom-

bay, and was organized on the lines of a naval squadron afloat, though it remained permanently ashore. The Headquarters, under the Flag Officer Commanding Royal Indian Navy (FOCRIN) was staffed with only 16 officers at that time. After 18 months of war it was realized that the FOCRIN would have to be stationed in New Delhi, the seat of the Government of India and the Headquarters of the other two Services. However, on account of difficulties of accommodation at Delhi only a part of the staff was transferred to Delhi in March 1941. Some other offices were transferred to Delhi from time to time as need arose, but a few departments of the headquarters continued to function in Bombay.

The expansion of the Service and needs of the war necessitated a general reorganization in July 1943. One of the objects of the change was to approach more closely to the organization of the Admiralty in the UK as far as possible. A further minor reorganization took place in 1944. In 1945 when the end of war was in sight, a post-war planning directorate, and a demobilization and resettlement section were added. After August 15, 1945 a process of retrenchment and contraction was proceeded with vigorously, and peacetime establishment for Naval Headquarters was worked out and a phased reduction of temporary officers and ministerial staff effected by the end of 1946. This paved the way for the setting up of a permanent peacetime establishment for Naval Headquarters.

Even after the war came to an end in August 1945, the RIN had a busy time for the next two years. These activities, briefly speaking, related to the following matters :

- (i) operations to clear British and Japanese minefields around Singapore and in the Malacca Straits in company with units of the East Indies Fleet before the Supreme Allied Commander South-East Asia, Lord Louis Mountbatten, received the Japanese surrender at Singapore ;
 - (ii) reoccupation of Andamans and other islands ;
 - (iii) supply of equipment and food to the newly liberated territories of South-East Asia ;
 - (iv) evacuation of released Allied prisoners of war and internees from Japanese camps ; and
 - (v) transporting home of servicemen due for release, etc.
- Administrative matters also engaged its attention, such as demobilization of temporary employees, release of merchant shipping from naval service to their rightful owners, and other problems connected with returning to peace time conditions. The total strength of the RIN personnel (including all ranks and categories, civilians etc.) which stood

at 37,863 on July 1, 1945, was brought down to 15,001 on July 1, 1947, representing a reduction of more than 60 per cent.

The RIN Revolt (1946) : An event worthy of note which occurred in the period between the close of hostilities and the partition of the country was the RIN ratings' revolt which took place in February 1946. There were nine minor cases of revolt in the RIN from March 1942 to April 1945, both on ships afloat and shore establishments, but they were nothing as compared to the widespread movement of February 1946. Still, the wartime revolts have a bearing on the revolt of 1946 inasmuch as they bequeathed a state of discontent and indiscipline which erupted in the post-war period. A detailed account of the revolt can be read in the report of the Commission of Enquiry appointed by the Government of India in April 1946, a summary of which is published in the Gazette of India (extraordinary) dated January 21, 1947.

Immediately after the revolt, steps were taken to meet the grievances as far as possible, and the process was continued after the report of the Commission of Enquiry. The political causes were automatically removed by India after attaining independence and at present the Indian Navy is a well contended and disciplined body wherein officers and men have close contact and understanding of each other.

Partition and After : On August 15, 1947, constitutional changes of great magnitude took place when the country was partitioned into two self-governing Dominions of India and Pakistan. In anticipation of this a naval sub-committee had been formed on July 1 to make recommendations regarding the division of assets and liabilities of the undivided Service. On the recommendations of this Committee the Partition Council allocated the following ships to India and Pakistan respectively :

	INDIA	PAKISTAN
SLOOPS	HMIS <i>Sutlej</i> " <i>Jumna</i> " <i>Krishna</i> " <i>Cauvery</i>	HMPS <i>Narbada</i> " <i>Godavari</i>
FRIGATES	HMIS <i>Tir</i> " <i>Kukri</i>	HMPS <i>Shamsher</i> " <i>Dhanush</i>
CORVETTES	HMIS <i>Assam</i>	
MINE SWEEPERS	HMIS <i>Orissa</i> HMIS <i>Carnatic</i> " <i>Deccan</i> HMIS <i>Rajputana</i> " <i>Bihar</i> " <i>Konkan</i> " <i>Kumaon</i> " <i>Bombay</i> " <i>Khyber</i> " <i>Bengal</i> " <i>Rohilkhand</i> " <i>Madras</i>	HMPS <i>Kathiawar</i> " <i>Baluchistan</i> " <i>Malwa</i> " <i>Oudh</i>
SURVEY VESSEL	HMIS <i>Investigator</i>	

TRAWLERS	HMIS <i>Nasik</i> " <i>Calcutta</i> " <i>Cochin</i> " <i>Amritsar</i>	HMPS <i>Rampar</i> " <i>Baroda</i>
MOTOR MINE-SWEEPERS	130 132 151	129 131
MOTOR LAUNCH	154 420	
HARBOUR DEFENCE	1110 1112	1261 1262
MOTOR LAUNCHES	1117 1118	1263 1266

On August 15, 1947, the Headquarters of the Commander-in-Chief of the undivided Royal Indian Navy was split into three District Headquarters :

- (i) Supreme Commander's Headquarters (Navy) under the Deputy Commander (Navy) located in Delhi ;
- (ii) Naval Headquarters (India) under the Flag Officer Commanding, Royal Indian Navy located in Delhi ; and
- (iii) Naval Headquarters (Pakistan) under the Flag Officer Commanding, Royal Pakistan Navy, located in Karachi.

The Flag Officer Commanding, Royal Indian Navy, with a nucleus staff of six officers and eighteen clerks assumed responsibility for the operational control of the reconstituted Royal Indian Navy from this date, and immediately started planning the reorganization of the Service. The principal function of the Supreme Commander's Headquarters (Navy) was then to turn over the remaining subjects to the two new Dominion Headquarters with the minimum disruption and as expeditiously as possible. This task was completed on November 30, 1947, when the Headquarters of the Deputy Supreme Commander (Navy) closed down and Naval Headquarters (India) took over complete responsibility for the Service.

At that time, the Naval Headquarters was organized in two main departments, Naval Staff and Naval Administration under the Chief of Staff and Chief of Administration respectively.

Partition and the consequent reconstitution of the Armed Forces had left the Indian Navy with an unbalanced cadre and had deprived the Service of many of its finest training establishments which were located in Karachi. During the first year of independence the Naval Headquarters had, therefore, to concentrate on solving these and many other problems arising from partition. Much attention had also to be devoted to planning and laying the foundations for a well-balanced Task Force. The burden of reorganization naturally fell on the few senior officers available.

On January 15, 1949, Naval Headquarters was reorganized into

five main departments each under a Principal Staff Officer :

Deputy Commander-in-Chief and Chief of Staff,
 Chief of Personnel,
 Chief of Administration,
 Chief of Material, and
 Chief of Naval Aviation.

Later certain other changes were made and a full fledged secretariat in Naval Headquarters modelled on the secretariat of the Admiralty and of a Royal Naval Command was set up in 1949-50 to function under the naval Secretary who ceased to be personal secretary to the C-in-C. From that time onwards the story of the Indian Navy has been one of gradual but steady expansion, consolidation and improvement in all spheres.

Change in Name : From January 26, 1950, when the new Republican Constitution of India was inaugurated, the prefix 'Royal' wherever it occurred in the Service was discontinued, and so was the use of the words "His Majesty's". From that date the RIN became the Indian Navy (IN) and His Majesty's Indian Ships simply Indian Naval Ships (INS). Their crests and mottoes were also changed and almost all were given new mottoes in Sanskrit or Hindi. For example when the cruiser HMS *Achilles* was acquired from the Royal Navy in July 1948, it was renamed HMIS *Delhi* and from January 26, 1950, INS *Delhi*. Later, its Latin motto '*Delecta son Deleta*' was replaced by a Sanskrit one "*Sarvato Jayamichchhami*" meaning "I desire victory everywhere".

Post-Independence Modernization and Expansion : After 1947 the main task of our Navy has been to ensure adequate defence of our long coast-line and island territories and also arrange for the surveillance and protection of our territorial interests and off-shore wealth. This meant further augmentation of the fleets and other maritime forces, besides increased provision for repair, maintenance and logistic facilities.

The plans for modernization and augmentation of the Fleet Units and other facilities are reviewed from time to time with a view to balancing these with the threat assessment, on the one hand, and the country's economic and resources position, on the other.

Acquisition New Ships : To make up for the loss of ships suffered consequent on a division of the RIN fleet at the time of the partition and due to the increased responsibilities of the Navy resulting from the ceasing of the duty of the Royal Navy to protect the Indian shores, it became necessary to acquire new ships of all types. Cruisers, destroyers, frigates (including some anti-submarine frigates), self-propelled oil barges, tankers, minesweepers, survey ships, tugs etc. were added to the Indian Navy from time to time either by construction in Vishakha-

patnam, Calcutta and Bombay or by acquisition from the Royal Navy or construction in Great Britain. Thus while some new ships were commissioned, some old ones were decommissioned, recommissioned or converted for uses other than the original purpose. But perhaps the most important event in this respect was the acquisition from the UK of the 19000-ton aircraft carrier, the *Vikrant* which was commissioned on February 16, 1961, and joined the fleet in November 1961. The required aircrafts for the carrier including Seahawks and some other types were also acquired. The *Vikrant* has now Seahawk jet fighters, Briguet Alize reconnaissance and anti-submarine aircraft and Alouette sea-air rescue helicopters. The carrier has an angled deck and is equipped with a steam catapult, mirror landing aids and two electrically operated aircraft lifts.

Changes After 1965 : It was only in the latter half of the sixties that the Navy went full steam ahead in the fulfilment of its legitimate role in the defence preparedness of the country.

The year 1966-67 marked the beginning of the Defence Plan. A phased programme was taken in hand for the replacement of ageing ships by modern ones, construction of various types of ships in Indian yards and development of India's underwater capability.

Some conventional types of submarines, fitted with modern equipment, have since joined the fleet. To keep the submarines fighting fit with facilities for repair and supply of water, fuel and torpedoes, the depot ship, *INS Amba*, was acquired. Taking into account the threat the country is likely to face in future, the submarine arm is progressively being strengthened.

Organization : A restructuring of the higher echelon of Naval Headquarters was carried out in early 1973. Reorganization has been carried out, down to the unit levels with a view to making the Navy a more efficient and effective-force. The command and control structure of the Submarine Army has been rationalized through the formation of squadrons. A separate wing has been constituted to oversee the maintenance and safety aspects of submarines and their operations. A Directorate of Management Services at the Naval Headquarters to organize work-study, statistical analysis and operational research, has been set up recently.

Missile Era : The Navy acquired in early 1960 multi-purpose ships. It also has in addition another two frigate squadrons one being an anti-aircraft squadron and another the anti-submarine squadron. The Navy entered into the missile era when it acquired a squadron of missile boats. A new establishment, *INS Agnibahu*, which would cater to the logistic and maintenance requirements of the missile boats squadron has been commissioned recently. In addition, a few seaward

defence patrol boats constructed in Indian shipyards and a few police boats have been added to the fleet.

Progress on the East Coast : A big maritime base at Vishakhapatnam was practically of no use at the dawn of independence because the navy was too small to acquire many shore bases. During May, 1971, the submarine base INS *Virbahu* was commissioned with a view to providing logistic facilities and administrative support to submarines of the Indian Navy. The base will also provide facilities for carrying out maintenance and repair of submarines. In addition, it can conduct trials and work up the submarines to ensure high level of operational efficiency.

The results were evident in the 14-day conflict with Pakistan in December 1971 which proved beyond doubt that the Indian Navy has built itself into an efficient fighting force. Our Navy is proud of its achievement as a major naval force between the Straits of Malacca in the East and the Persian Gulf in the West. It is these ships of the Indian Navy which successfully and effectively blocked all ports in East Pakistan (now Bangladesh) and West Pakistan, sank several enemy ships and submarines and helped to keep our sea-lanes clear for the merchant shipping during the entire period of the war. The contribution of the Navy in the liberation of Bangladesh speaks volumes for its progress through the years.

Frigate Class Ships : The keel of the first frigate INS *Nilgiri* was laid in 1966. The ship was launched by the then Prime Minister in October 1968, and commissioned into the naval fleet by her on June 3, 1972. This 2,400 ton anti-submarine, all-purpose frigate is one of the most modern and sophisticated warships of its type. Armed with anti-aircraft missiles and its own submarine hunter-killer helicopter, this frigate is also equipped with highly developed radar and sonar systems. The second frigate of the series INS *Himgiri* was commissioned into the naval fleet on November 23, 1974 and the third INS *Udayagiri* on February 18, 1976.

Some more such frigates are on order at the Mazagon Dock and will join the fleet at regular intervals. With a view to achieving the maximum indigenous content in these frigates, public and private sectors are extending a great deal of cooperation. By way of a balance, a number of other types of ships and smaller crafts have been added. More of these types of craft are under construction at Garden Reach Workshops.

Training : Providing facilities in the country at Vishakhapatnam was yet another significant step taken by the Navy towards achieving self-sufficiency and self-reliance in the matter of training. This training was earlier done abroad. This has resulted in the savings of a substantial amount of foreign exchange in the country besides

cutting down the period of training.

A permanent site for the training of boys in Orissa has been selected and construction work is in progress.

New training centres with modern equipment have been set up at Cochin, Vishakhapatnam, Bombay, Jamnagar and Goa. Some of the old establishments have been revamped and expanded. Steps have also been taken to set up a number of training centres for the personnel of *INS Garuda*.

Technical training of electrical officers and sailors is now being undertaken at the Navy's electrical establishment *INS Valsura* at Jamnagar. To meet the increased commitments due to expansion of the fleet and rapid technological developments that have taken place during the last two decades, *INS Valsura* has expanded progressively over the years and fully caters to this demand. The Naval College of Engineering at Lonavala conducts marine engineering courses.

INS Kunjali located at Bombay and *INS Hamla* at Marve also are meeting the training requirements of the men of the regulating branch and the Central Naval Band and of the officers and the sailors of the logistic, administrative and catering branches.

The Chief of Naval Staff's annual exercises and the good-will visits by the naval ships are regular features to keep the naval fleet in a state of readiness.

The Indian Navy which had only some corvettes, sloops and minor naval crafts in 1947, acquired the status of three dimensional naval force when it acquired submarines to extend its sphere of activities below surface of the ocean. Today the proud Indian Navy consists of a balanced fleet.

Indian Air Force : The first serious use of aerial warfare was made during the World War of 1914—18. In the early stages of that war, the Germans sent their Zeppelins for dropping bombs over London. Small dirigibles for coast inspection were also used. Both these were of lighter-than-air variety and were soon superseded by heavier-than-air aircraft. In the beginning their role was mainly, almost entirely, that of reconnaissance of the enemy positions and ranging own artillery. To counter this dual activity, two defensive measures were adopted; one on the ground and the other in the air. While on the ground the art of camouflage or concealment was developed, in the air smaller and faster aircraft, fitted with machine guns, were sent up to shoot down or drive away the reconnaissance aircraft of the enemy. These were the predecessors of the modern fighters. Soon both sides began to use both types of aircraft, the heavier and slower ones for bombing and reconnaissance and the lighter ones for providing a protective cover for these and for fighting

the enemy fighters. This naturally resulted in some air battles between fighters of the opposing sides quite independent of land operations. Later, an important tactical use was made of the air power by attacks on troops by low flying aircraft using machine guns, and higher-flying planes using bombs. Strategic and industrial targets were also bombed. Another important development was the use of aircraft for transporting troops and supplies.

Though the air power proved in no sense decisive during the First World War, its immense potentialities were recognized and during the intervening period all western countries made great improvements in the speed, range, size and lifting-power of aircraft. Nothing, however, was done in India in this respect as there was neither an aircraft industry nor an Indian Air Force. The air needs of the country were satisfied by the planes of the Royal Air Force.

Beginning of Aviation in India : The first few flights ever made in India were by private enterprise in 1912. These ended in disaster to the aeroplane, but bore fruit in directing attention to the military potentialities of the new arm, resulting in the preparations to form an Indian Flying School in the barracks of the deserted cantonment at Sitapur. The staff was provided by some officers of the Indian Army who had learnt to fly at their own expenses while on leave in England and had also completed a course with the Royal Flying Club at Farnborough. Other necessary materials were imported from England, and all was set for the first course to commence in 1914 when the World War began. The staff and aircraft equipment were all pressed into active service and the school was broken up. Later, this Indian flying unit saw active service in Egypt and Mesopotamia before ceasing to exist as a separate body in the winter of 1915 when all air organization for war was concentrated in the hands of the Imperial Government in the UK.

Royal Flying Corps in India : The first detachment of the Royal Flying Corps arrived in India in December 1915. This was one squadron with the nucleus of its Aircraft Park and was located at Naushahra, later shifted to Risalpur. The squadron had intensive training but engaged in no large operation between 1916—18. In the latter years another squadron was formed so that when the war ended the Royal Flying Corps had two squadrons in India with a total strength of 80 officers and 600 men.

In the two years after the close of hostilities, this strength had swollen to eight squadrons of which two served the purpose of bombing or distant reconnaissance mainly on the North-West Frontier, two as fighters and four for army cooperation duties. The force was distributed widely from Bangalore to Quetta and Peshawar and was

backed by an efficient ground organization. During 1921-22, however, the Air Force, too, suffered as a consequence of the post-war financial stringency. Both the fighter squadrons were dispensed with, while appreciable reorganization took place for the sake of economy in the remaining six.

Fortunately, this prior reorganization of the Air Force induced the Inchaape Committee of 1922-23 not to recommend any further retrenchments in the case of the Air Force, which continued to have six squadrons, four for army cooperation duties and two as bombers. Of these, five were stationed along the North-West Frontier and one at Ambala with a total establishment of 218 officers, 1,757 British Non-Commissioned Officers and airmen, and 138 Indians.

Demand for Indian Air Force : During all this time a persistent demand was voiced in the country that Indians should be freely admitted to all Arms of His Majesty's forces including the Air Force in India. As a result the Skeen Committee of 1925 (popularly known as the Indian Sandhurst Committee) recommended *inter alia* that Indians should be made eligible for employment in the Air Arm of the Army in India and that for this purpose they should be admitted to the Royal Air Force (RAF) College at Cranwell. In the beginning only two vacancies were to be reserved for Indians in Cranwell, to be increased progressively.

The Government of India's decision on this part of the report was that an Indian Air Force should be created, and that six Indians should be trained at Cranwell for 2 years, after which they should spend three months at the Army Cooperation Training School and three with various RAF establishments.

By 1930, six flying clubs subsidized by the government were also functioning in India for training pilots and engineers for commercial aviation. Selection of six candidates for Cranwell was, therefore, not very difficult and the first batch left for England in 1930. All six of them completed their training—five as pilots and one as Equipment Officer.

Indian Air Force Constituted : On the return of these Cranwell-trained Indians, the Indian Air Force (IAF) was formally constituted by the Gazette of India notification of October 8, 1932 and came into existence on April 1, 1933, when its first squadron with headquarters and a flight of four Westland Wapiti aircraft was formed at Drigh Road, Karachi. Flight Lieut. (subsequently Air-Vice Marshal) C.A. Bouchier DFC was its first commanding officer. Another flight was formed three years later and a third flight in June 1938. The three flights of the first squadron came together for the first time at Ambala in July 1938 when the squadron was reorganized. The pilots and

aircraft were distributed evenly among the three flights, each being given 3 aircraft and an Indian officer in command. The three officers were Flying Officer A.M. Engineer, Pilot Officer S. Mukerjee and Pilot Officer K. K. Majumdar, the first two of these later rose to be Air Marshal and Chief of the Air Staff in India.

When the war began in September 1939, the Air Force in India comprised the following units :—

- (i) Two army cooperation squadrons at full strength.
- (ii) One army cooperation squadron at one flight strength.
- (iii) Two bomber squadrons.
- (iv) One bomber transport squadron.
- (v) One squadron Indian Air Force.

Indian Air Force Volunteer Reserve : The proposal to form an Indian Air Force Volunteer Reserve for coastal reconnaissance and port defence had been under consideration for some time, but could not be given effect to for want of funds. However, in 1939 under the shadow of the gathering clouds of a major war, the idea was accepted and shortly before the outbreak of the war the organization was formed. It had both a regular and a volunteer element and was mainly recruited on a territorial basis and for local defence. The personnel selected were brought to Risalpur for training for coastal reconnaissance work. An RAF squadron was converted into a training unit for this purpose, and an intensive course of flying and navigation was gone through till October 1940 when the pilots and navigators flew to their respective posts.

Coast Defence Flights : In addition to the regular Air Force recommended for the local defence of India, the Chatfield Committee had also proposed that five flights should be raised on a volunteer basis for certain duties in connection with coast defence. They were to be raised at Bombay, Karachi, Calcutta and Madras, respectively where they should be developed out of the existing flying clubs. Bombay was to raise an additional flight for duty at Cochin. These flights were placed under a Coast Defence Wing in charge of a Wing Commander with his headquarters in Bombay. A sixth flight was added in March 1942 for duty at Vishakhapatnam after the entry of Japan into the war.

Indian opinion, however, looked upon this slow development with misgiving. It was apprehended that the RAF on whom lay the main responsibility of air defence of India might be so engaged in Europe that any reinforcement from Britain for the defence of India in case of attack would not be possible. Apart from this consideration, it was also strongly felt that India should have an Air Force manned by her own officers. These points were stressed by various speakers in

the Central Legislative Assembly on February 8, 1940, in the course of a debate on a resolution moved by Sir Syed Raza Ali. The mover pleaded for a progressive increase in the number of Indian squadrons. The resolution recommended provision of suitable air training for the Indian youth and the establishment of an Indian Air Force commensurate with the size, population and requirements of the country. The government spokesman (C.M.G. Ogilvie, Defence Secretary), while not opposing the resolution, pointed out that anything in the way of a vast expansion of the Indian Air Force would be absolutely beyond the power of India to attain. The equipment of a single squadron cost Rs. 80 lakhs and its recurring annual expenditure was from Rs. 20 to 25 lakhs. Another factor which was impeding the growth of the IAF was the long-time (about 4 years) it took to train Air Force mechanics to keep the aeroplanes in flying condition. In spite of these limiting factors the government, he said, was doing whatever was possible. As regards the formation of more IAF squadrons the Defence Secretary informed the House that a second squadron would be formed as soon as possible.

By October 1940, No. 1 Squadron had been brought to full strength but the five Coast Defence Flights were in operation at half strength.

In pursuance of the Defence Department programme, No. 2 Squadron was formed on April 1, 1941, at Peshawar. The Squadron was equipped with Wapiti aircrafts. Six months later, on October 1, 1941, No. 3 Squadron was formed at Peshawar. The Squadron was equipped with Audax aircraft, 6 being received in October.

At Peshawar was also formed No. 4 Squadron on February 1, 1942, equipped with Lysanders, the first allotment of 4 aircrafts being received on February 16. Some officers were drafted from No. 2 and No. 3 Squadrons. Besides, some pilots trained in England and having experience of operations in England and the Middle East also joined the Squadron.

The proposal to build up six coast defence units to squadron strength was, however, not implemented. Instead, the existing flights were disbanded towards the end of 1942. The personnel of the disbanded coast defence flights were absorbed in the three new squadrons, Nos. 6, 7 and 8 that were formed on December 1, 1942. No squadron was numbered 5 as there was an RAF squadron with that number in India and the existence of two squadrons with the same number might, it was feared, result in confusion. No. 6 Squadron was formed at Trichinopoly, Squadron Leader Mehar Singh, one of the earliest pilots trained at Cranwell being put in command. No. 7 Squadron was formed at Vishakhapatnam and No. 8 at Trichinopoly

(Tiruchirapalli). Both were equipped with Vengeance aircraft.

The formation of further squadrons was delayed by more than a year on account of the non-availability of pilots. This necessitated the inclusion of British officers not only in technical capacities but also for flying duties in the new squadrons. However, No. 9 Squadron started forming at Lahore on January 3, 1944. By January 8, 18 Hurricane II C aircrafts were received. Eighteen pilots who had just completed a fighter course at Risalpur joined the Squadron two days later. By January 17, the Squadron moved to Bhopal. During February more British officers arrived on posting.

The Squadron No. 10, the last to be formed during the war, was also raised at Lahore in 1944. It started forming on February 20, but was not provided with any aircraft until March 14, when 16 Hurricanes were received.

Side by side with this expansion of the Indian Air Force from one squadron in 1939 to nine in 1944, there was tremendous accession to the Royal Air Force units in India, particularly from 1942 onwards when the Japanese threat to India and Ceylon began to loom large. Air reinforcements came pouring into India, but there were inadequate aerodrome facilities, which had consequently to be increased and improved. Plans were made for the construction of 222 modern airfields and this task was given priority. By the end of 1942, 148 airfields were available for use in India. Personnel and machines also arrived, mostly from the United Kingdom and some from Burma which had been completely occupied by the Japanese. Recruitment of airmen and technical men was stepped up, and communications, both of wireless telegraphy and land lines were developed on a large scale. A warning system with the help of newly-arrived units having Radio Direction Finding or Radar equipment was installed to cover Calcutta and other major ports in India and Ceylon. A Balloon Branch was formed and some Indian officers and other ranks transferred from the Army to the Indian Air Force were trained with the Royal Air Force units. Many new schools and training establishments were opened for the training of Indians and for providing refresher courses of all kinds to RAF personnel. By the end of 1942, the India Command had 29 squadrons fully operational and 20 more squadrons at various stages of training, with two transport squadrons and one photographic reconnaissance unit. The number of planes of various makes available had risen to 1,433. The combined strength of the RAF and IAF in India at that time was 3,944 officers and 57,270 other ranks (the latter figure includes civilians and non-combatants).

The build-up of the Air Force in India continued at a fast pace

in 1943, and at the end of the year there were 3,699 service planes available. Of this total about 43 per cent were ready with the squadrons and the rest were with the storage or maintenance units. The personnel strength had risen to 6,531 RAF and 1,125 IAF officers and 1,27,492 other ranks including both civilians and non-combatants. The IAF had eight squadrons by this time.

By the beginning of 1944, the Allies were on the offensive and had won air superiority everywhere. The Indian Air Force was not to be expanded any more, but efforts were made in consolidating the progress made in 1943, and recruitment of Indians that took place was for the purpose of replacing the Royal Air Force personnel who were serving with the Indian Air Force. The strength of the Indian airmen at the close of the war was :

Trained	...	22,345
Under Technical Instruction	...	2,127
In No. 2 Recruits Training Centre	...	2,142

Meanwhile, the strength of the RAF and the United States Army Air Force (USAAF) in India and South-East Asia Command had further increased. Even on August 1, 1945, when Burma had been won back and many squadrons had left the Air Command, South-East Asia, there were 76½ RAF and 9 USAAF squadrons in the area excluding those based in China. On July 1, 1945, a few weeks before the end of the war, the IAF and RAF in the theatre had the formidable strength of 2,07,632 officers and men, made up as follows :

IAF Officers	...	1,638
Indian Other Ranks	...	26,900
Non-combatants enrolled	...	13,727
Non-combatants unenrolled	...	26,469
Cadets, Civilians, WAC(I) etc.	...	6,991
RAF Officers	...	13,225
British Other Ranks	...	1,18,682

Operations 1939—45 : Initially the Indian Air Force had seen some service in the North-West Frontier, but after the Japanese had conquered Burma and had even occupied certain parts of India (in Assam) the force was mainly used in the Burma operations. In the fighting on the Arakan coast it played a distinguished part, but its most valuable work was in the defence of Imphal and Kohima. When Kohima was besieged by the Japanese, there was no way of supplying the garrison by land. The Indian Air Force along with other Allied Air Forces undertook the task of flying supplies and dropping their

loads of food supplies, ammunition, etc., to the hard-pressed garrison through a storm of Japanese shells and bullets. Later when the battle for Imphal and Kohima had been won in the summer of 1944, the Indian Air Force helped in pushing the Japanese out of Indian territory into Burma and then out of Burma itself. In these operations it cooperated with the Royal Air Force and USAAF and the American Volunteer Group. In recognition of its services in Arakan the IAF was given the title of "Royal" (RIAF) and from that time may be regarded as having attained maturity. By 1944, when the squadrons of the Indian Air Force had been given more trained officers and modern machines, it was no longer an infant service performing Army cooperation role only—it had built up a bomber force and creditably performed tasks ranging from reconnaissance to bombing, combat fighting and pursuing enemy planes.

Indianization : The Indian Air Force Act of 1932 had laid down that only Indians would be eligible for commission in this force. This force was thus the only purely Indian Service, though of necessity some RAF officers were often seconded or attached to it. When the war started there were only 14 officers holding regular commissions in the Indian Air Force. During the war, regular commissions in this service were stopped and only temporary or emergency commissions were granted both in the Indian Air Force and the IAF Volunteer Reserve which was created in 1939. The strength of the Indian officers in the combatant Arms of the IAF rose from 14 on September 1, 1939 to 1,375 on September 1, 1945. While there was no officer of the rank of Wing Commander or above in 1939, there were nine such Indian officers six years later. Although these are impressive figures, the fact remains that not enough Indian candidates suitable to hold officers' jobs in the combatant Arms of the Air Force were forthcoming, and that was one of the reasons for the slow formation of Indian squadrons and the considerable admixture of British officers from the Royal Air Force in them.

Demobilization : After the war came the inevitable demobilization in the Air Force as in the other two Services, plans for which had been worked out in 1944 by the Chiefs of Staff Committee. Their estimate was that India would require, in peace time, 36 squadrons—7 for tribal control on the North-West, 5 for internal security, 3 for the North-East Frontier and 21 to form a nucleus for expansion in case of a major threat of war. Of these the IAF would be limited to 10 squadrons for a considerable time on account of lack of suitable Indian personnel and 26 would be provided by the RAF. Although this estimate was accepted as a useful foundation for further examination, it was realized by April 1945 that the lower limits should be

further brought down and should be based on minimum figures considered absolutely necessary for India's local defence and to enable her to hold out, in the event of a major war, until reinforcements could arrive from outside. New targets were, therefore, evolved, demobilization machinery set up, release regulations framed and demobilization set in motion soon after the war ended. The lowest limit for the Air Force in India was fixed at 19 squadrons out of which 10 would be of the Indian Air Force. Thus there was to be very little reduction in the Indian Air Force officers though the number of other ranks was reduced to almost half. Figures for July 1, 1945 and July 1, 1947 (for the RIAF) are given below for comparison:

	Officers	Other ranks
July 1, 1945	1,638	26,900
July 1, 1947	1,480	13,257

The strength of Royal Air Force personnel (officers and other ranks) was as follows :—

	Officers	Other ranks (Air Crew and Airmen)
July 1, 1945	13,225	118,682
July 1, 1947	1,133	10,140

Indian Air Force since Independence : The partition of the country had deprived India of the permanent bases of the Air Force which were located in West Pakistan. Two of the nine squadrons went to Pakistan and simultaneously most of the senior instructional staff which was largely British left the country. The solitary Dakota squadron which was still in the process of being raised was also divided. This created a vital gap which had to be filled immediately. Starting from obsolescent piston engine fighter bombers and a small fleet of Dakota transport aircraft, the Indian Air Force has achieved a steady progress.

The objective is that Indian Air Force should be least dependent on aircraft and equipment from abroad and it should be put on sound organizational and operational footings. In pursuance of this policy, the plan to develop, design and manufacture HF-24 (Marut) aircraft was undertaken. These aircrafts are already in squadron service and a successor to this aircraft to meet the future needs of the Air Force

is being processed. Production of Gnats and MiG-21 aircraft was also undertaken.

The Long Journey to AN-12 : Dakotas were the only transport aircraft which IAF possessed at the time of independence. The IAF has subsequently acquired Packets, Caribous and AN-12 to meet the increasing commitments. For meeting the requirements of the Communication Squadron, HS-748, which is manufactured in Kanpur and TU-124 aircraft have been inducted. The sturdy and sleek AN-12s appropriately called the flying fortresses of the Indian sky, maintain the supply line between the plains and the Himalayan posts of the Army. The Fairchild Packets—the 'flying cars', carry out transportation of vital supplies to forward areas. The good old Dakotas still survive and continue to ply over difficult hilly terrain side by side with the more sophisticated and dependable Caribous and the STOL (Short Takeoff and Landing Aircraft).

Helicopter Fleet : The helicopter fleet has been standardized to Mi-4, Mi-8 and Alouette III-B. A high record of landing at an altitude of 7,500 metres was set up in 1969 when one of our Air Force test-pilots flew an Alouette helicopter to that height.

The task of expansion to have a compact and hard hitting balanced force of 45 squadrons as a result of experiences of the aggressions since independence has been successfully accomplished. Consequently greater aircraft armament and auxiliary equipment have been acquired from various sources and of many different makes and types. Standardization of both equipment and procedures has been achieved through greater and more rapid reliance on indigenously produced aircraft and equipment. The overall objective has been to achieve the optimum out of the available manpower, aircraft, equipment and other resources. Studies in depth were undertaken by specially appointed teams at all levels of the Air Force with a view to improving all round efficiency and effecting economy. Latest management techniques and system analyses to suit the specialized needs of the Air Force were prescribed and enforced. Latest developments in the concepts and techniques of air warfare, particularly in relation to short and long term threats faced by the country, are constantly being evaluated.

Sophistication : Efforts for indigenization of aircraft and equipment in keeping with the national policy of self-reliance in defence equipment are still continuing. Government is constantly on the look out for more modern and sophisticated aircraft. Indigenous development and production of a long-range strike aircraft and an air superiority aircraft are under consideration to meet our long term requirements.

The Hindustan Aeronautics Limited (HAL) manufactured MiG-21 has already been inducted into squadron service. The HS-748 air-

craft has been modified into a freighter and certain number of this aircraft are proposed to be inducted into IAF. Modernization of helicopter force is already in hand. The HAL built Cheetah helicopter has been introduced in service and more units are planned to be re-equipped by this type over the years. Steps continue to be taken to place more sophisticated weapons at the disposal of IAF. The work on improving the Gnat to a better version is also at an advanced stage.

Air Defence Ground Environment System : A comprehensive Air Defence Ground Environment System aimed at strengthening air defence of the country, specially in northern and western theatres, is under implementation on a phased basis. This system will augment and integrate a modern radar and communication set-up which will not only strengthen our radar system but also provide a more effective air defence cover by integrating these radars with air defence control centres, air bases and missile bases.

Air Force Academy : The inauguration of the first phase of the composite Air Force Academy near Hyderabad early in 1971 was a great landmark in the field of training of the Indian Air Force personnel. The Academy is equipped to train pilots and Ground Duty Officers (non-technical branches).

A Compact Force : The chastening experience of IAF operations since independence in Kashmir, Goa, Pakistan and the erstwhile eastern wing of Pakistan (now Bangladesh), the execution of day-to-day peace-time commitments—diverse and complicated on account of the vastness of the country, and the bewildering variety of terrain and climates, have moulded the Indian Air Force into an institution symbolizing strength, resourcefulness, adaptability, improvisation and the spirit of go-getting against the heaviest odds. Today the IAF is a compact and consolidated force of 45 squadrons with a stable air defence network.

IAF has rendered immense service both in times of peace and war, well demonstrating that while it flies with the wings of a dove with a message of goodwill and a healing touch, it also has talons of steel. Today the IAF is so well integrated a part of our life that it has come to be regarded as a symbol of our national aspirations.

II. Problems

The main task of the Indian Armed Forces (Army, Navy and Air Force) is to defend India and every part thereof against aggression or encroachment from outside. The coordinating and servicing agency

for the efficient performance of this task by the Armed Forces is the Ministry of Defence which is responsible for matters relating to the defence of the country and for obtaining policy decision of the Government of India in all matters concerning the forces and to transmit them to, and process their implementation by, the three Service Headquarters.

A secondary task is that of coming to the aid of civil power in time of civil commotion. Although the responsibility for maintaining internal law and order is primarily that of the civil authority with the help of police forces at its disposal, yet when the disorder grows beyond the control of civil police, a civil magistrate may requisition military aid to restore order with the help of troops. Other secondary tasks of the Armed Forces are to help the government in times of natural calamities like earthquakes, floods, famines, etc., to organize relief measures for the people in distress.

Special Assignments

(1) *Military Evacuation Organization* : The earliest special assignment given to the Army of free India was in connection with the aftermath of the partition of the country in 1947. The decision to partition the country involved the demarcation of predominantly Muslim majority areas in Punjab and Bengal. The Punjab Boundary Commission was created by an announcement of the Governor-General on June 30, 1947 for the purpose of demarcating the boundaries of the two parts of the Punjab. The decision was to be announced as soon as possible before August 15, 1947. The task was rendered difficult by the divergent claims of the various parties and zones. The Boundary Commission failed to arrive at an agreed solution and ultimately the Chairman of the Commission, Sir Cyril Radcliffe had to give his award. As was expected the award satisfied neither party, and to enforce it the Punjab Boundary Force was created and stationed in central Punjab. Meanwhile the tempo of the riots which had started in March 1947 was arising in the Punjab. Muslims in West Punjab began a wanton destruction of property and brutal murder of innocent people belonging to the other community. This soon brought retaliation on the Muslims in East Punjab. Millions of people from each zone fled in terror to seek refuge in the territories of their co-religionists in the other. An unprecedented two-way traffic started—Muslims of East Punjab going west and Sikhs and Hindus of West Punjab going east.

The combined force, the Punjab Boundary Force, however, failed to maintain law and order mainly because it was ill equipped and inadequate for the task, the magnitude of which nobody had anticipat-

ed. It was, therefore, disbanded on August 31, 1947, its place being taken by the Military Evacuation Organization (MEO) on September 1. A parallel organization was set up in Pakistan also. The 4th Infantry Division, designated for East Punjab Area, became responsible for maintenance of law and order in East Punjab, while the Indian Military Evacuation Organization operated in West Punjab to arrange for the safe evacuation of Hindus and Sikhs from there to Indian territory.

An idea of the gigantic nature and immensity of the task so successfully accomplished by the MEO can be had from the following figures :

Refugees brought to India on foot	16,00,000
Refugees brought to India by rail	10,82,500
Refugees brought to India by motor-transport	3,20,000
Refugees brought to India by air	30,000
	30,32,500

This was a very creditable performance, and more so when one considers that the Army and Air Force had no experience of this type of operation and that the task was carried out by officers and men many of whom were often themselves in the grip of acute anxiety about the safety and whereabouts of their own kith and kin. It was indeed a unique achievement in the annals of military history of any country.

Most of the task was finished by December 1947. The organization was gradually wound up and finally ceased to exist in August 1948. Other major operations undertaken by the Armed Forces of India in the post-independence period in the performance of their main task up to 1971 were Jammu and Kashmir, 1947-48; Liberation of Portuguese enclaves, 1961; Kutch, 1965, and Indo-Pak conflicts of 1965 and 1971.

(2) *Peace Keeping International Obligations* : Apart from the six operations on the Indian soil mentioned above, the Armed Forces of free India have also been in service in many foreign countries on behalf of the United Nations (UN). A brief account of such service in discharge of peace-keeping international obligations is given below :

(a) *Korea* : When in June 1950, the Republic of South Korea was invaded by the communist forces of North Korea across the 38th Parallel, the UN Security Council called upon the member states to render help in repelling the invasion. Consequently the United States and some other countries constituted a UN Force for fighting from the South Korean side. India contributed a Medical Unit from her Armed Forces to the sick and the wounded in the war-ravaged Korea. The

60th Field Ambulance with a total strength of 346 (including 17 officers) was sent. It carried out its humanitarian task with great devotion and treated the sick and wounded Australians, Americans, South Koreans, and even Chinese and North Korean prisoners of war. For its services, it was awarded the Meritorious Unit Commendation by the United Nations Commander.

After nearly three years of warfare, when an agreement was signed by the warring sides, a Neutral Nations Repatriation Commission was appointed. India was named its Chairman and the armed contingent (custodian force) to assist the Commission in its work was also provided by India. The Indian officers and men did splendid work in connection with the repatriation of the prisoners of war, and although the work of the Commission was not wholly successful, there was all-round praise for the exemplary conduct of the Indians some of whom were given suitable awards on their return to India.

(b) *Indo-China* : Three international commissions for supervision and control in the States of Vietnam, Laos and Cambodia were set up under the Geneva Agreement during 1954. In her capacity as member and Chairman of the International Commission, India provided a number of Army personnel for manning fixed and mobile teams at various stations, to keep a check on the entry of war material in the states of Indo-China, and investigate violations of the Geneva Agreement. Apart from providing personnel to carry out the functions devolving on India as member and Chairman of the three International Commissions, India also made available a number of personnel for security, signal, medical, movement and postal duties who served all members of the Commissions. After the Emergency of 1962, it was desired but not found possible to withdraw the Indian contingent wholly on account of India's obligations resulting from her membership of the International Commission. Certain reductions were, however, made in the strength of the personnel posted in Laos and Vietnam. During 1964, the strength of our contingent was 48 officers, 17 JCOs and 265 ORs.

(c) *Egypt (Gaza)* : The Suez Crisis of 1956 was responsible for the creation of the United Nations Emergency Force (UNEF), Gaza, on the request of the United Nations. India contributed an Indian Army contingent to this force, which was stationed on the Egyptian side of the border between Israel and Egypt. The Indian contingent consisted of an infantry battalion and ancillary units, its strength being the largest among the nations who had contributed troops to the 5,000 strong UN Force there.

In common with other members of the UNEF, our troops in Gaza were deployed on the Cease Fire line to keep a vigil on the international

border and thus prevent violations of the border and help to preserve peace in the area. Even after the emergency of 1962 in India the strength of Indian contingent in UNEF was left undisturbed.

(d) *Lebanon* : In 1958, India was called upon to provide Armed Forces personnel to assist the United Nations Observer Group in Lebanon. Seventy-one officers were sent for the purpose and later repatriated to India on the completion of their task.

(e) *Congo* : In 1960, when trouble broke out in Congo and United Nations Force was set up, India provided a number of officers, on the request of the United Nations. India also contributed an Indian Army military hospital and some ancillary units. During 1961, when conditions further deteriorated in that country, an independent Infantry Brigade Group was sent. This Brigade Group was called back to India in 1963 and the ancillary units were repatriated in June 1964 when the UN Force in the Congo was finally wound up.

(f) *United Nations Yemen Observation Mission* : In December 1963, India provided a Colonel and four Majors for the United Nations Yemen Observation Mission which was set up for observation of withdrawal of UAR troops from Yemen. The Colonel served as Chief of Staff of the Mission and the Majors as Observers, till September 4, 1964 when the Mission was wound up.

Cooperation with Friendly Foreign Countries : Since India is a free country and is not militarily aligned with any foreign power, the question of coordination in matters of defence with the Commonwealth or other countries does not arise. However, certain exercises are sometimes carried out jointly with the forces of other friendly countries (not necessarily with the Commonwealth countries alone). An example of this is the Joint Exercises and Training (JET) which the Indian Navy has had occasionally with the navies of other countries in the Mediterranean, Indian Ocean and other waters. India also takes part in the various international oceanographic expeditions in the Indian Ocean in which ships of several countries participate.

General Policy : The Policy of the Government of India is to respond positively to request from friendly Afro-Asian countries for cooperation in their own programmes for building up their defence arrangements and infra-structure. Every effort is made to comply with their requests within the framework of our programmes for economic, technical and scientific cooperation with these countries.

On the specific requests of these countries, we have been offering facilities for the training of their personnel in our defence training establishments. We have also been deputing our officers to work as advisers or instructors in these countries. The aim of such deputations generally is to provide expertise in organizing their instructional

institutions. Some of our personnel have at times been temporarily utilized on staff assignments also.

We have also endeavoured within the limits of our policy and our capabilities to meet the requests from some countries for co-operation in meeting their requirements on commercially competitive terms for stores and equipments.

Training

Training facilities are offered to foreign governments in various Indian defence establishments as mentioned below :

Army : The demand for courses in defence establishments from the foreign countries has been progressively on the increase particularly in view of the enhanced reputation for our standards of training and professional competence following the operational experience in 1971. We are meeting these demands to the best of our ability. In some cases we have had to stretch our facilities to the maximum in order to be as helpful as practicable.

In the Army, besides the Defence Services Staff College and Indian Military Academy, the other courses which are in demand are at the Infantry School, Mhow ; College of Combat, Mhow ; School of Artillery, Deolali ; Armoured Corps School, Ahmadnagar ; College of Military Engineering, Poona and Military College of Telecommunication Engineering, Mhow.

Navy : The naval courses on which foreigners are being trained include Long Specialization Course, Sub-Lieutenants Professional Courses in various branches, specialization courses of the Seaman Branch, Artificer Apprentices and Medical Specialization Courses.

In spite of our own needs, facilities for training at naval institutions have been offered to a number of friendly countries. During 1971, 141 officers and 283 sailors of different Asian and African countries were undergoing training with us.

Air Force : The important courses which are in demand by foreign governments are Pilot Training Course, Qualified Flying Instructors Course and Ground Training Course for technical and non-technical officers.

Air Force personnel from a number of friendly countries have been offered training facilities.

Deputation of Personnel Abroad : In addition, Indian senior officers were sometimes sent to the UK to participate in certain studies there. In August-September 1961 an Inter-Service study known as "Union" was held in which all the three Chiefs of Staff and Chief of the General Staff from India took part. Similarly, a joint

secretary of the Ministry of Defence, represented India, at a Study Conference on Defence Administration held at Oxford in September, 1961.

Our Army officers have been loaned to a number of African and West Asian countries for work on important assignments. Apart from rendering contribution in the military training they have performed a variety of other tasks concerning administration and organization. In addition, civilian academic staff from the National Defence Academy has been sent on deputation to some African countries.

One of our senior Army officers had the distinction of establishing the Harar Academy at Addis Ababa and of being the first Commandant of this Academy in 1957. His services were widely appreciated by the Ethiopian authorities. In fact, at the invitation of the Emperor of Ethiopia, he visited Ethiopia thrice *i.e.*, in 1970, 1971 and 1972, mainly for advising the Ethiopian authorities on certain specific defence projects.

In Nigeria also, a senior Indian Army officer acted as the Commandant of the Nigerian Defence Academy at Kaduna in 1963. At present an Indian Army officer is serving as its Deputy Commandant.

In addition to the above, at the request of a West Asian country, an Indian Army Band was sent to that country on the occasion of the celebration of their National Day in October, 1972. The performance of the band was highly appreciated by the Head of the State.

Our naval personnel have been loaned to a number of Asian and African countries for the performance of a variety of tasks for which local facilities were deficient.

We have deputed our Air Force officers to the government of a West Asian country for instructional duties. Two retired Air Force officers are also serving with an African country.

The normal tenure of deputation of these officers with the foreign governments is two years, extendable to three years at the request of these governments.

Goodwill Visits : Goodwill visits between our Service Chiefs and Heads of the Armed Forces of various friendly countries are a regular feature.

Apart from these goodwill visits, a number of foreign military delegations had visited India during 1972. It has been the aim of these visits to generate goodwill and to see our selected training centres and production units with a view to assessing and identifying areas for developing friendly cooperation in the defence sector.

Foreign high ranking army officers and delegations who have visited India during 1972—75 have been from the following countries: Yugo-

slavia, France, Sri Lanka, Nepal, Iraq, Singapore, Fiji, Bangladesh, USSR, Bhutan, Thailand, Guyana, Canada, Iran, Korea, Ghana, Malaysia, Laos, Bulgaria, Poland, Afghanistan, etc.

Similarly, such visits are returned by high dignitaries of India connected with or interested in defence matters and by high officials of the Indian Armed Forces of all the three Services.

Emergency Civilian Needs : Assistance rendered by the three Services to civil authorities may be divided into four categories, viz.,

- (i) in natural calamities, (ii) for maintenance of law and order,
- (iii) for maintenance of essential services, and lastly (iv) miscellaneous types of assistance.

Only in the case of No. (ii) above, namely maintenance of law and order there is a legal obligation on the part of the defence services to come to the aid of the civil power. In all other cases where a request for help is received the decision lies with competent military authorities for the reason that rendering of such help does not come strictly under the legitimate functions or duties of the Armed Forces. Since, however, the defence services are well organized and disciplined bodies and their personnel have expert knowledge and specialized training, calls for help are frequently made on them by the civil authority and are responded to willingly and efficiently, in some cases even in spite of other commitments of a primary nature on our borders.

The occasions on which such help and assistance has been rendered during the post-independence period are too numerous to be recounted fully. It would be sufficient, therefore, to give an idea of the forms which such aid assumes by mentioning a few instances as below :—

(i) *Natural Calamities :* In case of natural calamities like floods and earthquakes aid is given in the form of supplying vehicles and technical equipment, e.g. assault boats, outboard motors, bailey bridges, wireless sets etc. ; distribution of foodgrains, medicines and other supplies, evacuation of marooned villagers and cattle and arranging ferry services for civil officials and others ; carrying out salvage or lending salvage equipment, organizing relief work, medical aid, etc., as in Kashmir after the earthquake in Srinagar in September 1963 ; provision of fire fighting equipment, etc.

At the request of civil authorities flood relief was provided by various types of aircraft of Indian Air Force to the states of Bihar, Gujarat, West Bengal, and Arunachal Pradesh. In Bihar alone the Air Force flew 120 sorties involving 140 hours of flying and airlifted 293 passengers and 88,436 kilograms of relief supplies. In the earthquake relief operations for the affected areas in the Himachal Pradesh,

which were at the time snowbound, the Air Force flew 349 sorties involving 256 hours of flying and airlifted 227 passengers and 81,922 kilograms of relief supplies in January and February, 1975.

In June 1966, western Nepal was rocked by a severe earthquake. Within 48 hours of the request for help from the Royal Nepal Government, operations started. Over 67,000 kilograms of supplies were dropped in the affected region. Again in 1967, the Air Force provided massive help to flood victims in many areas of the country like Uttar Pradesh, Rajasthan and Andhra Pradesh. In 1971, the Air Force provided valuable support to the victims of floods in Bihar, Uttar Pradesh, Assam and West Bengal. It also airlifted large relief supplies for the Bangladesh evacuees.

IAF has also provided help of a different kind. In September 1966, two sherpas and one member of a mountaineering expedition, who were injured while returning from Mana-Kamat Peak, were rescued by a helicopter.

The Maritime Reconnaissance Squadron of the Air Force has successfully located many ships and country craft in distress and has been instrumental in saving many valuable lives. IAF has helped the Survey of India in completing their map-making tasks and has helped them in demarcating over 384 kilometres of Indo-Burma border. It has also been employed in geological mapping from the air which helped in locating mineral wealth in the country.

The Air Force also helps in evacuating injured people from inaccessible places in IAF helicopters, by carrying relief supplies, medicines and food to victims of earthquake or by air dropping stores and supplies. In 1974, at the request of civil authorities, flood relief was provided by various types of aircraft of the IAF to the states of Bihar, Gujarat, West Bengal and Arunachal Pradesh. In Bihar alone the Air Force flew 120 sorties to airlift passengers and relief supplies. Apart from such help given in India, the Air Force has sometimes performed such missions for helping other countries also such as Yugoslavia and Italy in 1963.

(ii) *Maintenance of Law and Order* : In case of civil commotion Army troops are employed to curb disturbances and help the police in maintaining law and order as was done on numerous occasions in Nagaland, in Calcutta, and in Kashmir on the occasion of the loss of holy relic from a shrine, and in many other places from time to time.

(iii) *Maintenance of Essential Services* : As an example of this may be cited the breakdown of water and power supply in Poona in March 1963 when Army personnel along with vehicles and electrical equipment were provided to assist in the restoration of water and

power supply. Similarly, assistance was given in January-February, 1974, in Bihar for water and power supply and in Bulandshahr (Orissa) for maintenance of water supply in February, 1974.

(iv) *Miscellaneous Assistance* : It would include the provision of bridging equipment, bull-dozers etc., to civilian authority for the construction of bridges, roads and canals, and also for repair of damaged canals and breaches in roads and drains; also the loan of transporters for conveying of heavy equipment, etc., etc.

Similarly, the Navy too has often given help to civil authorities in such matters as conveyance of medical supplies and officers in case of epidemics as in the case of islands of Minicoy, Amindivi, loaning of naval divers for restoring water supply, assistance to various hydro-electric projects for repairs to dams, clearing underwater obstructions; unloading of food ships, help to port authorities in case of strike by dockyard workers, rescue operations and help to other ships (Indian as well as foreign) having engine breakdown, catching fire or running aground, help to water works to clear sluices, help to civil authorities in anti-smuggling operations, fishing out gold dumped in the sea by smugglers, assistance to missing fishing craft and in many other ways.

III. Organization

Introduction : In the time of the East India Company, its territories in India were divided into three distinct Presidencies—Bombay, Madras and Bengal, where the President of each was also the Commander-in-Chief of its military forces responsible only to the Directors in England. In 1748, the Presidency authorities' susceptibilities must have received a shock when Major Stringer Lawrence arrived in India to take up his appointment as the Commander-in-Chief of the forces of all the three Presidencies. The Regulating Act (1773) created a Governor-General in Council at Fort William in Bengal and gave him overall operational control through his Council of which the Commander-in-Chief was also a member. A little later (1786) a Military Department of the government was also created which may be considered the forerunner of our Ministry of Defence. There was also a Military Board of which the Commander-in-Chief was the President with the Senior Artillery Officer, the Adjutant-General, the Chief Engineer and the Commissary General as members. This Board was abolished in 1855, and its members became simply the Staff Officers of the Commander-in-Chief.

After the Great Revolt of 1857, when the Governor-General's Council was reorganized by the Act of 1861, an experienced soldier

took his seat in it as Military Member of the Viceroy's Executive Council along with the Commander-in-Chief (C-in-C). Thus, although the C-in-C was superior in rank and prestige to the Military Member, he received orders of government through the Military Department (headed by the Military Member) which performed the basic functions of a ministry, and had brought under its control by 1894 the organizations which now form part of the Army Headquarters, such as the Commissary General, the Inspector-General of Ordnance, Director-General of Military Works etc. etc. The C-in-C still had under him the Quarter Master General (QMG), the Adjutant-General and the Principal Medical Officer but all administrative work of the Army was performed by the Military Department and its secretariat under the Military Member.

This position was not to the liking of Lord Kitchener who came here as C-in-C in 1902, and gave rise to the famous Curzon-Kitchener controversy. Lord Kitchener objected to his proposals being vetted and criticized by the Military Member who could not be considered a better judge of Army's needs than the C-in-C, and also because it involved delay in getting decisions. On the other hand Lord Curzon, the Viceroy, insisted on the right of the government to obtain expert military advice on Commander-in-Chief's proposals. The question of civil control over military matters did not arise, as both the Military Member and the C-in-C were experienced soldiers and members of the civil government. In the end Kitchener won his point and in 1906 the arrangement under which the Government of India had two military advisers was abandoned in favour of an arrangement under which a Department of Military Supply was created under another soldier with the rank of Major-General who also had a seat on the Executive Council. Three years later even this department was abolished and a new system was introduced by which the C-in-C also became the Military Member and attended the Executive Council meetings in this dual capacity. All work connected with the administration of the Army, the formulation and execution, of military policy, the responsibility for maintaining every branch of the Army, combatant and non-combatant, in a state of efficiency and the supreme direction of any military operations based upon India were thus centered in one person. The Esher Committee (1919-20) asked to consider the position of the C-in-C in his dual capacity as Head of the Army and member of the Executive Council and make recommendations, did not recommend a change, and the arrangement was allowed to continue.

Control Machinery in UK : The ultimate control over the whole defence system in India was, of course, that of His Majesty's Government since India was a dependency of the British Crown. The Secretary of

State for India as one of His Majesty's Ministers was responsible to the British Government and Parliament for the military administration in India. His principal adviser on Indian military matters was the Secretary in the Military Department of the India Office who was an officer of high rank, usually a Lieutenant-General with recent Indian experience.

Army Headquarters : The C-in-C in his capacity as head of the Armed Forces had the Principal Staff Officers under him to assist him in carrying out his duties of Command and administration. The staff of the Commander-in-Chief known as the Army Headquarters staff, was organized into various branches, the important of which were :

- (i) The General Staff Branch,
- (ii) The Adjutant General's Branch, and
- (iii) The Quarter Master General's Branch.

Each branch had its well-defined functions which it performed under the guidance and control of specially selected officers taken normally from among those who had graduated at the Staff College at Camberley or Quetta. After the end of the World War I, some new branches were added to the Army Headquarters, such as Master General of the Ordnance, Engineer-in-Chief's Branch, and Military Secretary's Branch. The heads of all these branches together with the heads of Navy and Air Force constituted the Commander-in-Chief's chief advisers and senior subordinates before the World War II (1939-45).

Army Department : The Commander-in-Chief, as the Army Member of the Executive Council, had the Army Department under him. Proposals relating to the better administration of Army and the welfare of the troops requiring the decision of the Government of India or the Secretary of State were first submitted to the Army Department, organized in the same way and possessing the same functions and authority as the civil departments of the Government of India. The staff of the Army Department consisted of a Secretary possessing the constitutional right of access to the Viceroy, a deputy secretary, assistant secretaries and an establishment section. Till 1921, the Army Secretary was an Army officer usually of the rank of Major-General. The Esher Committee took exception to this and as a result of its recommendations the post was, from 1921, given to a civilian.

The Army Department dealt with the Army, marine and RAF in India in respect of all questions requiring orders of the Government of India. It had no direct relations with commanders or troops or staffs of formations subordinate to Army Headquarters, but had continuous and intimate relations with the Army Headquarters only.

The Army administration was represented in the Council of State

by the Army Member and in the Legislative Assembly by the Army Secretary.

The Army Council : This was an advisory body constituted for the purpose of assisting the C-in-C in the performance of his administrative duties. Its President was the C-in-C who convened it for the consideration of important cases requiring examination in conference. Its other members were the Principal Staff Officers, Secretary to the Government of India in the Army Department and the Financial Adviser (Military Finance) representing the Finance Department of the Government of India. Heads of minor branches of Army Headquarters and technical services attended when required.

Post-Independence Defence Organization

After independence, when India became a Republic on January 26, 1950, the defence organization was recast in the light of the new Constitution. The defence structure, as distinct from the organization under the British rule, was now in two separate parts : (i) a central organization for control and for laying down the policy ; and (ii) an executive organization for translating the policy into action.

(1) Central Organization

The President : As Head of the State, the President is vested with the Supreme Command of the defence forces of the union, but in accordance with the accepted constitutional practice his authority is "regulated by law", which means that he exercises his authority on the advice of the "Council of Ministers" (headed by the Prime Minister) which is collectively responsible to the Lok Sabha or the House of the People. Hence the defence mechanism of modern India is based on the principle of parliamentary control exercised through the Cabinet.

The Defence Minister : Although there is no statutory provision for the appointment of a Defence Minister as such, defence being one of the key subjects of any country, a separate Minister for Defence along with a Deputy Minister for Defence and a Minister for Defence Production have been appointed. Like all other ministers they are answerable to Parliament for all defence problems in general and for administrative matters of the three Services. The overall and supreme responsibility in matters of national defence is, of course, that of the Prime Minister and his Cabinet in accordance with the well-established practice in parliamentary democracies.

Policy Making Instruments : After partition with the adoption of

the parliamentary form of government and the Cabinet becoming the supreme policy-making body it became necessary to create a number of policy-making instruments. A Defence Committee of the Cabinet was set up in September 1947 and it dealt with all policy matters relating to the defence of the country. It comprised the Prime Minister, the Defence Minister, the Home Minister and other Ministers to be nominated by the Prime Minister. In addition the three Service Chiefs, Defence Secretary and the Financial Adviser, Ministry of Finance (Defence) were in attendance at its meetings as expert advisers but not as members of the Defence Committee. Its secretariat was provided by the Military Wing of the Cabinet Secretariat. All questions relating to defence administration requiring decision of the government at the top level were referred to this committee, which in cases of great importance could refer a question to the whole Cabinet. The Minister of Defence not only tendered advice to this committee and the Cabinet but had also to implement policies laid down by these bodies, through his secretariat organization known as the Defence Ministry.

The Political Affairs Committee : In the light of the experience gained over the years, the Defence Committee of the Cabinet was, however, abolished. With a few modifications in its composition of procedure, the old committee emerged as the new Political Affairs Committee with a larger scope as its name implies.

In the light of shortcomings revealed by security challenges to the country, the other policy-making bodies like the Chief of Staff Committee and the Defence Minister's Committees also underwent further evolution. At present the major decision-making committees are (i) the Political Affairs Committee of the Cabinet; (ii) the Defence Minister's Committee; (iii) the Defence Minister's Production Committee; (iv) the Defence Research and Development Council, and (v) the Chiefs of Staff Committee. There are a number of other committees also involved in decision-making in national security matters. There is a network of Secretaries' Committees, the Joint Intelligence Committee, the Joint Planning Committee, Ordnance Production Board, Aeronautics Production Board, etc. Further, flexible procedures have developed over a period of time as political leadership, the Service officers and the civilians became increasingly familiar with the problems of national security and crisis management.

This complex decision-making apparatus took time to evolve and the success of the campaign of 1971 bears testimony to the decision-making process having reached the requisite level of skill, competence and sophistication. The effectiveness of the procedures for inter-service coordination developed in recent years was demonstrated in the conflict

of 1971. Considerable attention had been paid to improve management efficiency and this resulted in high dividends in a limited war.

Defence Minister's Committee : The Defence Minister is assisted by two committees known as the Defence Minister's Committee and the Defence Minister's Production and Supply Committee.

The Defence Minister's Committee is composed of the Defence Minister, the Minister of State (Defence Production), the Deputy Minister in the Ministry of Defence, the Chief of the Army Staff, the Chief of the Naval Staff, the Chief of the Air Staff, the Defence Secretary, the Secretary, Defence Production, the Financial Adviser (Defence), and the Scientific Adviser to the Minister of Defence. This committee deals with the Defence Plan and all important matters concerning the three Services and inter-service problems.

The Defence Minister's Production and Supply Committee consists of the Minister of Defence, the Minister of State (Defence Production), and the Deputy Minister in the Ministry of Defence, the Chief of the Army Staff, the Chief of the Naval Staff, the Chief of the Air Staff, the Defence Secretary, the Secretary (Defence Production), the Additional Secretary (Defence Supplies), the Scientific Adviser to the Minister of Defence, the Financial Adviser (Defence), the Additional Secretary, Ministry of Defence, the Director-General of Ordnance Factories, and the Director-General of Inspection. This committee regulates defence production efforts in the country and coordinates them with the civil industrial capacity to achieve self-sufficiency in defence stores ; reviews from time to time the mobilization plans for defence production ; approves projects for submission to the committee on Political Affairs of the Cabinet, and gives policy decisions on all matters for the effective operation, modernization or expansion of the ordnance factories. Apart from these functions, the Committee also gives policy decisions on all matters relating to import substitution in the field of defence, particularly instrumentation, vehicles and ship-building and other matters dealt with in the Department of Defence Supplies.

Other Committees : Apart from the above two committees, there is the Appellate Committee of Pensions which provides a final forum for considering appeals relating to claims to disability and family pension of the Armed Forces personnel.

The secretariat for the Defence Minister's Committee, Defence Minister's Production and Supply Committee and Defence Minister's Appellate Committee on Pensions is provided by the Cabinet Secretariat (Military Wing).

The Defence Research and Development Council : The council is responsible for coordinating and directing scientific research relating to defence problems, particularly in relation to the developments and improvements required by the Armed Forces. The Council consists of

the Defence Minister, Minister for Defence Production, Deputy Defence Minister, Defence Secretary, Scientific Adviser to Defence Minister, Secretary (Defence Production), Additional Secretary (Defence Supplies), Financial Adviser (Defence Services), the three Chiefs of Staff, Director-General Armed Forces Medical Services, Director-General Council of Scientific and Industrial Research, Director, National Aeronautical Laboratory, Bangalore; Director, National Chemical Laboratory, Poona; Vice-Chancellor, Jawaharlal Nebru University, New Delhi; Secretary Department of Science and Technology, New Delhi; Director, Bhabha Atomic Research Centre, Bombay; with Director of Administration (Research and Development) as the Secretary.

The Chiefs of Staff Committee : This Committee is the supreme coordinating agency at the Service level and its only members are the Chiefs of Staff of the three Services, its Chairman being the member who has been longest on the Committee. All important questions of policy which require Cabinet approval are first discussed by the Chiefs of Staff Committee and their opinion in the shape of expert advice is placed before the Cabinet for decision. The Chiefs of Staff are thus collectively the professional military advisers to the government. After a decision has been obtained from the government, the Chiefs of the Staff become the supreme executive for implementing it. The Committee is assisted by several sub-committees dealing with specific problems relating to planning, training, communications, etc. The secretariat for the Committee and its sub-committees is provided by the Cabinet secretariat.

Raksha Utpadan Board : The Raksha Utpadan Board was formed in May, 1971. Its main purpose is to ensure speedy implementation of projects and to find quick solutions to the problems facing the ordnance factories by providing a forum for inter-ministerial and inter-departmental consultations and decisions as well as sharing of responsibility.

The Secretary, Defence Production is its Chairman and the representatives of the Departments of Expenditure, Economic Affairs, Defence, Defence Supplies, Industrial Development and three Armed Forces, besides the Scientific Adviser and the Director-General Ordnance Factories, are its members. Within the limits of the budget provisions, and subject to the overall directions of Defence Minister and Minister for Defence Production, the Board enjoys the financial and executive powers of the government. It normally meets once in two months. Meetings of the Board have been useful in expediting important decisions relating to the ordnance factories.

The Ministry of Defence : In the British regime the C-in-C was also the Defence Member of the government. For the first time an

Indian and that too a civilian took charge of the defence portfolio in the Interim Cabinet of 1946. After independence the Defence Member became the Defence Minister. He is, under the Republican Constitution of India, responsible to the Cabinet and to the Parliament for everything concerning the defence organization of the country. He has under him the Defence Ministry for helping him to carry out his tasks.

The Ministry of Defence consists of the ministry proper, the Department of Defence Production and the Department of Defence Supplies.

The Ministry of Defence, including Departments of Defence Production and Defence Supplies, is responsible for the following items of work :

- (i) 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.
- (ii) The Armed Forces of the union, namely, Army, Navy and Air Force.
- (iii) The reserves of the Army, Navy and Air Force.
- (iv) The Territorial Army and the Auxiliary Air Force.
- (v) The National Cadet Corps.
- (vi) Works relating to Army, Navy, Air Force and execution of works relating to Defence Production as are entrusted to Military Engineering Service (MES).
- (vii) Military Farms Organization.
- (viii) Canteen Stores Department (India).
- (ix) Civilian services paid from Defence Services Estimates.
- (x) Hydrographic survey—preparation of navigational charts.
- (xi) All matters about cantonments.
- (xii) Acquisition, requisition, custody and relinquishment of land and property for defence purposes. Eviction of unauthorized occupations from defence land and property.
- (xiii) Matters relating to ex-servicemen including pensioners.

Department of Defence Production : Created in November 1962, this department is now under a separate Minister. Before the emergency of 1962, the Controller-General of Defence Production was responsible for the overall defence production effort including the utilization of existing capacity or its expansion both in government owned ordnance factories and in the civil sector. After the emergency while some changes were effected in the organization of the production department, a separate Minister for Defence Production was also appointed in place of one of the two Deputy Ministers of Defence. The organizations

under this department, and their detailed functions are discussed in the next section.

Department of Defence Supply : In September, 1965, a number of foreign governments completely stopped supplies under Military Aid which they had been making after the Chinese aggression in October, 1962. Several of them also imposed an embargo or restrictions on shipment of military hardware and spare parts even against commercial orders which had been placed with the manufacturers and suppliers in these countries and under collaboration agreements. The flow of vital supplies considerably slowed down. This necessitated serious examination of measures which should be taken for attaining greater self-reliance and maximum self-sufficiency. It was recognized that it would not be safe to rely on foreign sources of supply for meeting defence requirements in an emergency and that a concerted effort should be made to plan indigenous production of defence requirements which were hitherto imported or which would have to be imported in the absence of indigenous production.

Therefore, the Department of Defence Supply was created for dealing with planning for substitution of import requirements for defence purposes, implementation of schemes in this regard through utilization of the industrial capacity in the country for research and development work and for manufacture.

Inter-Service Organizations : There are certain specialized services or facilities which are required by all the three Services. The Defence Ministry makes these available to them through the agency of inter-service organizations. The office of the Chief Administrative Officer (CAO) is responsible for all matters relating to civilian gazetted and non-gazetted staff of the Armed Forces Headquarters and Inter-Service Organizations, and for office accommodation for Defence Headquarters (DHQ) and residential accommodation for Service officers employed at HQ and inter-service organizations. Inter-service organizations are :

- (i) Armed Forces Film and Photo Division.
- (ii) Office of the Armed Forces Medical Services.

The organization of Armed Forces Medical Services was created in 1948 with a view, on the one hand, to develop the medical services of the Army, the Navy and the Air Force and, on the other, to integrate them under one organization to ensure more effective and economical utilization of available resources.

All medical officers are initially recruited to the Army Medical Corps, which meets the requirement of the medical officers of the three Services, the Army, the Navy and the Air Force. As such against the authorized strength of 4,352 the actual strength of medical officers on

December 31, 1974 was 3,961, of whom 2,765 were permanent commissioned officers. A certain number of non-technical officers are also authorized in the Army Medical Corps to man those appointments in the medical units which do not require any technical or professional knowledge. The authorized and actual strength of such Armed Forces Medical (non-technical) Officers was 377 and 325 respectively in 1974.

Medical officers, who hold post-graduate qualifications before joining the Service or acquire such qualifications while in service are, on being found suitable after a short period of training/assessment, graded as specialists. However, the major portion of the requirement of specialists is met by selecting young medical officers and detailing them for advanced specialist courses at the Armed Forces Medical College, Pune and the Air Force Institute of Aviation Medicine, Bangalore. The number of officers detailed for specialist training at the Armed Forces Medical College and the Air Force Institute of Aviation Medicine during 1974 was 107 and 4 respectively.

School of Foreign Languages : Started in 1949, the school provides tuition in 12 foreign languages to students from the Services and from ministries of the Government of India. It also has a translation bureau. Outsiders, in a limited number, are also admitted, subject to the availability of seats. The languages taught at the school are Arabic, Burmese, Bahasa—Indonesia/Malay, Chinese, French, German, Japanese, Persian, Russian, Spanish, Tibetan and Pushto. Sanction has also been accorded for starting classes in Sinhala. In 1974, 325 students were admitted to the classes in the school.

Directorate of Public Relations : The Directorate, formerly known as Armed Forces Office, functions under the Director of Public Relations who is an officer of the Ministry of Information and Broadcasting. All other officers are appointed by the Defence Ministry and Armed Forces. It runs a weekly in ten languages, and has public relations units in various places in India. It highlights the work and achievements of the Defence Services and various departments through press releases, radio and television, documentary films and other mass-media.

Historical Section : This section compiles the history of post-partition military operations, and supplies information on military history and allied subjects to the Ministry of Defence and the Services. It also advises them in the selection of designs and mottoes for flags, crests, emblems, etc. It assists military units in preparing their regimental histories and the Battle Honours Committee in the verification of claims for awards of battle honours to the officers and units of the Armed Forces.

National Defence College* :

Military Land and Cantonments : Cantonments are established for quartering troops and safeguarding their health, welfare and safety. For providing these facilities and for historical reasons, cantonments have a sizeable civil population. It is hence necessary to provide for local self-government in these stations and, constitutionally, the responsibility for this devolves on the central government. These functions are administered under the Cantonments Act, 1924 through the Cantonment Boards. These Boards are responsible for providing and maintaining water supply, public health, sanitation and medical facilities, roads and street-lights, primary education, markets, shopping centres, public gardens, play-grounds and other civic amenities.

(2) Executive Organization

While the Cabinet, the Ministry of Defence and the various high level committees constitute the policy-making and decision-making machinery for defence matters and the inter-service organizations described above provide specialized facilities common to the three Services, the Service Headquarters and the executive agencies under them provide the organization for implementing and carrying out the policy and decisions.

Army : Before independence, the Commander-in-Chief was the over-all Commander of all the three Services. After independence each Service was given its own independent Chief, thus making the Army Commander-in-Chief a colleague of the Naval and Air Commanders-in-Chiefs. The designation Commander-in-Chief was changed on April 1, 1955 and the Heads of the three Services became, respectively, the Chief of Army Staff, the Chief of Naval Staff and the Chief of Air Staff in keeping with the new constitutional position where the President is the Supreme Commander of the Armed Forces. The Chief of the Army Staff exercises his administrative control over the Army through the Army Headquarters which was formerly known as the Army Department.

Army Headquarters : At the end of the Second World War, the Army Headquarters consisted of six branches. In the following years, some minor changes involving the transfer of certain Directorates from one branch to another took place but on the whole the present structure of the Army Headquarters is the same as in 1945. Army Headquarters functions directly under the Chief of the Army Staff, assisted

*For details see pp. 358—365.

by the Vice Chief of the Army Staff (VCOAS) and five Principal Staff Officers, namely, the Deputy Chief of Army Staff (DCOAS), the Adjutant-General, the Quarter-Master General, the Master General of the Ordnance, the Military Secretary and the Engineer-in-Chief. The functions of the branches are described below in brief :

- (i) General Staff Branch : (a) Organization and development of the Army, military operations, intelligence, military training and education, military survey, including maintenance and supply of maps and plans, and engineers in staff matters. These are dealt with by the VCOAS. (b) Staff duties, selection and scale of weapons and equipment, inter-communication services, coordination and policy regarding equipment including provisioning, training and equipment of all armoured corps units, artillery units, advice and suggestions on infantry matters, Territorial Army and Defence Security Corps. These are dealt with by the DCOAS.
- (ii) Adjutant-General's Branch : Manpower, recruitment, leave, pay and allowances, pensions and other conditions of service, discipline and ceremonial. It also deals with the welfare, health and military law.
- (iii) Quartermaster General's Branch : Movements of personnel, stores and equipment, provisions, storage, inspection and issue of fuel, food stuffs and forage; works policy military farms, remount and veterinary services. Army postal, pioneer and canteen services; fire fighting services and technical examination of MES works bills.
- (iv) Master General of the Ordnance Branch : All aspects of procurement policy, provision, storage, recovery, repair, maintenance and issue of all stores and equipment of ordnance supply including MT vehicles, armaments and ammunition, signal equipment, general stores and clothing as well as the supply of items of consumer use to the Navy and the Air Force.
- (v) Military Secretary's Branch : Issue of commissions in the Army, posting, transfers, promotions, release, retirement, registration, invalidment and regular reserve of all non-medical officers of the Army; maintenance of the confidential reports and personal records of all non-medical officers of the Army; provision of secretariat for the Selection Boards which recommend officers for promotion to the rank of Lt. Col. and above; recommendations for grant of honours and awards to Army officers and

honorary commissions in the Army to civilians.

- (vi) **Engineer-in-Chief's Branch :** All matters relating to engineer units including transportation, bomb disposal and mine clearing and engineer stores; administration of personnel of the Corps of Engineers and the MES; design, provision, construction and maintenance of all accommodation and works for the Defence Services; work study of specific projects, and cantonment planning.

Commands and Areas : The Army is organized into five Commands under Army Headquarters. Each Command is further divided into Areas, Independent Sub-Areas and Sub-Areas. The Command is commanded by a General Officer Commanding-in-Chief (called the Army Commander) of the rank of Lt. General, Area by General Officer Commanding (Major-General) and Independent Sub-Areas and Sub-Areas by Brigadiers. All these are static formations. However, each Command Headquarters can form a mobile tactical headquarters for exercising operational control over its mobile formations such as Corps, Divisions, Brigades, or Independent Brigades. A Corps Headquarters is placed under a Command Headquarters to command two or more Divisions or a combination of Divisions, Brigade Groups and Independent Brigades.

Navy : The Royal Indian Navy from its very inception in 1934 was commanded by British officers. Even after India became independent in August 1947, and after it became a Republic on January 26, 1950 when the Royal Indian Navy became Indian Navy, it continued to be commanded by a Britisher till 1958. In that year on April 22, an epoch-making event took place in the history of the Indian Navy, when the first Indian Admiral, Vice-Admiral Ram Dass Katari assumed its command. He succeeded Vice-Admiral Sir Stephen Carlill—the last British officer to Command the Indian Navy. From that day a new Admiral's flag was brought into service, a flag which had the *Dharma Chakra* superimposed on the centre of the St. George Cross.

The primary responsibility of the Indian Navy is to protect India's long coast-line and island territories. The protection of the large and growing merchant fleet is also the responsibility of the Indian Navy. This task has assumed increasing importance with increase in the number of ships flying the Indian flag and expansion in the tonnage of Indian exports and imports. The rapidly developing fishing industry and activities in connection with exploitation of natural resources also require protection of the Indian Navy.

Naval Headquarters : The Naval Headquarters under the Chief of the Naval Staff is responsible for carrying out the above tasks and

for the organizational and operational efficiency of the Navy including the Hydrographic Branch. As a result of the experience gained during the 1971 conflict and for providing direction in the higher echelons of the Navy, a reorganization of the Naval Headquarters was undertaken in 1972-73.

In the reorganized set-up, the Chief of the Naval Staff is assisted by five Principal Staff Officers, namely the Vice Chief of Naval Staff, Deputy Chief of Naval Staff, Chief of Personnel, Chief of Material and Chief of Logistics. The posts of Vice Chief of Naval Staff, Chief of Personnel and Chief of Material are now of Vice Admiral's rank; the remaining two Principal Staff Officers are Rear Admirals. Further, one Rear Admiral each would assist the Vice Chief of Naval Staff, Chief of Personnel and Chief of Material in controlling certain specified Directorates that require close attention.

A Directorate of Management Services at Naval Headquarters organizes, within it, different groups for work-study, statistical analysis and operational research.

The Chief of the Naval Staff exercises overall command of the Navy through Flag Officers Commanding-in-Chief, Western Naval Command, Bombay and Eastern Naval Command, Vishakhapatnam, and Flag Officer Commanding, Southern Naval Area, Cochin. Following the creation of the Eastern Fleet in 1972 the Eastern Naval Command was suitably strengthened. Naval Officers-in-Charge Junction at major ports like Calcutta, Port Blair, Madras, Goa and Okha. They administer the naval personnel located in the various ports to assist naval ships, which may call at the ports or come for repairs and liaison with civil and port military authorities. They are also responsible for port defence. Proposals have been formulated to increase the status of these officers so as to enlarge their initiative and authority in the interest of harbour and coastal defence.

The major training institutions of the Navy are located at Cochin (INS *Venduruthy*), Vishakhapatnam (INS *Circars*), Lonavla, near Bombay (INS *Shivaji*), Bombay (INS *Hanala*) and Jamnagar (INS *Valsura*). A sailors' training establishment at Goa and a Boy's Training Establishment in Orissa have also been set up.

The Naval Officer-in-Charge, Goa, administers INS *Command*, and Naval Air Station Dabolim is directly under Naval Headquarters. **Air Force :** After the partition, the Indian Air Force was reorganized into three Commands under Air Headquarters and all Air Force units (except a few which were directly under Air Headquarters) were placed under these Commands. Unlike the Army, the Air Commands are functional rather than regional.

There has been considerable improvement, expansion and moderni-

zation in the Air Force establishments, both ground and air. The experience acquired in the Second World War, and later in Kashmir, Goa and the years of 1965 and 1971 of Indo-Pak conflicts has invested it with a sense of confidence and provided it with a leadership which has made easier the task of turning the small force of 1947 into the mighty Air Force of today.

Air Headquarters : The Head of this organization is the Chief of the Air Staff who is assisted by four Principal Staff Officers—the Vice Chief of Air Staff, Deputy Chief of Air Staff, Air Officer-in-Charge Administration and Air Officer-in-Charge Maintenance. Air Headquarters consists of three main branches. Their functions are as below :

(i) **Air Staff Branch :** Policy and plans, training, signals, education, auxiliaries and reserves and guided weapons under the Vice Chief of the Air Staff; operational flight safety, intelligence, guided weapons, signals and meteorology under the Deputy Chief of the Air Staff.

(ii) **Administration Branch :** Recruitment, discipline, terms and conditions of service, postings, promotions and welfare, medical, accounting, budget and works requirements under the Air Officer-in-Charge Administration (AOA).

(iii) **Maintenance Branch :** Provisioning and maintenance of aircraft; procurements and storage of weapons, equipment and other Air Force stores including armaments and storage of aircraft, plans and inspection, etc., under the Air Officer-in-Charge Maintenance.

Air Force Commands : There are three operational Air Force Commands and an independent operational Group. These are the Western Air Command, the Central Air Command, the Eastern Air Command, and No. 1 (Opl) Group. In addition, there is the Training Command and the Maintenance Command. Certain units are also controlled directly by Air Headquarters in view of their distinct functions.

The Western, the Central and the Eastern Air Commands and No. 1 (Opl) Group have under their control certain number of fighter, bomber, reconnaissance and air transport squadrons and signals units. Within their area of jurisdiction Commands/Groups are responsible for the defence of India against air-attack and support to the Army and the Navy, and generally for overall execution of air operations.

The Training Command has under its control all institutions which are responsible for training both the flying and non-flying personnel in the Indian Air Force.

The Maintenance Command has under its control all the units which are responsible for the repair and storage of aircraft, mechanical transport and signal equipment, armaments, ammunition and explosives.

The units directly under Air Headquarters are mainly the Air Force Station, New Delhi, Air Force Selection Boards and Centres, the Proof Ranges, School of Land Air Warfare.

The Indian Air Force has 45 squadrons and is one of the important Air Forces of the world today. In its combat squadrons a significant proportion is current supersonic aircraft. The MiG-21 and Gnat interceptors, the HF-24 (Marut) fighter bomber, HS-748 transport aircraft, and Alouette-III helicopters are produced in the country and, consequently, have full overhaul and maintenance backing. Even in regard to other types of aircraft, it has been the policy to establish adequate support facilities for maintenance and overhaul within the country. Attention to this aspect paid adequate dividends during the 1971 operations.

The MiG-21 (manufactured at Hindustan Aeronautics Ltd.) has already been inducted into squadron service. The HS-748 aircraft has been modified into a freighter and certain number of this aircraft are proposed to be inducted into IAF. Modernization of helicopter force is already in hand. Hindustan Aeronautics Ltd. built Cheetah helicopter has been introduced in service and more units are planned to be re-equipped by this type over the years. Steps continue to be taken to place more sophisticated weapons at the disposal of IAF.

Work on improving the Gnat to a better version is now in an advanced stage.

Auxiliary Organizations : For a considerable period of time it had been advocated that military training should be given to the youth and the civilian population of our country both in the national interest and for moulding the character of our youth and people on the right lines. Such a scheme would also serve the purpose of creating a second line of defence and providing a large reserve of semi-trained manpower.

The British had introduced military training in colleges and universities under the University Training Corps (UTC) Scheme, later designated University Officers' Training Corps Scheme. This was instituted in 1925 but had a limited appeal and only a few students took part in it.

National Cadet Corps : In 1946 the National Cadet Corps (NCC) Committee was constituted and based on its recommendations the NCC Act was passed in 1948. The organization of the NCC thus came into being.

Its aims are :

- (i) developing character, comradeship, the ideal of service and capacity for leadership in young men and women ;

- (ii) providing service training so as to stimulate interest in the defence of the country ; and
- (iii) building up a reserve of manpower to enable the Armed Forces to expand rapidly in the event of a national emergency. No actual service liability is, however, attached to NCC.

It consists of Junior and Senior divisions of all the three Services and its organization is headed by a Director-General of the rank of a Major-General. Under him are 16 Directors in the various States.

NCC training was entirely voluntary till 1963 when it was made compulsory for all able-bodied male college students with certain exceptions. In the Army Wing of the Senior Division, cadets are given training in drill with arms, weapon training, field craft, map reading, message writing and technical subjects pertaining to their particular Arm or Service.

In the Naval Wing (non-technical Unit) cadets receive service lectures, parade training and arms drill, gunnery and weapons training and training in communication seamanship, elementary navigation, torpedo, anti-submarine, damage control, ship's safety and ship and boat modelling. In addition to the above, cadets of Medical units receive training in hygiene and sanitation, stretcher drill, evacuation of casualties on board ships, naval aviation medicine and radiation hazards. Cadets of Naval Engineering units receive training in marine engineering. Besides other subjects of elementary military training, the ship modelling is taught in the Junior Division, Naval Wing.

In the Air Wing, cadets receive training in drill, physical training, organization, administration, first-aid, weapon training, principles of flight, navigation, meteorology, aero-engines, aero-modelling, gliding and powered flying. In the Technical Air Squadron special emphasis is laid on technical subjects such as tele-communications, radio and radar systems. In the Junior Division, besides elementary military training, aeromodelling is taught to all cadets of the Air Wing.

The training imparted to girl cadets lays greater emphasis on first aid, elementary nursing, wireless and telephone communications and civil defence.

The NCC Evaluation Committee was set up in December 1972 under the chairmanship of Dr. G. S. Mahajani to evaluate the work of the NCC programme and suggest changes in its aims and objects, organization, training, etc., taking into account the activities covered by the National Services Scheme (NSS) and the National Sports Organization (NSO) in the sphere of youth development. The Committee presented its report in January 1974 and made comprehensive recommendations including one to the effect that the NCC should continue

as a separate organization and not be mixed up under one authority with the NSS and the NSO. All recommendations are under active consideration of the government.

In 1974 the NCC covered 3,492 colleges in 101 universities and 6,481 schools.

The sanctioned and actual enrolment figures for the NCC as on December 31, 1974 are as under :—

Type of Units	Senior Division		Junior Division	
	Ceiling	Actual Strength	Ceiling	Actual Strength
Army Wing	3,13,800	2,86,946	5,31,850	4,97,950
Naval Wing	12,600	11,550	49,100	44,834
Air Wing	11,600	9,737	52,050	46,253
Girls Wing	62,000	52,930	67,000	61,173
	4,00,000	3,61,163	7,00,000	6,50,210

Auxiliary Cadet Corps : The Auxiliary Cadet Corps, started in 1953, laid emphasis on physical education, recreation, discipline and character building. The training course ran to three years with a total of 275 working hours and was confined to school children of the age group of 13 to 16 years.

From 1965-66 the Auxiliary Cadet Corps has ceased to exist in schools where it was possible to replace it by the new integrated programme called the National Fitness Corps, sponsored by the Ministry of Education. NCC junior Division is being continued as a co-curricular activity along with scouting and girl-guiding at the school stage.

Territorial Army : The Territorial Army (TA) is a part-time voluntary force of citizens who are not professional soldiers but civilians eager to contribute their spare time for the country's defence. It is designed to give the youth of the country an opportunity of receiving military training in their spare time and, without disturbing their civil vocation, enable them to bear arms in defence of their country, whenever called upon to do so. It also helps the civil authorities in dealing with national calamities and maintenance of essential services. It celebrated its silver jubilee on November 16, 1974 by which time it had emerged as a tough force of officers and men who had stood the test of time. It comprises a cross-section of government employees, farmers, factory owners, clerks, industrial workers and others. It has units of Air Defence, Infantry, Electrical and Mechanical Engineers, Medical (General Hospitals), Engineers, Signals and Railway Engineer Groups.

When the Territorial Army units are embodied the personnel of units are assigned duties as in the regular Army. During the hostilities in 1965 and 1971 many units of the Territorial Army were embodied for military service. The Air Defence Regiments were moved at short notice in 1965 to defend installations in cities and in vulnerable areas. A Field Regiment of the Territorial Army went into battle on the Punjab front in 1965 in support of an Infantry Brigade of the regular Army. The Infantry Battalions of the Territorial Army also carried out the role of guarding vulnerable areas and installations behind the scene of battle. The anti-aircraft gunners of the TA brought down a number of Pakistani aircrafts during the two conflicts with Pakistan in 1965 and 1971. The railway units of the TA operated trains during the Chinese aggression in 1962 and the Indo-Pak conflict in 1965. In December, 1971, the TA units restored railway services in the eastern and northern sectors and later assisted the Bangladesh railway staff in maintaining essential services.

The Territorial Army personnel fulfilled efficiently the tasks allotted to them especially in the rounding up of Pakistani paratroopers. The Posts and Telegraphs units of the Territorial Army helped to maintain communication lines and trunk circuits during the operations.

Use of Hindi in Defence Organization : With a view to ensuring that government's orders for the progressive use of Hindi in all offices and departments are complied with an Official Language Implementation Committee has been functioning in the Ministry of Defence. Similar committees have been set up in Service Headquarters and Inter-Service Organizations. A consolidated Defence Glossary, containing defence terms in Hindi has been prepared. Out of 8,600 forms in use in defence organizations 6,400 have been translated and printed bilingually. Some manuals have also been similarly translated and printed in Hindi. Hindi has also been adopted to a large extent as a medium of instruction in the Army not only for educational subjects but also for training in drill, PT, weapons, training in field craft and reconnaissance. Hindi classes have been organized in all units. Caps, badges and medals are also being prepared with Hindi letterings.

IV. Defence Production and Research

It is a well recognized maxim that the Defence Services must be equipped with modern and efficient weapons and equipment capable of performing well under all conditions in which they may have to operate. After the World War I (1914-18) the role of the Army in India was defined as holding a minor invasion in the north-west,

maintaining peace on the frontier by keeping in check the warlike tribes and preserving peace in the country. To meet an attack or invasion by a major power was the responsibility of the British Government. In view of this limited role of the Indian Armed Forces, their equipment was never brought up-to-date nor was the country's industrial organization encouraged to produce and supply the Army's need. Some of the articles needed were produced in the government-owned ordnance factories, a few were supplied by private industry, and the more sophisticated ones were imported.

It was only in the thirties (in the year preceding the outbreak of the World War II) that it was realized that the Indian Army might have to play a more significant role than the one officially accepted. Schemes were, therefore, set afoot to mechanize and give better equipment to India's Armed Forces but not much was done to increase indigenous production.

During the years of the World War II (1939-45), however, as a result of the unprecedented expansion of India's own Armed Forces, the necessity to maintain large contingents of foreign troops as a result of India having made a base of operations against Japan, and the difficulty of obtaining imports from Britain and other western countries, it became necessary to increase to the maximum the local production of materials required by the forces. This led to tremendous expansion in ordnance factories as well as private industry for the increased production of defence items which were already being produced and to the production of some new items not manufactured in India before. However, for some of the more complicated equipment and weapons, India still relied upon imports.

This dependence upon imports for such items continued for several years even after the attainment of independence in 1947. But the aim of achieving self-sufficiency in defence requirements was always kept in view and steps were taken towards that end. As a result of this a very substantial progress has been made in increasing the indigenous content of major items of equipment and in building up a large measure of expertise in a variety of specialties.

Department of Defence Production : Before the emergency of 1962, the Controller General of Defence Production was responsible for the overall defence production efforts including the utilization of existing capacity and its expansion both in government-owned ordnance factories and the civil sector. After the emergency while some changes were effected in the production department's organization, a separate Minister for Defence Production was also appointed in place of one of the two Deputy Ministers.

Departmental Production Units : There are a number of depart-

mental factories working under the control of the Department of Defence Production. The activities of these factories embrace a very wide field and a number of specialized technologies covering the production of weapons, ammunition, transport vehicles, bridges, anti-submarine projectiles, supply dropping equipment, clothing and a large range of general stores. Since the declaration of emergency in October, 1962, the responsibilities and activities of the ordnance factories have very considerably increased. Some of these factories are very old with outmoded plant and equipment. A comprehensive plan for rehabilitation and modernization was framed, and considerable progress achieved between 1962-75.

The production in the ordnance factories depends in nature and extent upon the requirements of the Defence Services. These increased very considerably during and after the conflicts of 1962, 1965 and 1971 and most of the factories worked round-the-clock.

The ordnance factories continued to render assistance to the civil sector, though only to the extent the capacity could be spared after meeting the requirements of the Defence Services up to their maximum capacity. Supply of certain specialized stores of the Railways and other public sector undertakings as well as Border Development Board was, however, continued.

During 1974, the industrial establishments of the ordnance and equipment factories employed about 1,11,700 men. The items made by the factories during 1974-75 were approximately worth Rs. 213 crores as against a target of Rs. 182 crores.

Production and Supply : Ordnance factories have attained self-sufficiency in the production and supply of small arms. For artillery, heavy mortars, anti-aircraft guns and mountain guns and for the Vijayanta tanks 105-mm guns have been supplied. The production of 105-mm Indian Field Gun has commenced. Besides these, sighting and vision instruments, range finders, binoculars and compasses, etc., have been produced.

The Navy has been supplied with an important item, viz. 4.5" barrel for the naval gun. Various items of ammunition have also been supplied to the Navy.

Similarly for the Air Force, 300-mm Aden gun barrels have been supplied besides various ammunition items, bombs and optics for aircraft and airport lighting equipment for the night landing facilities in the airfields.

Picrite for use in flashless propellants, nitrocellulose powder for the ammunition of 7.62 mm semi-automatic rifle, 9-mm sten gun, 30-mm anti-aircraft gun and 40 mm anti-aircraft gun besides cord detonating fuses for field demolition have also been produced. Some of

the high explosive compounds required for filling warheads of large calibre ammunition bombs, etc. have been developed and the requirements of the Services are being met. Development works are also in progress for manufacture of plastic explosives based on certain high explosive compounds.

Computerized material planning system has already been introduced in 16 ordnance factories. This system will be gradually extended to other factories as well. With centralized processing of information of production programmes and inventory control, the requirement of raw materials and components is known well in advance, so that timely action for provisioning projects, apart from computerized project review, can be undertaken.

Statistical quality control is being used in the ordnance factories with the object of building quality into production during manufacture.

Besides, ordnance factories manufacture shot guns and rifles as well as their ammunition for civil use. They are also supplying acids and various chemicals to trade firms. Instruments like binoculars, compasses, micro-film readers, strip-film projectors and drawing instrument sets are also being produced for civil use. Depending upon availability of capacity, the factories are also making iron and steel castings, forgings and undertaking machining work for the railways, public sector undertakings and trade firms.

Modernization Programme : An intensive programme for renewal and replacement of old equipment and modernization of the production facilities in the ordnance factories is in hand. The old TNT (trinitrotolvene) plant in a factory is being replaced by a modern unit. Replacement of auxiliary plants such as the oleum plant, nitric acid plant etc., engineered indigenously, using the latest techniques, is progressing expeditiously.

To achieve fuller utilization of capacity, approximately 10 to 15 per cent capacity is being used for meeting civil and export orders.

Modernization of the century old Ordnance Equipment Factory, Kanpur was initiated in 1971 to meet the increased production activity and also to provide better working conditions. This work is going apace rapidly. There has been appreciable progress in the modernization of the tanning process. Chrome tanning of skins and hides has been started. The factory has undertaken fabrication of sophisticated chrome tanning machines which is a significant step towards import substitution.

Continuous efforts are being made to increase the indigenous content of stores and equipment manufactured by the ordnance factories. In this process, the factories are assisted by various technical committees functioning under the Department of Defence Supplies. In fur-

therance of the objective of indigenization and also to promote the growth of ancillary industries, a project has been taken up to establish ancillary industries adjacent to the ordnance factories.

Other Organizations under the Department of Defence Production

(1) *Directorate General of Inspection* : The Director-General of Inspection (DGI) is responsible for the inspection and quality control of arms, ammunition and equipment for Defence Services manufactured in the ordnance factories, public sector undertakings and in the civil sector including certain stores ordered through Director-General Supplies and Disposal. In addition, the Director-General investigates and advises on the possibilities of indigenous production of imported items of defence stores. It also tenders technical advice on manufacture of stores in the civil sector used by the Services and helps in investigating defects in equipments where failures occur in use.

An important function of the Inspection Services is laboratory testing of materials and finished stores to ensure compliance with specifications. For this purpose, a network of laboratories has been organized at all important stations to ensure speedy inspection of supplies. The value of stores inspected by DGI's organization during 1974-75 was 335.75 crores.

(2) *Directorate of Standardization* : The basic objective of the Defence Standardization Organization is to improve, simplify and make economical, the performance of logistic functions. The Services have acquired a very large variety of equipment over the years. It is, therefore, essential to reduce without detriment to the fighting efficiency of the Services, this variety in number, by resorting to standardization, wherever possible. The Directorate of Standardization is entrusted with these tasks. It functions as a secretariat for the Standardization Committee, which consists of representatives of the three Services and the Ministry of Defence. The Standardization Committee is assisted by eight sub-committees and forty-eight specialist panels.

The Directorate also maintains a Technical Information Centre, which contains up-to-date national and international standards, specifications, technical reference journals and publications for the use of the Defence Services.

During 1975, the Directorate considered 27,000 items, which is an all time high when compared with the figures of the last ten years. Hundred and twenty-two Joint Services Specifications were also issued for items not covered by national or international standards. Also by means of systematic codification over two lakh items have so far been catalogued.

(3) *Directorate of Technical Development and Production (Air)* : The Directorate of Technical Development and Production

(Air) is responsible for :

- (i) inspection of defence aircrafts, accessories and associated airborne and ground equipment ; and
- (ii) development and establishment of indigenous sources of supply for certain categories of aeronautical stores and ground support equipment of imported origin.

The Directorate is also responsible for the screening of indents for the import of aeronautical stores, so that items for which indigenous sources are already available or can be established within a reasonable time, are not imported. For quality assurance and inspection role, the Directorate is assisted by Resident Inspection Establishment at various divisions of Hindustan Aeronautics Ltd., an Air Armament Inspection Wing at Khamaria, with detachments at some ordnance factories for covering air armament stores, Resident Inspectorate at Ordnance Factory, Dehra Dun, for air-field lighting equipment and an establishment at Bangalore for inspection, and the Authority for Holding Sealed Particulars (AHSP) functions in relation to aviation electronic items.

This Directorate carries out both direct inspection and supervisory inspection through the system of "approved firms inspection" depending on the nature of quality control system instituted by the manufacturer. The inspection and quality assurance service provided by this Directorate covers production as well as repairs and overhaul of defence aircraft, aeronautical and allied stores outside IAF units. Stores worth Rs. 82.61 crores were inspected during 1974-75.

As a result of the indigenous development and substitution activities, a saving of foreign exchange to the extent of Rs. 7.58 crores had been achieved during 1974-75 as against Rs. 87.31 lakhs during the previous year.

(4) *Public Sector Undertakings* : In addition to the above, the Department of Defence Production has under its control nine very important public sector undertakings run on the lines of limited companies in which the government holds the controlling share. These are :

- (i) Hindustan Aeronautics Limited, Bangalore (HAL).
- (ii) Bharat Electronics Limited, Bangalore (BEL).
- (iii) Mazagon Dock Limited, Bombay (MDL).
- (iv) Garden Reach Workshops Limited, Calcutta (GRW).
- (v) Praga Tools Limited, Secunderabad (PTL).
- (vi) Bharat Earth Movers Limited, Bangalore (BEML).
- (vii) Bharat Dynamics Limited, Hyderabad (BDL).
- (viii) Goa Shipyard Limited, Goa (GSL).
- (ix) Mishra Dhatu Nigam Limited, Hyderabad (MDNL).

(i) **Hindustan Aeronautics Limited, Bangalore** : This single aircraft corporation comprises the former Hindustan Aircraft Limited, the Aircraft Manufacturing Depot, Kanpur, and the Aeronautics India Limited. A brief history of these three organizations is given below before describing the work entrusted to the new corporation.

(a) *Hindustan Aircraft Ltd.* : This was established at Bangalore in December, 1940, as a limited company owned by the Government of Mysore and Messrs Walchand Hirachand, with the object of carrying out all types of aircraft repairs and maintenance. The Government of India joined the company as a share holder in 1941 and purchased the entire interest of Messrs Walchand Hirachand. Later, in 1946, the company undertook the assembly and manufacture of Prentice trainer aircraft for the IAF. The first Hindustan Aircraft Ltd. assembled Prentice flew in April 1948. Subsequently the company undertook under agreement with foreign collaborators the assembly and manufacture of Vampires and Gnats as well as Orpheus Dart engines. The Hindustan Aircraft Ltd. designed and developed HT-2 (a basic trainer aircraft), Pushpak and Krishak light aircrafts and a Basic Jet Trainer. In the early sixties it took in hand work on development of the Supersonic HF-24. A subsidiary activity of the company was the production of conventional integral rail coaches for the Indian Railways.

(b) *Aircraft Manufacturing Depot, Kanpur* : This was set up as a unit of the Maintenance Command of the Indian Air Force in 1959 to manufacture Medium Transport Aircraft under a licence agreement with a British firm.

(c) *Aeronautics India Limited* : An agreement was signed between the Government of India and the Government of USSR granting the licence to manufacture in India a modified single-engine fighter aircraft, MIG-21, complete in all respects.

It was decided that the factory to undertake the manufacture of air-frames would be established at Nasik in Maharashtra state, aero-engines would be produced at Koraput in Orissa, and the electronic and allied equipment at Hyderabad in Andhra Pradesh.

Considering the size of the project and the necessity for speedy execution, an autonomous undertaking in the public sector, called Aeronautics India was registered in August 1963 and the MiG project entrusted to it.

All these three organizations were merged together and a single corporation designated Hindustan Aeronautics Limited came into being on October 1, 1964 and was made responsible for the production of aircraft and allied equipment in India. All the shares in this undertaking are owned by the Government of India. The corporation has

an authorized capital of sixty crores and 11 divisions located in six different states. Six of these factories including the unit at Barrackpore constitute the Bangalore complex and the three factories at Hyderabad, Koraput and Nasik divisions comprise the MiG complex. The remaining two at Kanpur and Lucknow manufacture HS-748 and accessories respectively. The Indian Air Force continues to be HAL's principal customer.

The following types of aircraft and aero-engines are currently (1974-75) being manufactured at the various units of the company :

Marut	Jet fighter/ground attack aircraft designed and developed by HAL.
Marut Trainer	Tandem 2 seat trainer version of Marut designed and developed by HAL.
Kiran	Basic jet trainer aircraft designed and developed by HAL.
Basant	Single seat, low wing agricultural aircraft designed and developed by HAL for aerial application of pesticides and fertilizers.
Chetak	7 seater helicopter.
Cheetah	Light weight helicopter for Air Observation Post role.
MiG-21	Supersonic jet interceptor.
HS-748	Pilot trainer and freighter version of twin-engined transport aircraft.

Orpheus 703 engine for Marut aircraft.

Engine for MiG-21 aircraft.

Dart engine for HS-748 aircraft.

Artouste III-B engine for the Chetak and Cheetah helicopters.

A new addition to HAL's product range is the Basant agricultural aircraft for which the Director-General of Civil Aviation issued the type approval certificate in January, 1974. A batch of 20 Basant aircraft in the pre-production series was built during 1973-74 and 1974-75 and certificates of airworthiness obtained. Series production of the aircraft has commenced during 1975-76.

(ii) **Bharat Electronics Limited, Bangalore** : A scheme for the establishment of a factory for the manufacture of communication equipments for Defence Services and civil government departments was approved and a ten-year agreement was signed in December 1952, between the Government of India and a French firm, for technical collaboration. Following the agreement, the Bharat Electronics Limited, was registered as a Limited Company in the public sector in April 1954.

The entire capital of the company *i.e.* Rs. 6.96 crores is subscribed by the Government of India.

The factory commenced production on a small scale in January, 1956. The number of types of equipment and the value of production in the factory have been progressively increasing year by year. With a view to meet the diversified requirements of the various departments, technical collaboration agreements have been entered into with some foreign companies including one for manufacture of some types of radar equipment. Bharat Electronics Limited have themselves designed and developed various items of electronic equipment, instruments, accessories, and appliances which have been taken up for production and supplied to the Defence Services, the civil departments like the All-India Radio, Police, Civil Aviation, Meteorological Departments, Post and Telegraphs as also for the entertainment industry. The Bangalore unit of the company produced goods worth Rs. 42.82 crores in 1973-74 while the Ghaziabad unit which went into production only in 1972-73, had work in progress of the value of Rs. 2.25 crores at the end of the year. The Bharat Electronics also exported certain items worth about Rs. 2 crores in that year. It has expanded the production capacity of TV picture tubes and ceramic capacitors.

(iii) **Mazagon Dock Limited, Bombay :** The Mazagon Dock Limited, had been incorporated under the Companies Act in 1934 with the British India Steam Navigation Company and the Peninsular and Oriental Steam Navigation Company of the UK as the principal shareholders. In 1960, on account of the expansion of the Naval Dockyard at Bombay undertaken then, the acquisition of further facilities for the maintenance of our naval fleet became necessary. The Mazagon Dock Ltd. which was working at loss was eager to sell and government were able to acquire the entire share-holdings of the company in April 1960.

From what was primarily a small ship repair yard at the time of its takeover in 1960, Mazagon Dock Ltd. has grown into a premier shipyard capable of building sophisticated warships and merchant ships of up to 150 metres in length and 24 metres in breadth. Soon after its takeover the shipyard embarked upon an expansion and modernization programme consisting of two new ship building berths, an impounded wet dock capable of accommodating four to five medium-size ships at a time and new production and assembly shops with modern machinery and equipment, crange facilities and electrical and electronic shop, which has since been completed. With the establishment of the modern ship-building facilities, the shipyard

is now capable of producing ships of the following categories :

- (a) Sophisticated warships, such as destroyers, frigates, and patrol craft.
- (b) Passenger ships, passenger-cum-cargo ships and cargo ships.
- (c) Dredgers.
- (d) Tankers.
- (e) Tugs, barges, trawlers, launches, floating docks, floating cranes, special purpose pontoons, assault boats, etc.

To date, the Mazagon Dock Ltd. has built three frigates—INS *Nilgiri*, INS *Himagiri* and INS *Udayagiri* two passenger-cum-cargo vessels (*M.V. Harsha Vardhana* and *M.V. Onge*), five dredgers, two mine-sweepers, two AVCAT (Aviation turbine fuel for use on Board carrier) tankers, four tugs, three pontoons, four passenger ferry boats, one motor cutter, one water boat, two launches, twenty-one fishing trawlers, and thirty-six barges.

With the modernization of the yard, the shipyard's capacity for undertaking ship repair work of sophisticated nature has also increased. The company has established an image abroad for quality work particularly in West Asia and South-West Asia.

During the year 1973-74 the ship construction activity showed an all-round improvement and the turnover of ship-building increased from Rs. 2,318.34 lakhs in 1972-73 to Rs. 2,438.45 lakhs in 1973-74.

(iv) **Garden Reach Workshops Limited, Calcutta** : The Garden Reach Workshops Ltd., Calcutta, were established as a private company by the British India Steam Navigation Company and the River Steam Navigation Company of the United Kingdom for undertaking marine repairs and services to their own ships and vessels.

The entire assets were acquired by the government in April, 1960. After acquisition the company form of management was continued. The company is concentrating on ship-building and general engineering manufacturing lines. During 15 years from its takeover, it has grown into a multi-product diversified undertaking with growing emphasis on ship-building. The company has six units in and around Calcutta and two outside Calcutta, one at Ranchi and the other at Nagpur.

The value of the company's production in 1973-74 was Rs. 22.81 crores, an increase of 35 per cent over the previous year in spite of shortage of certain raw materials and oil based products owing to the oil crisis.

(v) **Praga Tools Limited, Hyderabad** : The administration of the company was transferred to the Ministry of Defence (Department of Defence Production) in December, 1963 to enable the utilization of

the capacity available for defence production.

The company has two divisions namely, (i) Machine Tools Division in Secunderabad, and (ii) the Forge and Foundry Division Hyderabad. The Machine Tools Division manufactures machine tools such as cutter and tool grinders, surface grinders, drilling machines, milling machines, George Fischer Copy Lathes and thread rolling machines, besides certain machine tools accessories like lathe chucks, drill chucks, machine vices, etc. The Forge and Foundry Division produces railway screw couplings, auto and diesel spares and some defence items.

The value of production achieved during 1973-74 was Rs. 314.46 lakhs while the sale amounted to 302.00 lakhs. Production and sales during the year were the highest the Praga Tools has achieved so far.

During 1974-75 the company is likely to achieve a production level exceeding Rs. 400 lakhs. Sales during the same year are expected to reach Rs. 380 lakhs.

The company's products have found a market in highly developed countries like the USA and Canada. It exported items worth Rs. 4.04 lakhs during 1973-74.

(vi) **Bharat Earth Movers Limited, Bangalore** : In view of the large demand for the various types of Heavy Earth Moving equipment for defence needs and major irrigation and power projects, a new factory was established in 1964 in cooperation with M/s Le. Tourneau Westinghouse of USA and started functioning from January 1, 1965. It has two factories : (i) the Railcoach Factory at Bangalore and (ii) the Earth Moving Factory at the Kolar Gold Fields.

The Railcoach Factory is manufacturing broad-gauge integral railcoaches of different models. The Earth Mover Factory is producing heavy earth moving equipment such as scrapers, dumpers, motor-graders wheeled tractors and trawler tractors of three sizes.

The company has been earning profits right from the very first year of working *i.e.* 1964-65 and has been declaring dividends since 1967-68. It has also been able to generate sizable internal resources. Significant efforts have also been made in the direction of diversification of the production. The company achieved production value of Rs. 38.21 crores during 1973-74 as against Rs. 37.13 crores and Rs. 34.13 crores achieved in 1972-73 and in 1971-72 respectively.

(vii) **Goa Shipyard Limited** : This company was first established under the Portuguese law in November, 1957 with the name of Estaleiros Navais De Goa, primarily with a view to providing barge repair facilities required as a result of the spurt in the export of iron ore from the territory of Goa, and the consequent increase in the number of barges. After the liberation of Goa, the

yard was given on lease to the Mazagon Dock and was being run as a branch of that undertaking till September, 1967. It started functioning as a separate company with its own Board of Management (but as a subsidiary of the Mazagon Dock) with effect from October 1, 1967.

Until 1966-67, the activities of the Goa Shipyard were confined mainly to barge repairs and the construction of ore-carrying barges up to about 500 ton capacity. The yard facilities were subsequently augmented and a third slipway was commissioned, apart from installing several additional items of machinery and equipment. The company is now capable of constructing barges up to 1000 DWT, small dredgers, fishing trawlers, tugs, and other harbour craft. It also carries out repairs to such vessels.

(viii) **Bharat Dynamics Limited** : The *Bharat Dynamics Limited* was set up at Hyderabad in July, 1970 for the manufacture of anti-tank missiles.

The production of anti-tank missiles in the *Bharat Dynamics Limited* commenced in July, 1971. The value of production during 1971-72, 1972-73 and 1973-74 has been Rs. 1.08 crores, Rs. 2.16 crores and Rs. 2.51 crores respectively.

(ix) **Mishra Dhatu Nigam Limited, Hyderabad** : This company was incorporated on November 20, 1973 with an authorized share capital of Rs. 20 crores to set up a factory for the manufacture of special metals and super-alloys on a site adjacent to the Defence Metallurgical Research Laboratory, Hyderabad. Technology for setting up the plant is being obtained from selected foreign firms. The plant, which is expected to commence production by the end of 1979 or early 1980, will help in the indigenous production of a variety of alloys required by several vital industrial sectors such as nuclear energy, power generation, chemical engineering, space, aeronautics, electronics, and instrument industries.

V. Training

Training centres, schools, institutes, colleges, for the Armed Forces of the country are of three types—those for Other Ranks (ORs) only, those meant for both ORs and officers and those meant exclusively for officers.

An OR gets training in his regimental centre before being posted to his unit. Each regiment of infantry has its own training centre and depot.

Other Arms and Services have also their own training centres where

recruits are given training. The Corps of Engineers, for example, which is divided into three groups, has three training centres, one for each group. Similarly Commands also have their own training camps or schools in certain subjects. Then there are certain schools and colleges run by various corps for the training of officers and ORs in their particular subjects, such as, the College of Military Engineering at Dapodi (Poona), School of Signals (Mhow), and the Artillery School at Deolali. At the highest level we have the National Defence Academy, the Indian Military Academy, Wellington Staff College and the National Defence College—all for officers and would-be officers only.

A. Pre-Commission Training

National Defence Academy, Khadakvasala : The National Defence Academy (NDA) is intended for entry into the officer ranks of the three Services. It is an inter-Service institution where candidates are trained for the Army, Navy and Air Force.

The nucleus of the fund for the building of the Academy was provided by the Sudan Government in gratitude for the gallantry of Indian troops in liberating Sudan and Abyssinia in World War II. After partition (1947), the Government of India decided to utilize this amount for establishing an academy at Khadakvasala on the lines of the US Military Academy at West Point with slight modifications. The National Defence Academy, built on a 6,500 acre site, eleven miles from Poona, was formally opened in January, 1955. Candidates for entry to the Academy must be between 16 and 18½ years of age, must qualify in a written examination conducted by the Union Public Service Commission (UPSC) and pass interview and intelligence, psychological, endurance and leadership tests conducted by the Services Selection Board (SSB). The cadets must be unmarried and remain so during the period of stay in the training. The course is for three years.

The emphasis during the first two years is on academic subjects and in the third year on Service subjects. Drill, weapons training, PT, riding and other games are obligatory throughout. In addition to physical and military training, discipline, leadership, team spirit and cooperation, inter-Service spirit and atmosphere are fostered. During the third year's training the cadets considered fit for technical arms are given separately additional training in technical subjects. Specialist training for different Services is organized and, on completion of the third year, the cadets branch out to their respective Service training centres. Army cadets are sent for one year's further

training to the Indian Military Academy, Dehra Dun, on completion of which they are commissioned. The naval cadets do a mid-shipman's tenure before getting commission while the air cadets are despatched to the Air Force Academy.

Indian Military Academy, Dehra Dun : This Academy was inaugurated in Dehra Dun in 1932, to give pre-commission training to Indian cadets. From that time Indians ceased to be eligible for admission to Sandhurst and Woolwich. When in 1955, the Joint Services Wing (earlier known as Inter-Services Wing) of the Academy was transferred to Khadakvasala, only the military wing remained at Dehra Dun, which is now the main avenue through which admission to the commissioned ranks of the Army is obtained.

The main sources of entry into the Academy are : (i) successful candidates who have completed three years' training at Khadakvasala; (ii) higher age-groups with Intermediate as minimum qualification who have qualified in the written examination and interview held by the UPSC and SSB respectively; (iii) graduate candidates of the National Cadet Corps; (iv) technical graduates selected for specialized commission in the technical arms of the Army; and (v) National Service or Territorial Army personnel.

The training is designed to endow Gentlemen Cadets with the basic military requirements necessary for a junior leader in the Army, although academic studies are also continued to some extent. The tactical training culminates in war games at platoon level in near-war conditions at the Academy's range, a few miles outside Dehra Dun in the Ions Valley.

Army Cadet College : The Army Cadet College, established at Nowgong (Madhya Pradesh) in 1960, is now located at Poona and trains promising Other Ranks for entry into commissioned ranks through the Military Academy.

Rashtriya Indian Military College, Dehra Dun : Formerly known as the Prince of Wales Royal Military College, it is run on public school lines and serves as a feeder to the National Defence Academy.

Sainik Schools : These are several residential schools run on the lines of public schools and are primarily meant for the sons of the Defence personnel. They prepare boys for the School Leaving Certificate Examination, but the primary aim is to train the students to compete for entry into the NDA, Khadakvasala. Emphasis is, therefore, laid on qualities of leadership, discipline, endurance, team spirit and cooperation. Similarly there are five Military Schools (at Dholpur, Chail, Belgaum, Ajmer and Bangalore). All these Sainik Schools and Military Schools, like the Rashtriya Indian Military College, Dehra Dun and the Army Cadet College, Poona, serve as

feeders to the National Defence Academy, Khadakvasala, and the Indian Military Academy, Dehra Dun. These schools are primarily meant for the sons of Junior Commissioned Officers and Other Ranks. They impart general education and at the same time prepare the students for entry into the commissioned ranks.

Naval Training : Subsequent to their completing the course at the NDA all naval cadets are given further specialized training according to the branches to which they are allocated. The officer cadre of the Navy comprises six branches : (i) Executive, (ii) Engineering, (iii) Electrical, (iv) Supply and Secretariat, (v) Instructor, and (vi) Medical.

The cadets are allocated to the first four of these branches only as the recruitment to the last two (Instructor and Medical) branches is not through cadet entry.

For the training of officers and seamen there are various shore establishments, the more important ones being INS *Venduruthy* (at Wellington island, Cochin), INS *Garuda* (Naval Air Station, Cochin) ; INS *Shivaji* (Lonavla, Bombay) ; INS *Valsura* (Rozi island, Jamnagar), INS *Circars* (at Vishakhapatnam) and INS *Hamla* (Bombay).

Air Force Training : The bulk of the entrants to the flying branches of Air Force are from the NDA. During the third year at the NDA, the air cadets are introduced to gliding and such other subjects as will prepare them for service in the Air Force. After finishing the three years' course at NDA the cadets are sent to the Air Force Academy, Dindigul.

The advanced training of pilots is carried out either at the Jet Training Wing, Begumpet or the Transport Wing, Hakimpet. After successfully completing their training the pilot trainees are commissioned into the Air Force and awarded their "Wings". The Air Force Technical College at Jalhalli is responsible for the training of technical officers (as also of apprentice airmen) of the Air Force.

B. Post-Commission Training

(a) Inter-Services :

(i) Defence Services Staff College, Wellington : While the academies at Khadakvasala and Dehra Dun impart basic pre-commission training, there are two colleges for advanced training of senior officers already holding commissions. These are the Defence Services Staff College at Wellington and the National Defence College, New Delhi. The former trains staff officers of the three Services to make them fit for holding command and staff appointments. Officers wishing to

join the College have to appear for the entrance examination except in the case of Navy where the entry is by selection from suitable candidates. The qualifications for Army candidates are at least five years' regimental experience, three months' experience in a formation headquarters and successful completion of the Junior Commanders' Course at the Infantry School, Mhow. Candidates should be between 25 and 35 years of age. Normally, the College trains 175 officers at a time. Some vacancies are reserved for students from the Commonwealth and other friendly foreign countries. A few civilian officers from the IAS, the Defence Science Service and the Naval Armament Service are also deputed to attend the course for a better understanding of the problems of India's Armed Forces. The training is spread over a period of ten months (reduced to seven months during the emergency).

The College is ideally situated in the Nilgiris where different types of terrain are available for all types of military exercises under realistic conditions.

(ii) National Defence College : The National Defence College was started in New Delhi in 1960 to provide joint training and instruction to senior Service and civilian officers in dealing with the wider problems relating to the defence of the country. Their studies relate to strategic, economic, scientific, political and industrial aspects of national defence. The College provides an opportunity to senior Service officers and highly placed civilian officers for meeting and exchanging views for a better understanding of each other's problems. Till 1960, India used to send officers of the three Services to attend courses at the Imperial Defence College in the United Kingdom, where the vacancies offered were limited. The Estimates Committee (1958-59), in its report to Parliament strongly recommended that, as the training imparted at the Imperial Defence College was useful, a similar college should be set up in India. The recommendation was accepted by the government.

Service officers of the rank of Colonel and above in the Army, and of equivalent ranks in the Navy and Air Force who have already held responsible jobs and may reasonably be expected to hold even more responsible jobs are selected to attend the course. Civilian officers from the civil services and some scientists are also nominated by the authorities concerned.

The aim of the College is to train the selected officers so as to be capable of holding key jobs in the structure of the country's defence, economy and administration both in peace and war.

The course aims at giving the students an idea of the great complexity of problems that confront men and governments today.

It also aims at giving them an idea of the effect, both on national and international policies, of the adoption of the various solutions of the problems. Lectures by distinguished men of affairs—politicians, soldiers, diplomats, civil servants, professors as well as practical business leaders and industrialists—enable the students to obtain a first hand account of how these problems strike those who are actually concerned in formulating or implementing policies.

During vacations, students visit different countries; these visits give them ample opportunities of seeing industrial plants and of understanding the civil and defence organizations.

All this knowledge is supplemented by selected but extensive reading. The process of absorption of knowledge derived in these various ways is strengthened by studies of specific problems. Students are grouped together into syndicates for the purpose of such studies. Each syndicate produces its own solution after a prolonged study and by discussion among its members. A careful comparison of the different approaches and opinions of different syndicates produces very interesting and instructive lessons. It is in solving the problems in this manner, against the background of his own knowledge and experience, of the knowledge and experience contributed by his fellow students, of the ideas thrown out by the visiting lecturers, and of the study of a wide range of books, that the student educates himself. He realizes the vital necessity of ascertaining and sifting facts. He discovers the extent of the basic similarities of human tendencies, and above all acquires a healthy respect for the other fellows' point of view and ceases to be dogmatic.

(iii) Institute of Armament Technology, Kirkee (Poona) : This institute provides facilities for research in various sciences and technical subjects connected with armaments, vehicles, equipment and electronics. It also conducts advanced courses for the Technical Staff Officers Course, as also in weapons and electronics.

(iv) Armed Forces Medical College, Poona : This is a first class medical college for training of newly-commissioned medical officers. Apart from running refresher courses and specialist courses, it conducts research in subjects related to the health of men and officers of the Armed Forces. It now also prepares students for the MBBS examination of the Poona University. The Director-General of the Armed Forces Medical Services administers the College with the assistance of an Academic Council consisting of experts on medical education. The College came into existence in May, 1948, and is a recognized institution of Poona University.

(v) School of Land-Air Warfare : Started at Secunderabad in 1960, this establishment is run by the Air Force to foster inter-Service

understanding of the organization of each Service in tactical warfare.

(vi) Himalayan Mountaineering Institute : To encourage men and officers of the Armed Forces and the youth of the country to take to mountaineering as a sport, the institute was set up at Darjeeling. There is another similar institute at Manali, and the Nehru Institute of Mountaineering in Uttar Kashi.

(vii) Training Abroad : A limited number of officers from all the three Services are sometimes sent abroad also, to countries such as UK, USA, USSR, etc., on courses of instruction to keep abreast with the latest techniques.

(b) Army

(i) Infantry School, Mhow : Formed in 1946, this school imparts infantry training to officers of all Arms and Services in infantry tactics and techniques. It conducts Junior Commanders' and the Senior Commanders' courses, and the courses in tactical and administrative handling of units and sub-units of all Corps. Specialized training for the various important weapons held by an infantry battalion is also carried out. Officers, JCOs and NCOs are also trained as instructors in all weapons of infantry rifle platoons.

The school's training programme has been reoriented to fit men and officers to face the peculiar problems of mountain warfare.

(ii) Armoured Corps Centre and School, Ahmadnagar : The school undertakes the training of regimental instructors, squadron commanders and regimental commanders of the Corps.

(iii) Artillery School, Deolali : This is the main training institution for men and officers of the Corps of Artillery, providing training in field, counter bombardment and Air Defence artillery, while its branch at Bombay gives training in coastal artillery. A separate wing of this school teaches the trainees the art and skill of deploying the guns in the field. Originally established at Kakul, it moved to Deolali in 1941.

(iv) College of Military Engineering : It was founded in 1943 at Roorkee when it was called the School of Military Engineering. It moved to Kirkee in 1946 and developed into the College of Military Engineering. The college imparts training to officers and Other Ranks of engineers and other arms in all aspects of field engineering. It also trains and tests Sappers in higher trades training. In addition to other small courses as in transportation, bridging, bomb disposal for the Engineer Officers, the college also conducts longer courses of over two years up to degree standard for engineers, signals and electrical and mechanical engineers. Along with the graduate course

run for officers of the Corps of Engineers, specialized training in petroleum and ammunition handling is carried out for Army Supply Corps, Army Ordnance Corps and officers of other Arms. Though the stress is on practical military engineering, there is ample provision for games and sports like shikar, gliding, sailing and riding.

(A) **Other Schools and Training Centres:** There are a number of other Army training centres and schools. Some of these are—School of Signals, Mhow; Electrical and Mechanical Engineering School, Secunderabad; Physical Training School, Poona; Army Ordnance Corps School, Jabalpur; Intelligence School, Poona; the Army Service Corps School, Bareilly; the Remounts and Veterinary Corps Centre and School, Meerut; the Army and Air Transport Support School, Agra; the School of Mechanical Transport, Faizabad; the Corps of Military Police Centre and School, Faizabad; the Army Educational Training College and Centre, Pachmarhi.

There are a number of training centres for the training of recruits, namely, the Electrical and Mechanical Engineering Centre at Trimulgherry, Secunderabad; the Second EMB Centre at Allahabad; the Signal Training Centre at Jabalpur; the Armoured Corps Centre at Ahmadnagar; the Artillery Centre at Nasik; the Second Artillery Centre at Hyderabad; the Madras Engineer Centre at Bangalore; the Bengal Engineer Centre at Roorkee; the Bombay Engineer Centre at Kirkee; the Remounts and Veterinary Corps Centre at Meerut; the Army Medical Corps Centre at Lucknow; the Army Ordnance Corps Centre at Secunderabad; the Army Service Corps Centre (South) at Bangalore; the Second ASC Centre (North) at Meerut; the Army Educational Corps Centre at Pachmarhi; the Corps of Military Police Centre at Faizabad; and the Army Postal Service Centre at Kamptee.

(c) Navy and Air Force

Similarly, for the post-Commission training of Navy and Air Force officers there are several institutions where higher and specialized training is imparted. Apart from training and refresher courses in their own institutions, a few selected officers of these Services are also sent to non-military institutions like the University of Roorkee for specialized courses.

VI. Welfare

Before 1939: At the end of 1914-18 War, the Indian Soldiers'

Board (ISB) was formed to watch the interests of serving personnel and ex-servicemen and their dependents. Under it were set up District Soldiers' Boards (DSBs) in heavily recruited districts.

The activities of DSBs were supervised by the Recruiting Organization which, however, was too small to do much. In 1939, there were approximately 97 District State Soldiers' Boards throughout India; nearly the whole cost of them was borne by the ISB Fund, the income of which was barely about Rs. 59,000.

The ISB (later known as the Indian Soldiers', Sailors' and Airmen's Board, or ISSAB) controlled the following funds for giving financial assistance to servicemen and their families :—

- (i) Indian Army Benevolent Fund, later styled the Indian Defence Services Benevolent Fund.
- (ii) India and Burma Military and Marine Fund, later called the Defence Forces Relief Fund.
- (iii) Sir Victor Sassoon Fund.

During the Second World War : In 1939, when the Second World War broke out the Soldiers' Board Organization was much handicapped through lack of funds and interest. No plan existed for revitalizing it or for giving it any assistance from military sources. Only when it broke down completely and the serious results of the breakdown on the morale of serving men were recognized that action was taken to improve matters. As a first step the government allotted funds for an increase in the staff required for additional Boards, but that too was not enough. Later, with the introduction of the Civil Liaison Organization (CLO) and male and female welfare workers, the situation improved, and the Servicemen's family affairs were attended to slowly but surely.

As more District Sailors', Soldiers' and Airmen's Boards were opened, the ISSAB was unable to meet the additional expenditure. The central government, therefore, accepted the commitment and the number of District Boards in the provinces finally reached 174. There were in addition 35 Boards set up in the princely states assisted by the centre ; five other states set up similar Boards and paid their entire expenses themselves. There was thus a total of 214 District Boards.

After attainment of independence, though some changes and improvements were made in the working and organization of the ISSAB and the District SSABs, major changes had to wait till after the declaration of emergency in 1962, when the ISSAB was reconstituted with a view to providing greater representation for the states and for senior ex-service officers.

Directorate General of Resettlement : There is a Directorate General of Resettlement under the Ministry of Defence which is 1 D of Cult./76.—25.

responsible for the twin tasks of resettlement of ex-servicemen (of whom about 45,000 need help for resettlement in civilian life every year) and welfare of the families of servicemen. The Director General, Resettlement (DGR) discharges his functions through his Directorate and through the Indian Soldiers', Sailors' and Airmen's Boards at state and district levels. The secretariat of the ISSAB is the apex body of the 3-tier organization of the Boards and forms a part of the Directorate General of Resettlement. The most important links in the chain of this organization are District Boards through which field work is done and contact established with families of servicemen and with ex-servicemen. These function under the supervision of the state government ; but while the expenditure of the State Soldiers', Sailors' and Airmen's Boards is met entirely by the state governments, that of the District Soldiers', Sailors' and Airmen's Boards is shared equally between the centre and states. There were 22 State Soldiers', Sailors' and Airmen's Boards, four Boards in union territories and 213 District Boards in the country in 1975-76.

The Resettlement Directorate consists of five wings dealing with employment, self-employment, training, publicity and statistics. In addition there are four Directors of Resettlement at four Regional Centres to serve as a link between the centre and the state authorities and guide private and official bodies on the needs of ex-servicemen. They ensure implementation of various schemes of resettlement in conjunction with local authorities.

Work : For employment of ex-servicemen following measures are adopted : (i) reservation of posts in central government departments and public sector undertakings; (ii) sponsoring of names by employment exchanges; and (iii) absorption in para-military forces. For self-employment, they are given loans, technical advice for starting enterprises, land for those who wish to do farming, farm tractors, cars and auto-rickshaws for plying as taxis. The Indian Oil Corporation offers agencies for distribution of Indane gas, petrol and kerosene oil as means of resettlement of widows and dependents of personnel killed in action or on duty, disabled personnel and ex-servicemen. Other measures for the dependents and disabled are liberalized pensions, free education for children, reservation of posts, vocational training, *ex-gratia* grants, medical treatment and after-care of the disabled, etc., etc. Other amenities provided are stipends to servicemen disabled in operations for receiving training in technical schools and industrial establishments, setting up of cooperatives for starting enterprises like the Ex-Servicemen's Woolen Mill at Navalgarh in Rajasthan, and housing colonies.

Even though all the states have made reservations up to 15 per

cent in their own housing schemes for defence personnel, including the disabled, war widows and ex-servicemen and separate defence housing colonies have also been set up in the past at Chandigarh, Churu (Rajasthan), Dehra Dun, Goa, Hissar, Jullundur, Ludhiana, Mohari (Punjab), Pune and Panchkula (Haryana), there are large number of ex-servicemen who are facing great difficulty in finding houses. States are being requested to spare more land for setting up housing colonies and to make larger reservations of plots and flats for ex-servicemen in their housing schemes.

During the period January-March, 1972, a series of decisions were taken to extend various benefits and facilities to the war bereaved families, particularly the widows and to the disabled and their dependents. A special organization was created in the Ministry of Defence to attend to this work which required concerted action by different ministries of the central government and by the state governments. Of the total number of 3,691 personnel estimated to have been killed during the Indo-Pak conflict of 1971, 2,314 were married. This number includes 111 officers and 2,203 JCOs/ORs and equivalent ranks. The most significant part of the rehabilitation scheme for these families is the liberalized pension scheme which compares with the best in the world. This has also been extended to the casualties of the conflicts earlier to 1971.

Welfare Workers : In 1963-64, 61 welfare workers were appointed as an experimental measure in some of the Boards functioning in Punjab, Rajasthan, Maharashtra, Madras and Uttar Pradesh, to serve as a link between the Boards and ex-servicemen. The scheme proved useful in these states and was later extended to all states by the appointment of more welfare workers. The expenditure on this account is being shared equally between the central and state governments.

Amenities : Various types of amenities are provided but a new one introduced after the Indo-Pakistan conflict of 1965, of particular interest to the families of the *jawans* may be mentioned. A special programme was introduced with the help of All India Radio for broadcasting messages of a personal nature, in their own voice and mother tongue by the *jawans* stationed in forward areas to their families and friends.

Welfare Funds : There are various funds in existence which assist or finance welfare activities for both serving personnel and ex-servicemen. These are :

- (i) Armed Forces Reconstruction Fund (mainly for provision of amenities to serving personnel and other welfare schemes).

- (ii) Armed Forces Benevolent Fund.
- (iii) Military Nurses Benevolent Fund (for helping ex-nursing officers in distress).
- (iv) Indian Gorkha ex-Servicemen's Welfare Fund (for stipends for school and higher education to the children of Gorkha ex-servicemen).
- (v) Flag Day Fund. Allocations from this fund are made to different organizations for assisting various welfare activities but the biggest single allocation is to various states for replenishment of their benevolent funds for ex-servicemen. Among other beneficiaries are Services Sports Control Board, Indian Red Cross Society for Medical After-Care Fund, military hospitals etc.
- (vi) Indian Soldiers', Sailors' and Airmen's Board Fund. From this fund, different welfare activities are financed and helped, a typical example of which is the special pensions granted to ex-servicemen blinded during World Wars I and II, operations in Jammu and Kashmir, police Action in Hyderabad and in Indo-Pak conflicts of 1965 and 1971. These pensions are in addition to those granted by government in the normal course.
- (vii) Army Relief Fund. Relief grants from this fund are given to families of officers, JCOs, etc.
- (viii) Special Fund for the Reconstruction and Rehabilitation of ex-servicemen. After the Indo-Pak Conflict of 1965 it was decided to set up a new Special Services Fund for Reconstruction and Rehabilitation of ex-servicemen with an initial contribution of Rs. 5 crores from the National Defence Fund and an annual contribution of Rs. 1 crore initially for a period of 3 years from the Defence Budget. Eighty per cent of the total amount was distributed to the states and union territories on the basis of the strength of the recruits. Payments of the contribution from the Defence Budget was made subject to the state governments and union territories making an equal contribution. The fund was meant to be utilized for the welfare and resettlement of ex-servicemen and their dependents.

Canteen Stores Department : The Canteen Stores Department (India) is a departmental undertaking of the government. Though run on commercial lines, its objects are two-fold. These are firstly to ensure essential supplies of payment issues to the troops at reasonable rates throughout the country and secondly, to provide certain funds to meet the various welfare needs of the troops which cannot

normally be met from government grants. The business of the Department has continued to grow. The turnover during 1974-75 was Rs. 5,362.77 lakhs as against the previous year's turnover of Rs. 4,270.94 lakhs.