



B.A. PART - III

DEFENCE AND STRATEGIC STUDIES

SEMESTER-V

UNIT NO. 2

**Department of Distance Education
Punjabi University, Patiala**

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LESSON NO.:

- 2.1 : Internal Dimensions of India's National Security with particular reference to Insurgency and Terrorism-(I)
- 2.2 : Insurgency and Terrorism in Jammu & Kashmir, Assam and North Eastern States
- 2.3 : Economic Mobilisation
- 2.4 : Planning and Production of War
- 2.5 : Major Defence Production Industries (DPSU's)

Note:- The students can download the syllabus from departmental website www.pbide.org

**INTERNAL DIMENSIONS OF INDIA'S NATIONAL SECURITY
WITH PARTICULAR REFERENCE TO INSURGENCY AND TER-
RORISM (PART - I)**

INTRODUCTION

National security refers to that capability of a nation by which the nation defend its honour both from internal as well as external threats. The internal threats assumes great significance and importance in recent times in view of ethnic violence, fundamentalism, sectarianism, naxalities, insurgency and cross border terrorism etc.

Since its independence in 1947, India has been facing the problem of insurgency and terrorism in different parts of the country. India has faced exclusively terrorist movements in Punjab and Jammu and Kashmir, bordering Pakistan, and party insurgent-party terrorist movements in the northeast, bordering Myanmar and Bangladesh; Naxalite movements in Bihar, bordering Nepal; and in certain interior states like Andhra Pradesh, Madhya Pradesh and Orissa that do not have international borders.

India has also faced terrorism of an ephemeral nature, which sprang suddenly due to religious anger against either the government or the majority Hindu community or both and petered out subsequently. Examples of this would be the simultaneous explosions in Mumbai on March 12, 1993, which killed about 250 civilians, and the simultaneous explosions in Coimbatore, Tamil Nadu, in February 1998. Tamil Nadu has also faced the fallout of terrorism promoted by the Liberation Tigers of Tamil Eelam in Sri Lanka in the form of attacks by LTTE elements on its political rivals living in the state and in the assassination of former Prime Minister Rajiv Gandhi in May 1991.

The causes for the various insurgent/terrorist movements include :

Political causes: This is seen essentially in Assam and Tripura. The political factors that led to insurgency-cum-terrorism included the failure of the government to control large-scale illegal immigration of Muslims from

Bangladesh, to fulfil the demand of economic benefits for the sons and daughters of the soil, etc.

Economic causes: Andhra Pradesh, Madhya Pradesh, Orissa and Bihar are prime examples. The economic factors include the absence of land reforms, rural unemployment, exploitation of landless labourers by land owners, etc. These economic grievances and perceptions of gross social injustice have given rise to ideological terrorist groups such as the various Marxist/Maoist groups operating under different names.

Ethnic causes : Mainly seen in Nagaland, Mizoram and Manipur due to feelings of ethnic separateness.

Religious causes : Punjab before 1995 and in J & K since 1989.

In Punjab, some Sikh elements belonging to different organisations took to terrorism to demand the creation of an independent state called Khalistan for the Sikhs. In J & K, Muslims belonging to different organisations took to terrorism for conflicting objectives. Some such as the Jammu & Kashmir Liberation Front, want independence for the state, including all the territory presently part of India, Pakistan and China. Others, such as the Hizbul Mujahideen, want India's J & K state to be merged with Pakistan. While those who want independence project their struggle as a separatist one, those wanting a merger with Pakistan project it as a religious struggle.

There have also been sporadic acts of religious terrorism in other parts of India. These are either due to feelings of anger amongst sections of the Muslim youth over the government's perceived failure to safeguard their lives and interests or due to Pakistan's attempts to cause religious polarisation.

The maximum number of terrorist incidents and deaths of innocent civilians have occurred due to religious terrorism. While the intensity of the violence caused by terrorism of a non-religious nature can be rated as low or medium, that of religious terrorism has been high or very high. It has involved the indiscriminate use of sophisticated Improvised Explosive Devices, suicide bombers, the killing of civilians belonging to the majority community with hand-held weapons and resorting to methods such as hijacking, hostage-taking, blowing up of aircraft through IEDs, etc.

The following are the main sources of funding for terrorist and insurgent groups :

- Clandestine contributions from Pakistan's Inter-Services Intelligence.

- Contributions from religious, fundamentalist and pan-Islamic jihadi organisations in Pakistan.
- Contributions from ostensibly charitable organisations in Pakistan and Saudi Arabia.
- Contributions from trans-national criminal groups, such as the mafia group led by Dawood Ibrahim who operates from Karachi, Pakistan.
- Extortions and ransom payments for releasing hostages.
- Collections--voluntary or forced--from the people living in the area where they operate.
- Narcotics smuggling and small arms smuggling.

Insurgency is a word meaning armed revolt, insurrection, or rebellion aimed at overthrowing or subverting a government or regime in power, or any duly constituted regime, including elected and non-elected officials. The official U.S. Defense Department definition is “an organized movement aimed at the overthrow of a constituted government through use of subversion and armed conflict.” Insurgencies involve irregular fighting by non-state armed groups such as terrorists, criminals, militias, mercenaries, and vigilantes. Sometimes the fighting forces are so irregular that they involve suicidal maniacs and irrational psychopaths. Insurgents often make demands that cannot be negotiated with, but sometimes, they can be worked with in compromises and peace agreements. Some insurgents have been known to “trade” or “sell” hostages, carry out assassinations and sabotage plots, harm humanitarian workers, seek media attention for themselves, or spin off into criminal enterprise. While some insurgencies will use the tactics of terrorism, and insurgency differs from terrorism in that insurgencies are usually contained geographically and in this respect, are more like domestic terrorism than terrorism at all. An insurgency also differs from terrorism in being driven by diffuse anger than specific anger. It may be impossible to identify the leader or spokesperson for an insurgency, or on the other hand, the leaders may be well-known and a surgical strike on the leader may work much better than it would with terrorism. One thing that terrorism and insurgencies have in common, however, is the contest for the “hearts and minds” of the populace, making it kind of psychological warfare.

Insurgency:

Insurgency conflicts have been taking place through out the world since the

beginning of history. When, one opposing, group within the state wishes to overthrow the ruling regime, or separate its rule, it can do either by subverting the establishment or by challenging the regime's armed forces with a rebel force.

To begin with insurgency movements have to operate clandestinely because of their being weak initially. As the insurgency movement gathers support, the conflicts may take place between the regimes, army and the insurgents using guerrilla tactics. At the last stage, when the insurgents start winning, they may adopt conventional tactics of open conflicts. An approximate example can be sighted of Shivaji's small guerrilla groups challenging the powerful Mughal army by lightning attacks in the inhospitable terrain of Deccan (Maharashtra).

Definition of Insurgency:

According to Wikipedia, the encyclopedia "Insurgency is an armed revolt or insurrection against established civil or political authority, such as a constituted, government or an occupation by an invading force".

A.M. Scott, "Insurgency is irregular warfare plus politics. Irregular warfare is insurgency minus politics.

Random House Dictionary, "The term insurgency itself merely conveys an insurrection against government by a group not recognized as belligerent.

So we say insurgency may be defined as an armed rebellion by section of population against the legally constituted government with the popular support or sympathy of the bulk of the local population, obtained voluntarily or by coercion. Developing nations are the most vulnerable societies which provide breeding grounds for insurgency. Poverty, illiteracy, disease and lack of opportunities for self development have been the ideal places for development of insurgency.

Violence is an accepted norm in insurgency and takes place in most of the cases. The insurgent being weak in armament and material resources does not go in for open confrontation and only tries the hit and run tactics.

Basic Requirements for an Insurgency Movement:

- 1. An Ideal:** An attractive ideal is the first requisite of an insurgent movement. It should evoke popular enthusiasm and appeal, inspiring individuals to dedicate their lives to its attainment.
- 2. Popular Support:** It is the most important requirement for a successful insurgency campaign. An attractive ideal and discontentment with the

existing schemes of the government enables insurgents to gain popular support, since the insurgency visualizes protracted guerrilla warfare which depends on the popular support for their existence. The people must provide food, shelter, recruits, money and updated intelligence. Without popular support the guerrilla cannot operate.

3. Dedicated Leadership: A suitable dedicated leadership is required to lead the insurgency movement when articulated and fanned into a flame by Charismatic leadership. They find expression in insurgency. The leader should be capable of recognizing the popular cause, present an attractive programme to the people and get their ready response.

4. Favourable Terrain: Jungles, rugged mountains and swamp's constitute favourable terrains as guerrilla can operate in great freedom in these areas as the security forces are not in a position to exploit their mechanical mobility. Jungles provide protections against aerial detection.

5. External/Outside Support: Outside support has assumed great importance, for modern insurgency movements. Modern weapons and ammunition are required for the movement which is available from outside. The outside support may be a combination of moral, political, technical financial and military assistance including the training of insurgents outside the country.

Features of Insurgency:

1. To get help from public, gain sympathy and moral support from local population.
2. Insurgency is a political war, because it has a political aim.
3. Peace- to- war- Insurgents when starts insurgency they start winning in many years. So we say that it is a slow process which moves from peace to war.
4. This is a long war in which a long time needed to counter the enemy and their organisation (Government).

Examples: China Revolutioner war- 22 Year

Malaya War- 12 years

5. Insurgency is cheaper from the other methods of war and regular war fare and counterinsurgency is expensive.

Questions for Exercise:

Q: Define Insurgency

Q: Define two basic requirements for an insurgency movement.

Q: Write any two features of insurgency.

Terrorism:

Although predicting World War II, terrorism is very much a feature of contemporary political conflict. Defining terrorism has long been a subject of controversy. Some believe it to be an identifiable threat to the government while others believe it as a clandestine act of violence against unarmed victims.

Definition of Terrorism:

An academic definition can be, "the use of threat or use of violence by an individual or a group to achieve their socio political aims and objectives".

The US Departments of Defence defines terrorism as the unlawful use of threatened use of force or violence against individuals or property to coerce or intimidate government or societies, often to achieve political, religious or ideological objectives.

The US Army on the other hand defines terrorism as the calculated use of violence or the threat of violence to attain goals political religious or ideological in nature.

Thomas Perry Thornton categorized two types of terrorism. The first is roughly, the activity of insurgents who wish to disturb the existing order and achieve power". The Second is "the activity of the incumbents who wish to suppress that challenge to their authority".

Walter Laquer "Terrorism is now an insurrectional strategy that can be used by people of different political convictions".

Jeckins, "Terrorism as a kind of threat of violence designed primarily to instill fear".

Oxford Dictionary, "Use of violence intimidation to achieve ends and create a state of terror".

From the India's point of view terrorism may be defined as, "an act of the threat of an act, aimed to create extreme anxiety and fear, including effects in a target, target group with the purpose of coercing the group into acceding to the political religious or the administrative demand of the perpetrators'.

It is emerging as a new challenge and is viewed as a form of warfare of the future.

Various Types of Terrorism:

Edward F. Micklous in his famous essay, 'Statistical Approaches to the Study of Terrorism' divides terrorism in four types :

- i. Terrorism Among Nations
- ii. Internal and Instable Terrorism.
- iii. National and Home Base Terrorism.
- iv. National Terrorism.

But many scholars define the terrorism into two types:

- i. National Terrorism
- ii. International Terrorism

Relationship and differences between Insurgency and Terrorism:

Terrorism and Insurgency are two difference aspects of violence. Though violence is the common factor to both. For the difference between in these two we can say:

1. Insurgents gets support from people from insurgent areas but this is not possible in terrorism because terrorist kills innocent peoples.
2. Insurgents are mainly from specific residence of the countries but terrorists may be from internal or external both sources and even they are may be enemy agents.

Difference:

Now in these days there is no assurance that terrorist acts would not become a part of insurgency activity and an insurgency, on the other hand become terrorist activity. Both are reversible to each other as there is no clear dividing line between them.

Conclusion

India is facing the terrorism and Insurgency since independence. It started with the North East, followed by Punjab and now in Jammu and Kashmir.

Events of September 11 (terrorist attack on U.S.) have focused world attention towards countering terrorism in all over world. India should make use of the changed circumstances and environment to address its own problem of terrorism and insurgencies on its soil. There is need for a fresh and comprehensive counter terrorism policy.

Questions for Exercise:

Q: Define Terrorism

Q: Define any two types of terrorism.

Q: Relation between Terrorism and insurgency.

Suggested Books for Further Readings

- J.A. Khan : Probing War and Warfare.(A.P. H. Publication Co op. New Delhi, 2005).
- V.K. Anand : Insurgency and Counter Insurgency, A Study of Modern Guerrilla Warfare (Deep and Deep Publication, New Delhi, 1971).
- Roger Perkinson : Encyclopedia of Modern War, (Grenada Publishing, New York, 1979).
- Lawrence Freedman: Terrorism and Strategy, (Rutledge and Kegan Paul Ltd., 1986).

"The primary and most effective strategy to avoid war is to prepare for it" KPS GILL.

**INSURGENCY AND TERRORISM IN INDIAN STATES:
JAMMU AND KASHMIR****INTRODUCTION**

Since independence, the relations between India and Pakistan have seen many ups & down. India have fought four major Wars with Pakistan i.e. 1947-48 Jammu & Kashmir conflict, 1965 War, 1971 war (which created Bangladesh in the East Pakistan) and the recently concluded Kargil war of 1999. We had nearly gone to war with Pakistan in 2002.

Since Independence, India is facing a number of terrorist/insurgency related problems, which have revolved around perceived concepts of secession with the aim of creating separate independent sovereign states. Although we have been able to control such situations, a dangerous dimension has been added for the last two decades by the involvement of Pakistan in aiding secessionism in North East, Punjab and Jammu and Kashmir. Having failed in its attempts of annexing Kashmir by force and realizing the futility of carrying out an armed adventure in the existing security scenario. Pakistan resorted to what can be termed as proxy war and cross border terrorism.

Jammu and Kashmir:

As have been the case in Jammu and Kashmir since 1947 low intensity conflicts are an on going process. The so called freedom fighters as Pakistan describes them, Jehadi and religions fanatics continue posing security problems of National Security and low intensity conflicts are continuing. Aiding training and equipping these terrorists by Pakistan pose a major security threats to Indian security arrangements.

History and Accession with India:

Pakistan and its leaders at the highest level have been propagating that "Kashmir is the only, unfinished agenda of Partition in the Indian sub

continent (since 1947)". Though after partition, princely states in India and Pakistan merged with respective countries within their geographical jurisdiction except some. Pakistan wanted Jammu and Kashmir to merge with it. But Jammu and Kashmir though a Muslim majority state was being ruled by a Hindu Maharaja Hari Singh and it did not merge with any one initially. Kashmir merged with India through the instrument of accession on 26th Oct. 1947 when Pakistan had already moved her army backed by Razakar's into Kashmir to forcefully occupy Kashmir. The instrument of accession was signed on 26th October 1947, signed by Maharaja (Erstwhile ruler of the State) was completely valid in term of the Government of India Act (1935), Indian Independence Act (1947) and international law. The accession was also supported by the largest political party in the state, the National conference.

India moved its troops by airlifting them into Srinagar, which was under attack by Razakar's and Pakistani militia only on 27th October, 1947. Thus Jammu and Kashmir partially saved by the Indian Force from annexation by Pakistan.

This was followed by similar actions and regular attacks by Pakistan in 1965 and 1971 and in the early 1980's.

The present situation in Kashmir has been created by Pakistan's support to terrorism in India. This support to cross border terrorism is not only an attempts to unilaterally after the status quo on the ground but also to under mine India's Secular fabric and image in world.

The external security threat is a fallout of Pakistan's long standing obsession over Jammu and Kashmir. Its domestic and foreign policies are centered over J&K and it has availed of every opportunity to highlight the issue of "Indian Presence" in various international forums.

Ist Jan. 1948, India took the issue to the security council of United Nation. Since then Kashmir issue has been lying with the security council. Pakistan is constantly blaming India in all regional and international forums for not implementing the UN resolution regarding holding of plebiscite in J& K. In fact, Pakistan is responsible for this because it has failed to withdraw its forces from J&K. Which was a pre condition for holding plebiscite according to United Nation Resolution.

India on its part has maintained that the insurgency in J&K is the

handiwork of terrorist groups, operating from Pakistan with the covert support of the establishment.

Conclusion:

Jammu and Kashmir is an internal matter for India. Indian willingness to accommodate the legitimate political demands of people of the State of J&K. However, Pakistan sponsored terrorists have terrorized the population of the state to revolt against Indian Government.

Right from the initial years of Indo-Pak relations, Kashmir issue continues to be a crucial and most irritating issue. The human rights of the people of J & K have been systematically violated by such terror tactics and the kidnappings and killings of innocent peoples by terrorists.

India needs to pursue the diplomatic efforts to ensure the lasting peace in J&K and move towards a bilateral solution to resolve the issue. Jammu and Kashmir is an integral part of India. There can be no compromise on India's unity and Integrity.

Insurgency in Assam**Introduction**

North-East India is the eastern most region of India consisting of the following states: Nagaland, Meghalaya, Arunachal Pradesh, Mizoram, Manipur, Tripura and Assam. However, they share only a 50km common Border with India.

Insurgencies in northeast India, unlike J & K have an indigenous character. At the root of the movements are British administrative policies like 'Indirect rule' and 'exclusion' (Partial exclusion of hill tribe areas). Which aggravated ethnic differences to an extent where tribal loyalties received primacy over national loyalties.

India's north-eastern corner faces insurgencies or separatists movements from over 50 groups. Although each conflict has its own roots' and history, the issues they raise include language and ethnicity, tribal rivalry, migration, control over local resources, access to water and a wide spread feeling of exploitation and alienation from the Indian state.

Assam:

The state of Assam has been badly affected by armed insurgency over the last one and a half decades with various insurgent groups.

Main Reason :

Insurgency in Assam primarily emerged out of one main issue i.e. the deportation of illegal migrants from Bangladesh. Since India's partition in 1947, a continuous flow of illegal migrants across the borders has disturbed the local demography.

Assam Agitation:

Seeking the detection of illegal immigrants a movements commenced in July 1979 under the leadership of the All Assam Students Union (AASU) and the All Assam Gana Sangram Parishad (AAGSP).

Insurgency:

The United Liberation Front of Assam (ULFA) was established on April 7, 1979 at Sibsagar. Secession from India was its declared goal. The Bodos, a major tribe and among the earliest settlers in the state initiate a second stream of insurgency on the issues of the dispossession of their tribal lands by Bengali and Assamese settler's as well as neglect of the Bodo language and culture.

Currently there are as many as 34 insurgent groups listed in the Assam State, though ULFA is the main outfit among other terrorist outfits. Muslim migrants in Assam have also shows sign of incipient militancy. The Muslim United Liberation Front of Assam has raised the demand for a separate state comprising the five border districts of Assam which now have a Muslim majority. Apart from these prominent terrorist outfits operating in the different part of the state, many splinter groups emerge, operate and decline on a continuous basis. The problem of insurgency in the state acquired another important dimension when Assam policies gather sufficient evidence of Pakistan Intelligence Agency ISI's involvements informenting violence and terrorism in the state.

Insurgency in the other States of the North East:

a. Manipur: The insurgency in Manipur entered its 43rd year in 2007. Among the 35 insurgent groups in the state in past, as many as 18 are reported to be currently active.

The primarily conflict in the state involves various insurgent groups, constituted along tribal affiliations, fighting against the government for sovereign or separate homeland.

The insurgency in Manipur started in 1964. The primary conflict involved the fight for statehood. In the course of time, secondary conflicts have arisen out of tensions between various ethnic and tribal groups.

b. Nagaland: The Nagas comprise nearly 17 major tribes and over 20 sub tribes. Each tribe and sub tribe speaks a different language, belonging to the Tibet Burmese group of languages.

The main objectives of the national socialist council of Nagaland Isak-Muivah (NSCN-IM) is the establishment of a Nagalim (Greater Nagaland) consisting of all the Naga - inhabited areas of neighboring Assam, Manipur, Arunachal Pradesh and Some portions Myanmar, which it considers to be the rightful homelands of the Nagas.

The Delhi Agreement between a section of the Naga leadership and the government of India, led to the formation of the state of Nagaland on December, 1, 1963. A group of about 140 activist of the NNC formed a new underground organisation called the National socialists council of Nagalim (NSCN). With the passage of time, the NSCN emerges as the most radical and powerful insurgent group fighting for the Naga cause.

The principal Naga militant group today, the National Socialist Council of Nagalim (Isak-Muivah), demands a united homeland, Nagalim and claims a territory six times the size of present day Nagaland, including most of Manipur as well as parts of Assam, Arunachal Pradesh and Burma.

Angami Phizo, the founder of the Naga insurgency opened the Burma front to the insurgency in the 1950's. Phizo's group established links with Chinese leadership at the same time, and later with Pakistan.

c. Tripura: Tripura has 865- km long border with Bangladesh and insurgents and terrorists are using it to push arms into the state. Tripura is one of the Indian states with a history of revolutionary peasant movements, and for much of the last quarter of the 20th Century had a communist state government. Insurgent groups have seriously disrupted attempts at land reforms and other progressive interventions. Particularly in Tripura, the dividing line between political insurgents and Plain terrorists is blurred and many of the groups have transformed kidnapping into an industry. Tripura is the only state in India's Northeast that has been transformed, in recent history. From a predominantly tribal to a predominantly non-tribal state.

A deepening nexus between major political parties and terrorists groups is evident in Tripura, and terrorist groups in the state also have strong connections with other insurgent organizations in the region. These groups often aided by the ISI of Pakistan.

d. Meghalaya, Arunachal Pradesh and Mizoram:

These three states are the peaceful Northeastern States. Only militant groups of other states and elements perform terrorists activity on the soil's of these states. Outsiders has led to the growth of a number of militant organizations constituted in these three state. Arunachal Pradesh suffers primarily from an 'overflow' of violence in the neighbouring Nagaland, particularly in the Naga dominated Tirap and changlang districts. Arunachal Pradesh was long projected as an 'Island of Peace' in the turbulent Northeast. Mizoram has been relatively violence free. During the year 2000, a total of four civilians, one militant, and seven security forces were killed in militancy related violence. In 1999, only two civilians and five security personnel lost their lives.

Conclusion:

Continuous demographic destabilization as a result of migration, both within the country, and illegal population flows from Bangladesh, have created some of the most significant threats to present and future peace of north east India.

Some of the problems are the problem of youth unrest, the unemployment problem, problem related with the quality of education and its accessibility, the problem of corruption at all levels, the crisis of trust in public institutions and the pathetic conditions of the state of affairs of the states. Each state or region has its aspirations which should be represented with a good strength in the Lok Sabha. But the northeast hardly has preference in the National Policies and the net results is alienation of the region.

Unified command in the North East should be made more effective and given a free hand to tackle insurgency, because the ISI is deeply involved in their strategic planning and to some extent they have support from the Chinese outfits also. One has to rise above the party politics to establish peace in the disturbed region.

Suggested Books for Reading:

- J.A. Khan : Probing War and Warfare.
Baldev Singh & Brig : Military Studies Manual
Jasbir Singh : study groups publication, Chandigarh,

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- Sreeradha Datta : The North East Complexities and its Determinants. Shipra Publication, New Delhi, 2004.
- B.G. Varghese : India's Northeast Resurgent, Konark Publication, New Delhi, 2004.
- E.N. Rammohan : Insurgent Frontiers, India Research Press, New Delhi, 2005. c

ECONOMIC MOBILISATION

In 1947, India inherited highly inflammable and vulnerable borders-but she wake up to this reality when China launched a massive attack on her territory in 1962.

India has been following the practice of sacrificing development when the enemy withdraws or is beaten back. Recent history has however shown that Indian Economy can bear the tremendous strain of total mobilisation very well. By a very well planned and co-ordinated defence orientation of the country' Industrial base, we have, however, now reached a stage of positive development when the strategy of mobilisation and the scheme of fiscal mobilisation is not hampering the national economy.

Let us examine this task of mobilisation which is likely to add to the inertia of our planned and rapid progress:

In a situation of war, a country has to take care of its war front, home front and diplomatic front. These three fronts which aim at winning the war are interdependent. Their complete co-ordination and integrity of purpose and efforts is essential. The home front can help the JAWANS by producing supplies required by theatres of war, relieving manpower for defence services by keeping up its own morale and integrity and by strengthening and administration.

Production of all sorts of war supplies in adequate quantities is an economic task of supreme importance, though other task are also governed by economic coordination of varying importance.

Task of Total Mobilisation

It is a situation in which a country firmly resolved to win a large scale war, organises its economy to produce the maximum possible volume of war materials. It implies the use of total manpower, total capital resources (in existence or procured), increase in daily working hours to raise the maximum possible output in a limited period of time and reduce consumption to the lowest minimum Total mobilisation embraces an economy such bigger than we have at any time experienced or imagined.

It is human nature to try and find reason against what it does not want to accept. In 1962, to avoid grips with the challenging magnitude of the problem, a tendency to reduce the problem had crept in by thinking that:

- (a) The unmanageable internal situation in China would control its aggressiveness.
- (b) Soviet-Chinese rift would hold in check China's fury against India.
- (c) Snowfall in Himalayas would ease situation.
- (d) China's economic difficulties and weaknesses are too great to permit a prolonged aggression. A nation which is resolved to win a total war, must rule out such apparently pious hopes in its military plans. Military of fiscal traditions cannot offer a wholly dependable guideline in building up a striking power of adequate size and aggressiveness. These are usually embodiments of past experiences bound by-historical situations and concepts but military strategy and warfare involve highly dynamic variables and their complex involves large elements of the unexpected and the unorthodox. Total mobilisation should therefore project true thinking and planning on the canvas of existing facts, speculations and anticipations. It is the test imaginative and management power of human beings as also their courage and boldness.

Objectives of Economic Mobilisation

The estimate of the required military build-up to make our borders secure, is a military and political decision which we do not presume to know or predict. Some experts in 1960s have however estimated that the military strength of India contains approximately a striking power of 8,25,000 officers and men; the numerical object of mobilisation of India may therefore reasonably be fixed at raising the Country's striking Power to the level of 30,00,000 raising it about 4 time its present size. Besides an increase in numbers there is an urgent need of equipping India's fighting forces with modern/sophisticated weapons and other military hardware including weapons suited to guerilla/mountain warfare. The object of total mobilisation in India may as such be expressed as the raising of fully equipped and modernised Indian Armed forces of 30,00,000 combatants ready to fight at immediate notice.

The estimate of the required military build-up to make our borders secured however is a military and political decision which cannot be predicted and can be very much different from what has been given above. The main difference between peace and war levels of readiness is that the latter involves

tremendous amount of expenditure on arms and ammunition which are rapidly consumed when a war is being fought.

The element of time

Every day is an opportunity for better military preparation which we must cash eagerly and resolutely. We cannot afford to wait at all and, therefore, must determine the period of time during which we purpose to build up the striking pore of the desired magnitude. The duration of war is a function of the ferocity of aggression and preparedness of the invaded country to beat it back.

Expert from time to time after the independence have proposed the time span limitations of various duration between one year to 18 month But this again has to be a military and political decision. The time limit of any particular objective can, however, be expanded to reduced without destroying the validity of the suggested resources. The endeavours have only to be spread over or adjusted according to Govt. decision.

Defence Budget

The military objective can thus be spelled in terms of the magnitude of economic mobilisation. The monetary measure has to be phased and estimated for a financial year and necessary resources have to be provisioned. These figures sometime are astronomical. In India, due to phased and planned development annual budgets have included the elements of mobilisation process in their five year plans. A progressive and upward development stock pile envisaged from 1962-65 onward made over defences worthy of taking on the challenges in 1971. The positive orientation of a Defence based Industrial set up in the country to shift over to the military hardware if necessary overnight has been slowly and gradually implemented and achieved.

To translate in monetary terms the military preparedness of the country, it is necessary to analyse the elements of defence cost and the study the structure of a war budget in India. The anatomy of a defence budget for our country during a state of belligerency can be designed on the experience gathered of foreign war budgets with possible adjustments for meeting the changing requirements of modern defence and other relevant factors and own experience of the past.

Most of the expenditure in a state of total mobilisation is incurred on ammunition and other military hardware. Nobody can predict with any amount of exactitude, what would be the expenditure on arms and ammunitions

when a major war is being fought. If a war is ferocious and our army happens to suffer setbacks the loss of ammunitions can be enormous. On the contrary if we give a liking to the enemy, our consumption of arms and ammunition may not necessarily be so heavy. Theoretically the structure of our Defence Budget (for purposes of illustration) for 30 lac combatants could be as under:

Item	Rs. in Crores	Per Capita Rs.	%age of Total
1. Wages of combatant's, civilians food, clothing & training, etc.	1,338	4,460	25
2. Additional Expenditure on food, clothing & equipment	161	536	03
3. Arms, ammunition and other hardware	3,901	13,004	72
Total	5,400	18,000	100

During Second World War, India's Defence expenditure mounted up from 46.10 crores in 1939-40 to 896.16 crores in 1944-45. It is true that situation of India during that period was different from the present situation. But some experts are also of the opinion that for military preparedness on war basis along the whole range of our vulnerable land frontiers, we might need more striking power than what was built during the period of Second World War by the country.

Strategy of Mobilisation

An ideal mobilisation programme should yield the required resources without upsetting the activities which are of fundamental importance to the nation. A proper criteria in this regard may be as under:-

- (a) The five years plan should be so drawn that adjustments should be possible in the event of sudden aggression.
- (b) The incremental income be diverted to meet the defence needs.
- (c) For the duration of emergency, household consumption be frozen at the present levels.
- (d) Special reduction in consumption of certain articles be made.
- (e) National output be increased by increasing working hours.
- (f) National output be further increased by additional employment.

- (g) Resources made be diverted for defence purpose.
- (h) Aid should be received from friendly countries and allies.

Fiscal Mobilisation

The Govt. would mobilise physical resources for National defence in the form of purchases which would result in an increase money circulation. This inflated money must flow back to the Govt. in the interest of price structure and economic stability. The acquisition by the Govt. of goods and services from the market constitutes the physical aspect of defence mobilisation and the withdrawal of money from circulation is its monetary or fiscal aspect. In an exchange economy; the physical and fiscal aspects of mobilisation are two sides of the same medal; one cannot be separated from the other though both would not usually be of the same dimension. In a war economy, the volume of physical mobilisation tend to exceed the volume that can be actually mobilised through fiscal mean; and it is this which puts undue strain on the price level and presses on inflationary tendencies.

The Principal instrument of monetary mobilisation is the tax handle which justifies the use of the term FISCAL MOBILISATION. Purely physical mobilisation is an ideal situation in the context of war economy. In case, however, the fiscal mobilisation does not yield expected results. Govt. may have to resort to deficit financing this would be unfortunate. Firstly it would indicate lack of public support or failure to mobilise public enthusiasms constructively and secondly it would accentuate inflationary tendencies.

We must remember that defence expenditure is inherently limited by economic consideration: An extravagant defence budget can be ruinous to the country's economy. The drain upon financial, material and human resources may weaken the whole economic structure, impair the human will to resist the enemy and disrupt production mechanism. India however is in a happy position to practice a method which is not usually available to fighting nations-this is her increasing reduction and mounting productive capacity flowing out of her economic plans which can be directed to defence preparations.

It has been traditional to try and meet the economic problems with the help of legislative fiscal and other economic tools. In a state of belligerency such tolls must be used whenever feasible and necessary but too much reliance should not be placed on them. Awakened public consciousness, high moral and acquired action can be effective for defence endeavour. A Scheme of

enlisting public enthusiasm and cooperation should be designed to serve the war effort outlined above and should be channelled into constructive and precise ways of national defence.

An integrated sector wise programme of popular defence support and enlisting public enthusiasm be directed in the following five spheres:

- (a) Resource Mobilisation.
- (b) Increasing production and savings.
- (c) Market supplies and price line.
- (d) Communication, intelligence and morale.
- (e) Man power organisation and training for Civil-defence. If we translate the resource Mobilisation programme in terms of the certain population the work can be classified as under:
 - (i) Austere living. (ii) Payment of taxes. (iii) Donation, (iv) Subscribing to defence loans and securities. Consumption consciousness has to be associated with production defence approximately of the same quantity as restriction on consumption. The following directions may be given to this part of the mobilisation programme.
 - (v) (1) Saving, (2) working more per day, (3) Joining New Production Units. (4) Working in additional shifts and New localities. (5) Increasing output in rural areas.

One of the great problem during war time is the danger of inflation which causes hardships and even loss of moral among the people. Emphasis should therefore be on 'NOT' spending. Social organisation can do useful work in this field. Hoarding and profiteering must be stopped. It is necessary to:

- (i) Create public opinion against hoarding.
- (ii) Publishing fair prices of mass consumption articles.
- (iii) Detection of unfair prices and bringing them down.
- (iv) Organising consumer stores and fair price shops.
- (v) Giving business community the responsibilities for fair distribution and equitable prices.

Another problem during the period of war is to keep up the tone of the public morale and steer is to a high pitch of optimism so that it can sustain occasion a disasters. This is a matter of political consciousness and for this purpose it is necessary to:

- (a) Build up fast moving channels of communications between Govt. and the people to disseminate accurate information and news.
- (b) Prevent rumours from spreading and contradict them.
- (c) Infuse a sense of pride in people.
- (d) Keep a watch on the activities of people who are likely to crack under national strain.

It is also essential to organise people and train them for defence if the enemy agents of forces come in their midst. The public realises the need for civil defence and this understanding should be increased. It is necessary to:

- (a) Train and organise people for civil Defence.
- (b) Give physical instruction to people.
- (c) Arrange Military training on voluntary basis.
- (d) Expand maximum help in the construction of Defence projects.
- (e) Expand Training for nursing work.
- (f) Help and encourage recruitment for War services.
- (g) Train people for war production.

A successful leadership involves a daring vision, capacity to plan and manage. open mindedness, sensitivity to expert opinion, recognition of individuals strong points and utilizing them according to their capacities, delegation of authority, and courage to go beyond one's own group in larger interest. The Govt. and the people have risen as one man to meet any threat to our national integrity.

SUGGESTED BOOKS FOR FURTHER STUDY

1. A. N. Aggarwal : Economic Mobilisation for National Defence
2. Falk National Security Management.

PLANNING AND PRODUCTION IN WAR

In war, victory or defeat depends upon the military planning and production. Nation, which fails in military planning and production should not think in terms of waging a war. In peace, the purpose of planning and production is quite different than in war. In war the main purpose of planning is to fulfil the needs of the army. In production, priority is given to those things which are required for the army.

The concept of planning and production for war is not new. The idea was conceived since the inception of warfare. In some of the other way military planning was carried out production of war material was always stepped up Waging of war is an enterprise and for the same huge quantity of national resources are used. This is true that 'man and material are never sufficient in war and therefore it is necessary that before waging a war proper planning should be done and sufficient quantity of war material should be in stock.

We can safeguard our country only when we have the strength to make aggression a costly and profitless adventure. The greater our economic and defence potential the less will be the dodger from across our border. The bare truth is that poor faith in our neighbour in the north has been shattered and it cannot be restored soon. Therefore, India has to remain on a constant vigil and in a state of complete readiness for every. Our planning and production should be defence oriented and also it should be an integral part of the national economic plan.

After independence India has been involved in the international use of force in defence of her own interest on six occasions. The role of Indian armed forces in preserving India's internal security and unity is praiseworthy. Indian armed forces have contributed much in establishing peace under U.N.O in many countries of the world. After China India has the largest man power in the world but as far as armed forces are concerned India ranked fourth largest country in the world.

With regards to the defence commitments of the Indian army we can say that India has to defend long land and sea frontiers with limited resources. In the past we were unable to distinguish between defence policy and defence management. Our Political leaders, civil and military bureaucrats has little

knowledge and understandings about the planning, resources and production for war. Because of this lack of understanding we suffered in 1962 when China attacked us. Our image as a military nation was shattered. But the successful operation of 1971 had beneficial impact on the self-confidence and self-image of our decision makers and military planners. After our reverses in NEFA We studied our problems and requirements and started working on those lines on war footing and thus we were able in improving our image and induce confidence in our jawans.

To that extent the credibility of the government has significantly improved both among the public and the members of the armed forces.

National security occupies the top most position and should not be influenced by party politics. National security is the country concern of all the country men. Hence, the problem of defence should be planned in such a way that the common man feels that the country belongs to him and it is his prime duty to defend the country at every cost. It is the duty of every citizen of the country to pool all available resources to meet the eventuality. With all the limited resources available it is the duty of the military planners to make the maximum use of the resources. Armed forces can be alert only when they are properly equipped with most modern weapons and equipments. In this way will be able to counter any threat from any quarter. For achieving the above object we require foolproof planning in exploring our resources, increasing the production and thus making India strong in war potentials. Since, planning and production are the basis of defence let us study them separately.

What is Planning?:

Planning is a programme which is designed to achieve three major objectives:

- (a) It will help us in finding out new ways to do jobs faster.
- (b) to do jobs better and
- (c) to do jobs at lesser cost.

Planning will ensure a much sounder judgement through more accurate information, pinpointing those things that we ought to be more, spotlighting those things that we ought to do less. By correct type of planning it will be easy for us in making our decision making process as up to date as our space programmes. By planning we will be able to achieve our objectives or targets by a method already decided, within a prescribed time limit, and finally estimate the resources need to achieve the same. The planning is done in

two parts.

- (a) Programming and
- (b) Budgeting

Programming:

It is an important part of planning. It mean comprising all those activities which serve a major purpose. For this purpose the entire defence plan should be broken in to different various departments of planning. Unless this is done it will not be possible to go in to minutest details and do the proper calculations. Each department should be given the outline of the job to be completed and should be responsible for detail planning and blue print of each scheme.

Budgeting:

Budgeting mean earmarking and allocating funds. This is done by the legislature. It is an operation which exhibits for the benefits of the legislature the expenditure and obligations proposed to be incurred in a financial year by the executive branch of the government. Budgeting has three functions to perform in administration:

- (a) It is a financial plan for realising the objectives of the department;
- (b) It is a means by which approval of the legislature is obtained for incurring expenditure;
- (c) Through budgeting we ensure control over finances.

Planning for Defence:

The idea of planning for defence of the country came after we got our independence. Britishers left us in a hollow state of affairs. After withdrawal of British officers and jawans and because of the division of the armed forces a vacuum was created. At this juncture when we were not at all prepared for any armed conflict, Pakistan suddenly attacked on kashmir. We were taken a back, but soon we realised our position and started working in terms of defence. The real awakening came when we were attacked by China without any provocation. We faced reverses in NEFA but did not take much time when our military planners realised that unless we defend ourselves no body will come for our defence. Consequent to these attacks the importance of defence was realised. The plan was prepared in 1964. This plan consisted of various schemes which were already approved of sanctioned. This planning was done on the assessment on the development of Chinese troops in Tibet

and Pakistan troops on our Western border. This plan was made up to date twice, once in 1966 and again in 1969. This was also decided that these plans will be brought up to date every year. This planning consisted in Five Year Plans.

Ist Five Year Plan:

The first five year plan was formulated in the year 1964 to cover the period from 1964 to 1969. This plan was compilation of a five year budget in place of an annual budget. Each service was given an allocation of funds which was equal to their needs during the five year period. It was not based on long term requirements plan, suffered from the disadvantage that there was no assurance of resources to support it over the whole period. Moreover, a five year forecast of requirements was not adequate for defence planning. The cycle of development of weapons and other equipment is 5 to 7 years, while that of advanced technological aircraft is even longer-7 to 10 years. There can be no significant progress in attaining requirements over a reasonable long period.

Further, in three Services Head Quarters till now no significant amount of staff have been earmarked for undertaking such planning. The air force and navy have policy and planning branches but for the army the Directorate of Weapon and Equipment is supposed to fulfil this role. These organisations are more concerned with short term planning instead of long term planning. As a matter of fact there should be a forum to discuss an issue like whether given limited resources we should apply them to produce more tanks or more aircrafts or more ships.

The ministry of defence has taken a right step in announcing a plan to expend and strengthen its planning capabilities, but no corresponding plans have been announced to strengthen the planning capabilities of the three services or the Chief's of Staff Committee secretariat. Further, in this plan, there are no facilities available in the three services to acquire, collate and compile the necessary data on developing technology, strategic doctrines and international developments which should form the basis for each long term planning. As a matter of fact there should be a competent staff in the three services as well as within the secretariat of the chief's Staff committee. This will ensure that various proposals will be adequately debated at three levels before they are finally approved to be incorporated in the plan.

2nd Five Year Plan:

The 1969-74 plan for the first time fully took into account the changes in strategic needs and tactical concepts as well as a 10 year forecast of requirements. The government assured that financial assistance and foreign exchange facilities would be provided and this was also laid down in plan. Therefore, starting from 1966-74 the Defence Plans are resource-based. This is something very significant. It was also decided that from the total allotment of budget to the ministry of the defence all three services will be distributed as per their requirement. This lends realism to their plans, and the fact that any saving arising from a readjustment of priorities can be used by the same services has also provided them a new incentive both for economics and for studies in cost effectiveness in depth. There is one thing very significant in this plan that the Department of Defence production has been very closely associated with all the discussions. In this way the planning for development and production has been integrated. This integration is not only for five years but for ten years requirement plan and also for the thinking on the new weapon system for all the three services.

Defence planning should be a continuous process. It is therefore, a part of the scheme that the plan should be up to dated by an annual review so that the year that has passed is deleted and one more year added. In this way the defence services will have more before them a fully up-to dated five year plan at all time.

Some Suggestions for improvement

The shortcomings in the process of decision making are absence of clearly formulated objectives, long term assessment of requirements, long term planning, application of modern techniques of management etc. If these shortcomings are not removed we will have to pay heavy toll. Therefore, it is necessary to take immediate prompt and necessary action in this matter. These shortcomings can be removed within a year or two but we will have to show attitudinal changes. Some of the changes which are necessary are given below.

1. There should be a National council for security in place of the present Political Affairs Committee of the cabinet.
2. An independent secretariat for national security affairs be established in Prime Minister's office.
3. The joint intelligence Committee and its staff be expanded.

4. There should be a policy planning staff in the ministry of defence.
5. The planning staff in three services and the ministry of defence be strengthened, and also.
6. The staff of the Chief's Staff Committee be strengthened.
7. An independent committee to look in the organisational changes needed in the services to meet the current requirements of the defence management be set up.

What is Production?:

From the point of view of an economist, production means creation of utilities or addition of values. Marshall had said that "All that man can do in this physical world is either to adjust matter so as to make it more useful....." With the fast development of science and technology it has become easy to obtain strength and efficiency both. Therefore, through modern techniques we can increase our production and gain all round efficiency.

Modern wars are more technical with the result defence equipments also have become highly complicated, sophisticated and improvements and new developments are taking place at a faster space. These equipments cost a lot of money and if they have to be imported, it will mean a big drain on our limited foreign exchange resources. Therefore, it is necessary to make war requirements ourselves in the country. For making the country self-sufficient in defence production there are a number of factors which do matter and it is very necessary to consider them one by one.

Factors effecting production:

Following are the factors which help us in making war production easy and considerably at less cost:

(1) Resources :- Modern wars are very expensive and all the resources of the country are drained out during war. Therefore, it is necessary to pool all the resources and utilize them in planned way. Since war can start at any moment therefore it is necessary to be in readiness to meet the eventuality. For waging war defence preparedness is the prerequisite. Defence preparedness has perhaps, no boundaries but each nation, even the richest, has limitations of resources-resources of money, material and skilled man power. Every nation has to make an assessment of the potential threats and possible strength in defence of resources of such threats and the justifiable effort in defence preparedness has to be commensurate with this assessment.

In 1962 and 1965 unprovoked attacks by China and Pakistan and their collusion against India needs all times vigilance and preparedness as far as our defence is concerned.

Although India is a poor country and her resources are limited yet we have to find but resources to strengthen our defence. Our aim and objective of the defence effort should be to make the most of the available resources and to prevent a heavy drain on foreign exchange resources.

(2) National Policy :- As far as defence is concerned there should be a firm policy of the nation. We have already discussed that resource are costly enterprise, and a major portion of national resources are used, our national economy is adversely affected; social equilibrium is disturbed and uncertainty prevails in the country, therefore, it is necessary to have a firm defence policy. As far as India is concerned our policy is against the use of nuclear weapons. Our state of economy does not permit us even to think in terms to compete with intercontinental Ballistic Missiles. We do not want to compete with the most developed nations of the world as far as highly sophisticated defence equipments and weapons are concerned, but at the same time we have to decide the type of weapons and equipments that are necessary for our own defence keeping in view our enemies.

(3) Self-sufficient :- Self-sufficiency is the basis of victory because in modern times the wars are long drawn as we have seen in Korea, Vietnam, Arab and Israel. The period of confrontation can not be forecasted. Thus, victory lies with those who are able to engage the enemy for a longer period. This is possible only when the country is self-sufficient in war materials. We generally talk of self-sufficiency and self reliance in defence production but at times it became very difficult and even impossible to produce every thing for the defence forces. We have to depend upon some friendly nations also. Countries like U.S.A and U.S.S.R. have to depend upon other countries as far as oil is concerned. Where requirements are small and the magnitude of investment needed to meet them through our own production is large, it is not worthwhile to set up a production line. In such cases we should seek market and import these items.

(4) Peace time build-up :- Peace time is the time when we prepare for war. All strategic planning and preparation is done during peace time, because during war such planning is not possible and feasible because there is not time left for making basic preparation. We have to depend upon our own resources. Therefore, preparedness has to be linked up in suitable manner

with the requirements of an emergency. We should plan our capacity for the production in such way that in any emergency goods may be delivered at such faster rate. Often it is possible to use this capacity for the production of some items of civil use if we make greater use of general purpose machines in the production line. Further, during peace time it is necessary that the machines and the human skills should be kept in perfect trim during peace time to be effective in war time.

(5) Role of Civil Sector :- War is not fought only on the battle front but on the civil front as well. Therefore, we have to study the role of civil sector in defence production. The Government should not wholly depend upon public sector but also on civil sector. The requirements of defence production have to be fully understood. Rigidly in specification of items must be followed. The soldier who is responsible for defending countries border away from home must not be let down and, therefore, the weapons and equipments which he uses must be dependable and reliable.

(6) Public Sector :- The production capacity in the public sector has been modernised to large extent. The progress towards self-reliance is being maintained and the production is being expanded. Sometimes it is asked what is the future of public sector? This question can best be answered through the address delivered by Smt. Indira Gandhi (Ex. P.M.) at a press conference in 1966. We advocate public sector for three reasons:-

- (i) to gain control of the commanding heights of economy.
- (ii) to promote critical development in terms of social gains of strategic values rather than primarily on consideration of profit and
- (iii) to provide the commercial surplus with which to advance further economic development.

The public undertakings have known much interest in introducing innovations in their system of working and in adopting modern techniques of industrial management, such as operational research, inventory control and financial control. In public sector many items developed by India have stilled the test of difficult operational condition. The Public Sector have to expand further not only in defence production but also in other fields so that it plays a major role in the fulfilment of the dream of our people that they should enjoy the fruits of prosperity.

(7) Rigid Specifications :- The rigidity of specifications not

primarily apply to items produced for the use of the armed forces. For proper checking there is a process of detailed inspection at all stages.

(8) Import Substitutions :- The private sector manufacturers have done well in providing defence items. With the result the items which used to be imported have been developed and manufactured indigenously. For a developing nation like India it is necessary to develop modern techniques for manufacturing defence items. In our country both public and private sectors are making efforts and both the sectors, therefore, must be supplementary to each other.

Problems of Defence Production

With the advancement of science and technology, war is becoming more and more scientific. The cold war is giving impetus to armament. Armament race gives birth to the new tactics and vice versa. The times are changing so fast that it is becoming very difficult for poor nations to come in line with rich nations. Due to lack of funds and other technical backwardness they are unable to produce modern weapons and equipments. There are some other problems which are related to the defence production. They are following:-

(1) Sophistication :- Generally the department of defence production deals with the most sophisticated industrial techniques. Although the government gives top most priority to this matter yet sophistication has it as own handicaps and problems, especially in poor countries. With the fast changing techniques most sophisticated weapons are being manufactured by rich and technically and industrially advanced countries. The reason is that rich countries have all the facilities, funds and technical know-how with them which the poor nations does not have. As far as India is concerned the department of defence production deals with such as electronics, aircraft and ship building etc. but this department has its own problems and limitations.

(2) Quality Control :- Quality control is very necessary as far as production of defence material is concerned because the soldier who is going to use them should have full confidence in his weapon and equipment. These things should be able to give best performance in all the weathers and in all the conditions of warfare. If the quality is not controlled the soldiers will not be able to use their weapons and equipments with full confidence but half heartedly. These weapons and equipments must be tested fully before they are issued to the armed forces for use. Quality control must be imposed to the every stage and at every cost.

(3) Convertibility of Civil Industry into Defence needs :- For every action poor and rich it is very difficult to carry on the production of war material during peace time more than the requirement. If some material is produced of war material during peace time become unserviceable. Therefore, it is necessary to plan the civil industry in such a way so that during war they should be able to switchover to the production of the items required for war with in no time. During peace time these industries should produce things required for the use of civilian people. In such industries more skilled and trained technicians and labourers should be employed. This convertibility will raise the morale of both the soldiers and the civilians.

(4) The limited war requirements :- A few year back long term wars were fought with lot of war material but in considering the problems of defence production today, the crucial issue is whether such an expensive war will be fought in future or not. But keeping the efforts for disarmament in view, we can come to some conclusion that in future expensive wars are not likely to be fought because ill industrially advanced countries are afraid that if wars are prolonged a time may come when nuclear war may start. No advanced country is in favour of nuclear war rather they are always for avoiding this war. Prolonged wars can only be fought if the fighting countries are able to produce more or unlimited war material but now a days no country is in position to bear the heavy cost of war. Therefore, the problem of defence production should be considered in this perspective.

(5) Obsolescence factor :- As we have seen that even the most modern and sophisticated weapons become obsolete soon due to over-night improvements. The defence production establishments are facing these problems. Today's planning becomes obsolete tomorrow. Due to the accelerated changes in technology, the rate of obsolescence becomes faster in all the industrial products. Therefore, at this stage the defence production establishments will have to plan for production by keeping the above factor in view.

(6) Problem of resources :- For production, raw material is required. The raw material is to be procured from some or the other source. The problem of raw material is solved if the country is rich in resources but on the other hand if there is shortage of raw material it is imported from friendly nations. As far as India is concerned the resources are plenty. The main raw material are iron and coal and both these things are available in India. India has set up steel plants where best type of steel is produced. The other items of raw material which is not available. In India are imported

from other countries thus we fulfil our defence requirements.

(7) Discontinuity factors :- Where there is no war the production of war material is done at a slow rate. The greatest difficulty which arises with the civil industries is that when there is no war then these industries had to face slump thus causing them financial loss. This discontinuity in production somewhat makes the civil industries disinterested in taking up the defence production work. The civil industry, whether run in private sector or in public sector would like to have steady and continuous orders. But when they do not get the order they become indifferent.

(8) Research and Development in Defence Production:- The factor of obsolescence also brings in the consideration of research and development. This work is generally taken up by the government in their research and development departments. The developments of sophisticated weapons etc. requires huge amount of funds and facilities. All this is provided by the government. This arrangement is an essential part of the defence production because this department is responsible for development of most of sophisticated weapons etc.

Planning for Defence Production:

As we have studied that planning and production are the life and soul of fighting forces and without proper planning and production wars can not be fought. The technically and scientifically advanced countries have tried their best in the field of planning and production for war but in spite of this planning for defence requirement appears to have some serious shortcomings that are realised and felt from time to time and efforts are still continuing to remove them. As far as planning and defence production are concerned they should be planned in such a way that the production which is a costly enterprise the financial pressure on the state exchequer, is split emphases. For this, there should be two type of plans for production.

(a) Short term plan :- to meet the immediate requirements of the defence forces and

(b) Long term plan :- to meet the future requirements.

In short term plan we can depend upon our friendly nations for the fulfilment of our defence requirements but in long term plans we should make an effort to set up industries and research and development centres for the sophisticated weapons and equipments. Our planning should be flexible and not very rigid to enable us to change our production according to the requirements of time.

The planning should be well coordinated so that all the three services get proper attention of planners. As already suggested our defence plans should be time bound so that the project which starts production would be able to justify its existence in the field of production. The planning should be on 10 year basis and every year the plan should be subject to review and when one year is complete one more year should be added to the plan. There are a few things which must be added to the plan for proper production.

(a) Food-Stuffs :- The planning should also be done in the field of agriculture to increase the production of food Stuffs and to make a buffer stock of these items to meet the war time requirements. During war our troops as wells the civilian people should be able to get sufficient food because generally during war the yield of crops is effected.

(b) Direction to Industries :- The planning should be such that during war the industries should be able to switchover to the materials required for war. For example mills which produce woollen goods during peace time should be able to produce jerseys and blankets etc. Our steel plants which produce iron bars, rails, pipes etc. should be able to produce armed vehicles and tanks.

(c) Increase in Working Hours :- In peace, generally the working hours are less but during war the working hours and shifts can be increased to increase the production of war.

(d) Recruitment :- In war we need a big army. Our planning should include compulsory military training, in some of the other forms, to our young men to enable the armed forces to expand rapidly in times of war. We should have reserve of trained men both in military and civil life so that in case of an emergency own people should be able to defend our borders and as well as home front. It is also advisable to have a data of such young men who can be called upon, in an emergency, to join the armed forces without any delay.

(e) Transport and Communication :- The means of transport and communications are as important for the nation as nerves and veins for the body for the supply of blood. In war supplies play an important role. Without supplies soldiers can not fight with tooth or nails but they need arms, ammunition, POL, food, water, medical aid etc. If the supply lines are not maintained the war will come to an end by itself. Development of border roads, air fields and various methods of communication is very essential.

Production does not include only the manufacturers of sophisticated weapons but all those items also which have been discussed above. Production means increasing the utility. Thus, while making plans for defence production we should have wide field and consider all those subsidiary matter also which have concern with the production.

Important Questions

1. What is Planning and production? What is its importance for War? Discuss.
2. Planning and production has been described as the life and soul of the warfare? Do you agree with this statement? Discuss
3. Programming and budgeting are the two faces of planning. Discuss.
4. Write a short essay on the five year plans for defence. Give your suggestions for any improvement that you want to include in these plans.
5. What are the various factors which effect the production for war? Give reasons why our Prime Minister Mrs. Indira Gandhi advocated for the production of war items in public sector?
6. What are the problem of Defence productions? Give your suggestion for solving these problems.
7. Write an essay on planning for defence production.

Books Recommended

1. Perspectives in defence planning by K. Subramanyam
2. India's Quest for Security, by L.J. Kavic
3. The Economics of Defence by Richard V. Clemenbe
4. The Economics of Defence by Richard V. Clemenbe
5. War and the Indian Economy by V.K.R.V.Rao
6. The Economics of Defence in the nuclear Age by Hitch and M.C.Kean.
7. Military Year Book 1971-72
8. Ministry of Defence Report 1972-73

**MAJOR DEFENCE PRODUCTION INDUSTRIES : PUBLIC SECTOR
UNDERTAKINGS**

Defence Production in India

At the time of attaining Independence, the Government of India was fully aware that development foundation of the country was weak and it was not capable of producing modern weapons and also that there was a shortage of men of skill for manufacturing those weapons. In spite of this state of affairs, Nehru, when pressurised for manufacturing war material for armed forces, used to say, "India should fight with sticks" because the government did not have adequate funds for additional expenses. Defence production received a set back from the very beginning and remained ignored to start with.

1. Defence Production in India, 1947 to 1962

In spite of the government's adherence for defence production, efforts started being made to overcome the weaknesses of development and shortage of expert technicians. But the government policy was that defence items, which were required in great quantity, and also essential items even though required in small quantity, should be manufactured indigenously and that the equipment, which was very expensive and which was subject to becoming obsolete in short time, should be purchased from outside, such as fighter and bomber aircraft, guided missiles and tanks.

In 1948, India established Research and Development Organisation and in 1952, Defence Science Service. More arrangements were also made for research. A number of plans were made for production of war material. Even then, India was no where near self-sufficiency in defence production by 1962.

2. Defence production in India, 1962-1974

The 1962 debacle brought the factories on the line of defence production. For the first time, contracts were given to civilian private manufacturers for some times. Department of Defence production was established in 1962. In 1965, Department of Defence supplies was established. After 1971, strong need was felt for preparing our own designs for the manufacture of weapons.

India's national policy adopted the aim of ensuring that the manufacture of military weapons was based on indigenous designing, development and production. A start was made for fulfilling the aim of self-sufficiency through special programmes. The civil sector was further probed for its capability to give full practical shape to self-sufficiency.

3. Subsequent defence production in India

It had been fully realised that civil sector is not only to be permitted but also to be encouraged to take more active part in defence production. Defence and civil development are very closely inter-linked. Defence production is dependent upon civil development for raw material. India has since paid full attention to the important need of having joint activities for mobilisation of development for defence and civil sectors. The country has been concentrating on achieving the two aims- modernisation and self-sufficiency.

Indigenisation of defence production for self-sufficiency

1. Need for indigenous production

Defence equipment was procured by India mainly from Western countries. The need for indigenous manufacture of defence equipment was felt by all the importing countries because of two main reasons; firstly the equipment supplied was not current and technologically at least a generation behind, and secondly spares for the equipment were not forthcoming when badly needed. The supplying countries at times withheld the contracted supplies of equipment and also spares with a view to using it as a lever to put political and economic pressure on the purchasing countries. This highlighted the need for India to produce own defence equipment. As envisaged in the defence plans, India started making efforts for indigenous production of war material for attaining self-sufficiency. The country had to depend upon its research and development organisation for designing and production of defence equipment. As this organisation could not meet all the defence requirements, India had no option but to purchase and import high technology (hightech) equipment and manufacture it in India under a license from the countries of origin.

2. Technology not made available by USA

The memorandum of undertaking (MOU) for the transfer of hightech to India signed in Washington in Nov. 1984 did not cover military technology. USA considered arms sale to India only on the terms that were applicable to non-NATO nations, that is without any consideration for technology transfer provisions. India insisted on transfer technology as distinct from outright

purchase of weapon system. USA did not want to put this technology into the hands of a nation in which more than 80% of weapons were Soviet-made or produced in India with Soviet permission. They feared it being transferred to USSR.

3. Technology made available by USSR

On the other hand, Soviet assistance, in addition to supplying military hardware, also covered building up India's defence production capability. The first major Indo-Soviet agreement, which went a long way in promoting India's defence building capability, was concluded in Aug., 1962. The Soviets always agreed to transfer "fully developed technologies" to India. Indigenisation in defence production unit set up with Soviet collaboration in India increased in tanks, missiles, naval ships (including submarines) and aircraft. Soviet economic and technological cooperation has made immense contribution to the economic and production self-reliance of India.

4. Advantages gained through indigenous defence production

India has successfully built up a strong base of production facilities in the fields of science and technology which has enabled it to produce the latest versions of main battle tanks, howitzers, war ships, submarines, fighter aircraft and missiles. India has gained numerous advantages by developing and producing its own defence equipment, some of which are:-

1. Cost of equipment and spares has gone down.
2. Now the country possesses what it can produce, in stead of equipment from various countries resulting in problems of the variety.
3. Training can now be imparted to the armed forces liberally without the fear of non-availability of the equipment for replacement and of non-availability of spares.
4. Valuable foreign exchange has been saved.
5. In the event of war, production can be increased by mobilising factories.

5. Reaction of former supplying countries

Because of the problems faced in importing war equipment, the importing countries started developing their indigenous defence production. These developments caused a stir among the supplying countries which have started exerting pressures on their former importing countries. India is being

pressurised to sign the NPT and Missile Technology Control Regime (MTCR).

System for defence production

The activities of defence production can broadly be divided into two groups - ordinance factories and defence public sector undertakings (DPSUs). Both the groups have a continuous programme of indigenisation.

Ordinance Factories

In addition to establishing new factories, India had taken steps on a large scale to modernise the existing factories and to increase their number. At the time India attained Independence, there were only 16 ordinance factories. Their number has now grown to 40.38 of them are under the direct control of the Director General of Ordinance Factories. The remaining two- the Heavy Vehicles Factory at Avadi and Accelerated Dried Meat Factory at Tundala- are directly under the control of the Ministry of Defence (Department of Defence Production). In 1979, an Ordinance Factory Board was established which was given the responsibility of planning and implementing programmes for ordinance factories. The large range of vital elements produced by the factories includes highly sophisticated weapons, tanks, arms, heavy and light vehicles, ammunition, technical equipment, parachutes, general shoes and clothing of special types. Even though the primary role of ordinance factories is to fulfil the needs of the armed forces, they manufacture a few items of civilian consumption also, such as guns and ammunition for games (shikar).

Defence Public Sector Undertakings (DPSUs)

At present, there are eight DPSUs in India. They were under the administrative control of the Ministry of Defence (Department of Defence Production). One of them - Parga Machine Tools Ltd. (PMTL) was transferred to the Ministry of Industries. The DPSUs have been taking great part in the defence effort and have made considerable contribution to defence production, indigenous production and self-sufficiency. DPSUs are geared up to undertake the production of ships, aircraft, earth moving equipment, machine tools, electronics, missiles and so on. Like factories, the undertakings have also manufactured for civil consumption.

DPSUs in India

1. **Hindustan Aeronautics Ltd (HAL).** Manufacturers aircraft of the air force; MIG, Ajeet, Kiran, Avro (HS- 748 M), transport aircraft, Chetak, Cheetah (SA-315), Mirage 2000, Jaguars, HF-24 Marut.

2. **Bharat Electronic Ltd (BEL).** Produces sophisticated electronic communication equipment and radars for the three services.
3. **Bharat Earth Movers Ltd (BEML).** Produces heavy duty trailers and wheeled earth moving equipment.
4. **Mazagon Docks Ltd (MDL).** It is India's leading ship building and ship repair yard. Builds Leander class frigates for the navy.
5. **Garden Reach Shipbuilders and Engineers Ltd (GRSE).** Produces Seaward Defence Boats, survey vessels and ocean going tugs for the navy, and also a range of marine engines
6. **Goa Shipyard Ltd (GSL).** Manufactures landing craft utilities and torpedo recovery vessels for the navy.
7. **Bharat Dynamic Ltd (BDL).** Manufactures sophisticated anti-tank missiles.
8. **Mishra Dhatu Nigam Ltd (Midhani).** Manufactures super alloys and special metal required by aeronautics, space and electronic industries.

Praga Tools Ltd (PTL). Produces machine tools for meeting the requirement of the industry. But this is no more a DPSU.

Defence production organisations in India

The Ministry of Defence oversees the functioning of the Directorate General of Ordnance Factories (DGOF) and DPSUs, through the Department of Defence Production. There are other organisations also for defence production. The major organisations are discussed below:-

1. Department of Defence Production, set up in 1962, was made responsible for laying down stable foundation for indigenous manufacture of military weapons, ammunition, aircraft and naval ships to meet the country's defence requirements. Ministry of Defence charts, controls, guides and conducts all defence production through this Department. It directly administers and controls the ordinance factories and also controls DPSUs. It is, therefore, responsible for the manufacture of the items required by the defence services. In addition, it is responsible for coordination and control of the inspection of all defence equipment. It also undertakes the important task of standardisation and cataloguing of various items of equipment used by armed forces. Directorate of ordinance factories and a few other

directorates function under it.

2. Directorate General of Inspections: This Directorate undertakes scrutiny of tenders, testing of samples, assisting production agencies in overcoming technical bottlenecks, analysing the user's problems, standardisation, establishing commonalities between products and processes and preparation of a variety of literature on the defence equipment in use.

3. Directorate of Technical Development and Production. This Directorate is responsible for inspection of defence aircraft and development and establishment of indigenous sources of supply of certain categories of aeronautical stores and ground equipment of imported origin.

4. Directorate of Standardisation. Standardisation embraces a variety of activities like codification, variety reduction, entry control, preparation of standards and laying down preferred ranges of stores with the basic objective to improve, simplify and make economical, the performance of logistic functions keeping in view the necessity for increase in indigenous design and procurement.

5. Directorate of Planning and Coordination. This Directorate is responsible for processing new projects, modernisation and rehabilitation of old projects and augmentation of production capacities in the departmental factories. It acts as a coordinator between the user, the designer and the production agencies for all indigenously developed and produced weapons, equipment and other stores.

6. Directorate of Defence Production and Supplies. As a part of the policy to reduce dependence on external sources, this Department was set up in 1965 under the Ministry of Defence, for primary purpose of developing indigenous sources, both in public and private sectors, for the production of defence stores procured from abroad, as well as stores introduced into the services for the first time.

Research and development in India

Research and development was initially neglected and not given the priority it deserved to ensure proper defence production in the country. In 1958, Defence Research and Development Organisation (DRDO) was formed by amalgamating the Defence Science Organisation and other technical development establishment. The DRDO was formally constituted into a department - Department of Defence and Development - in May 1980. It was a belated action compared to Department of Defence Production having been

established in 1962.

Department of Defence and Research Development has a network of 35 establishments/ laboratories, each dealing with a specific area of science and technology of importance and relevance to defence and covering the major areas of work associated with the development of defence equipment and meeting other needs of the services. It is headed by Director General of Research and Development who is also the scientific adviser to the Defence Minister and Secretary to the Government of India for Defence Research. Its activities have dealt with aeronautics, electronics and radar, engineering, naval research, rockets and missiles, vehicles.

India has made good strides towards research for defence production. The Department has excelled in designing and developing main items of defence requirements. It has been engaged in designing and developing main battle tank. However, there is still room in improvement to overcome delays; for example development of Main Battle Tank Arjun took 19 years (1974-93).

Major defence items indigenously produced

As a process of indigenisation of defence production, major items produced and/or being developed are mentioned below:-

1. Tanks

- a) Vijayanta. Manufactured as main battle tank (MBT)
- b) T-55 (Soviet) Modernised in India.
- c) T-72 (Soviet). Modernised in India. Production started in 1984.
- d) Arjun. The indigenously manufactured new MBT "Arjun" whose project was conceived in 1972, was formally inducted into the Indian Army on 14 Jun 1993, thus marking an important milestone in the development and production of India's ambitious tank programme. For the first time, state-of-the-art tanks, which were specifically designed to operate in the conditions that obtain in the western sector, were introduced.

2. Combat Vehicles.

- a) Infantry combat vehicle (ICV) - BMPI (Soviet)
- b) Sarah - Basically Soviet designed BMP II tracked ICV

3. Armaments, ammunition and explosives. Development of weapons and ammunition is being undertaken at Armament Group of Laboratories at Pune, Jabalpur, Chandpur and Balasore, Major product

development at these laboratories are:-

- a) Infantry weapons: Rifles, machine guns, mortars.
- b) 5.56 mm system:- Advanced range of light arms is being produced to improve the fire power capability of forces engaged in anti-terrorist operations in J & K and Punjab. 5.56 mm Indian new light small arms system to meet terrorist and insurgency threats is being mass produced in ordnance factories. The weapons being inducted under this system include rifles and light machine guns. The elite formations of the Army and para military forces are being equipped with this system.
- c) Infantry ammunition. For rifles, machine guns and mortars.
- d) Artillery guns and ammunition - 105-mm Light Field Gun.
- e) Artillery mortar ammunition - For 105, 120 mm and 130 mm
- f) Mortars. 2 in, 51 mm, 81 mm, 120 mm
- g) Howitzers - 155 Field Howitzers
- h) Anti tank armaments - 81, 105, 120, 125 mm
- i) Mines and mine breaching systems.

4. Naval Ships.

- a) Frigates: India started manufacturing Leander Class frigates. Nilgiris and Himgiri were completed by the end of 1974. Many more have since been built.
- b) Submarines. In 1981, India had signed an agreement with HDW of Germany for the supply of four HDW diesel-electric Type-1500 submarines. Two were bought off the shelf by India. India manufactured two submarines on semi-finished sub-assemblies supplied by the HDW. India is likely to manufacture two more submarines. In Feb 1988, an Indo-Soviet accord on naval building was reached. India has joined the club of ten nations which manufacture their own submarines.
- c) Nuclear-powered submarine. Defence Ministry launched the advance technology vessel programme in 1984-85, focusing on building of a nuclear-propelled submarine. India's first indigenously built nuclear-powered submarine is likely to be launched by 2000.

5. For air force.

Hindustan Aeronautics Ltd. meets the requirements of India Air Force. It has 11 factories in six different states.

a) Aircraft.

Kiran. Basic jet trainer aircraft.

Ajeet: Jet fighter aircraft, an improved version of Gnat.

Basant - Single seat, low wing agricultural aircraft.

MIG-21 - Between 1967 and 1985, the MIG production line turned out a total of 486 units. It was reported in Jan 1992 that India was likely to manufacture MIG-21 for export. The 100th MIG-21M was formally handed over to Indian Air Force on 2 May 1993. It is basically an advanced ground-attack fighter-bomber, operating at supersonic speeds.

MIG-27 - India's first MIG-27 rolled out of the assembly in Oct 1988.

MIG-29 - assembled in Nasik.

Jaguar - The first Jaguar aircraft manufactured from the raw material phase and delivered in 1987-88.

HS-748

HF-24 Marut

b) Light combat aircraft (LCA). The first test flight of the LCA is expected in Jan 1996. The first 12 prototypes are to be fitted with the American F-111 Norothrop engines.

c) Helicopters. Cheetah (SA 3150), Chetak (Aloutte-III)

d) Advance Light Helicopter (ALH). The first prototype of the ALH developed by the HAL took off on its official test flight on 30 Aug 1992. The twin-engined ALH, perceived as the lightest helicopter in the world, can seat upto 14 persons, including two crew. Its production is likely to start by 1994. India became the second country in the world after USA to have indigenously designed and developed a helicopter of this type.

e) Aero engines. For Ajeet, Marut, MIG-21, HS-748, Chetak, Cheetah

6. **Missiles:** For Ajeet, Marut, MIG-21, HS-748, Chetak, Cheetah.

DRDO has developed five main missile systems:-

- a) Agni: Intermediate range ballistic missile "Agni" was assembled in 1988 and launched in May 1989. It failed to carry out the final manoeuvres in the re-entry stage. Second test flight was carried out on 29 May 1992. It is a re-entry technology demonstration project.
- b) Trishul: Short range, multi target surface-to-air missile, having a nine km range.
- c) Akash:- Medium range surface-to-air missile, with a range of 25 km. It is the version of Patriot, the world's only anti-tactical ballistic missile developed by USA. It was first test fired on 4 May, 1990.
- d) Nag: Ballistic flights of the country's first third generation anti-tank missile "Nag" designed to defeat all known futuristic armour, was successfully carried out in Jun 1990. It has a range of four km.
- e) Prithvi:- The first launch of the most sophisticated medium range surface to surface missile "Prithvi" was carried out on 25 Feb. 1988. It was test-fired for the 12th time on 30 Nov. 1993. It has a range of 250 km and can carry different types of war heads. Successful launching was another milestone in the missile technology. It is a modified version of the indigenous satellite launch vehicle-3 (SLV-3).

Development work on Akash and Nag missiles is expected to be completed by 1995. Trishul and Prithvi missile systems are expected to be induced into the armed forces during 1993.94.

7. **Rockets:**

- a) Grad BM-21 rocket launcher:- It takes its name from the Russian word for hailstorm. It is capable of firing 40 rockets in 20 sec destroying enemy position in a 600-metre area.
- b) High altitude Rohini-560: sounding rockets was successfully launched on 20 Feb 1993.

Type Setting :

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