

**1. Report of the planning group on civil aviation  
at the turn of the century, Oct., 1986**

**2. 9<sup>th</sup> annual report 2003 – 2004, Airport  
authority of India**

# REPORT OF THE PLANNING GROUP

On

CIVIL AVIATION  
AT THE TURN OF THE CENTURY

नागर विमान विभाग
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31st October, 1986

*Dear Dr. Manmohan Singh,*

On behalf of the members of the Planning Group on Civil Aviation at the turn of the Century, which was constituted by the Government of India vide their Memorandum No.T&C/3(27)/85 dated 9th December 1985, I have pleasure in submitting herewith the Report of the Group along with the five separate volumes of its enclosures.

*With regards,*

Yours sincerely,



(J. R. D. Tata)  
CHAIRMAN

Dr. Manmohan Singh,  
Deputy Chairman,  
Planning Commission,  
Government of India,  
NEW DELHI.

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## CHAPTER 1

### INTRODUCTION

#### Constitution of the Planning Group

The Government of India, vide their Memorandum No. TAC/3(27)/85 dated 10th December, 1985 set up a "Planning Group on Civil Aviation" to formulate a long-term perspective plan for the transport sector on an integrated basis. The composition of the Group was as under :-

1. Shri J.R.D. Tata  
Chairman,  
Tata Group of Companies ..... Chairman
2. Shri K.G. Appusamy  
Retired Managing Director,  
Air-India ..... Member
3. Dr. H.K. Paranjape  
Economist ..... Member
4. Air Marshal C.K.S. Raje  
Director General, Civil Aviation ..... Member
5. Air Marshal M.S.D. Wollen  
Chairman,  
Hindustan Aeronautics Ltd ..... Member
6. Prof. R. Narasimha  
Director,  
National Aeronautics Laboratory ..... Member
7. Capt. K. Chadha  
Managing Director,  
Indian Airlines ..... Member
8. Shri K.L. Thapar  
Adviser (Transport),  
Planning Commission ..... Member
9. Dr. N.W. Nerurkar  
Joint Secretary,  
Dept. of Electronics ..... Member
10. Shri C.L. Sharma  
Dy. Managing Director,  
Air-India ..... Member - Convener

1.2

Later on, Dr. N. K. Sengupta, Director General Tourism, Government of India was also included as a member of the Group in order to ensure that projections plans for future traffic growth both on the International and domestic sector are in full consultation and in harmony with the Department of Tourism. Also, in its meeting held on the 7th/8th January, 1986, the Group felt that since there considerable coordination required between the civil and defence agencies in management of airspace, provision of facilities at civil as well as military airports, re of pilots from the Indian Air Force for civil aviation, etc., it would be useful to co a member from the Indian Air Force. Similarly, it was considered essential to co a member from the International Airports Authority, as they operate and admin the four main international airports in the country. Consequently, Air Vice Ma P. P. Singh from the IAF and Air Marshal P.S. Dere from the IAAI were co-c as members on the Group

2.

## **Terms of Reference**

2.1

In the Government Memorandum the Terms of Reference of the Group were laid out as follows :

"1. The Group will determine the roles of civil aviation in the total transport infrastructure of the country and prepare a long term plan based upon sound technical and economic consideration in the time perspective up to the year 2000 A.D. The specific Terms of Reference will be as follows: -

- i) To study the past trends in growth of passenger traffic and air cargo including developments in the pattern of air services over the last two decades and projected developments for the period ending 2000 A.D. based on inter-modal allocation of traffic, appropriately phased over 5 years period ending 1990, 1995 and 2000 A.D.
- ii) To review the existing network of airlines with a view to restructuring to the extent necessary taking into account the future role of air transport in the planned development of the country.
- iii) To make an assessment of the existing technologies and technology development forecasts into the next 15 years in the Civil Aviation Sector to consider their applicability and adaptability to Indian conditions with regard to the economics of different technologies for long term options.
- iv) To study the productivity and efficiency of the various constituent units of Civil Aviation Sector with a view to recommending suitable normative measures to improve productivity.

- v) To assess the requirements of aircraft and related equipment up to 2000 A.D. appropriately phased over 5 years period.
- vi) To assess the requirements of infrastructure facilities at international as well as domestic airports up to 2000 A.D.
- vii) To assess the requirements of communication and navigation infrastructures for safe operations of aircraft.
- viii) To assess the manpower needs for the development of civil aviation sector and recommend appropriate training programmes and other measures for manpower development consistent with future development plans and projected technological changes.
- ix) To recommend policy changes consistent with future development plans including financial, operational and pricing policies to ensure development of the sector on a sound commercial basis, and
- x) To recommend organisational and institutional measures to systematise long-term planning for the sector on a sound technical and economic basis"

The Planning Group was required to submit its report to the Government by June 15, 1986. However, in view of the very extensive scope and area to be covered in the report, the Government later extended the date for submission of the report to October 1986.

### **Work Programme & Methodology**

The Terms of Reference set out for the Group fell in four more or less clearly definable areas and therefore, the Planning Group decided to appoint four expert Working Groups to deal in depth with these four divisions of the Terms of Reference. The subjects allotted to the Working Groups were as indicated below: -

Working Group I — Traffic Forecasts

Working Group II — Airports & Airport Facilities

Working Group III — Manpower Development & Productivity

Working Group IV — Organisation & Finance.

The composition and Terms of Reference of these Working Groups are given in Appendix I to this report.

The Working Groups were required to study in detail the long term requirements/forecasts in their respective areas. Their ideas and projections, as developed over the period, were critically examined and discussed by the Planning Group in its meetings. The reports of the Working Groups are appended to this report in separate volumes and contain the requisite detailed back up to this report.

Since time was short, and the data to be collected and analysed voluminous, the Planning Group considered it necessary that the Working Groups should have the assistance of capable consultants to help them in their task, and to this end, the services of a couple of recognised specialist consultants were made available to the Working Groups which enabled them to accomplish their task in the rather short time at their disposal.

The Planning Group had altogether seven meetings. In addition the four Working Groups had several meetings of their own.

Reference in this connection must also be made to the important seminar on 'Civil Aviation at the Turn of the Century' held in Delhi in January, 1986. This included presentations by, apart from Air India and Indian Airlines, the Aircraft & Engine manufacturers, IAAI, DGCA and experts from other related fields. The seminar provided excellent inputs for this Committee's work in terms of anticipated rate of growth, financial outlays and infrastructural requirements etc.

### Objectives

Throughout history the movement of people and goods has been a major activity of the human race and the propulsive means used, mainly animals on land and sails on sea, remained virtually unchanged until the 19th century when the discovery and application of steam and electricity and of the internal combustion engine in the 19th century revolutionised travel and transport and introduced the present era of air travel and air freight. The advent of long range aeroplanes after World War II particularly of jet aircraft in the late 1950s, provided the next spectacular breakthrough which opened the whole world to the immense benefits of air travel, and airfreight of light goods which in only 25 years have almost totally replaced surface means for all but short distances.

The full significance of the impact of a virtually instant transformation of an important part of the way of life of the peoples of the world is still not fully understood or visualised. One thing which is clear, in so far as India is concerned, is that supplementing road and rail transport by developing air transport has been and will continue to be necessary because of the geographical distances. Further, air transport is increasingly becoming an essential instrument of the socio-economic development of the country along with that of telecommunications.

Although some may question the importance of air transport relative to that of other basic economic needs, only the speed and extent of the development of civil aviation can be a matter of debate for there can be no escape from its essential need in



long term scenario of national development. In pursuit of this development, it should be the aim of the air transport industry to be entirely self sustaining in rupee terms and also to recover a substantial part of the foreign exchange outgo through its operations.

Every effort should also be made to recover in the long term as much as possible of the infrastructural cost of developing, improving and enlarging airports or creating new ones. Other than the cost of acquisition of land, through airport charges to the airlines and rents and other charges for the host of profitable trade and service activities patronised by the travelling public at the airports themselves.

In planning for the development of civil aviation into the next century, one has to identify the factors which inhibit its growth in India and recommend to the Government the short and long term measures necessary to make good existing short comings and to accelerate the coordinated development of civil aviation with that of other forms of transport in the interest of overall economic growth.

India has a well established surface transport system which suffers, however, from serious shortcomings. The road transport system has become stagnant, and is unable to play its full part in the promotion and growth of tourism. The railway system, though fairly extensive, is good only in parts. In any case in a large country such as ours and the short time at the disposal of the average tourist, rail travel is too slow to satisfy the needs of international tourists.

It is essential that the growth of civil aviation is properly planned, monitored and co-ordinated to ensure that it covers all aspects of civil aviation, which has not always been the case in the past. Also, in view of the inadequacy and antiquity of the existing ground infrastructure the development of civil aviation must be on modern lines so that India gradually comes abreast of the more developed countries in providing the facilities where there are serious deficiencies today.

It is also important to keep in mind that the time frames for investment in the various sectors of civil aviation are different as the time required to acquire additional aircraft, to construct additional runways, to put up or expand new terminal facilities and to produce trained crews vary considerably. Since the investments involved in each of the sectors are heavy and resources scarce, the need for long term co-ordinated planning is paramount.

The nearly stagnant number of foreign tourists in the last few years has been a matter of serious concern as targets set over the years have proved to be totally elusive. While the blame for non-realisation of these targets cannot be placed at the door of the civil aviation sector alone since there are several other factors which have contributed to this situation, there is an urgent need for a look at our attitudes and approach in this area because in a country as

badly in need of foreign exchange as ours, the growth of foreign tourism is major requirement and justification for investment in the civil aviation sector

## 5. Historical Background

5.1 The Indian Air Transport Industry in 1946 consisted of Tata Airlines and Indian National Airways which, though small was well organized and professionally competent.

For the development of civil aviation in India in the postwar period, a paper was prepared in 1943. This paper, after taking into account the total capacity that would be required in the initial postwar period (20 million ton miles) which worked out a little less than 40 aircraft of DC-3 type, recommended that operation of scheduled services be entrusted to a limited number of private airlines say not exceeding five with adequate route mileage and scope for development so as to ensure efficient and economic use of aircraft, ground equipment and manpower. It also recommended that all scheduled services should be licensed by an autonomous licensing Board.

5.2 This plan, if properly implemented would have ensured a more orderly development of civil aviation in the country. However, the recommendation of limiting the number of scheduled airlines to four was discarded and by the middle of 1947 provisions for licences to as many as eleven companies over 51 routes were granted. This situation was further complicated by the partition of India. The newly licensed airlines were deficient in organisation, equipment etc. and were not able to provide the required degree of safety and competence.

5.3 Realising the critical situation in which India's air transport industry was placed the Government appointed an Air Transport Committee in 1950 which once again recommended restricting the number of scheduled airlines to four. The Government however, decided upon complete nationalisation and in March 1953 the Parliament passed the Air Corporations Act, under which Air India International and Indian Airlines were formed as Public Sector Corporations from 1st August 1953 (Air India to operate long range international services and Indian Airlines to operate all domestic and short range regional routes to adjacent countries viz. Pakistan, Bangladesh, Sri Lanka, Nepal). Since 1953, the growth of the two national airlines has been as under:

	1953/54	1984/85
<b>Air - India (Aug 1953/March 1954)</b>		
(8 months data)		
Available Tonne Kilometres (ATKMS - Millions)	18.375	1964.167
Revenue Tonne Kilometres (RTKMS - Millions)	11.657	1241.265

1953/54      1984/85

### Indian Airlines

ATKMS - Millions	74.957	959.616
RTKMS - Millions	51.052	663.656

### Growth of International Traffic & Air India's Performance

The average annual rate of growth of international passenger traffic to/from India in the last decade from 1974 to 1984 has been 16.0%. As against this, the growth rate achieved by Air India during the same period was 13.2%. Air India's share of the Indian originating market is currently 35.9%. During the period in which Air India achieved the growth rate of 13.2% in Passenger Traffic and 12.4% in the total RTKMS performed, the capacity measured in terms of ATKMS performed increased by 11.3% which indicates that Air-India's utilization of the capacity has been quite satisfactory.

Air India's route coverage has been extensive and it has utilized its compact fleet efficiently. However, in the last few years, the spectacular growth of some of the Asian carriers has resulted in some erosion of Air India's share of the originating market.

In recent years the India/Gulf route has been dominant contributing as much as 31% of the total traffic to/from India.

### Growth of Domestic Traffic

During the same decade i.e. 1974-75 to 1984-85 domestic air traffic (passenger, cargo and mail) has increased from 212.900 million RTKMS to 668.580 million RTKMS representing an annual average growth rate of approx. 12.0%. As far as domestic traffic is concerned, the period 1974-75 to 1979-80 witnessed a high growth rate of 13.4% per annum which declined to 10.9% during the period 1979-80 to 1984-85. The reason for the decline in the growth rate was to a certain extent the capacity constraint experienced on the major routes as there have been no additions to the Indian Airline's fleet since 1982-83.

The domestic air passenger traffic has trebled between 1974-75 and 1984-85 in terms of no. of passengers and in terms of RPKMS. In 1984-85 Indian Airlines carried 8.08 million passengers and Vayudoot 0.16 million passengers. Passenger traffic accounts for as much as 81% of the total RTKMS performed on the domestic sector.

7.3 Whereas air traffic in India has grown at a faster rate during the last decade in terms of total revenue passenger kilometres air traffic still accounts for only 1.4% of total traffic (by Air, Rail and Government run Road Transport). Comparing this with happenings at the other end of the scale, in the U.S. air travel accounts for 84% of the passenger kilometres performed by airlines, rail, road and roadcoach traffic

7.4 Cargo traffic of Indian Airlines has grown at an annual average rate of 19% during the 10 years span from 1974-75 to 1984-85.

7.5 Indian Airlines has a route network covering 73 stations including 9 international stations. Over the last 5 years, Indian Airlines has shown a shift towards operating a higher percentage of direct flights as opposed to hopping flights.

7.6 Indian Airline's passenger survey on its Airbus flights (covering 30% of Indian Airlines passengers) indicates that :

(i) 82% of the passengers are resident Indians and 18% are foreign nationals who buy tickets in foreign exchange and contribute to Indian Airlines' foreign exchange earnings.

(ii) 73.5% of Indian Airlines' passengers travel on business and 26.5% on vacation and personal reasons.

## 8. Directorate of Civil Aviation

8.1 Though the Directorate of Civil Aviation was set up in 1927, the civil aviation Department really took shape only in the year 1945 with the establishment of the office of Director General of Civil Aviation.

8.2 The functions of the DGCA were as under till very recently :

(i) Regulatory functions such as airworthiness of aircraft, licensing of personnel, investigation of incidents/accidents, bilateral matters, approval of tariffs/schedules etc.

(ii) Administering the domestic airports other than the four international airports which were run by IAAI.

(iii) Providing navigation/communication facilities and air traffic services.

With the establishment of the National Airports Authority (NAA) effective 1st April 1986 functions (ii) and (iii) above hitherto under DGCA will now be performed by

## 9. IAAI

9.1 With the introduction of jet aircraft, and a gradual increase in the size of the aircraft

passenger air traffic increased considerably resulting in serious congestions and delays at the airports. To review this situation and to recommend measures which would enable civil aviation in India to keep abreast of world wide developments, the Government appointed a Committee under the Chairmanship of Mr. J.R.D. Tata in July, 1967. Based on this Committee's recommendations, the International Airports Authority of India was set up in April, 1972 to plan, develop, construct and maintain the four international airports in India, viz., Bombay, Calcutta, Delhi and Madras.

Some of the projects which the IAAI has completed since its inception are Phases I and II of the international terminal building at Bombay, the new domestic terminal building at Madras and the Indira Gandhi International Airport at Delhi. The activities of IAAI have been somewhat handicapped due to :

- 1) Inadequacy of funds provided in the Five-Year Plans.
- 2) Lack of integrated development of the aviation industry. While the national airlines, viz., Air India, Indian Airlines and foreign airlines operating to India geared themselves to the traffic growth and expanded, IAAI could not keep in step with this expansion, mainly because of lack of funds.
- 3) Increased requirements of infrastructural facilities during the concentrated peak hour traffic due to bunching of flights and under-utilisation of these facilities at other hours of the day. The magnitude of this imbalance at the international airports in India is abnormally high due to its geographical position and night curfews at airports in the East and the West.

### Technological Developments

There are several major technological developments which are likely to occur in the fields of flight equipment and its operational environment in the next 15 years, and it is important that these are kept in view in planning the future growth of civil aviation.

In the field of flight equipment, fuel efficient propulsion systems like still higher bypass ratio jet engines will be followed by the geared or ungeared ducted or unducted fans offering fuel burn improvements of 25% and upwards.

Light weight composite materials will come increasingly into use, enabling valuable savings in weight combined with structural strength and freedom from corrosion.

The considerable improvement already achieved in cockpit instrumentation and automated flight management in the latest crop of aircraft will no doubt be further advanced with increasing use of digital technology and advanced computer software concepts. Along with this, improved communication and navigation systems.

of "fly by wire" flight control systems with side stick and use of computers with intelligence will provide notable improvements in pilot work load, reliability and of operations. These advanced systems will have their impact on functional requirements of crew and their training.

- 10.5 It is envisaged that the existing operational restrictions on twin engined aircraft will be progressively relaxed with further improvements in power plant and system reliability.
- 10.6 The growth in air traffic density and technological advances in airborne equipment will require commensurate advances in flight environment. Airport capacity limitations will have to be tackled with computer based communication, navigation, surveillance and traffic handling systems so as to achieve optimum airport usage.
- 10.7 Major changes in the area of navigation will result from the implementation of microwave and satellite based navigation systems. Two such systems which are to be introduced before 2000 A.D. are the Global Positioning Systems (GPS) Microwave Landing Systems (MLS). Combined use of both these systems may replace the present Positioning Determination Systems (PDS).
- 10.8 Developments in the navigational field will introduce the concept of managed air traffic which will be a significant departure from the existing traffic monitoring system. This will require a combination of both dependent and independent surveillance of aircraft. This will provide improved air safety while holding the load on the ATC within reasonable limits.
- 10.9 Besides flight equipment and ground navigational communications aids, technological changes likely in the terminal area will be the growing use of automatic ticketing, readable tickets, computerized photo identification of passengers for immigration control etc. These improvements would be needed in order to facilitate a high faster throughput of passengers through the terminal area. Baggage sorting machines will become increasingly common which, besides providing faster handling of baggage, will also ensure automatic systems for baggage accounting and security.
- 10.10 A significant number, if not all, of these developments are likely to take place before the year 2000 A.D. for which timely advance preparations to study and adopt them will be necessary.
- 10.11 It is also reasonable to expect aircraft with increased size and carrying capacity to the extent of 1.5 times the present 747s being marketed in the next 20 years. With the increased size, there is a likelihood of introduction of new and larger size aircraft by the turn of the century, to cater to specialised segments of traffic.
- 10.12 These technological developments are bound to have a major impact on the civil infrastructural facilities to be provided by the year 2000. However, many of these developments have not reached the stage of advancement to enable a proper evaluation.

of the size of financial outlay that may be required to implement them. The concerned agencies should, therefore, keep themselves abreast of these developments and take appropriate action well in advance, particularly in the field of navigation/approach aids, communication and search and rescue.

All these likely technological developments are in the Group's view applicable and adaptable to Indian conditions. Application of these technological improvements will greatly enhance the efficiency of the civil aviation sector and what is even more important, its safety standards.

## CHAPTER II

### TRAFFIC FORECASTS

1.1 The report of Working Group I (Annexure I-separate volume) provides the details on traffic forecasts.

#### 2. Domestic Traffic

2.1 To determine the requirements of civil aviation up to the year 2000, the Working Group I studied the likely growth in domestic traffic, based on an econometric model using Regression Analysis establishing a relationship between the traffic and independent variables like cost of travel (real cost in terms of Rs/RTKMS), income, (GDP indicators of business and trade, population growth, tourist arrivals etc.

2.2 After examination and review of the Working Group's recommendations for domestic passenger and cargo growth, the Planning Group accepted the traffic forecast at an average annual growth rate over the actual traffic in 1985-86 of 11.2% for passenger traffic and 11.2% for cargo traffic which results in the following projections in the period up to 2000 A.D. :

	1985-86 (Actuals)	1990-91	1995-96
RPKMS (Million)	7,336	12,643	19,540
No. of Passengers (Thousands)	9,130	15,803	24,423
Cargo (Tonnes)	1,11,215	1,89,098	2,89,139

#### 3. International Traffic

3.1 For international traffic into and out of India, the Planning Group examined the scenarios available, e.g., the IATA forecasts, the manufacturers' estimates, the Consultant's study. After examining all these, the Group arrived at a likely scenario for passenger traffic to/from India at an average annual rate of 6%. The number of passengers based on these growth rates are :—

	1986	1990	1995
No. of Passengers (Thousands)	4,509	5,867	7,876

3.2 The average annual growth rate of 6% is for the total traffic and includes both tourist and non-tourist traffic. At present roughly 40% of the incoming traffic consists of tourist traffic. If this trend continues, then tourist traffic would also grow at an average annual rate of 6%. However, if the recommendations on the subject made elsewhere in



are implemented, and if further emphasis is placed on the development of tourist infrastructure, then tourist traffic could grow at a significantly higher rate—say 10%. The Table below gives the estimated tourist traffic if the growth rate is 6% and 10%.

Growth Rate /Year	<i>(Figures in thousands)</i>			
	1985-1986 <i>(Actuals)</i>	1990-91	1995-96	2000-01
6%	876	1173	1570	1982
10%	876	1411	2273	3328

If tourist traffic does grow at a rate of 10% per annum, and there is no reason why it should not if the major factors hindering its growth are analysed and tackled effectively, then the overall growth of total traffic into and out of India will go up from 6% to 8%.

In order to maintain its present share of the market, Air India will naturally be required to grow at the same rate as the total traffic. However, Air India must strive to improve its share of the market, particularly in East Asia and Europe. This should be feasible because the economies of the South East Asian countries continue to prosper, and there are signs of a slowing down in the spectacular growth of some of the major carriers of the region. Europe is a vast market which has not been adequately and effectively exploited in the past. One of the reasons for this has been the type of aircraft in Air India's fleet not being suitable for this market for which a medium size aircraft is required so that non-stop services between points in India and points in Europe can be operated on a viable basis. Therefore, overall it should be possible for Air India to achieve an average annual growth rate of 6.9% in its passenger traffic up to the year 2000, if the total traffic growth rate is 6% and higher if the traffic growth rate goes up further due to accelerated growth in tourist traffic.

As far as international cargo traffic is concerned, growth rates based on Air India's carriage alone as projected by the Consultants are as under :

1986-90	1990-2000	Overall
<i>(Average Annual Growth Rate—%)</i>		
6.2	5.9	6.1

Though mathematical models might point to the above modest rate of growth, the Group is of the view that these projections are too conservative. The Indian economy is bound to gradually transform itself from an economy largely based on raw materials and semi processed products to a more industrialised economy manufacturing goods better suited for air transportation. Also, in the past there has not been adequate emphasis on promotion of cargo traffic and there has been a tendency to treat it as an adjunct to passenger traffic. In the event, the Group expects cargo traffic into and

out of India to grow at a faster rate of around 10% per annum, and since Air India aims to expand its freighter services and is proposing to invest in freighter aircraft, it should be in a position to achieve an average annual growth rate of 12% (16% on freighter services and 9% on passenger services).

In so far as domestic traffic, both passenger and cargo is concerned, it is evident that the growth rates are achievable by Indian Airlines because in the past their growth has been shackled due to paucity of resources. The Group, in accepting the growth rate of 11.5% for domestic passenger traffic recommends that this growth rate should be permitted on the basis that it would be entirely self sustaining in terms of rupees and largely so in terms of foreign exchange.

In international traffic, the situation is obviously somewhat unpredictable. The international aviation industry as a whole has suffered serious setbacks periodically in the last decade and a half and continues to face an uncertain future. The suggested projections also assume that Air India will be able to increase its market share from 35% to around 40%. This is certainly an achievable target but in a competitive environment, clearly the airline will have to work for it.

#### Fleet Requirement — Indian Airlines

Based on the above mentioned growth rates (11.5% for passenger and 11.2% for Cargo), Indian Airlines will require to take their fleet strength to 193 aircraft including those needed for replacement, with a financial outlay of Rs. 8,998.00 crores (at 1985-86 prices) as per details given below :

	A-300	A-320	B-737	TP	Total
Current fleet	10	—	25	15	50
Fleet at year end 1990-91	10	36	20	15	81
	300 + Seater	150 + Seater	100 + Seater		Total
Fleet at year end 1994-95	20	42	42		104
Fleet at year end 2000-01	38	80	75		193
Addition over current fleet	+28	+80	+35		+143

The current fleet of 50 aircraft will be replaced by new aircraft by the year 2000-01. The total requirement of 193 aircraft is thus as under :-

143	Aircraft for growth
50	Aircraft for replacement
—	
193	Total
==	

#### Fleet Requirement — Air India

Air India will need to add more 747s to cater to growth on high density

routes as well as to replace the current B-747s. The replacement of the 747s has, in fact, assumed some urgency since Air India's oldest aircraft of this type are now over 15 years old. In addition to A-310-300 and B-747s, Air India will also require medium sized aircraft with extra long range. Airbus Industrie have announced plans for a four engined long range A-340 while McDonnell Douglas plan to produce the MD-11 as a successor to DC-10, both of which would be highly suitable for Air-India's aircraft requirement for medium density long range routes. Based on the accepted growth figures (6.9% for passenger and 12% for cargo), Air-India is likely to require the following types and number of aircraft :

Year	PASSENGER				FREIGHTER	
	B-747	A300-B4	A-310	'X'	B-747F	A310-C4
Fleet strength as on 1-6-1985	10	3	—	—	—	—
	400+	300+	200+	240/280		
	Seater	Seater	Seater	Seater		
Fleet at year end 1990-91	11	3	12	—	2	—
" 1995-96	11	—	12	9	3	—
" 2000-01	16	—	12	12	5	3
Net addition over fleet as on 1-6-1985	+6	-3	+12	+12	+5	+3
				+ 27 aircraft		+ 8 aircraft

Additionally the current B-747 200 type of 10 aircraft will need to be replaced with B-747 400 type. The total requirement of 45 aircraft is as under :

27 Passenger Aircraft for growth
8 Freighter Aircraft
10 Aircraft for replacement
<u>+ 45</u>

Note : At present Air India also has 5 Boeing-707 Aircraft which are being phased out by October 1986

The total investment required (at 1985-86 prices), for purchase of these 45 aircraft on account of growth and for replacing existing aircraft would be as under :

	1986-90	1991-95	1996-2000	1986-2000
	<i>(Rs. in crores)</i>			
Growth	1,181	1,076	1,436	3,693
Replacement	565	866	949	2,380
Growth + Replacement	<u>1,746</u>	<u>1,942</u>	<u>2,385</u>	<u>6,073</u>

## 6. Choice of Aircraft

- 6.1 The choice of aircraft, of primary importance to an airline's efficiency and profitability is not an easy one.
- 6.2 Under the stress of competition and astronomical development costs, the number of manufacturers of large transport jet aircraft outside Russia has gradually declined to three—Boeing and McDonnell Douglas in the USA and the Airbus Consortium. European manufacturers mainly French, British and German. While there has been considerable improvement in the efficiency and economy of the various types of aircraft produced by them, it has been at a phenomenal increase in the purchase price. As an example, the 400 Seater passenger Boeing 747 first introduced in 1968 at a price of about 25 million dollars now costs over 125 million dollars:
- 6.3 An important trend in the types of transport planes offered to airlines in recent years has been their crystallisation into two main types, the very large long-range, multi-engine 747 and the somewhat similar but smaller DC-10 on the one hand, and a medium-size, medium-range twin-engine aircraft such as the Boeing and Airbus twins rendered possible by the development of efficient engines of such high power that two of them can produce all the thrust which previously had to be sought from three or four engines. These large twins are ideally suited to the routes of Indian Airlines but less so to those of Air India because of the latter's need to meet the growing demand for long non-stop flights for which aircraft require more than two engines to carry their heavy fuel loads. Unfortunately, today the only aircraft being built that meet the range and multi-engine requirements of Air India is the Boeing 747 which, while ideal for high density, long-range flights, is too large for Air India's medium density long-range routes on which, in order to achieve reasonable load factors, a number of stops have had to be included on services for which passengers increasingly demand non-stop operations. As a result, Air India has not been able, on most of its flights to distant destinations, to match the time-saving and convenience offered by competitors and has failed to secure its due share of the market.
- 6.4 Furthermore, the rate of Air India's growth and fleet replacement programme has been slow compared to those of other international airlines, including its main Asian competitors. While its recent acquisition of six Airbus A-310s, the delivery of which is still taking place, will have suitably replaced its phased-out Boeing 707s, the first of which type it acquired as far back as 1960, it will have added little to its total capacity. The management seems to have been waiting for McDonnell Douglas and Airbus Industrie to announce their firm commitment to produce the long-range multi-engine aircraft of a little more than half the carrying capacity of the 747, about which they have hinted for the past two years. As neither of these will in all probability be available before 1992, it is clearly necessary and the Planning Group recommends, that urgent consideration be given by the Corporation to acquiring further medium-size twins to expand its total capacity and frequency of operations pending the availability of

long-range, multi-engine aircraft mentioned earlier which the airline should be amongst the first to acquire.

## 7. **Vayudoot**

7.1 It is difficult to make a reasonable estimate of the future traffic growth of Vayudoot even though the airline has completed five years of operations by now. This is so because socio-political pressures rather than commercial prospects could turn out to be a dominant factor in determining its expansion atleast for the next few years, since there are persistent pressures to provide air links to small towns without any immediate economic justification. Recognizing the fact that some concessions to these pressures would be inevitable, even though they may run counter to the underlying basic objectives of establishing the airline, it would be useful to lay down some economic yardsticks for the future expansion of Vayudoot.

7.2 There are some areas where in the larger interest, it is necessary for social or other reasons to provide an airlink even if such an airlink is not economically viable. Such cases must be carefully identified and the cost to the national economy worked out. Unless this is done, there is likelihood of proliferation of such short haul services.

7.3 The Group noted that at times, Vayudoot services are cleared on the basis that an airstrip already exists. It must, however, be understood that many airstrips, though in existence, have not been in use for a long time, and there are substantial costs involved in their reactivation, which should be properly assessed. There are also additional costs involved in setting up an infrastructure, i.e. building, fencing, manning etc. The economic viability of any short haul operations must therefore take into account all such additional costs and their spread over an infrequent operation.

7.4 The Group noted that since inception, starting with leased aircraft, Vayudoot has moved up to owning ten Dornier 228 aircraft, and four Turbo Props transferred from Indian Airlines. These 14 aircraft currently operate over 52 stations. This has resulted in a substantial expansion of Vayudoot's role in the civil aviation sector.

7.5 The Group noted that apart from expansion of scheduled passenger services, Vayudoot has also entered the field of Charter market, and operation of night airmail services. It is understood that unlike the scheduled services, these operations have proved to be profitable. If so, the Group considers this as a very laudable diversification, indicative of intelligent commercial opportunism. Nevertheless, it is necessary that Vayudoot also, like Air India and Indian Airlines, develops and grows within the framework of a coordinated and properly evaluated plan. This must be so because of the constraint on resources, particularly the foreign exchange resources. Except where the terrain or natural obstacles cause it to be otherwise, very short haul operations are likely to be more economical by modes of transport other than air, and a detailed study of this aspect should always be undertaken before further expansion to other points

is approved. A further fact which emerged out of the Group's examination was the relatively high cost of developing airports for Vayudoot's operations. The Group is of the view that if Vayudoot is to become viable, its operations must continue to remain low cost, with low overheads, and make minimal demands on the infrastructure. This would imply that in the choice of aircraft, consideration would be given not only to the technology level, but also the requirement of infrastructure for its support. By the same token serious attention should be paid to the fare structure of Vayudoot to ensure that its social obligations and commercial operations at least balance each other.

7.6 In the absence of detailed and properly evaluated growth projections, coupled with the shortage of time at its disposal, it was not possible to make a rational analysis of the extent to which Vayudoot can, and should be allowed to grow but subject to the recommendations in the preceeding paragraphs and the airline's own projected requirements, the additional aircraft and the corresponding investment (at 1985-86 price) would be of the following order :—

#### Aircraft Requirement

	TP	20+Seater	40+Seater
Existing fleet	4	10	—
Fleet at year end 1990/91	—	11	12
Fleet at year end 1995/96	—	18	20
Fleet at year end 2000/01	—	29	33
	—4	+19	+33
Addition over the existing fleet	—4	+19	+33

7.7 The total investment required (at 1985-86 prices) for purchase of 19 20+seaters and 33 40+seaters aircraft broken down into three periods would be as under :

	20+seater	40+seater	(Rs. in crores) Total Investment
1990	4.02	96.60	100.02
1995	28.17	64.40	92.57
2000	44.28	104.65	148.93
Total	76.47	265.65	341.52

## 8. Short Haul Operations

- 8.1 In the context of development of Intermodal Transport Systems for the country, the Group also considered it necessary to estimate the economics of operating scheduled short-haul air services in India.
- 8.2 The study conducted by TECS indicates that on the basis of the most realistic scenario in which aircraft fuel and oil are valued at resource cost, fares subsidies are not allowed and limited charter operations are permitted, operation of a scheduled air service would be viable only if the distance is more than 300 Kms. For smaller distances, other modes of transport are likely to prove more economical.
- 8.3 It is therefore recommended that unless the terrain or natural obstacles make it necessary, short haul operations whether by Indian Airlines or Vayudoot should be permitted only after the economics of these operations has been worked out on the basis of a 'no fare subsidy' and after working out the resource cost to the nation. If this approach is not adopted, there is a danger of costly and unjustified proliferation of short haul services resulting in a loss to the Indian economy.

## 9. Helicopter Corporation of India ✓

- 9.1 Recently, the Government had announced the formation of the Helicopter Corporation of India, as an autonomous Corporation in the aviation sector. However, apart from the fact that this Corporation is still in a very nascent stage, there were other reasons enumerated below, because of which the Group decided not to evaluate the likely growth and investment in this Corporation.
- 9.2 The Petroleum Sector has a requirement of rotating wing aircraft for transporting men and material to support its off-shore operations. Additionally, it requires some special purpose Helicopters for on-shore work, which need external crane capability and for surveillance of pipelines and installations.
- 9.3 Because of its high cost the requirement of Helicopters purely for civil transport needs is very minimal, except in rare cases where the nature of the terrain or other special reasons do not permit the use of other modes of transport. Because of the prohibitive cost of transport by Helicopters its use is extremely limited even in highly developed countries.
- 9.4 In view of the above, the Group felt that Helicopter operations are unlikely to become a part of the Indian Civil Air Transport Sector within the foreseeable future. The operations that may occur in the Civil Sector by Helicopters are likely to be only marginal. The Group would therefore like to recommend that, since the Helicopter Corporation will not be contributing to the Civil Air Transport market to any significant extent, the funds allocated to this organization should not be out of the allocations for the civil sector.

## Air Taxi Service :

It is felt that Air Taxi Services will help promotion of tourist traffic as this would enable tourists to visit places of interest which today are not easily accessible or, where they are accessible, to do so in much greater comfort and in much shorter time. The aircraft available in the country suitable for this purpose, however, are hardly any and import of up to 10 seater aircraft would be needed which would mean foreign exchange outgo.

While the introduction of Air Taxi Services is recommended, it will be necessary for the government to carefully determine the number of operators to be approved for this purpose and the total number of aircraft and their value.

### Total Investment on Fleet Acquisition

The total investment up to the year 2000 required for the purchase of aircraft by the three national carriers would be as given in the table below:

*(Rs. in crores—1985-86 Prices)*

	1986-90	1991-95	1996-2000	1986-2000
Air-India	1746.00	1942.00	2385.00	6073.00
Indian Airlines	1768.00	2382.00	4848.00	8998.00
Vayudoot	100.02	92.55	148.93	341.50
	3614.02	4416.55	7381.93	15,412.50



## CHAPTER III

### DEVELOPMENT OF TOURIST TRAFFIC

- 1.1 With so many competing demands for resources, investments in the civil aviation sector in India would need growth in international tourism as their primary justification. Because of geographical reasons, the vast majority of tourists coming to India arrive (and depart) by air. In 1974, 81.8% of foreign tourists arrived by air, which has increased to 88.2% in 1977 and 89.6% in 1984. Once having arrived in India the tourists are again largely dependent on air transport for their movements within the country. This is so not only because of the vastness of the country, but also because, unlike in Europe, USA or other developed countries, we do not have a road/coach system offering the necessary quality of service.
- 1.2 So far as tourism as an industry is concerned, ours is a story of lost opportunities. India's share of world tourist traffic, between 8,00,000 to 1 million per annum, is a dismal 0.29%. Many tiny countries and far-flung islands succeed in attracting a far larger number. What is even more worrisome is the fact that inspite of the small base, the growth has been almost negligible in the past few years. However, despite such slow growth, foreign exchange earnings from tourism have increased significantly. This can be seen from the data obtained from DG Tourism's office as regards number of tourists and RBI as regards earnings and shown in the Table below :-

#### FOREIGN EXCHANGE EARNINGS FROM TOURISTS IN INDIA

*Rs. in crores*

Year	No. of Tourists	Estimated Earnings	
		Current Prices	1975/76 Prices
1973-74	408,121	56.50	75.43
1974-75	440,484	94.00	97.71
1975-76	475,941	189.60	189.60
1976-77	561,405	285.00	290.52
1977-78	667,380	530.00	502.94
1978-79	756,940	565.30	537.36
1979-80	780,197	920.00	784.98
1980-81	816,144	1166.30	827.16
1981-82	851,713	1063.90	672.92
1982-83	865,139	1130.60	715.57
1983-84	905,980	1225.00	669.00
1984-85	801,336	1300.00	664.00
1985-86	875,575	N.A.	N.A.

It is seen that even in real terms earnings from tourism increased in the decade between 1973-74 and 1982-83 by 28.4% per annum (compounded). Since 1979-80, however, the situation has been alarmingly stagnant.

There are many reasons for our inability to attract tourists to India. As mentioned earlier, most of the tourists to the country arrive by air, and their first task on landing obviously is to clear immigration and customs – a task that is performed most smoothly and unobtrusively at the airports of countries who are eager to attract tourists, but which, more often than not becomes a time consuming ordeal for the ordinary tourist to India. Since there is a wide choice of destinations worldwide available to him it is more than likely that, having undergone this ordeal once, the tourist would opt for some other place for his next holiday.

While it is realized that collections from customs duties are a major source of revenue, that should not be the enticement so far as foreign tourists are concerned for the gains to the country's economy from a steady increase in the number of tourists would much exceed what they currently pay by way of customs duties. We should make separate arrangements particularly at Delhi and Bombay for immigration and customs clearance of foreign passport holders, with specially trained staff so that their progress is unhampered and smooth. Stringent and thorough customs checks are necessary to discourage smuggling rather than for collecting revenues from foreign tourists. It is therefore of paramount importance that special emphasis is placed on developing better customs intelligence and techniques that will distinguish between the genuine tourist and the smuggler. The Government might also examine the possibility of inflight clearance on certain selected flights. On long distance, high density, non-stop flights, say from UK/Europe to India, an immigration-cum-customs officer boarding the flight at the last point i.e. London or Paris or Frankfurt could perform the immigration clearance on board if he carried with him the visadex list. The passengers can be asked also not only to complete their disembarkation cards in flight but also slightly modified customs clearance forms. The officer can examine those forms, on the basis of which most of the passengers can be cleared to walk through while the remaining required to stay back for a detailed check. This can be supplemented by a couple of precleared passengers being held back for a surprise check. Apart from speeding up clearance, this would also ease the pressure on airport terminals considerably. It would also help if the present somewhat cumbersome procedures for tourists to import and reexport their cameras and binoculars etc. could be simplified to reduce the waiting time on this account.

There is also need for larger investment in improving and modernizing the infrastructure used by tourists. This investment should be particularly to improve roads and hotels and bringing them wherever possible up to the international standards. In the Seventh Five-Year Plan a sum of Rs. 326 crores has been earmarked for the tourism sector which is less than a third of the direct foreign exchange earnings from tourism estimated for the year 1982-83. While increasing infrastructural investment, it is very essential

not to fritter away substantial parts of the allocated funds in making small allocations to a large number of places with little or no immediate tourist potential. While different states and regions may naturally be anxious to secure investments in the various places of interest in their territories, to achieve quick results this Group recommends that the investments to improve infrastructure in the next few years should be mainly concentrated on points which offer special attraction to foreign tourists such as Agra, Goa, Jaipur, Khajuraho, Konarak, Mahabalipuram, Srinagar, Trivandrum-Kovalam, Udaipur, Varanasi etc.

- 1.7 The importance of the seasonal nature of international tourism due to the different climatic conditions prevailing in temperate and tropical earth zones must also be recognised. While India's sunny weather for most of the year is an attraction to people from countries in which they are over-exposed every year to long periods of dismally cold and wet weather, they can be reasonably attracted during our burning summers only to our hill stations and our beaches, on which we should concentrate our efforts. There are signs that our beaches are becoming widely known and appreciated in the world of tourism.
- 1.8 The first and foremost requirement for upgrading India's tourist attractions, if an additional two million international visitors are hopefully to be attracted to India, will be for the provision of adequate hotel accommodation in the three, four and five star categories demanded by foreign tourists, for which about 50,000 additional rooms will be required to be built by the end of the century. Secondly, we need decent roads to connect the hotels with the airport. Fortunately, the expansion of hotel capacity can be provided entirely by the private and joint sectors at minimal cost in foreign exchange. What will be required is for the Governments both at the Centre and in the States to recognise the importance and need for expanding the Country's hotel capacity, and for that purpose to recognise the hotel industry as an export-oriented one to which the fiscal and other incentives available to other export industries and should be extended.
- 1.9 One of the main obstacles to achieving an increase in international tourism in India has been the serious deficiency in travel facilities from the main points of arrival in the country to the centres of tourist attraction which tourists want to visit and stay at. The growth of air travel capacity during the next fourteen years will have to meet much of that need, but must be supplemented by a reasonable road system which today is sadly deficient. The cost of making up for the deficiency here will have to be met by the Central or State Governments or a combination of both, fortunately at no foreign exchange expenditure. As improvements in the road system to cater to tourist needs will be mainly to supplement air travel, the extra mileage of good roads involved would be relatively small and can be developed on a financially viable basis.

In allocating additional funds for the development in view the intention should be to bring the entire touristic infrastructure up to international standards in every respect, including connections to internal destinations from international airports, luxury coach services, hotels of various 'stars', guided tours, cleanliness, and reasonable freedom from several irritants which today plague tourists everywhere in our country, viz. beggars, touts and cheats in different garbs, and removal of the ban on photography except where such a ban is really necessary.

There are a few locations which are primarily meant for mountaineers and trekkers. Their development should also be pursued on specialised lines for which the advice and collaboration of foreign experts may be well worth securing for some years. This is a form of tourism which has shown enormous popularity and growth in Europe and America.

We have considerable potential to attract trekkers from abroad in view of the extensive Himalayan range. In this area also there is need for improving the infrastructure, and facilities for trekkers, like clean accommodation, better communication facilities, and better roads.

So far as traffic out of the country is concerned, only 12 to 15% of India originating traffic consists of leisure tourists. The bulk of other travellers are on business (private sector and government), or travelling to their places of employment. In this case the one improvement needed is to rationalize and systematize the present system of outgoing customs check which tends to retard the flow of traffic in the terminal building.

There should also be a greater co-ordination between Air India and Indian Airlines in the matter of reservation procedures for foreign tourists covering both international and domestic centres since this seems to be a recurrent complaint from visitors to India.

In the endeavour to achieve accelerated growth of tourism, apart from the foregoing, the following policy issues were also considered by the Group :

- 1) Establishing a liberal charter policy so that India can be offered to foreign tourists at reasonably priced holiday packages.
- 2) A liberal bilateral policy that would permit foreign airlines to operate new services to India irrespective of reciprocity provided such airlines show capacity to generate additional tourist traffic to India.
- 3) Opening more airports in India to direct operations by international airlines.
- 4) Use of Air Taxis for tourists to reach certain destinations comfortably and speedily.

1.16 The above suggestions when looked at in isolation and purely from the point of encouraging tourism could certainly be effective in increasing tourist traffic into the country. However, implementation of these suggestions needs to be examined in the context of the overall effect they will have on the national economy in general and civil aviation and air transport in particular.

1.17 The Group feels that charters should be liberally allowed as long as the price of the total tour package (air fare + cost of ground arrangements) is not less than the promotional fares applicable on scheduled air services to/from India. While a more liberal charter policy will clearly be beneficial, the same degree of liberalization in exchanging bilateral rights for scheduled services and opening up of more airports for direct international operations may not be quite so beneficial, particularly in so far as the foreign exchange outgo is concerned. Operation of Air Taxi Services to/from destinations of tourist interest should certainly prove attractive to tourists and has been covered in somewhat greater detail in a separate paragraph elsewhere.

### SOCIAL COST/BENEFIT OF CIVIL AVIATION

The size and geographical position of India endow air transport with a special role not only in providing rapid communications, but also in mobilising the national resources, in stimulating investments, commerce, foreign trade and of course, tourism. This special role is further accentuated by the fact that our road and rail systems are not quite equipped to provide the desired service to the international tourists. Thus, in the promotion and carriage of international tourist traffic, both into and within the country, civil aviation is even more dominant than the other industries.

The benefits to the country from civil aviation are largely in the following areas: -

- 1) Development of Tourism and Foreign Exchange Earnings.
- 2) Development of Trade and Commerce.
- 3) Generation of Employment.
- 4) Contribution to national income accounts.

In view of the very large investments needed for the civil aviation sector up to the year 2000, the Planning Group had asked Tata Economic Consultancy Services (TECS) to undertake an exercise to estimate the incremental cost and benefits of future investments in the civil aviation sector. Details of this analysis are contained in section 4 of the TECS report. (Annexure I - separate volume). The analysis has assessed the benefits vis-a-vis costs from the point of view of the economy as a whole, and the costs and benefits have been estimated at their economic value.

The basic assumption used in that analysis is that Air India, Indian Airlines and the existing airports in the country are already operating at their maximum capacity and, therefore, to carry additional traffic, additional investments in aircraft supporting equipment and airports will be required.

Costs and benefits have been identified and quantified on the basis of the "With/Without" principle, according to which incremental costs and incremental benefits are considered in two situations - one "With Project" (i.e. the case where future investments are made in civil aviation) and the other "Without Project" (i.e. where no further investments are made in civil aviation, but where additional investment would be required in surface transport, viz. road and rail).

On the cost side, estimates have been made for all items of incremental infrastructure

for air transportation in the "With Project" situation and for incremental ground transport systems infrastructure in the "Without Project" situation. All costs have been broken down into local and foreign exchange components, where possible.

1.7 The benefits have been quantified in terms of the income generated in the economy as a result of tourist (domestic and foreign) expenditures, the value added by Air India and landing fees received by IAAI from foreign airlines. These benefits have been reduced by the drain on foreign exchange caused by Indian travellers going abroad on the FTS.

1.8 Appendices IIA and IIB at the end of this report give in detail the incremental costs and incremental benefits up to the year 1990/91. Based on this study the incremental benefits are expected to increase from Rs. 216.45 crores in 1986/87 to Rs. 888.20 crores in 1989/90. The incremental benefit/cost ratio works out to 1.8 indicating that benefits of additional investments in the civil aviation sector are substantially greater than the costs, and the economy will benefit from additional investments made in the civil aviation sector.

1.9 Growth of foreign tourism has been considered to be the major reason for supporting development and investment in the civil aviation sector. During the Group's deliberations, questions were raised as to whether the role of tourism as an income generator more so as a foreign exchange income generator for the economy is being overplayed, and whether in assessing the value of tourism, due account was being taken of the costs incurred in providing the very extensive infrastructure. In this connection, it was also pointed out that a large volume of traffic ostensibly falling in category of tourists really consisted of ethnic Indians visiting India, to spend time with relatives or to attend religious ceremonies etc. It can be assumed that the contribution from this category of visitors to the foreign exchange earning and in fact even the rupee earning is not significant.

1.10 The Group did not have this matter studied in any great detail for this really has to be the subject of a separate full fledged study. However, relying on the findings of the 'Comparative Study of Incentives for Invisible Earnings through Tourism' published by the Indian Institute of Foreign Trade, the Group thought that even after making allowance for the above factors, international tourism is likely to make a substantial contribution to the economy and continues to be an important reason for supporting development of civil aviation in the country.

1.11 In so far as generation of employment both primary and secondary is concerned, once again the Group did not have a detailed study done and to its knowledge the last such study done was the one in 1972 by the Indian Institute of Management, Ahmedabad according to which in 1968 the ratio of primary employment to total employment in civil aviation was 1:5. In so far as the net foreign exchange contribution by the sector is concerned, this forms a separate chapter in this report.

1.12 Taking all factors into consideration, the Group concludes that the civil aviation sector is an important contributor to the nation's economy and additional investments in the sector, made judiciously, should prove highly beneficial.



## CHAPTER V

### AIRPORT & AIRPORT FACILITIES

- 1.1 The report of Working Group II (Annexure II – separate volume) provides the necessary details on development of airport and airport facilities. The facilities and services provided by India need considerable improvements to bring them up to the international standards, particularly in the air traffic services, communications and approach aids at domestic airports. Many reasons were put forward before the Group for this state of affairs—lack of funds, lack of planning, time consuming procedures for procurement, lead time for indigenous development, inadequacy of reliable communication networks etc. There was unanimity, however, on the view that the situation is not satisfactory.
- 1.2 It is imperative that facilities and services recommended by ICAO as also any other facilities required for safe operation of aircraft both at domestic and international airports should be implemented without undue delay.
- 1.3 However, realizing that there are resource constraints, the Group suggests implementation of the recommendations made in the report of Working Group II with the following observations:—
- 2 **Bombay Airport**
- 2.1 The details of passenger and cargo traffic currently handled at Bombay Airport and likely growth in five-year periods up to the year 2000 A.D. may be seen in the report of Working Group II.
- 2.2 In so far as the Terminal complexes are concerned, there appears to be an immediate requirement for commencing work on Module III of the international terminal complex so as to meet the requirements up to 1995, when the Bombay Airport will reach saturation point both in terms of terminal and runway capacity. The domestic traffic at Bombay Airport is expected to increase to 6.3 millions in the year 1989-90, 9.7 millions in 1994-95 and 14 millions in the year 2000. Therefore, there is immediate need for expansion and modernisation of the Domestic Terminal to prevent its capacity saturation before 1992.
- 2.3 Immediate measures have also to be taken for modernisation of the Air Traffic Control System, improvement of the taxiway layout, runway capacity and to the extent possible, considering our geographical location, spreading of flights more evenly during day and night to ease the situation. The establishment of an engineering 'Sub Base', by Air-India at Delhi and at other smaller airports by Indian Airlines may further help in delaying the saturation point to 2000 A.D.

### 3. New International Airport

3.1 It is necessary to acquire land at a suitable location and commence development work so that the new airport would be available in the beginning of 2000 A.D. It is understood that the site at Mandava-Rewas, situated about 90 Kms from Bombay Fort area is being considered for the new airport. In its discussions on the subject, the Group had serious doubts on the suitability of this site. In view of the massive investment involved, and the irreversible nature of the decision once it is taken, the matter has to be examined critically from the point of view of convenience and speedy access to Bombay. The Group recommends that a separate group of experts should be immediately appointed to study the available options and submit a feasibility report to the Government for a suitable site for the new Bombay International Airport. The expert Group should include a couple of international experts with the requisite specialised background and experience.

### 4. Delhi Airport

4.1 The details of traffic handled and future projections may be seen in the report of Working Group II.

4.2 The new international terminal building was commissioned in May, 1986 which would meet the requirements up to 1990. The construction of the second Module should be initiated as soon as possible, with which the requirements up to 2000 A.D. would be met.

4.3 The planned first Module for domestic traffic with a capacity to handle 4.5 million passengers can be commissioned by 1990 if the work is started immediately. The work on second and third Modules should be started by 1990 and 1997 respectively. The work on the second cargo terminal should also be commenced by 1995 to meet the requirements up to 2000 A.D.

4.4 The existing runway capacity is considered adequate up to 2000 A.D. However, the work on a parallel runway should commence in the later part of 1990s to meet the traffic requirements after 2000 A.D.

### 5. Madras Airport

5.1 The present domestic terminal is likely to be saturated by 1990. The Group foresees the need for a second terminal to cater for the requirements up to 1993 and with additions and alterations these two terminal will meet the requirements up to the year 2000.

5.2 In the Group's view there is immediate need for commencing the work on the new international terminal which will cater to the traffic requirements up to 1993 and with additions/alterations will meet the requirements up to 2000.

## 6. Calcutta Airport

6.1 The first Module of the new domestic terminal is proposed to be commissioned by 1990 and will meet the requirements of domestic passenger traffic up to the year 1995. Therefore, the work on the second Module of domestic terminal will have to be commenced by 1992 in order that it can be commissioned by 1995. Once the proposed first Module of domestic terminal is commissioned by 1990, the present terminal building will be used exclusively for international traffic and will be able to cater for the international passenger traffic requirements up to the year 2000.

6.2 The main runway 01R/19L will meet the requirements up to 2000 A.D. The existing parallel Runway 01L/19R may be lengthened and strengthened for occasional use by wide bodied aircraft.

## 7. General

7.1 The requirements of international operations as envisaged in the ICAO Air Navigation Plan would have been adequately met with the recommended expansion plans at the four major international airports in India.

7.2 However, improvement is required in the pavement bearing strength of the runways, taxi tracks and manoeuvring areas. Though the manoeuvring areas were originally constructed with bearing strength of LCN 90 to 100, it is found that the Pavement Classification Number (PCN) values of these manoeuvring areas are much lower than the Aircraft Classification (ACN) of aircraft currently operating at these airports. This requires rectification by strengthening the manoeuvring areas in stages so as to match the PCN and ACN values.

## 8. Domestic Airports

8.1 Regarding the requirements of domestic airports, the largest aircraft currently operated by Indian Airlines is the A300 which should be the adequate size up to 2000 A.D. If any larger aircraft were to be used it would be only between airports already used by Air India's 747. The Group recommends that a minimum of 7500 ft. of runway with bearing strength to meet the requirements of A300 aircraft should be available at all airports where these aircraft are planned to be operated. To begin with, the runways at Cochin, Patna and Varanasi should be upgraded to be commensurate with the above requirements. The runways, taxiways and other facilities at the following airports should be upgraded to meet the requirements of B737 aircraft :

Nasik, Port Blair, Tirupati, Vijaywada, Kota, Belgaum, Tezpur, Ludhiana, Dehradun, Jabalpur, Allahabad, Gorakhpur, Coimbatore and Keshod.

8.2 The passenger handling facilities at Hyderabad, Goa, Nagpur and Ahmedabad should

be improved to meet the domestic traffic and international operations on scheduled or non-scheduled basis.

3. Ahmedabad, Nagpur and Trivandrum should be developed as international alternates with a view to conserve fuel.

### Land Zoning

1. The development of airports in India has often been an adhoc exercise to meet short term requirements and making additions as the requirements increase. This is both inefficient and costly in the long run. It is imperative that airport development should henceforth be planned on a long term basis with adequate provision for major expansion in future. For this, advance acquisition of land, city planning and zoning are required.

2. The Group also noticed that a number of obstructions in the take-off and approach areas have been allowed to be erected affecting safety in emergencies and necessitating displacement of landing thresholds and or limiting the take-off distances available. The Group recommends that strict control should be exercised in not permitting constructions along the take-off and approach areas to conform to the obstacle clearance surfaces prescribed by ICAO and efforts should be made to remove such obstructions already existing at many airports in India.

### Visual Aids

0.1 The Group recommends that High Intensity Runway Lighting should be provided by 1990 at Trivandrum, Amritsar, Udaipur, Bhopal, Guwahati, Nagpur, Jaipur, Varanasi, Lucknow, Khajuraho and Srinagar.

0.2 Simple approach lighting should be installed at Lucknow, Amritsar, Nagpur, Varanasi, Vadodra, and Bhopal by 1990. Precision Approach Lighting should be installed at Ahmedabad, Hyderabad, Trivandrum, Goa and Guwahati by 1990.

0.3 PAPI should be installed at all domestic airports. Where 'VASI'S' configuration requires upgradation or replacement, PAPI should be installed.

0.4 Cat II lighting is available at Bombay and Delhi airports presently. This lighting system meets the requirements of ICAO specifications. Since the ILS at these two aerodromes have not been declared fit for Cat II operations so far, operations under Cat II minima cannot be conducted presently. Obstacles in the approach area at Bombay airport restrict the lowering of the decision height. Considering the fact that availability of improved lighting system would reduce the chances of diversion even under extremely adverse weather conditions, the Group recommends commencement of Cat II operations at Bombay and Delhi airports wherever possible and installatin of Cat II lighting at other international airports also.

11. **Search & Rescue**
- 11.1 USA & USSR are experimenting with Search & Rescue Satellites (SARSAT and COSMOS respectively) and the feasibility of India joining these programmes may be considered by the Government.
- 11.2 It is noted that the government has set up a committee with the Department of Space as the agency to examine such a feasibility. It is recommended that all concerned agencies be involved together with the Department of Space at the national/international level of deliberations on this matter.
12. **Radio Navigation Aids**
- 12.1 ICAO recommends that the planning of navigation aids should be on a system basis recognising that requirements for both long range and short range may be met by same aircraft with self contained aids and it is practicable in some cases to establish ATS routes not provided with station referenced aids for these aircrafts.
- 12.2 Application of Satellite techniques for navigation is under consideration of ICAO FANS (Future Air Navigation Systems) Committee, and implementation will be preceded by advance notice period. India should therefore keep abreast of all the developments in these aspects and take necessary action.
- 12.3 Radio aids for enroute navigation are not considered adequate. The ATS route should be properly defined by the installation of VORs and DMEs to permit accurate navigation.
- 12.4 ILS is now available at some aerodromes through which Indian Airlines operate jet aircraft. An ILS is necessary for safe operation of jet transport aircraft of the category B737 and above. The Group, therefore, recommends that all airports where jet aircraft operate, ILS be provided and maintained to Cat II Signal Quality, and ILS should also be installed on Runway 09 at Bombay and Runway 10 at Delhi.
13. **Microwave Landing System**
- 13.1 ICAO has planned replacement of ILS with Microwave Landing System (MLS). MLS can provide Multiple/segmented Glide Slope and curved approaches. The ILS MLS Transition Plan envisages that all ILS installations should be phased out during the period 1998 to 2000 A.D. However, changeover to MLS can begin from 1st January, 1995. Aircraft will have to carry airborne equipment compatible with ILS/MLS from 1995 to 2000 A.D. It is recommended that replacement of ILS with MLS at the four main international airports should be planned sometime after 1995 so that the changeover to MLS takes place before 2000.

## 14. Aeronautical Communications

14.1 The existing Aeronautical Fixed Telecommunication Network (AFTN) circuits in India do not meet the transit time criteria of 5 to 10 minutes laid down by ICAO due to inadequacy of message handling system at various COM Centres, poor performance of leased telecommunication circuits and absence of automatic trunk switching system in the ground based telephone network. Inadequacy of intercentre communications jeopardises the safety of aircraft operations due to non-receipt /late receipt of important co-ordination messages, leading to increased cockpit workload in the form of additional position reporting, relaying of flight plan data etc.

14.2 The Group therefore recommends high priority in improving the AFS as indicated below :

1. Induction of AMSS (Automatic Message Switching System) and data links (CIDIN) at Bombay, Delhi and Calcutta, by 1990.
2. UHF/Microwave links between Airport terminals and city telecommunication terminals at Bombay, Delhi, Calcutta, Madras and Nagpur by 1990.
3. Establishment of dedicated Satellite Earth Stations at Airport terminals at Bombay, Delhi, Calcutta and Madras by 1990.
4. Installation of UHF/Microwave links and Satellite Earth Stations at other centres should be planned on a progressive basis to cover the whole of India.
5. The existing WT Circuits should be replaced with LTT Circuits and/or provided with dedicated Satellite Earth Stations to ensure speedy and adequate communications network.

14.3 The existing direct speech circuits are not-compatible for automatic trunk switching between controller to controller to permit contact within 15 seconds as per ICAO criteria due to the various performance limitations of the telephone circuits. The R/T circuits also have inherent deficiencies. The Group recommends the following action to eliminate these problems :

- i) Introduction of automatic trunk switching on telecommunication leased circuits at Bombay, Calcutta, Delhi, Madras and Nagpur by 1990.
- ii) Enlargement of automatic trunk switching on telecommunication leased circuits to cover all the aerodromes by 1995.
- iii) Conversion of HFRT DSB Circuits to SSB Mode by 1997.

- iv) Establishment of UHF/Microwave links between receiving stations and terminal buildings at Bombay, Calcutta, Delhi, Madras and Nagpur by 1990 and at all other Airports by 1995.

## 15. Aeronautical Mobile Service (AMS)

15.1 Standards for an integrated communication, navigation and surveillance system based on satellite technology are in the offing and it is expected that an interim data only satellite communication service is likely to be introduced within the next few years. This will improve the coverage and enlarge channel capacity. The DOT/DOE are planning a Network for data communication using INSAT IC between various regional/district centres. The civil aviation sector should use this facility for data exchange between various aviation information centres, and they should also explore the possibility of utilising the Indian Satellite programme for aeronautical communication purposes.

## 16. Air Traffic Services

16.1 Area Control Service in place of advisory/flight information service now provided on all ATS routes is long overdue. Adequate VHF coverage throughout India is not provided at present. A number of Remote Controlled Air-Ground stations (RCAG) are being set-up to enlarge VHF coverage throughout the landmass of India. This process should be accelerated. Radar coverage is primarily restricted to terminal areas at Bombay, Calcutta, Delhi, Madras and Bangalore. Primary radars (ARSR and ASR) should be extended to selected terminal areas like Ahmedabad, Nagpur, Trivandrum, Varanasi, Hyderabad and Vishakhapatnam by 1990 and to other locations subsequently. Secondary Surveillance Radar (SSR) is selectively used only at Bombay, and it is recommended that SSR coverage should be provided to cover all the ATS routes as early as possible, taking into account the development of Monopulse SSR with Mode-S (Data link). ATC automation with processing of primary and secondary radar inputs by ATC computers should be introduced at Bombay, and Delhi on a priority basis, together with self-contained modern Technical Blocks capable of handling the future growth in traffic on a sectorized basis.

16.2 With a view to taking maximum advantage of SSR, all aircraft in domestic operations should be equipped with airborne ATC transponder compatible with the SSR within a stipulated date, say 1995.

16.3 Precision Approach Radar (PAR) has been installed at Bombay, Calcutta, Delhi and Madras. PAR has been withdrawn throughout the world with the exception of a few airports, as pilots prefer use of ILS rather than PAR. Since PAR is no more an ICAO recommended facility, replacement of the existing PARs by new equipment should be undertaken. The service however may be provided as long as the existing equipment can be kept serviceable.

## 17. **ATS Routes**

17.1 Most of the domestic routes in India have been straightened out. Further efforts are necessary to straighten the remaining domestic and international routes as far as practicable. Such routes are :

Bombay - Karachi, Delhi - Karachi, Delhi - Lahore - Kabul, Bombay - Delhi, Hyderabad - Calcutta, Delhi - Srinagar, Delhi - Amritsar, Hyderabad - Bombay, Bombay - Vishakhapatnam, Bombay - Madras, Calcutta - Bhubaneswar, Delhi - Chandigarh, Mandasore - Karachi.

17.2 The increase in route mileage is mainly due to the existence of prohibited, restricted and danger areas. The Group, therefore, recommends that a High-level Committee comprising members from Civil Aviation Department, National Airports Authority, Defence Services, Indian Airlines and Air India should be constituted to consider feasibility of straightening out the ATS route net-work. The Committee should examine the type of restricted areas, the extent of activity, the possibility of permitting aircraft operations above certain flight levels, e.g. FL 240, permitting operations during hours when the areas are not active, etc.

## 18. **Civil Military Co - Ordination**

18.1 The airspace is shared by the civil and military users. The existence of restricted, prohibited and danger areas under the control of the military adds to the complexities of air traffic management. India has implemented Air Defence Identification Zones (ADIZ) in the western sector requiring civil aircraft to obtain Air Defence Clearance from Flight Information Centres ten minutes before entering the Indian territory. Similar clearance is also required from ATC before take-off.

18.2 The optimum use of airspace with a maximum degree of safety, regularity and efficiency can be ensured only with appropriate civil military co-ordination between civil ATS units and military operational control/Air Defence units so as to ensure integration or segregation of civil and military air traffic. Further, it is noted that occasionally there exists good co-ordination in ground navigation and communication facilities of both civil and military installations. The Group, therefore, recommends that there should be a wider co-ordination on institutional basis between civil and military authorities and the need for civil aircraft to obtain air defence clearance should be dispensed with.

## 19. **Indigenisation**

19.1 The Group has taken note of the fact that a number of items of communication and navigation equipment have been developed and manufactured in India and this should be encouraged. Considerable time and efforts are necessary for developing the



manufacturing equipment according to international specifications. A projection of requirements should, therefore, be made sufficiently in advance so as to enable indigenous industries to supply the equipment either on their own development or through collaboration and a balance should be struck to ensure that equipment which can not be produced indigenously in the given time should be imported to ensure upgradation of the services to international standards without loss of time on a planned basis.

## 20. **Meteorological Services**

20.1 The Meteorological services provided at international and domestic airports are considered adequate. The Indian Meteorological Department has plans for upgrading existing Meteorological offices and also establishing additional offices at airports where Vayudoot services operate. Such upgradation should include speedier dissemination of meteorological data through use of computers and satellite communication services.

20.2 ICAO has designated New Delhi as one of the Regional Area Forecast Centres. Steps should be taken to implement this recommendation.

20.3 The airlines have doubts regarding the accuracy of Runway Visual Range measurements provided by Skopograph instruments installed at Bombay, Delhi and Calcutta airports. The Group recommends that the accuracy of this equipment should be checked and calibrated taking into account the environmental conditions so as to provide representative Runway Visual Range measurements for landing and departing aircraft. The Group also noted that an equipment of superior performance has been developed successfully by the National Aeronautical Laboratory and recommends that this be taken up for production to meet requirements at our airports.

## 21. **Investment Required**

21.1 The total investment required for development of Airports and Airport facilities for the next fifteen years is likely to be around Rs. 3000 crores (at 1985/86 prices) which includes Rs. 1500 as the cost of acquiring land for Bombay airport but excludes cost of its development. Itemwise details of this investment are given in the report of Working Group III. The table below indicates the broad areas of investment :

(Rs. in crores)

I Terminal Complexes			
Development cost of present Bombay, Delhi, Calcutta, Madras Airports			
	150.17	182.51	—
Domestic Airports			
	101.45	205.05	—
	<u>251.62</u>	<u>387.56</u>	<u>—</u>
Sub Total :			
II Cost of land acquisition for New Bombay Airport			
	1,500.00	--	--
III Navigational and Approach aids			
	80.14	56.93	36.03
IV Communication facilities			
	32.66	26.94	9.00
IV Air Traffic Services			
	239.19	276.46	25.63
VI General			
	39.90	50.40	6.00
	<u>2,143.51</u>	<u>798.29</u>	<u>76.66</u>
Total :			

Grand Total : **Rs. 3,018.46** crores

## CHAPTER VI

### MANPOWER DEVELOPMENT & PRODUCTIVITY

- 1.1 The civil aviation sector requires highly skilled manpower to operate, maintain and manage the high technology equipment and systems used in this sector. The effectivity and efficiency of operations in the sector, therefore, depends largely on the quality and productivity of the manpower employed. Certain specific categories such as Pilots & Engineers take years of training and development to attain the desired levels of proficiency. It has also been experienced in the past that fully trained staff particularly such as pilots and engineers and lately those who have been trained in real time computer systems are syphoned off by other airlines in the region and it will be in the interest of the country to train more than the required number so as to provide for such contingencies.
- 1.2 In the category of pilots, there has been a sizeable gap between the training and development facilities currently available and the requirements of airlines for commercial operations. The establishment of the Indira Gandhi Flying Academy is a step in the right direction to provide the basic material for pilots of requisite quality and skill for the airlines. It is recommended that the policy should be to absorb pilots trained by the Indira Gandhi Flying Academy into Vayudoot or to Indian Airlines, and from there to release experienced pilots to Air India in a planned manner.
- 1.3 To ensure higher standards and minimum training time, the early development of skilled ground personnel like Aircraft Engineers, Technicians, ATC Controllers and maintenance personnel for communication and navigation equipment should be job related. The Group, therefore, recommends that a Committee should be set up with representatives of the airlines, DGCA and various technical educational institutes of importance in the country to review their syllabi to this end. It is also recommended that a common Civil Aviation Training Board to coordinate and oversee the training and development activities in this sector should be set up.

#### 2. Manpower Projections—Airlines

- 2.1 The requirements in key categories in the airline sector have been projected in line with the fleet augmentation programmes recommended by the Group. The manpower projections have been made according to the existing levels of productivity as well as on the basis of certain achievable productivity improvements as recommended by the Group which are briefly listed below :
- (a) Provision should be made for using multiple crew on scheduled flights to enable long haul/non-stop flights which is now the accepted industry practice. Time off at base which is half the number of hours away from base + 24 hours should be reduced to a maximum of 4 days. Transshipment of crew by other carriers

should be done in the normal course to avoid prolonged lay over at outstations. There should be a common stand-by crew when required to cover more flights.

- (b) There is need to revamp the existing pattern of training and progression of pilots from a lower category to a higher category of aircraft to reduce the training time.
- (c) There is scope for reducing the cabin crew complement on our flights to bring it in line with international standards
- (d) There should be inter-changeability of functions between hostesses and pursers which does not exist today.
- (e) In the categories of technicians and engineers productivity can be considerably improved with a change in certification procedures as practised by other airlines. A system of task approval on routine maintenance activities may be introduced with job flexibility and interchangeability. Some important changes in certification and approval procedures for aircraft maintenance suggested by Working Group III to achieve overall improvement in productivity and efficiency are recommended for approval.

2.2 It is observed that there are certain constraints imposed by existing collective agreements with the unions which may come in the way of implementation of some of these measures. Also, with respect to the changes in the certification procedures suggested by the Group, Indian Aircraft rules on this subject may have to be modified. The Group recommends a Committee consisting of representatives from the Airlines, DGCA, and the Administrative Ministry should be constituted to go into the subject further and develop working methodologies.

2.3 If it becomes difficult for the constituent units to achieve these productivity improvements, then it may become necessary for the Government to arbitrate in the matter since their achievement is definitely in the national interest.

2.4 As regards manpower requirements for categories such as ground support personnel, management and computer services, traffic and administrative staff, a co-relation with increased automation in the near future has to be kept in mind. In some areas, the possibility of contracting out certain services to outside agencies should be given serious attention.

2.5 The Group also took note of the emerging regional co-operation among the South Asian countries. There is some scope for sharing the maintenance and overhaul, simulator and training facilities. This should be pursued with the regional carriers/governments to avoid duplication in installation of equipment and consequent under-utilisation.

2.6 The manpower projections for certain key categories in the airlines as per the existing

productivity norms as well as the revised productivity norms are given in the statement annexed to this chapter

### 3. **Organisations other than the Airlines :**

3.1 The requirements of skilled and unskilled manpower for the various wings of other infrastructural organisations in the civil aviation sector have been studied by the Working Group III and incorporated in their report.

3.2 The Group observed that manpower/productivity norms have been clearly identified and developed in the airlines and since most of these norms are in international usage i.e. ATKM's per employee, RTKM's per employee, Manhours per overhaul and other norms indicating productivity of pilots and cabin crew etc. it is relatively easy to identify areas where improvements in productivity are needed. However, similar productivity norms for the various categories of staff in infrastructural organisations are not readily available. Thus, while it has been possible to suggest modified productivity norms for certain categories of staff in the airlines through a careful comparison with what has been internationally achieved, the same exercise was not possible in these organisations since the basic norms of productivity in these organisations have not been developed. Therefore, the Working Group had to evolve its own norms at the macro level without the possibility of rational comparisons, in assessing the manpower requirements. In view of this, the Planning Group recommends that a separate detailed study should be conducted in these organisations to evolve acceptable productivity norms and thereafter to identify areas which need improvement.

3.3 Subject to the above observations, the Group assessed the future manpower needs in the infrastructural units such as NAA, IAAI and Civil Aviation Department on the following basis :

### 4. **National Airports Authority**

4.1 In assessing the future manpower needs in the various units of NAA such as Communications Air Traffic Control Equipment Directorate and Training etc., the following assumptions have been made :

- (a) All the Airports were classified as per the traffic density as recommended by Group II;
- (b) The update of equipment resulting from technological advancements forecast by Group II for the Plan Period was taken into consideration;
- (c) The manpower norms were worked out assuming that the maintenance of communication equipment will be carried out at the station level, regional level as well as the Central Workshop in lieu of the present practice of carrying out

all levels of maintenance at the respective stations;

- (d) In case of Air Traffic Control, it was considered that the manpower augmentation for Group II to Group V Airports should be for upgradation of the Airports only and not for increased volume, while in case of Group I airports such as Bombay, Delhi, Madras and Calcutta, the upgradation of the airports alongwith the increase in traffic would be taken into account.

### **International Airports Authority of India**

The manpower requirements for various categories of IAAI have been based on the Investment Schedule proposed by Working Group II, and on the projected traffic levels.

### **Civil Aviation Department**

The manpower requirements of the various wings of the Civil Aviation Dept. such as Airworthiness Directorate, Air Safety, Training & Licensing, etc., have been based on the following factors :

- (a) Expected fleet augmentation by the various airlines in India.
- (b) Nature of specialisation required for various activities.
- (c) Increase in staff strength projected for the airlines as well as changes in licensing systems proposed.

### **Training**

While training is of utmost importance in all areas, the Group placed special emphasis on certain categories such as Pilots and Engineers etc. due to their specialised training requirements and also the long gestation period and the high cost involved in training them.

The key categories are Pilots, Maintenance Engineers (Aircraft), ATC/Communication Personnel and Airworthiness/Air Safety Personnel.

While the complete details on training needs and suggested changes are contained in the report of the Working Group III, some major points for implementation are listed below :

**Pilots :** The Group feels that the Indira Gandhi Flying Academy can provide well-trained Pilots with Commercial Pilots' Licence (CPL). It is suggested that the existing Flying Clubs should be upgraded to provide PPL training for fresh entrants as it will not be possible for the Indira Gandhi Flying Academy to meet the total requirements projected during the Plan period.

- 7.4 To ensure the quality of PPL training, the Ground Technical Course and the Flight Training should be upgraded with standardisation in training methodology. However, the Commercial Pilots' Licence training should be only at the Indira Gandhi Flying Academy. It is felt that the syllabus for the CPL should be of a compatible nature with the basic wing level training of IAF to ensure inter-changeability.
- 7.5 The airlines may sponsor training of PPL holders in India to the Flying Academy depending on their needs.
- 7.6 It is suggested that no separate examination should be conducted beyond CPL for ALTP requirements. The CPL requirements may be supplemented by an orientation training for award of ALTP and this training should be conducted at the Flying Academy.
- 7.7 The basic requirements for award of ALTP with respect to Pilot-in-Command experience should be restricted to 250 hrs.
- 7.8 The Group recommends that the induction of pilots to the airlines should be made through Vayudoot and as Second Officers in large multi-engine heavy aircraft.

#### 8. **Engineers/Technicians (Aircraft Maint.) :**

- 8.1 The present private institutions offering 3 years' Diploma Courses can be upgraded to provide consistent and quality standards of training. For this purpose, it is suggested that the syllabus and the practical orientation of these courses should be monitored by DGCA and the system of accrediting these institutions should be developed. The course content of this programme should be equivalent to that of the Diploma in Engineering awarded by any state Board.
- 8.2 Candidates successfully coming out of this programme may be absorbed as trainee technicians in the airline industry. After induction into the airline, the orientation training and advance technical training may be provided at the airlines.
- 8.3 Apart from these institutions, it is suggested that the Indira Gandhi Academy may also develop a technician's training programme. This will be economical as well as expedient as in the process the Academy's maintenance needs would be met, while on the other hand lesser investment would be needed for the technicians' training.
- 8.4 In case of Engineers, it will be advisable to develop a four year programme for training of Engineers at the Indira Gandhi Academy. The induction level of these trainees can be at the B.Sc. level. The candidates coming out of this Academy will possess the basic Aircraft Maintenance Licence to be absorbed as Junior engineers in the airlines. The in-service training programme of the airlines will take care of future training needs specific to the type of aircraft and for licence endorsement.

Whilst the licenced Engineers trained at the IG Academy would orient towards inspection duties only, in order to take care of the advancements in the aircraft engineering technology, it is essential to have technically qualified Engineers with basic engineering education at academic level. For this purpose, some of the educational institutions such as IIT with nearness to the airlines/aircraft industry base can be asked to develop a five year integrated programme with specific emphasis on aircraft maintenance engineering.

The course content may be planned in consultation with the airline industry and the educational institutions. The candidates coming out of these institutions may be absorbed as Junior engineers and employed in any one of the branches of Aircraft Maintenance as required by the airlines. It may be added that successful completion of this programme may be deemed to include the basic aircraft maintenance licence requirements. These Engineers will have the flexibility to be absorbed either in maintenance/overhaul areas or in technical support services such as quality control, production planning, industrial engineering etc.

#### **Training requirement of Airworthiness and Air safety Officers :**

It is recommended that Graduate Engineers selected for this wing should be provided with orientation training at Headquarters and Regional centres initially. Specific and specialised training under various aircraft and aircraft systems can be given at the respective airline facilities.

#### **Communications and ATC :**

The technical personnel of this category are currently trained at the Civil Aviation Training Centre, Allahabad. The facilities at this Training Centre are not adequate even for the present requirements and the Group recommends augmentation of training facilities at CATC for ATC and Communication personnel keeping in view the technological advancements forecasted. The training requirements specified for various categories include initial induction training as well advanced training. Periodic refresher courses are also necessary.

Considering the inter-relationship of training requirements of various categories the Group recommends formation of a common Civil Aviation Training Board to monitor and oversee the training standards/training policies and modifications needed from time to time as per changing circumstances for the entire industry.

Apart from the categories of technical personnel, there are also training requirements of other categories within the airlines such as inflight service personnel, traffic staff, etc. However, as training of these categories is restricted to airline operations only, no separate suggestions regarding infrastructure are necessary apart from augmenting the existing airline training systems.



10.4 . Since it is possible that the recommended productivity improvements may not come about or may be achieved only partially, the projected requirements in technical categories of airline staff have been given in the table below on both the bases. For other units the projections are contained in the report of Working Group III.

Category	Existing Productivity Norms				Improved Productivity Norms		
	1985	1990	1995	2000	1990	1995	2000
<b>AIR INDIA</b>							
Pilots	256	412	518	708	330	450	570
Cabin Crew	1800	2336	2800	3666	1552	1782	2311
A/c Technicians	1941	2949	3654	4806	1590	2174	2748
A/c Engineers (Licensed)	578	879	1089	1432	191	261	330
A/c Engineers (Non licensed)	147	201	249	327	286	391	495
<b>INDIAN AIRLINES</b>							
Pilots	384	764	1060	1973	692	956	1780
Cabin Crew	695	1452	2452	4444	1373	2320	4334
Technicians	2221	2420	3854	7176	3231	3597	6693
A/c Engineers (Licensed)	705	718	1140	2124	388	432	803
A/c Engineers (Non licensed)	236	256	408	760	582	647	1205

## CHAPTER VII

### AUTOMATION

Automation in various services and applications in the civil aviation sector now covers areas such as passenger safety and comfort, passenger and cargo movement and handling, decision making, cost optimisation, productivity improvement etc. While it is clear that one cannot afford to lag behind in use of modern technology in computers, it is necessary that the automation schemes should be introduced carefully keeping in view the expansion plans and adaptivity of such schemes to local conditions.

The following are the major areas in the aviation sector where automation/computerisation has already been introduced or is likely to be introduced in the near future. This is the world, and not an Indian scenario :—

- (i) Information transmission
  - Automatic message Switching
  - Air traffic control
  - Voice and data communication links between various centres
  - Use of national/international satellite services
  - Facsimile transmission
  - Information Transmission monitoring
- (ii) Data processing and dissemination of inputs received from navigation sensor
  - Long and Short Range Radars
  - Navigational aids of various types
  - Weather reports—radars and satellites
- (iii) Passenger and Baggage Handling
  - Computerised reservations
  - Self ticketing & self check in
  - Computerised passport/visa control
  - In flight communication facility
  - Information Display terminals/boards
  - Fire/Explosive alarms
  - Computer controlled baggage loading
  - Electrically operated baggage conveyors.

(iv) Training

- Aircraft Cockpit Simulator
- Air Traffic Control Simulator
- Computer Aided Training System (CATS) for flight crew and equipment maintenance personnel

(v) Airport operations

- AVECS—computerised control system for airport ground vehicles
- Powerful High speed runway sweepers
- Bird repulsers on airports

(vi) Aircraft operations

- Central Control Unit to ease pilot's workload in cockpit
- Automated test equipment/jigs
- Inflight monitoring/control and data transfer/access to ground computer.

1.3 Some of these applications have already been introduced in India, while most others will no doubt have to be gradually introduced in due course.

1.4 As regards the data exchange between the various centres, it should be possible for the aviation sector to become a subscriber of satellite based Indian National Satellite (INSAT) Business Telcom Network being planned by Department of Telecommunications (DOT) and Department of Electronics (DOE). Dedicated Pulse Coded Modulation/Ultra High Frequency (PCM/UHF) links merely to combat the problems of local links will be an expensive solution. Already certain sectors concerned with aviation are being provided with computer terminals for data handling. It should be possible to link such centres with the other aviation centres through the Business Network. It is suggested that considering the total requirement in the aviation sector, maximum use of Public Switched Data Network (PSDN) should be made in addition to the Business Network. There is no single network solution to the requirement.

1.5 Automation in office functions should be expedited, with priority being given to electronic mail, electronic filing, directory, word processing/data base management, information transfer between personal computers etc.

1.6 The requirements of computers for aviation sector should be worked out so that this could be looked at from making the same available locally. It is suggested that a group is set up to examine requirements of automation in aviation sector and implementation. Both Air India and Indian Airlines have by now computerised not only applications involving financial, marketing, engineering, inventory and other corporate reports, but have also progressed considerably towards computerising the services for passenger and cargo customers by acquiring on-line real time computer systems.

## **Co-ordination between Airlines, IAAI and DGCA :**

The Director General of Civil Aviation (DGCA) is also installing a computer system for their message switching applications. However, much greater computerisation of the administrative and service functions of the DGCA and the IAAI will have to be undertaken in the coming years in order to improve the information systems, management control and services to the customers. The entire traffic control system will require total computerisation with the traffic controllers' monitors getting upto date information received by the computer system directly from the aircraft within the range of the system which would also be updated by data received on flight plans filed by the despatches of various airlines for arriving and departing aircraft.

Since there are several interconnecting requirements of information between the airlines, the DGCA and the Airport Authority in the areas of flight arrivals and departures, despatch of the flight plans and traffic control, the Group recommends that it would be desirable to maintain close co-ordination between the computer applications developments in the areas of message switching taking place in these three organisations so as to facilitate computer to computer exchange of messages of common interest between them and thus avoid delays in making vital information about flight arrivals and departures available to the travelling public.

## **Future Planning for computerisation in Airlines :**

Unlike in the past, now the primary use of computers in airlines is for providing improved services to passengers and cargo customers and in corporate decision-making in marketing, finance or planning. The volume of traffic and aircraft movements to be handled by the airlines would require the use of computer communications networks and micro-processors at various points of movement of baggage, cargo or vehicular traffic in the operational areas. The high investments on aircraft and airports in the coming years would demand improvements in the level of efficiency and productivity which would require extensive use of computers. Since safety and security of passengers both on ground and during flight may continue to be a matter of concern for the civil aviation industry, both the aircraft manufacturers and safety specialists have been pushing ahead the application of computer technology in the design of aircraft as well as design of systems for screening of passengers, baggage and cargo on ground and it will be necessary to continuously monitor such developments and take advantage of them in order to make air travel safer and smoother. Computer systems will enable quicker turnaround of aircraft, on-line monitoring of various aircraft systems during the flight, on-line capture and analysis of such data by ground computers which will in turn enable the maintenance engineers to start corrective action on any defective systems soon after the aircraft returns to ground and then cut down the turn around time for the aircraft. The gap in using computer communications technology for providing services to customers between the progressive countries and India was as high as 14 years for the first applications viz. Passenger Reservations. With each

subsequent application such as Fare Display, Ticketing, Departure Control or Cargo computerisation, the gap is steadily diminishing. It should be the endeavour of the airlines to catch up with or come close to the other international carriers latest by 1995 by giving high priority to computerization in their future plans.

#### 4 **Investments in information technology :**

4.1 The investments in computer communications systems are likely to be substantial and probably as high as 5 to 10% of the investment on aircraft during the next decade, and provisions in the plans should be made accordingly.

4.2 The Group feels that computerisation needs to be viewed as an essential facility to maintain efficiency and competitiveness and the investments required for computerisation need to be treated in priority at par with the investments for aircraft. It would be advisable if the necessary provisions for the procurement of computer systems to meet the requirements of growth in traffic are built into the fleet investment plans of the Corporation.

#### 5 **Participation in industry systems :**

5.1 The Government of India has maintained a policy of making computer hardware and the essential software available to the airlines even if it involves import of such equipment because of (1) the advanced nature of airline application, (2) in order to develop indigenous skills, and (3) for reason of maintaining confidentiality of data.

5.2 While there can be no quarrel with this policy, use of external computer services does become necessary where there is need to capture essential operational or industry information expeditiously. It would need much larger effort and much longer time to produce the same information in house. IATA has set up several community projects for (1) tracking lost baggage, (2) exchanging uplift and revenue information from traffic uplifted by other airlines, (3) quick updating of information on the availability of seats on the flights of participating airlines directly between computer systems, (4) quick access to a central computerised data base of rapidly changing fares and tariffs, (5) quick access to industry marketing and financial statistics for forecasting and planning.

5.3 The Group recommends that whenever special needs such as a industry wide information base, or exchange of operational information exist, and co-operative effort is the speedier and cheaper solution, there is a strong justification for the airlines for participating in such activities.

#### 6. **Data communications facilities within India :**

6.1 One of the major bottlenecks in extending computerised services to newer cities and airports through which the airlines operate within India is the non-availability of

telecommunications links of high quality within a city from the local Telecom Centre of the reservations offices or to the airport offices of the airlines. In other countries, Pulse Code Modulate (PCM) or Ultra High Frequency (UHF) links have been provided for such within city traffic. These are of high quality and reliability but involve a substantial investment.

In view of the high investment involved for such within city telecommunications links the Group recommends that it would be highly desirable for the airlines to co-ordinate their efforts in terms of location of their reservations offices in the cities. It is recommended that the Department of Telecommunications should take urgent steps to set up a high quality and high reliability Public Data Network to which the airlines, the airport authorities and the Department of Civil Aviation would be able to connect their respective computer systems and take advantage of the quality and reliability offered by such networks.

#### **Integrated voice, data, facsimile networks :**

In other parts of the world, the Telecommunications authorities are already working on integrated digital networks which would facilitate transportation not only of data and voice but also of facsimile images and graphics. The DOT also has plans to set up such networks in India in the next decade.

It is recommended that the organisations in the civil aviation industry should take the initiative to register their specific requirements well in advance so that these requirements can be taken into account by the designers of the satellite based domestic communications networks planned by the DOT.

#### **Interlinking with travel agents, hotels, banks :**

The airlines have to interact with a number of other agencies with whom they have to carry out business dealings either in terms of transfer of goods and passengers or by obtaining their help in booking passengers and cargo or by settling accounts through a Bank Settlement Plan or Clearing House between the airlines. It is necessary for the airlines to establish linkages with the computer systems of the travel agent community, the customs authorities as well as the banks in order to expedite the processing of information and providing a faster service to the customers.

#### **INMARSAT :**

Air India and Indian Airlines have already been members of SITA, the telecommunications community organisations of the airlines. Another community organisation which is now in the process of setting up a worldwide satellite-based communications network for the shipping industry in INMARSAT. This organisation proposes to provide both digital and voice communications between the ships on the

high seas and various ground stations as well as with the Headquarters of the respective vessels. The INMARSAT network has been offered through SITA to the airline industry so as to facilitate voice communication between the Commanders and the Ground stations as well as between the travelling passengers. The INMARSAT network also facilitates transmitting the performance monitoring data recorded during a flight to the computer systems of respective airlines through the nearest ground station and the SITA network in flight. The experimental studies on the use of INMARSAT for transferring voice and digital information recorded on the performance of aircraft systems in flight to the ground stations or the host computers will begin in 1987 for the Trans-Atlantic flights and in 1988 for the Trans-Indian Ocean. The Group recommends that Air India should participate in this system by installing the appropriate equipment on its aircraft. At the same time, it will be necessary for the DOT and the Overseas Communications Services to support the airlines and shipping industries in the country by setting up the necessary ground stations.

9.2

In view of the fast developments in communication and computer technology, it was difficult for the Group to quantify the investments required in implementing each of these recommendations. A certain percentage of the total investment in the civil aviation sector needs however to be specifically set aside for automation and the Group recommends that based on industry experience and rough current estimates, this percentage can be put at  $7\frac{1}{2}\%$  of the investments in aircraft and other facilities that are proposed to be provided at the airports. Based on this the total investment envisaged by the Group in this respect may be around Rs. 1,229.50 crores.

## CHAPTER VIII

### ORGANISATION STRUCTURE FOR THE CIVIL AVIATION SECTOR

1.1 Under the present organisation structure, the four principals constituents of the sector viz. Air India, India Airlines, IAAI and the newly formed Natinal Airports Authority function as autonomous units under the Ministry of Civil Aviation. There is a limited extent of commonality at the Board level, and inter organizational co-ordination is achieved through the Ministry. There has been a feeling, probably quite justified, that the degree of co-ordination and co-operation has been inadequate and that a mechanism needs to be evolved which will ensure much closer co-ordination.

1.2 There are several alternatives which can be considered in order to achieve this :

1. The airlines to remain separate organisations with such facilities or operations to be combined as have commonality and are cost effective.
2. Having a holding Company for Air India, Indian Airlines and/or Vayudoot.
3. Having a Holding Company for IAAI and NAA also.
4. Merger of Air India and Indian Airlines.

It does appear that if the desired degree of co-ordinated working has not been achieved within the sector, then it is primarily due to there being no system for monitoring and ensuring such co-ordination. This, as well as the possibility of some economies expected to be achieved, makes the idea of a merger prima facie attractive. In viewing this proposition, however, some important factors have to be borne in mind.

1.3 Air India's operations are of a nature where it has to keep in step with the other international carriers and has to be a highly competitive organisation with standards in all respects no lower than the best in the world. Indian Airlines, because of the different environment in which it operates, is under no such compulsion and it is enough if it provides low cost but safe and reasonably efficient services. An outright merger of the two carriers is, therefore, a step whose strategic and economic consequences have to be carefully evaluated. Obviously, much can be done in the direction of merging of technical facilities, inter-linkage of international traffic with domestic, training, pilot requirements, ground handling facilities, computerisation etc. and savings can be effected both in financial and manpower terms.

1.4 The concept of a Holding Company for the airlines and the two airport authorities seems to offer many advantages and fewer risks. It has the advantage of co-ordinated policy formulations and controls both in terms of corporate planning and optimum utilisation of resources. The Planning Group, however, decided not to examine this matter in greater depth since during the course of its deliberations, there was an announcement by the Government setting up an expert group which is required to study and report on the matter.



- 1.5 The Group has observed that there appears to be absence of a long-term plan for development of civil aviation sector and thus infrastructural facilities have lagged behind the development of airlines. There is a strong need for setting up a machinery which would co-ordinate the plans and activities of various units of civil aviation in a properly integrated manner. Such a need was recognised by the civil aviation Review Committee in 1975 and the Estimates Committee. Subsequently the National Transport Policy Committee also made a similar recommendation.
- 1.6 It is necessary to have a system where the preliminary planning is done by each unit but the overall plan is framed by a committee which represents the three airlines, the two Airport Authorities and the DGCA. To make the system more effective, it will be necessary to strengthen and streamline the Planning Department in the various units which at present seems to be woefully weak in all the organisations. In some of them, such a set up is nonexistent. Unless this is rectified, it is not unlikely that the progress of these units towards the 21st Century will be marred by errors and lapses.
- 1.7 In looking at the organizational structure, the Group also considered the possibility of restructuring the routes of the national airlines.
- 1.8 Whereas the Group is of the view that present route structure of Air India and Indian Airlines should be maintained there appears to be some need for a limited route rationalisation on the domestic sector. The Group suggests that there should be better apportionment of routes between Indian Airlines and Vayudoot and secondary routes in the domestic sector requiring aircraft capacity of 40/50 plus seats should be allocated to Vayudoot, while Indian Airlines should concentrate on trunk and other primary routes. Alongwith this, it should be ensured that Vayudoot continues to maintain its low cost structure and make minimum demands on infrastructural facilities and use either cheap Turbo Prop aircraft or aircraft which would progressively have domestic content.
- 1.9 While reviewing the organisational set up of the National airlines and their relationship with the Government the Group is of the view that it is necessary to give greater autonomy than exists today to the national airlines.
- 1.10 It is axiomatic that the success of any business or industrial enterprise, however well conceived or equipped, depends largely on the efficiency and drive of its management. This axiom is particularly true where the business is a fast-moving and fast-growing one, in which the company serves individual customers, and all the more so when it operates in a strongly competitive market in which it must fight not only for growth but often also for survival. The airline industry is a typical example of this. Even though Indian Airlines is a monopoly, the very fact and the highly vocal and influential character of the sector of the community it serves, makes it as vulnerable to criticism and public assessment of its performance as Air India which has to face fierce international competition. While they are both expected to be profitable, Indian Airlines is measured more by the extent to which it satisfies the needs of the Indian travelling public for

convenient timings and punctuality, and Air India by its international reputation and its success or failure in obtaining an adequate share of the market.

11 To meet these criteria, the Planning Group strongly feels that the Airlines should be allowed the managerial freedom and flexibility of management, particularly in regard to commercial decisions, which they need, which is far from the case today when Government exercises control not only in matters of broad policy but even in the airlines' day-to-day affairs. This system, equivalent to departmental management by the Government of India, is not only time-wasting but also not conducive to maintaining the management's morale and staff discipline.

12 The Chairman and Member-Convener of this Group recently visited Singapore and Sydney in order to study the operation and managerial practices of Singapore Airlines and Qantas. Qantas, as a wholly owned government public sector enterprise of a similar size and operating similar equipment as Air India, is strikingly different in respect of its management and the attitude and philosophy of its Government. The Government of Australia appoints the whole Board of Directors but without including in it any government official. The Group suggests that on similar lines the Boards of the National airlines should have much more representation of eminent professionals from concerned fields, representatives from users' groups, etc. The Minister in charge of civil aviation himself and the Chairman and Board Members of Qantas whom Mr. Tata and Mr. Sharma met confirmed the total freedom of management extended to Qantas except in matters involving inter-government negotiations and treaties. Similar conditions are known to prevail in other countries such as France and Germany where the airlines are also wholly government owned.

13 It is recommended that, except in regard to major policy and budgetary issues, the managements of the Airlines be freed from ministerial or bureaucratic control and be allowed to run the airline as a commercial enterprise under the supervision of an independent, non-official Board of Directors. This was, in practice, the situation as it existed until about eight years ago when total administrative control seems to have passed into the hands of the Ministry of Civil Aviation.

14 This Group would even like to recommend that, in order to make Air India as commercially oriented as possible and to give it the maximum ability to compete in international air transport, the Government of India should consider the possibility of converting the Corporation into a joint-stock company and releasing a part of its equity capital for public investment. The Group considers that the discipline of the balance sheet is a more effective watchdog and judge of performance than that obtained by bureaucratic supervision and control. While the same possibility should also be considered for Indian Airlines, the Group recognises that, in the light of its being a monopoly and also of certain social and security factors, a greater measure of control may be necessary in its case.

## CHAPTER IX

### FINANCE

- 1.1 Based on the aircraft and related requirements for the airlines, the developments of airports and other infrastructure, training requirements etc., and taking into account the improvements in productivity and efficiency now recommended, the Planning Group estimates that the total financial outlay (at 1985/86 Prices) for the civil aviation sector is likely to be nearly 20,000 crores during the period 1986/2000, broken down into five year periods as under:-

	Rs. in crores			Total 1986/2000
	1986/90	1991/95	1996/2000	
Air-India	1746.00	1942.00	2385.00	6073.00
Indian Airlines	1768.00	2382.00	4848.00	8998.00
Vayudoot	100.02	92.55	148.92	341.50
Airports and Airport facilities	643.51	798.29	76.66	1518.46
New Bombay Airport (acquisition of land only)	1500.00	—	—	1500.00
Automation	300.50	362.00	567.00	1229.50
Total	6058.03	5576.84	8025.59	19,660.46

- 1.2 The Government's declared objective is to make the civil aviation sector self-financing. While this is a perfectly acceptable requirement, it is extremely doubtful if the sector can generate internal resources of this magnitude to meet its replacement and growth plans and will require budgetary support.

- 1.3 To minimise the requirement of budgetary support the Group has looked at (i) improving utilisation of aircraft thereby reducing costs (ii) possibilities of augmenting internal resources of the various units and (iii) raising finance through external resources.

The Group's recommendations are as under :

#### 2. Utilisation of aircraft :

- 2.1 A comparison of Air India and Indian Airlines utilization levels with those of other selected airlines indicates that while both the National Carriers are performing at a reasonably satisfactory level, there is some scope for improvement.

- 2.2 The major factors which influence the utilisation of aircraft are (i) type of fleet, (ii) route structure and (iii) average age of the fleet. Taking into account the above factors, the following norms are suggested for utilisation of aircraft by Air India, Indian Airlines and Vayudoot :

747	On the basis of the present route structure (average fleet age 10 years). This could go up to 4000 hours if average fleet age is 5 years or less.	3,800 hours
A300-B4	Based on the present type of operation (average fleet age 4 years)	3,200 hours (present utilisation)
A310	Based on proposed operating pattern (up to average age of 5 years).	3,500 hours

#### **Indian Airlines**

A300-B4	Based on present pattern of operations (average age of fleet 7 years).	3,000/3,200 hours
B-737	Short haul operations (average age of fleet 9 years).	2,800 hours
A300 320	Initial period upto 5 years	3,000 hours

The Managing Director of Indian Airlines, however, had some reservations regarding the feasibility of their achieving the utilization levels indicated for the Airbus fleet.

#### **Vayudoots**

Turbo Prop aircraft.	2,400 hours
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#### **Norms for achieving Load Factors**

Whilst it is neither appropriate nor possible to fix any norms for utilisation of capacity as a guiding principle, it may be stated that a route may be operated only if all the costs are met and if the route feeds another route, it should atleast meet the cash costs of operations.

In case it is considered essential to have certain routes operated inspite of their not satisfying this principle, the airlines should be compensated for the difference between the operating cost and the revenue. This would enable the Government to assess the economic loss when uneconomic routes have to be operated for socio/political reasons.

#### **Internal Resources :**

The two major components of Internal Resources are Profits and Depreciation.

As far as profits are concerned, Air India and Indian Airlines have been making considerable profits for the last 10 years except two years (1979/80 and 1980/81). The profits of IAAI has also been consistently increasing, though this has been achieved solely by increasing landing fees and parking charges periodically.

4.2 The financial performance of Vayudoot indicates that it has been making losses if all direct and indirect subsidies are taken into account. However, this is understandable in a new unit.

## 5. Depreciation

5.1 Apart from profits, the other component of internal resources is depreciation. In the past, Indian Airlines has been providing for depreciation at a level less than what is allowed under Income Tax laws. The fares/rates fixed on lower depreciation mean that these are not cost based. The internal resources of Indian Airlines would have been at a higher level if the full depreciation allowed under the Income Tax laws were to be taken into account.

5.2 It might be considered that Indian Airlines should work out depreciation on the basis of 7/8 years and on this basis evolve their fares and rates. The advantage of such a procedure would be that both Indian Airlines and Vayudoot would have sufficient resources to compensate for increase in the capital cost of aircraft. This procedure would be somewhat akin to the concept of computing depreciation on the basis of replacement cost. Additionally, this procedure would provide flexibility in pursuing appropriate replacement policies aimed at achieving higher profitability and maximising the revenues. Adoption of a similar policy for Air India, while it would not help in its primary policies, would greatly assist the airline in its fleet renewal programme.

5.3 As far as IAAI is concerned, the working Group felt that computation of depreciation should be on the basis of replacement cost. Such a procedure would enable IAAI to fix appropriate airport charges and provide support in negotiating for landing and parking charges with IAAI.

5.4 Coupled with the improvements in productivity of equipment and manpower and reducing the unit cost, there is some scope for improving revenues on the domestic sectors through more appropriate and judiciously conceived pricing policies.

5.5 The Group recommends the setting up of a small (say 3 to 4 members) Independent Airfares Committee consisting of professionals to monitor the domestic fares and deal with all requests for adjustments in fares in future.

## 6. External Resources :

In addition to augmenting finances through Internal Resources the Group suggests the following measures to raise finances from external resources:

### 6.1 Lease financing :

It should be possible for both the national airlines to acquire aircraft on lease-which may be either financial leases or operating leases. In case of financial leases, while leveraged leases have for the time being become difficult to secure due to changes in laws of countries which were the sources of such transactions, ordinary non-leveraged

leases are readily available. However, these leases run into a few technical problems in India.

Foreign leasing companies registered outside India and not carrying on business in India are not allowed to register aircraft in India. If Air India or Indian Airlines have to operate aircraft leased under this arrangement, then it is essential that such aircraft are permitted to be registered in India, without which such leases may be difficult.

Secondly, interest payable on loans raised through traditional financing is exempt from withholding taxes. However, in case of leases from foreign lessors the entire lease rental payment attracts withholding taxes at 73.5% unless such lessors are residents in the country with whom India has a double taxation avoidance agreement. If leasing is to be encouraged as a major tool for the airlines' growth, this provision should be abolished.

The advantage in financial leases would be that the Government may be able to keep their quantum out of its foreign debt figure and thus they would not impair the country's borrowing ability. Operating leases in any case do not figure in the foreign debt and in fact would not even be on the balance sheets of the airlines.

#### **Privatisation :**

Since the Government may not find it possible to provide additional equity capital to the various units in the sector due to paucity of resources, it may be worthwhile to consider partial privatisation of these units with the majority holding remaining with the Government. There are three avenues of privatisation viz :

- (i) **Partial equity holding by the staff of the organization :** This can be only a minor source of providing equity. There should be no objection to this since this would, in fact, improve morale and increase employee commitment.
- (ii) **Resident Indian Nationals :** This can be a much larger source for increasing the capital base of the organisations and improving their borrowing power. The Group recommends this avenue.
- (iii) **Non-resident Indians:** This can be a very major source of additional equity, but this has other implications which the Government may need to examine.

In case of an organisation like Air India, its conversion into a joint stock company with a part of its equity capital being released for public investment would, in fact, help to give it greater commercial orientation and user sensitivity.

However, in making these suggestions, the Group recognizes that this is a matter of overall national policy and there may be other factors influencing the approach to the subject.

## 8. **International Airports Authority of India**

- 8.1 As mentioned earlier, IAAI have been earning profits. However, it has been able to provide for only 60 to 70% of its expenditure and the balance is provided through budgetary support. Also it has been able to increase its profits solely by increasing landing fees and parking charges coupled with some increase in traffic.
- 8.2 The Group felt that there has been too much emphasis on raising resources through periodical increases in landing fees etc. Our landing fees are already high by international standards and can no longer be treated a source of ever increasing gains. The situation elsewhere seems to be different and it is the trading concessions eg. shop rentals, hoardings, advertising, percentage on sale, duty free shops and entertainment etc. which provide the bulk of the resources for the Airport Authorities. This is so in U.K., Hong Kong, Singapore, Australia etc. where between 50 to 60% of the revenue is from trading concessions. This is a much more acceptable method of raising resources and it is necessary that IAAI pay due attention to it. This would also mean that in planning of future terminal buildings, adequate areas will have to be earmarked for providing such services.

## 9. **Director General Civil Aviation/National Airports Authority**

- 9.1 Route navigation and landing charges are the sources of revenue for DGCA/NAA. ICAO has given certain guidelines to compute cost of landing aids and navigation facilities and according to the guidelines, full cost for providing such facilities should be recovered from the users. However, DGCA/NAA have not been able to do so because the DGCA (before the formation of NAA) was not maintaining accounts on a commercial basis.
- 9.2 With the formation of NAA, it will not be possible to determine the cost of providing such facilities and, therefore, it will be possible to levy charges in relation to the cost. The Group is of the view that the services provided by NAA should be fully recovered from the air passengers. However, considering the subsidised rates charged by DGCA in the past, it may not be feasible to increase these charges drastically in a short period of time, and they will have to be stepped up gradually.
- 9.3 Vayudoot is not paying the present rate of charges to NAA. Since NAA is already subsidising air passengers, it is not appropriate to build in further subsidies into the system. Like the IAAI, NAA has also scope, though relatively limited, for raising resources through trading concessions and it is necessary that they should draw plans to do so.

## CHAPTER X

### CIVIL AVIATION & NET FOREIGN EXCHANGE BALANCE

The Group realized that in projecting and recommending a certain level of investment in the civil aviation sector upto the year 2000, the element of foreign exchange in that investment will become a major constraint, and possibly an important consideration in approving the investments. It was, therefore, considered necessary to have a detailed study done of the net foreign exchange balance for the individual constituents and of the entire civil aviation sector as a whole. This task was assigned to a professional consultant whose report forms Annexure V.- (separate volume).

The consultant's report gives the estimated costs to be incurred in foreign exchange on the basis of likely cost escalations in different areas and the estimates of foreign exchange revenues under different scenarios of growth rate. The foreign exchange costs have been worked out at different levels of growth rates i.e. the costs likely to be incurred in pursuing a certain level of growth. The foreign exchange earnings similarly begin with a scenario of constant yields and proceeds, therefrom to the yield levels which would create a 'no surplus/no deficit' situation. Any increase in yields, if commercially feasible, would naturally produce a positive foreign exchange net balance.

Since the time at the disposal of the Group was short and the subject presented a number of complexities, it was not possible for the Group to verify item by item the correctness of the assumptions made as regards cost escalation, the break up of the revenues as between rupee earnings and foreign exchange earnings, and the commercial feasibility of achieving different levels of yields. To that extent, the results of the study should be treated mainly of an indicative nature, to be used as guidelines by the Managements of the airlines and other constituent units in the formulation of their policies as regards costs and revenues so that paucity of foreign exchange resources does not become a constraint in pursuing a growth rate which may otherwise be achievable and desirable.

#### Indian Airlines

The table below gives the foreign exchange cost, foreign exchange revenue and the foreign exchange deficit for Indian Airlines for a growth rate of 10.0%. ✓

	<u>Foreign Exchange Cost</u>	<u>Foreign Exchange Revenue</u>	<u>Foreign Exchange Deficit</u>
	<i>(U S \$ Million)</i>		
1986 - 91	1,547	693	854
1991 - 96	4,785	985	3,800
1996 - 2001	12,768	1,556	11,212

The figures of foreign exchange deficit look absurd because this is the scenario based on escalation in costs but no increase in yields. At different levels of growth, varying yield increases would be required to break even or to in fact produce a surplus.



3. **Air India**

3.1 As far as Air India is concerned the study gives the following picture :

	<u>Foreign Exchange Revenue</u>	<u>Foreign Exchange Cost</u>	<u>Foreign Exchange Deficit</u>
	<i>(U S \$ Million)</i>		
1986 - 90	3,193	3,368	175
1990 - 95	5,576	8,526	2950
1995 - 2000	7,435	16,512	9077
Total	16,204	28,406	12,202

3.2 The above deficit gets wiped out at a yield increase of 7% which is not far from what has been historically achieved. It is the Groups view that the actual picture is likely to be considerably brighter. Firstly, in determining the projected fuel costs, the study has used base figures which are no longer valid. This is because in the last few months there has been a sharp decline in fuel prices—atleast outside India. Since fuel forms the single largest component of the airlines' operating costs, there is obviously an element of considerable over estimation in costs. The same is true though to a lesser extent, of interest rates for long term financing.

4. Another factor to be taken into account is that with the steps that are being contemplated to increase tourist traffic into India, the proportion of tourist traffic to the total incoming traffic (which is around 40% at present) is bound to go up since there has been virtually no growth in the last few years. This will have the effect of increasing the foreign exchange content of revenues not only of Air India but of Indian Airlines as well. The increased tourist traffic, will in turn, have its multiplier effect on foreign exchange earnings by other segments of the economy like hotels, industry, road transport etc. The Group, while realising that these latter earnings will not be directly credited to the civil aviation sector, considers that this benefit to the economy should also be taken into account when the needs of foreign exchange resources for the civil aviation sector are considered.

5. Also taking into account the long time span of upto 2000, there is likely to be an increasing degree of indigenization which will help to further bring down the foreign exchange costs.

6. The Group therefore came to the conclusion that taking into account the progressive improvement in yields, likely increase in tourist traffic, a more stable situation in fuel prices, and some degree of increased indigenization, there will be adequate foreign exchange surplus generated by the civil aviation sector.

Notwithstanding the position envisaged by the Group of civil aviation generating adequate foreign exchange for its development it is important that every effort must be made by everyone concerned to reduce the foreign exchange costs and increasing foreign exchange revenues. Towards this end the Group recommends that :

1. Aircraft acquisition plans should be prepared judiciously and sudden increases and decreases in fleet sizes should be avoided.
2. Reduction in repair costs is achievable by reducing as far as possible outside repairs and through greater co-ordination between the airlines and greater pooling of available resources.
3. Utmost control on costs, particularly administrative costs should be exercised.
4. Constant efforts must be made towards increasing revenues from international traffic by increasing yields and the traffix mix.

## CHAPTER XI

### SUMMARY OF RECOMMENDATIONS

A brief summary of the recommendations contained in this report is given below.

1. In order to play its proper role in carriage of passenger and cargo traffic on the domestic sector, Indian Airlines should plan for an annual growth rate of 11.5% in passenger traffic and of 11.2% in cargo traffic.
2. International passenger traffic into and out of India is likely to grow at an annual rate of 6% in the next 15 years. It should be possible for Air India, however, to improve its present share of the market and achieve a growth rate of 6.9% per annum.
3. This improvement in market share should be possible particularly by Air India improving its performance in the South East Asian, the European and the USA markets through increased capacity and through deployment of the right type of aircraft and operation of faster services.
4. With a determined and well planned approach, it should be possible to achieve a rate of growth of 10% in international tourist traffic into India. If this happens, then the overall growth of passenger traffic into and out of India would go up from 6% to 8%.
5. At the recommended level of growth rates, the requirement of aircraft for replacement and growth and the corresponding level of investments would be as follows :

	<b>Air India</b>	<b>Indian Airlines</b>	<b>Vayudoot</b>
Number of aircraft	45	193	52
Investment (Rupees in crores - 85/86 prices)	6,073	8,998	341.52

6. In so far as Vayudoot is concerned, it is essential that it should grow, like Air India, and Indian Airlines within the framework of a co-ordinated and properly evaluated plan. It should remain a low cost operation, making minimal demands on the infrastructure.
7. As a general guideline, air services for distances less than 300 kms. are not likely to be economical as compared to other modes of transport. Therefore, except where the terrain or natural obstacles makes it necessary, very short haul operations should be undertaken only after a detailed study, and after working out the cost to the national economy.

In so far as the Helicopter Corporation of India is concerned, it is felt that helicopters, due to their very high cost of operation, have only a very minor role to play in civil aviation and their use is likely to be confined primarily to other sectors. In view of this, it is recommended that investments in helicopters should, in fact, be kept out of the allocation for the civil aviation sector.

Air Taxi services can play a role in promoting tourist traffic. For this purpose, the Government may consider some import of aircraft upto 10 seater capacity for a limited number of operators.

The growth in tourism has been nearly stagnant and it is necessary to take several steps to improve the situation. Quicker immigration and customs clearance of tourists should be aimed at by having separate counters, particularly at Bombay and Delhi for clearance of foreign passport holders. The feasibility of introducing on non-stop long haul flights, inflight immigration and customs clearance should be examined.

Larger investments to improve and modernize the infrastructure are necessary and the outlay in the current plan of Rs. 326 crores needs to be substantially increased.

The funds allocated for the tourism sector should be used for developing some selected and popular places of tourist interest such as Agra, Jaipur, Srinagar, Varanasi, Goa etc. to bring the infrastructural facilities at these places to the international level, instead of frittering away sums of money on less important places with no immediate potential.

It would be advisable to plan for additional 50,000 hotel rooms of the three, four and five star category. This can easily be done in the private sector.

The hotel industry should be recognised as an export oriented industry.

In view of the tremendous potential for trekking and mountaineering in India, development of this traffic should also be given special attention by bringing the facilities for trekkers to international standards. It may be advisable to avail of the services of a couple of international experts in the matter.

In evaluating the social cost/benefits of civil aviation sector to the national economy, the conclusion was that investments in the civil aviation sector would produce a positive return and prove beneficial to the national economy.

Due to lack of co-ordinated development in the past, the airports and airport facilities have been lagging behind. The recommendations made in the report of the Working Group II should be implemented with special emphasis on the following items.

It is necessary to acquire land and commence development work for a new international airport at Bombay. However, the site for this will have to be selected most carefully

keeping all factors in mind, particularly easy access to Bombay. It will be advisable to get this matter examined on a priority basis by an expert group which should include a couple of international experts with the requisite background and experience.

19. The work on Module III of the international Terminal Complex of Bombay should be commenced immediately.
20. The construction of a second module for the Indira Gandhi International Airport at Delhi should be initiated, and work on the second module for domestic traffic should commence by 1990.
21. The work on the second module of the Calcutta Domestic Terminal should be commenced by 1992.
22. Airport development should be planned on a long term basis with adequate provision for future expansion. For this advance land zoning and planning is essential.
23. A projection of navigation and communication equipment required on a planned basis should be made sufficiently in advance (say 3 years) to enable indigenous development/manufacture of equipment or Manufacture in Collaboration wherever feasible.
24. Aeronautical communications should be provided as per the criteria laid down by ICAO in order not to jeopardize safety of aircraft operations.
25. Plans should be made out for induction by 1990 of Automatic Message Switching system and Data Links at Bombay, Delhi and Calcutta. HF/Microwave links between airport terminals and city telecommunication terminals at Bombay, Delhi, Calcutta, Madras and Nagpur; and establishment by the same date of dedicated satellite earth stations at airport terminals at Bombay, Delhi, Calcutta and Madras.
26. Installation of UHF/microwave links and satellite earth stations at other centres should be planned on a progressive basis to cover the whole of India.
27. There should be greater co-ordination between civil and military authorities and the need for civil aircraft to obtain air defence clearance should be dispensed with.
28. For development of airports and airport facilities, investments of the following order would be needed upto the year 2000.

**1986-2000**

(Rs. in Crores — 85/86 Prices)

Terminal Complexes	639.18
Navigational & Approach Aids	173.10
Communication facilities	68.60
Air Traffic Services	541.28
General	96.30
Land Cost for Bombay Airport	1,500.00
	<b>3,018.46</b>

There are several areas where productivity of key technical personnel like pilots and engineers and of cabin crew can be improved. These improvements, if achieved, can substantially reduce the manpower requirements and make operations more economical.

If the constituent units find it difficult to achieve these improvements due to constraints of collective agreements etc., it may become necessary for the Government to arbitrate in the matter.

For IAAI, NAA & DGCA a separate detailed study should be conducted to evolve suitable productivity norms since none exist at present.

For training of pilots, the existing flying clubs can be upgraded to provide PPL training for fresh entrants as it will not be possible for the Indira Gandhi Uran Academy to meet the proposed requirements.

The basic requirements for award of ALTP with respect to experience should be restricted to 250 hours.

The induction of Pilots to the airlines should be made through Vayudoot and second officers in large multi engine heavy aircraft.

For training of Engineers and Technicians, the syllabus and the practical orientation of courses offered by private institutions should be monitored by DGCA and the system of accrediting these institutions should be developed.

It will be economical for the Indira Gandhi Academy to develop a Technicians' training programme.

For Engineers' training it is considered advisable to develop a four year programme with induction level of these trainees at B.Sc. level.

To take care of the advancement in the aircraft engineering technology, educational institutions such as IIT should be asked to develop a five year integrated programme with specific emphasis on aircraft maintenance engineering.

The aviation sector should become a subscriber of satellite based (INSAT) Network being planned by DOT and DOE.

Automation in office functions with priority to electronic mail, electronic filing, word processing/data base management etc. should be expedited.

It is recommended that a group is set up to examine the requirements of automation in aviation sector.

42. It should be necessary to maintain close co-ordination between the computer applications developments in the areas of message switching taking place in these three organizations.
43. It would be the endeavour of the airlines catch up with the international carriers latest by 1995 by giving high priority to computerization in their future plans.
44. It would be advisable if the necessary provisions for the procurement of computer systems to meet the requirements of growth in traffic area are built into the fleet investment plans of the Corporation.
45. Organizations in the civil aviation industry should register their specific requirements well in advance so that they can be taken into account for the satellite based domestic communications network planned by the DOT.
46. Air India should participate in the INMARSAT system by installing appropriate equipment on its aircraft and DOT should set up the necessary ground stations.
47. Investment in automation at 7½% of the investments in aircraft and other proposed facilities for airports, which will approximately be around Rs. 1230 crores, may be needed upto 2000 A.D.
48. There is clearly scope for a greater degree of co-ordination and co-operation between the various constituents of the civil aviation sector.
49. Formulation of a holding company exercising many of the powers presently vesting in the Government could be a possible solution. However, this matter is being presently examined by a separate expert Group set up by the Government for the purpose.
50. There is need to give much more autonomy to the Airlines than they enjoy at present, whereby they seem gradually to have become almost like departments of the Governments.
51. The Boards of Directors of Airlines should contain few bureaucrats and there should be a much larger representation from professions, industry and trade.
52. There is need to strengthen the Planning set up in all the constituents units since at present these are extremely deficient or non-existent.
53. There should be better apportionment of routes between Indian Airlines and Vayudoot. Secondary routes requiring capacity of 40/50 + seats should be allotted to Vayudoot while Indian Airlines should concentrate on trunk and other primary routes.
54. The total investment in the civil aviation sector upto year 2000 is likely to be of the order of around Rs. 20,000 crores most of it in the national airlines, who may not find it possible to meet the entire investment out of their internal resources and may require some budgetary support.
55. In order to improve availability of resources externally, several steps can be taken as given below.

56. Lease financing should be made easier by changing the existing regulations relating to registration of aircraft, withholding taxes etc.
57. The possibility of raising additional equity capital for the airlines, particularly Air India, through partial privatization by offering equity holding to the staff and to resident Indians is also recommended.
58. IAAI, and to a lesser extent, NAA, should endeavour to develop other sources of increasing revenue from trading concessions like shop rentals, hoardings, advertising, percentage on sale, duty free-shops etc. instead of relying only on landing and other fees.
59. The foreign exchange component of the total investment is likely to be a constraint in approving the investments. Through an appropriate control on costs and steps to increase revenue, the civil aviation sector should be able to achieve a positive net foreign exchange balance.
60. It is recommended that a small (say 3 to 4 member) independent Airfares Committee should be set up to monitor the domestic fares and deal with all requests for adjustments in fares in future.

Shri J.R.D. Tata  
Chairman



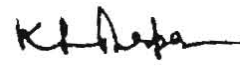
Capt. K. Chadha  
Member



Shri K.G. Appusamy  
Member



Shri K.L. Thapar  
Member



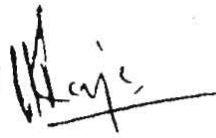
Dr. H.K. Paranjape  
Member



Dr. N.W. Nerurkar  
Member



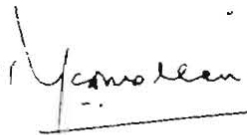
Air Marshal C.K.S. Raju  
Member



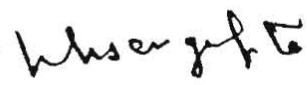
Shri C.L. Sharma  
Member



Air Marshal M.S.D. Wollen  
Member



Dr. N.K. Sengupta  
Member



Prof. R. Narasimha  
Member

Sd/-

AVM. P. Singh  
Member

Sd/-

Wing Commander P.R.P. Rao  
Member

Sd/-



## COMPOSITION AND TERMS OF REFERENCE OF WORKING GROUPS

### WORKING GROUP I — TRAFFIC FORECASTS

- Members each from:
1. Air India
  2. Indian Airlines
  3. Vayudoot
  4. Department of Tourism

Coordinators : Mr. K.L. Thapar  
Mr. C.L. Sharma  
Dr. H.K. Paranjape

#### Terms of Reference

##### Ref. to Governmental Notification

- i) To study the past trends in growth of passenger traffic and air cargo including developments in the patterns of air services over the last two decades and projected developments for the period ending 2000 A.D. based on the inter-modal allocation of traffic, appropriately phased over 5 years period ending 1990, 1995 and 2000 A.D.
- ii) To review the existing network of airlines with a view to restructuring them to the extent necessary taking into account the future role of air transport in the planned development of the country.
- v) To assess the requirements of aircraft and related equipment up to 2000 A.D. appropriately phased over 5 year periods.

#### Guidelines

The Working Group Will :

- a) Analyse historical data on air traffic growth and determine the anticipated growth in pax. and cargo traffic separately with respect to international, domestic and regional traffic and the composition of pax. traffic by major segments namely ethnic, tourist and business;
- b) consider the impact of shift of traffic to civil aviation from other modes of transport;
- c) examine existing route network and identify areas for realignment/expansion;
- d) laydown principles governing development of domestic intercity transport of short-haul nature vis-a-vis other modes of transport in terms of resource allocation and economic social benefits;
- e) assess the national carrier's share of pax. and cargo traffic flows and their aircraft and related equipment requirements;
- f) identify specific places of tourist interest which require concentrated development and also places which could be developed in future;
- g) other related matters.

Note : It is proposed to engage a consultancy firm to assist the Group. The Group can also co-opt additional members as necessary.

## WORKING GROUP II — AIRPORTS & AIRPORT FACILITIES

### Members each from:

1. Dept. of Civil Aviation (DGCA)
2. IAAI
3. IAF
4. Meteorological Department
5. Air India
6. Indian Airlines
7. Dept. of Electronics (Mr. Arora)

### Coordinators :

- Air Marshal C.K.S. Raje  
Capt. K. Chadha  
Prof. R. Narasimha

### Terms of Reference

#### Ref. to Governmental Notification

- iii) To make an assessment of the existing technologies and technological development forecasts in the next 15 years in the Civil Aviation Sector and to consider their applicability and adaptability to Indian conditions with due regard to the economics of different technologies for long term options.
- vi) To assess requirements of infrastructure facilities at international as well as domestic airports up to 2000 A.D.
- vii) To assess the requirements of communication and navigation infrastructure for safe and efficient operation of aircraft.

### Guidelines

The Working Group will :

- a) consider the traffic forecasts and determine the extent of development and other requirements at existing new international and domestic airports for :
  - passenger and cargo handling
  - runways, taxiways, apron facilities
  - visual aids
  - search and rescue facilities.
- b) assess air traffic services requirements in terms of :
  - airspace management including ATS routes, restricted/prohibited/danger areas
  - terminal area and enroute navigation air requirements
  - communication facilities (fixed and mobile)
  - radar facilities
  - approach aids
  - meteorological services
  - surface movement control requirements
  - where required, identify redundant facilities for withdrawal.

Note : The Working Group should take into account the ICAO Regional Plan and airline requirements.

The Group can coopt additional members as necessary. The requirements should be assessed for 5 year period sending 1990, 1995 and 2000 A.D.

## **WORKING GROUP III — MANPOWER DEVELOPMENT & PRODUCTIVITY**

- Members each from:**
1. Dept. of Civil Aviation (DGCA)
  2. IAAI
  3. Air India
  4. Indian Airlines

**Coordinator :** Mr. H.C. Kapoor

### **Terms of Reference**

#### **Ref. to Governmental Notification**

- iv) To study the productivity and efficiency of the various constituent units of civil aviation sector with a view to recommending suitable norms and measures to improve productivity.
- viii) To assess the manpower needs for the development of civil aviation sector and recommend appropriate training programmes and other measures for manpower development consistent with future development plans and projected technological changes.

### **Guidelines**

The working Group will :

- a) study manpower requirements for airlines and civil aviation sectors;
- b) examine the productivity and efficiency of manpower employed in airlines, DGCA, IAAI etc. and suggest ways and means of improving them;
- c) assess the adequacy of training facilities and to assess the capacity to meet future needs of airlines;
- d) the assessment of requirements should be done for the 5-year period ending 1990, 1995 and 2000 A.D.;
- e) other related matters.

**Note :** The Working Group can coopt additional members as necessary.

## WORKING GROUP IV -- ORGANISATION AND FINANCE

### Members each from:

1. Dept. of Civil Aviation (DGCA)
2. Civil Aviation Security
3. Planning Commission
4. IAAI
5. Air India
6. Indian Airlines

### Coordinators :

- Air Marshal M.S.D. Wollen  
Mr. K.G. Appusamy  
Dr. H.K. Paranjape

### Terms of Reference

#### Ref. to Governmental Notification

- iv) to study the productivity and efficiency of the various constituent units of civil aviation sector with a view to recommending suitable norms and measures to improve productivity.
- ix) To recommend policy changes consistent with future development plans including financial, operational and pricing policies to ensure development of the setor on a sound commercial basis.
- x) To recommend organisational and institutional measures to systematise long term planning for the sector on a sound technical and economic basis.

### Guidelines

The working Group will :

- a) assess the availability and allocation of financial resources for civil aviation development ;
- b) determine the method of raising finances for providing civil aviation infrastructure facilities ;
- c) examine the pricing policies of the national airlines ;
- d) examine the utilisation of aircraft and other equipment available with airlines and also the facilities at airports etc. and suggest ways and means of improving them ;
- e) review organisational structure of the Civil Aviation Department, IAAI and NAAI, with particular reference to :
  - management of international and domestic airports
  - provision of air traffic services, communication, navigation facilities
  - regulatory functions such as licensing of aircraft and personnel, tariffs and bilateral agreements etc ;
- f) consider the need for establishing and Central Civil Aviation Security Force ;
- g) other related matters.

Note :The Working Group can coopt members as necessary.

The Assessment of requirements should be done for the five-year period ending 1990, 1995 and 2000 A.D.

APPENDIX - I

**NAMES OF WORKING GROUP MEMBERS**

**GROUP I : (TRAFFIC FORECASTS) MEMBERS**

Air India	Mr. H.K. Malik, Commercial Director
Indian Airlines	Mr. R. Prasad, Dir. of Planning or Mr. G.K. Agarwal, Sr. Dy. Planning Manager
Vayudoot	Mr. Harsh Vardhan, General Manager
Deptt. of Tourism	Mr. Ramesh Chandra, Add. D.G., Tourism

**CO-ORDINATORS**

Mr. K.L. Thapar, Advisor  
(Transport), Planning  
Commission.

Mr. C.L. Sharma, Dy. M.D.,  
Air India.

Dr. H.K. Paranjape,  
Economist.

**GROUP II : (AIRPORTS & AIRPORT FACILITIES)**

DGCA	Mr. R.R. Chandramouli, Dir. of Aerodromes.
IAAI	Mr. K.K. Sud, Member (Engineering)
IAI	AVM P. Sing
Meteorology Deptt.	Mr. S.K. Das, D.G.
Air India	Capt. K.G. Rao, Dir. of Operations
Indian Airlines	Mr. R. Prasad, Dir. of Planning or Mr. G.K. Agarwal, Sr. Dy. Planning Manager
Deptt. of Electronics	Mr. R.K. Arora, Joint Secretary

Air Marshal C.K.S. Raju,  
Chairman, NAA

Capt. K. Chadha, MD,  
Indian Airlines.

Prof. R. Narasimha,  
Director, NAI.

APPENDIX I (Contd.)

<b>GROUP III : (MANPOWER DEVELOPMENT &amp; PRODUCTIVITY)</b>		<b>CO-ORDINATORS</b>
DGCA	Mr. S.P. Muryu, Dir. (A.W.), Bombay Airport.	Mr. H.C. Kapoor, Dy.MD. Air-India.
IAAI	Mr. G.S. Gupta, Member (Fin. & Admn.)	
Air India	Mr. H.C. Kapoor, Dy. MD	
Indian Airlines	Mr. Ashok Bhushan, Chief Industrial Engineer.	
<b>GROUP IV : (ORGANISATION &amp; FINANCE)</b>		
DGCA	Mr.T.S. Venkataraman, Dir. of Commn. (T&M), DGCA, Headquarters	Air Marshal M.S.D. Wollen, Chairman, HAI.
(Civil Aviation Security Deleted)		Mr. K.G. Appusamy
Planning Commission	Mr. B.N. Puri, Sr. Research Officer, Transport Wing	
IAAI	Mr. G.S. Gupta, Member (Fin. & Admn.)	Dr. H.K. Paranjape, Economist.
Air India	Mr. V.R. Kulkarni, Dir. of Finance	
Indian Airlines	Mr. R.N. Saxena, Sr. AFC (Planning)  Mr. B.S. Das, Advisor, Golden Tobacco Co. Ltd.	

TABLE  
INCREMENTAL COSTS

(Rs. crores)

	1986-87		1987-88		1988-89		1989-90		1990-91*	
	Local	F.E.	Local	F.E.	Local	F.E.	Local	F.E.	Local	F.E.
<b>A. INCREM. AIR INVESTMENT</b>										
1. Aircraft :										
Air India	20.04	122.92	18.37	135.33	32.98	194.25	28.33	178.98		
IA	14.61	87.47	14.85	102.09	21.13	163.30	15.52	169.60		
Sub-total	34.65	210.39	33.22	237.42	54.11	357.55	43.85	348.58	164.00	1123.59
2. Other Equipment :										
Air India	64.06	17.24	51.42	16.31	37.61	11.02	31.12	9.52		
IA	39.45	2.70	37.71	2.43	39.39	2.71	20.18	2.27		
Sub-total	103.51	19.94	89.13	18.74	77.00	13.73	51.30	11.79	16.47	3.67
3. Airports :										
IAAI	51.15	0.00	60.38	0.00	60.53	0.00	47.54	0.00		
DGCA	81.98	9.43	80.93	9.42	74.45	13.81	64.32	15.90		
Sub-total	133.13	9.43	141.31	9.42	134.98	13.81	111.86	15.90	0.00	0.00
4. C. N. R & O										
	60.33	0.00	60.33	0.00	60.33	0.00	60.33	0.00	275.95	0.00
5. Met. Dept.										
	1.10	0.56	1.10	0.56	1.10	0.56	1.10	0.56	14.33	2.46
Total (1-5)	332.72	240.32	325.09	266.14	327.52	385.65	268.44	376.83	470.75	1129.72
Ajdst. factor (25 premium for F.E.)	1.00	1.25	1.00	1.25	1.00	1.25	1.00	1.25	1.00	1.25
ECONOMIC COST	332.72	300.40	325.09	332.68	327.52	482.06	268.44	471.04	470.75	1412.15

(Contd. ...)

TABLE (Contd.)

	(Rs. crores)									
	1986-87		1987-88		1988-89		1989-90		1990-91*	
	Local	F.E.	Local	F.E.	Local	F.E.	Local	F.E.	Local	F.E.
<b>B. INCREM. RAIL INVESTMENT</b>										
Increm. m. RPKM	210.45	0.00	367.59	0.00	413.27	0.00	464.72	0.00		
Invest. cost (Rs. per RPKM)	0.43	0.00	0.43	0.00	0.43	0.00	0.43	0.00		
Total invest. (Rs. crores)	9.05	0.00	15.81	0.00	17.77	0.00	19.98	0.00	80.67	0.00
Adjust factor (25% premium for F.E.)	1.00	1.25	1.00	1.25	1.00	1.25	1.00	1.25	1.00	1.25
ECONOMIC COST	9.05	0.00	15.81	0.00	17.77	0.00	19.98	0.00	80.67	0.00
NET ECONOMIC										
COS ( = A-B)	323.67	300.40	309.28	332.68	309.75	482.06	248.46	471.84	390.08	1412.15
Present value @ 12%	228.99	268.21	246.56	265.21	220.47	343.12	157.90	299.35	221.34	801.29
Total PV (Rs. crores)	3112.45									

Source of Cost Data : Items 1, 2, 3 : Report of the Working Group on Civil Air Transport for Seventh Five Year Plan.  
 Items 4,5 : Report of the Working Group -- II Constituted by the Planning Group on Civil Aviation on Airports & Airport Facilities.  
 C.N.R. & O : Communication, Navigational Aids, Radar & Other Facilities.  
 Met. Dept. : Meteorological Department.

**Note :** \* The last 2 columns marked by an asterisk contain estimated present values (@ 12%) in 1990-91 of the stream of costs likely to be incurred during 1990-91 to 1994-95.



TABLE  
INCREMENTAL BENEFITS

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
I. Income Generated by Tourist Expenditure						
a) Domestic :						
Proj. Traffic (mil. RPKM)	3550.00	3824.87	4286.60	4803.94	5383.89	
Incram. m. RPKM	—	274.87	736.60	1253.94	1833.89	
Incram. Tourists (av. lead-800 Km.)	—	343588	920744	1567425	2292363	
Less intern. tourists	—	34108	70685	109616	151134	
Net Domestic tourists	—	309480	850059	1457809	2141228	
Per cap. Expend. (Rs.)	—	1779.00	1779.00	1779.00	1779.00	
Total Expend. (Rs. crores)	—	55.06	151.23	259.34	380.92	
Income Multiplier	—	3.20	3.20	3.20	3.20	
Income Generated (Rs. crores)	—	176.18	483.92	829.90	1218.96	
% of tourists who may not travel in absence of air service	—	15.00	15.00	15.00	15.00	
Net income generated	—	26.43	72.59	124.49	182.84	1428.14*

(Contd...)

TABLE (Contd.)

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
b) International :						
Proj. Incoming Traffic						
S-W Pacific (m. RPKM)	220.81	230.97	241.60	252.72	264.35	
Incram. m. RPKM	—	10.16	20.80	31.92	43.55	
Average lead (Km)	—	8850.00	8850.00	8850.00	8850.00	
Incram. passengers	—	1149	2350	3606	4921	
Incram. Foreign Tourists**	—	574	1175	1803	2460	
Europe (m. RPKM)	2697.09	2872.84	3056.80	3249.51	3451.48	
Incram. m. RPKM	—	175.75	359.71	552.42	754.38	
Average lead (Km)	—	6550.00	6550.00	6550.00	6550.00	
Incram. Passengers	—	26832	54918	84338	115173	
Incram. Foreign Tourists**	—	13416	27459	42169	57587	
Middle East (m. RPKM)	2194.43	2277.18	2362.04	2452.15	2542.41	
Incram. m. RPKM	—	82.75	168.61	257.71	347.98	
Average lead (Km)	—	2760.00	2760.00	2760.00	2760.00	
Incoming Foreign Tour	80000	83016	86146	89393	92764	
Incram. Foreign Tourists**	—	3016	6146	9393	12764	
N. America (m. RPKM)	998.06	1072.06	1154.14	1242.51	1337.64	
Incram. m. RPKM	—	73.99	156.08	244.44	339.57	
Average lead (Km)	—	12514.00	12514.00	12514.00	12514.00	
Incram. Passengers	—	5913	12472	19534	27136	
Incram. Foreign Tourists**	—	2956	6236	9767	13568	

(Contd...)

TABLE (Contd.)

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
C-W Africa (m. RPKM)	94.28	98.71	105.25	109.61	113.95	
Increm. m. RPKM	—	4.42	10.96	15.33	19.66	
Average lead (Km)		7832.00	7832.00	7832.00	7832.00	
Increm. Passengers	—	565	1400	1957	2511	
Increm. Foreign Tourists**		282	700	979	1255	
S-E Asia (m. RPKM)	766.57	842.99	927.02	1019.42	1121.04	
Increm. m. RPKM	—	76.41	160.44	252.85	354.47	
Average Lead (Km.)		3496.00	3496.00	3496.00	3496.00	
Increm. Passengers	—	21857	45893	72326	101392	
Increm. Foreign Tourists**	—	10929	22947	36163	50696	
N-E Asia (m. RPKM)	298.84	317.37	337.05	358.51	380.84	
Increm. m. RPKM	—	18.53	38.20	59.67	82.00	
Average lead (Km)		5336.00	5336.00	5336.00	5336.00	
Increm. Passenger	—	3473	7160	11182	15367	
Increm. Foreign Tourists**	—	1736	3580	5591	7683	
E. Africa (m. RPKM)	210.81	220.77	231.13	242.01	253.41	
Increm. m. RPKM	—	9.96	20.32	31.20	42.60	
Average lead (Km)		4159.00	4159.00	4159.00	4159.00	
Increm. Passengers	—	2396	4885	7502	10242	
Increm. Foreign Tourists**	—	1198	2442	3751	5121	
Total Increm. Tourists		34108	70685	109616	151134	
"Genuine" Foreign Tourists		31038	64323	99751	137532	

(Contd.)

TABLE (Contd.)

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
Per Capita Expend. (Rs.)		11319.00	11319.00	11319.00	11319.00	
Total Expend. (Rs. crores)		35.13	72.81	112.91	155.67	
Direct Inc. Multiplier		0.30	0.39	0.39	0.39	
Direct Inc. Generated (Rs. crores)		13.70	28.39	44.03	60.71	
Direct Inc. Generated applying premium of 25% (Rs. crores)		17.13	35.49	55.04	75.89	
Indirect + Induced Inc. Multiplier		2.81	2.81	2.81	2.81	
Indirect Inc. Generated (Rs. crores)		98.72	204.59	317.27	437.44	
Total Income Generated (Rs. crores)		115.85	240.08	372.31	513.33	4009.55*
<b>TOTAL INCOME GENERATED</b> Domestic + Foreign (Rs. crores)		142.27	312.67	496.80	696.17	5437.69*
2. Incremental Value added by Air India						
Est. of value added (Rs. crores)	192.19	284.09	350.78	426.74	463.76	
Increm. value added (Rs. crores)		91.90	158.59	234.55	271.57	2121.20*

(Contd...)

TABLE (Contd.)

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91
3. Landings Fees from Foreign Airlines						
Est. of Landing Fees (Rs. crores)	18.65	22.38	26.85	32.22	38.67	
Incram. Landing Fees	—	3.73	8.20	13.57	20.02	156.37*
TOTAL BENEFITS (1 + 2 + 3) (Rs. crores)	—	237.90	479.46	744.92	987.76	7715.26*
DRAIN ON FOREIGN EXCHANGE						
Outward Indian tourist	1787697	1966467	2163114	2379425	2617368	
Incram. Indian tourist		178770	375417	591728	829671	
% travelling on FTS		16.00	16.00	16.00	16.00	
No. of Indians on FTS		28603	60067	94676	132747	
FTS drain @ \$ 500 each (US \$)		14301600	30033360	47338240	66373680	
Drain @ US \$ 1 = Rs. 12 (Rs. crores)		17.16	36.04	56.81	79.65	
Drain with premium of 25% (Rs. crores)		21.45	45.05	71.01	99.56	777.65*
NET BENEFITS (Benefits less drain) (Rs. crores)		216.45	434.41	673.91	888.20	6937.61*
PV of Benefits @ 12%		193.26*	346.31	479.68	564.47	3936.59*
Total Present Value (Rs. crores)		5520.30				

Note : \* Values denoted by an asterisk are the estimated present values (@ 12%) in 1990-91 of the stream of benefits or drain accruing during 1990-91 to 2005-06.

\*\* Incremental foreign tourists equal half of the incremental passengers.

## INVESTMENT REQUIRED FOR AIRPORT &amp; AIRPORT FACILITIES

Facilities Required	Ref. Working Group II Report - Para No.	PRIORITY		
		By 1990	1990-95	1995-2000
(Rs. in Crores)				
<b>I. TERMINAL COMPLEX</b>				
<b>Bombay Airport</b>				
i) III International Module	5.1.3	39.02	—	—
ii) Parallel Taxiway with high speed exits	7.5.7	1.80	—	—
iii) Second Airport for Bombay	5.1.10	1500.00	—	—
<b>Calcutta Airport</b>				
i) Domestic Module I	5.3.4	19.51	—	—
ii) Domestic Module II	5.3.4	—	19.51	—
<b>Delhi Airport</b>				
i) Domestic Module I	5.2.4	80.00	—	—
ii) Domestic Module II	5.2.4	—	80.00	—
iii) International Module II	5.2.2	—	80.00	—
iv) II Cargo terminal	5.2.6	—	3.00	—
<b>Madras Airport</b>				
i) New International Terminal	5.4.2	9.84	—	—
ii) II Domestic Terminal	5.4.4	—	x	—
<b>Domestic Airports</b>				
i) R/W extension at Ahmedabad, etc.	7.20.1/2/3	36.90	101.00	—
ii) Terminal facilities	7.20.4/6	32.05	91.75	—
iii) Cargo Facilities		32.5	12.30	—
<b>II. NAVIGATION/APPROACH AIDS</b>				
i) Installation of ILS at domestic airports and R/W 09 at Bombay and R/W 10 at Delhi.	7.5.12	24.51	10.36	11.84
ii) Microwave Landing System	7.5.8	—	—	8.00
iii) VORSDM's, TVORs, DVOR's	7.5.13/14	44.28	18.27	5.39
iv) Runway/approach lighting system VASIS/PAPI	7.14.2/3/4	11.35	28.30	10.80

APPENDIX III (Contd.)

Facilities Required	Ref. Working Group II Report - Para No.	PRIORITY		
		By 1990	1990/95	1995/2000
(Rs. in crores)				
<b>III. COMMUNICATION FACILITIES</b>				
i) VHF coverage throughout India	7.3.6, 7.7.1	0.40	0.25	—
ii) Replacement of VHF equipment I	7.7.1	1.50	6.34	—
iii) HF SSB on domestic routes	7.7.2	3.30	0.25	—
iv) Automatic Message Switching System & data links	7.9.1	6.00	—	—
v) Satellite Earth's Stations	7.9.1	4.50	3.60	9.00
vi) VHF/Microwave links between Airport and city centres.	7.9.1/2	0.80	3.40	—
vii) MAS (WT) circuits to be upgraded to LTT circuits	7.9.1	0.17	1.21	—
viii) Automatic Trunk Switching DSC/ATS circuits	7.9.2	0.15	0.18	—
ix) Voice Controlled Communication Switching System	7.9.5	9.88	4.55	—
x) Electronic Intercom and Telephone Exchanges	7.9.4	2.36	2.20	—
xi) Speech Recorders	7.11	2.76	3.96	—
xii) ATIS broadcasting facility	7.10.1/2	0.84	1.00	—

(Contd.)

Facilities Required	Ref. Working Group II Report - Para No.	PRIORITY		
		By 1990	1990/95	1995/2000
(Rs. in crores)				
<b>IV. AIR TRAFFIC SERVICES</b>				
i) SSR coverage	7.8.1	37.60	61.10	
ii) Automation of ATC & Technical Blocks	7.15/7.20.7	15.00	15.00	
iii) Terminal Area Radars & Air Route Surveillance Radars	7.8.1	130.40	166.80	
iv) Digital VDF equipment	7.5.15	3.90	1.05	1.50
v) Meteorological Facilities	4.2/4.3	11.14	23.81	23.13
vi) Rescue and Fire Fighting equipment First aid.	7.19	41.15	8.70	1.00
<b>GENERAL</b>				
i) Modernisation of Civil Aviation Training Centre/ Regional Training Centres	7.18	6.00	6.00	6.00
ii) Computerisation of inventory control and system engineering management	7.21/22	1.00	—	—
iii) Test equipment		31.50	42.00	—
iv) Regional Maintenance Centres		2.40	2.40	—
	Total expenditure	2,143.51	798.29	81.00



## SUPPLEMENTARY NOTE

*By Dr. H.K. Paranjape*

*(In view of Dr. Paranjape holding some different views on some of the issues a separate note giving his views has been reproduced in the following supplementary note as per his request)*

- 1.(1.01) One major subject on which I find myself in considerable disagreement with my colleagues in the Planning Group is regarding the development of international tourism as a major justification for the investment in the civil aviation sector. The Group quite clearly points out that "with so many competing demands for resources, investments in the civil aviation sector in India would need growth in international tourism as their primary justification". And again, "international tourism is likely to make a substantial contribution to the economy and continues to be an important reason for supporting development of civil aviation in the country".
- (1.02) My doubts about this reliance on the development of international tourism as an important service industry in our country arises on both economic and non-economic - or not strictly economic - grounds. My objection on economic grounds is that the justification for investment in tourism and related sectors has not been satisfactorily proved up to now by any well organised and documented study. The Report clearly states that "the Group did not have this matter studied in any great detail for this really has to be the subject of a separate full-fledged study". In fact, at one stage, there was some talk about the Planning Commission itself setting up a parallel Study Group on this subject. But this has not happened up to now. The Group has therefore relied on the findings of a study conducted by the Indian Institute of Foreign Trade and published under the title "a Comparative Study of Incentives for Invisible Earnings through Tourism". This is not the place to go into a detailed examination and criticism of the methodology adopted and the conclusions of this study. I should only mention here that there are many inadequacies in the methodology as well as in the nature of data used in that study which will need further examination. I therefore cannot agree that the justification for the development of tourism has been well supported as a result of that study.
- (1.03) A further and important aspect of development of tourism facilities is that, to be viable, the facilities which are created - especially if they are in the private sector, as most of them are - should be available for use by domestic tourists and other domestic users. While no data are available about the proportion of international and domestic users of different tourists facilities, especially those like 5-Star Hotels, it is well known that these are patronised to a very large extent by Indians, mainly those who are able to put this expenditure on business account. The Group points out that, if the expected number of international visitors are to be attracted, the provision of adequate hotel accommodation of a standard demanded by foreign tourists must be given high priority, and it was necessary therefore "to recognise the hotel industry as an export-oriented one to which the fiscal and other incentives available to other export industries should be extended". It needs to be pointed out that, when such facilities or concessions are given for the setting up of what are called export-oriented industries, the condition is usually put that not more than a very small proportion of the output of the industry can be sold in the domestic market, the bulk of it being exported. Unless such a condition can be imposed on the hotel industry, the extension of benefits like low interest loans, special allocation of foreign

exchange, allotment of valuable land at special prices and various subsidies will in effect be to a significant extent used for subsidising the consumption of the rich and the affluent in the country. This is also likely to be the result of many other facilities which are usually justified in the name of international tourism. Any condition that these facilities will be available only to international tourists, or that the payments for them must be in foreign exchange, is unlikely to be acceptable to those who organise such facilities, and justifiably so as the investment would not then remain viable.

(1.04) I would also like to emphasise that there are indirect costs of tourism which tend to be ignored in most discussions on the subject. As Prof. Amartya Sen recently pointed out in another context, it is true that the yard-stick of "well-being" is difficult to use as compared to that of GNP; but it is generally accepted that the enhancement of GNP is desirable not for its own sake, but for what it does to the well-being of a nation. Without going into details - for that is a separate subject by itself - I should only mention that hazards like the growth of smuggling, prostitution, espionage, and drug-addiction are unavoidable if tourism is looked upon as a major service industry to be developed for earning foreign exchange. This is especially so in a poor country like ours where the number of the destitute and unemployed is very large, and there appears to be no early end to such a situation. The Group suggests that tourists should be saved from irritants which today plague them "everywhere in our country, viz., beggars, touts and cheats in different garbs". Is this possible? Can we create tourist "islands" in the country which are very different from its other parts? Can we ban the movement of Indian citizens to any of these "islands"? Experience of such tourist centres as Bangkok or Manila, or the little experience we have had in places like Goa, should surely suggest some second thoughts in this matter.

(1.05) It is true that the development of tourism as a major service industry for developing countries is a part of the presently established development doctrine. As V. S. Naipaul has stated, "Every poor country accepts tourism as an unavoidable degradation". But I am not sure that this is really unavoidable. The hazards which I mentioned above are especially troublesome in an open - almost porous - society ours. Even for countries like Yugoslavia or - in the last few years - China, enough information is available about the corrupting influence of large scale tourism. But in such controlled societies, such influences can perhaps be kept under limits. I would plead that a country like ours should take a more careful look at the pros and cons of the matter before blindly following the advice of development advisors, especially from the affluent world.

(1.06) I should make it clear that my position is not that our country should not be open for travel by international visitors who are interested, on that facilities in keeping with our own development - or perhaps even a degree better - should not be made available for them. The only limit would be the necessary care for the standards of security and public morality which we consider appropriate for our national requirements. Similarly, the only limitation on Indians visiting abroad should be the difficulty that the country faces - and is likely to continue to face for the next ten or fifteen years - regarding foreign exchange. My objection is to the attempt to treat tourism as an industry which the country should attempt to develop and exploit for

earning foreign exchange. Such an approach has hazards\* which, in my opinion, have not received proper attention.

\* cf. "You think the tourist explosion is just a minor nuisance. But the tourist industry occupies first place in the economy of this country and of others as remote as Fiji Island. They turn the natives into parasites, erode their way of life, contaminate their arts and crafts, their music. . . It is a global phenomenon spreading global corruption. Capitalism is dead, now we have neo-colonisation all over the World" Arthur Koestler - *The Cult-Girls*

- (1.07) I realise that mine is a very lonesome view in this matter. The Group as a whole is going largely by what is accepted both within the country and abroad as an established doctrine. I did not therefore expect to convert my colleagues to my point of view. At the same time, I do not think I shall be honest to myself if I did not point out my strong reservations on this matter, especially because the growth of tourism is treated as the most major justification for the growth of civil aviation in the country.
- 2.(2.01) The other aspect regarding which I need to make some specific points separately is about the proposed investment in the civil aviation sector over the next 15 years. Of course, the Group has been very careful in its assessment and, while stating the conclusions, it has been said, "additional investments in the sector, made judiciously, should prove highly beneficial" (emphasis added). This conclusion is unexceptionable.
- (2.02) But even then, the magnitudes of investment proposed are so large that some specific comments appear to me to be necessary. The investment in this sector over the next 15 years has been put at Rs. 19,660 crores at 1985-86 prices. This may be contrasted with the proposed estimate of outlay on this sector during the Seventh Plan period by the Planning Commission at Rs. 758 crores. It is interesting to note that, as against this estimate, for the Seventh Plan period, the Group estimates an outlay of Rs.6,058 crores, which is eight times the Plan estimate. The estimate for the next 15 year period at 26 times the Seventh Plan estimate follows. The magnitude of this proposed outlay can be better understood if it is compared with the Corporate Plan for the same period prepared by the Indian Railways. The outlay indicated there is Rs. 45,000 crores as against the proposed Seventh Plan outlay of Rs. 12,334 crores. Even allowing for the fact that civil aviation is a capital intensive sector, the contrast between the estimate for the Railways which are expected to cater by 2000 A.D. to passenger traffic of over 400 billion passenger kms. and goods traffic of over 400 billion NTKms. with the proposed aviation investment with a traffic which would not exceed even 2% of this should surely be very carefully noted. The Group has of course put its case very cautiously; but its overall approach of supporting such a magnitude of outlay cannot but give the wrong signals to the planners, the administrators as well as the public. This matter becomes all the more crucial as it is admitted that the objective of making this sector self-financing is unlikely to be achieved, and that an outlay of this magnitude "will require budgetary support". In a situation such as the country will continue to face of scarcity of investment resources, the question of the appropriate priority for the civil aviation sector cannot be ignored by those who think of perspective plans.
- (2.03) One point made in the Report is that, if lease financing is resorted to and if certain concessions like tax exemptions are also provided to leasing companies registered in India, it should be possible to ease the difficulty about the availability of resources for outlay, including capital outlays in foreign exchange. What needs to be underlined is that, under any such arrangement, even if the capital outlay at any one stage could be kept low, regular payments in foreign

exchange will have to be made and, unless the leasing rates continue to be very favourable, the total foreign exchange outgo over the whole period may be much larger. Whether the civil aviation sector will create a foreign exchange balance which would make it possible for such payments to be made is not clearly established.

(2.04) Regarding the overall foreign exchange impact of the working of this sector, the Group has relied upon a consultant's report. It is admitted in the Group's Report that it has not been possible for the Group to verify item by item the correctness of the assumptions made regarding various elements in that calculation. It is therefore stated that the results of the study have to be treated mainly as indicative, to be used as guidelines in the formulation of policies, rather than as firm conclusions for basing future estimates. As the report of the consultant became available only in the last stages of the Group's work, I have also had no opportunity of examining it. I cannot therefore do better than underline the conclusion that the matter needs further careful study.

(2.05) I would however hesitate to support the conclusion that "taking into account the progressive improvement in yields, likely increase in tourist traffic, a more stable situation in fuel prices, and some degree of increased indigenisation, there will be adequate foreign exchange surplus generated by the civil aviation sector". I would moreover suggest two points to help formulate guidelines regarding the future development of civil aviation. The first would be that the development for domestic purposes should be based on a firm estimate that the foreign exchange balance would be a favourable one, keeping in view the necessity to adopt an appropriate shadow price for foreign exchange in view of the fact that a very large part of the domestic traffic pays for its travel from business or public accounts. If any net foreign exchange expenditure has to be made for this part of the aviation sector, it will have to be very carefully examined and specially justified. International aviation by a country like India is justifiable in the long run only to the extent that it provides a net foreign exchange balance, with the exchange rate properly valued at an appropriate shadow price (as attempted in the cost-benefit analysis prepared by the TECS).

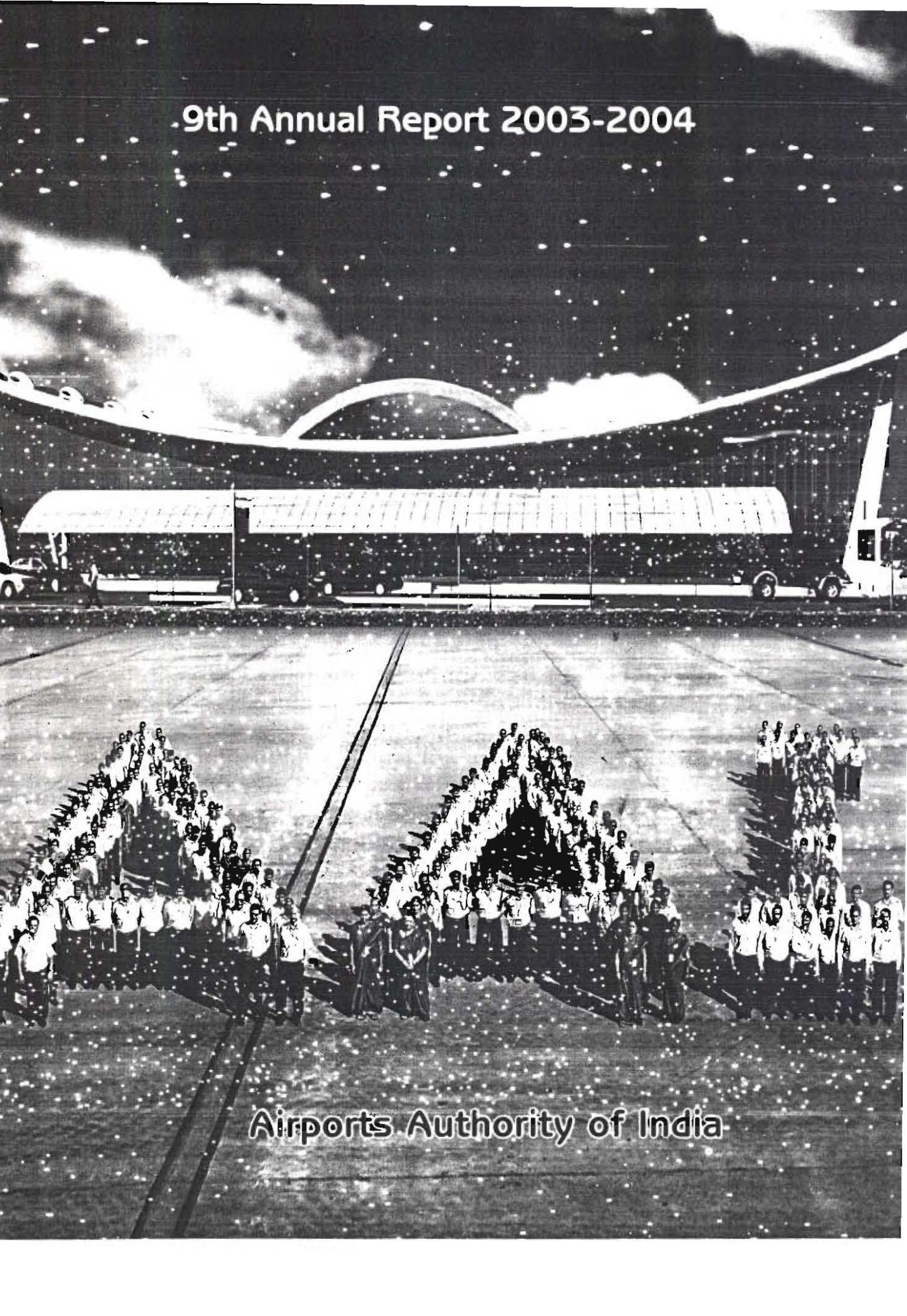
(2.06) Regarding the justification for the very large outlay which may have to be incurred on the civil aviation sector, the Group had a cost-benefit analysis done by the TECS. It is not possible here to go into a detailed examination of that analysis. I would only make the point that the incremental benefit/cost ratio works out at 1.8 in that estimate after allowing for not only the direct benefits flowing from the investment in the civil aviation sector but also adding the benefits estimated to be flowing from domestic and foreign tourism in the rest of the economy. The statistical basis for the data about the benefits from tourism is both meagre and outdated; and I am not sure about the validity of these calculations. Moreover, the investment private and public in the tourism sector will have to be added to the proposed investment in civil aviation for a proper benefit/cost examination. In any case, the whole matter would inevitably require far more thorough examination before any such conclusions can be arrived at to support the very large outlay indicated.

(2.07) Regarding employment resulting from the investment, some indication about the possible relationship between primary and secondary employment generation — based on 1968 data — has been mentioned in the Report. But what is far more important when considering the

generation of employment is the investment/employment relationship in the particular sector. It is quite obvious that civil aviation being a very investment intensive one, its capacity to generate employment is likely to be much less than that, for example, from that of investment in the Railways.

- (2.08) It may be objected that, when the Group itself has been very cautious in stating its final conclusions regarding proposed investment, why is it thought necessary to mention all these considerations so elaborately? My justification for doing so is that, while I have no difference with the overall conclusion of the Group, one should not ignore the fact that the civil aviation sector has very powerful support and is therefore likely to get away with a larger than appropriate share of national resources. Not only are its clients rich and powerful, but those working in the sector as well as the suppliers of its major equipments from well organised influence groups. The fact that the outlay allotted to this sector by the Planning Commission for the whole Seventh Plan period has already been exceeded in the initial two years or so, should be a good indication of the strength of this lobby. Even though the Group in its Report has very clearly indicated the limitations regarding further possible growth of short haul air operations, and the constraints which will have to be overcome for permitting the growth of helicopter and air-taxi services, the plans being announced — and partly implemented — by organisations like Vayudoot and the Helicopter Corporation cannot but underline the importance of the planners — and citizens — interested in ensuring the observations of proper priorities in the use of national resources to lay stress on the resource constraint aspect. The glamour of the civil aviation sector should not blind planners and policy makers to the real costs of developing such facilities, and the sense of priorities which should govern decisions relating to it.

# 9th Annual Report 2003-2004



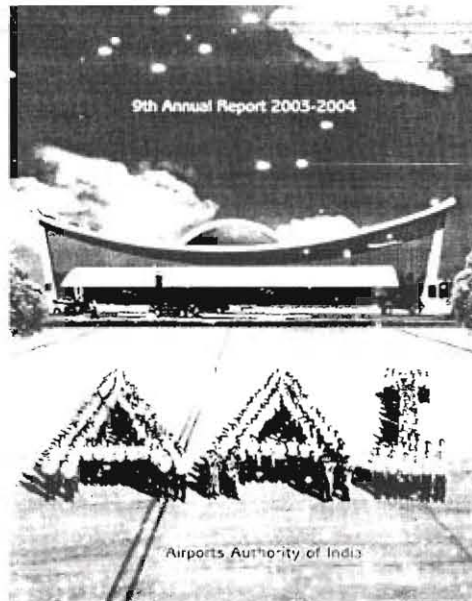
Airports Authority of India

# MISSION

*"PROGRESS THROUGH EXCELLENCE AND  
CUSTOMER SATISFACTION WITH  
WORLD CLASS AIRPORT AND  
AIR TRAFFIC SERVICES  
FOSTERING ECONOMIC DEVELOPMENT"*



City side view of the proposed Terminal Building of Silnagar Airport



This year's cover design depicts the employees of AAI standing in AAI Formation against the backdrop of the proposed New Terminal of Varanasi Airport

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# Board of Directors

(As on 31st March, 2004)



*Shri K. Ramalingam*  
Chairman



*Shri V.D.V. Prasad Rao*  
Member (Finance)



*Shri Satendra Singh*  
Director General of Civil Aviation &  
Ex-Officio Member



*Shri V. Subramanian, IAS*  
Adl. Secretary & Financial Advisor  
Ministry of Civil Aviation



*Dr. S.N.A. Zaidi, IAS*  
Joint Secretary  
Ministry of Civil Aviation



*Shri T.K. Mitra, IPS*  
Commissioner of Security (CA)  
Bureau of Civil Aviation Security



*Shri Sunil Arora, IAS*  
Chairman & Managing Director  
Indian Airlines Ltd.



*Shri M.C. Kishore*  
Company Secretary

## DIRECTORS' REPORT 2003-2004

The Airports Authority of India (AAI) completed nine years of successful operations on 31 March, 2004. The Authority recorded all round progress in its activities.

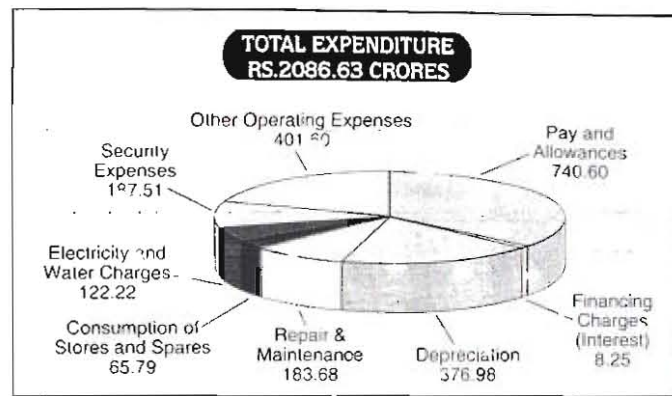
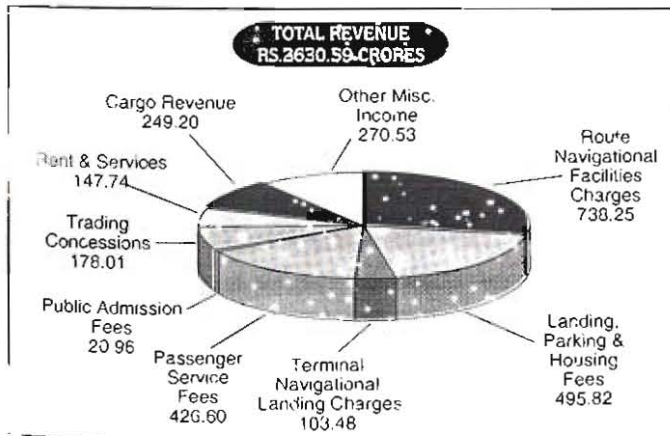
### FINANCIAL PERFORMANCE

The Authority achieved higher revenues amounting to Rs.2630.59 crores, which is the highest so far despite the constraints faced by the Authority coupled with Government decision to reduce airport charges and other factors. The Authority has utilized its resources in a very judicious manner to achieve the best results so far.

The Financial Highlights of AAI for the year 2003-04 are as under:

(Rupees in crores)

Particulars	2003-04	2002-03
a. Revenue	2630.59	2384.49
b. Expenditure	2086.63	1887.44
c. Profit before Tax	543.96	497.05
d. Provision for Tax	229.00	215.00
e. Profit after Tax	314.96	282.05
f. Proposed Dividend	70.00	62.00
g. Tax on Dividend	8.97	7.94
h. Appropriations to Reserves:		
(i) Specific Reserves	94.40	84.84
(ii) General Reserve	141.59	127.27
i. Internal Resources	612.97	555.44



### CAPITAL STRUCTURE

The Capital Structure of the Authority as on 1.4.2004 and 1.4.2003 is given below:

(Rupees in crores)

Particulars	01.04.2004	01.04.2003
Government Capital	416.63	405.59
Reserves & Surplus	2602.55	2317.07
Long Term Loans	145.23	225.73
Net Worth	2617.95	2370.93
Capital Employed	2698.26	2534.68
Working Capital	896.70	820.52

### PAYMENTS TO GOVERNMENT

During the year, the following payments were made to the Government of India:

(Rupees in crores)

Dividend	62.00
Guarantee Fees	1.64
Interest on Government Budgetary Support Loan	1.91
Prepayment/ Repayment of Government Loans	23.30
<b>TOTAL</b>	<b>88.85</b>

### PAYMENTS FROM GOVERNMENT

During the year, the Authority received Rs. 22.08 crores from Govt. as Budgetary Support and Rs. 4.50 crores from NEC as Grant for development and upgradation of infrastructural facilities at airports in the North Eastern Region of the country.



Presentation of Dividend Cheque by Chairman, AAI to the then Hon'ble Minister of Civil Aviation Shri Rajiv Pratap Rudy

## FOREIGN EXCHANGE

During the year 2003-04, an amount of approx. Rs. 154.32 crores was incurred on purchase of capital goods, spare parts, foreign travel, repayment of foreign loans, etc. The deemed foreign exchange earnings of the Authority were Rs. 787.08 crores.

## AIRPORT CHARGES: AN OVERVIEW

The airport charges were due for upward revision w.e.f. 1.4.2003. However, the Government directed AAI to defer this revision by one more year upto March 2005. Government has decided that TNLC charges at the international airports at Delhi, Mumbai, Chennai, Kolkata and Trivandrum are to be reduced by 25% of current rates for domestic flights w.e.f. 1.4.2003. Landing charges have also been reduced by 15% of current rates for domestic flights w.e.f. 12.2.2004 subject to the condition that airport charges are paid within the credit period of 15 days.

As per the recommendations contained in the draft Report of the Committee on a Road Map for the Civil Aviation Sector headed by Shri Naresh Chandra, the

Government has completely waived the landing charges in respect of aircraft of 80 seats and below and helicopters of all types w.e.f. 12.2.2004.

## ANNUAL PLAN

The Capital Expenditure during 2003-04 was Rs. 566.22 crores compared to Rs. 445.66 crores in the year 2002-03, an increase of 27% over the previous year. This has been possible due to a number of steps initiated by the Authority like close monitoring of progress of ongoing works at regional and corporate headquarters level, follow-up with the State Govt. for acquisition of land and removal of encroachments etc.

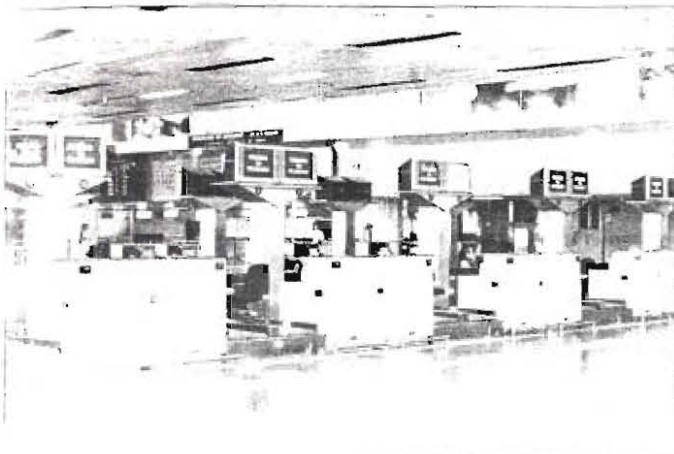
## TRAFFIC HANDLED

Particulars	Units	International	Domestic	Total
Aircraft Movements	in numbers	132934	506042	638976
Passengers Handled	in numbers	16624911	32076530	48701441
Cargo	in tonnes	693173	375029	1068202

## WORKS COMPLETED AND FACILITIES PROVIDED

### AERODROME WORKS

Indira Gandhi International Airport, Delhi



CUTE Compatible check-in counters at Terminal II, IGI Airport

Three additional security booths with exclusive gates provided at International Terminal.

Replacement of false ceiling in security hold area at International Terminal.

New state-of-the-art Courier terminal commissioned.

Six nos. Conveyor belts replaced in the arrival area of International Terminal.

Departure conveyor system at International Terminal has been extended as part of passenger facilitation.

Work on rainwater harvesting completed.

New state-of-the-art facilitation counter manned by AAi, Department of Tourism, Customs and Airlines commissioned at International Arrival Terminal.

Common User Terminal Equipment (CUTE) facility provided at check-in rows 3 & 4 with compatible check-in desks and Electronic Flight Detail Display System at the International Departure Wing.

### Chhatrapati Shivaji International Airport, Mumbai

Recarpeting of runway 09-27.

Four nos. of lowering type Apron lighting towers were installed to illuminate rear aircraft parking stands nos.

34 to 40A at Apron 1B. Additional four nos. apron lighting masts installed.

Four nos. escalators at International Terminal-2A were replaced.

Lounge for non-scheduled operators commissioned.

### Netaji Subhas Chandra Bose International Airport, Kolkata

New hangar was commissioned.

### Chennai International Airport, Chennai

Extension and modification of the newly constructed Anna International Terminal.

Re-carpeting of runway 07-25 carried out.

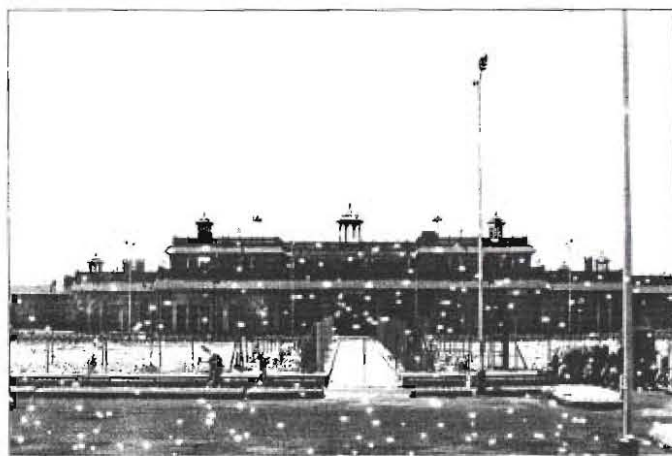
Sewerage treatment plant and connected works were commissioned.

New aero-link and airside corridor for aircraft parking stand no. 26 including aero-bridge and construction of atrium at Kamaraj Domestic Terminal commissioned.

Water softening plant for treatment of water has been provided.

### Sardar Vallabhbhai Patel International Airport, Ahmedabad

Construction of new fire station and isolated aircraft parking stand.



City-side view of the New Terminal Building at Bhuj Airport

### Other Airports

A new modern passenger Terminal Building with all passenger facilities was commissioned at Bhuj.

Construction of boundary wall at Rajamundry and Agartala Airports.

Resurfacing of taxiway and extension of apron, isolated aircraft parking stand, extension and strengthening of runway and provision of CAT II lighting system at Lucknow Airport.

Construction of Terminal Building at Gaggal (Kangra) and Jabalpur Airports.

Construction of perimeter road at Bhavnagar, Calicut, Guwahati, Porbandar and Rajkot Airports.

Resurfacing of runway, apron, taxiway, construction of shoulders, grading of basic strips, etc. at Bhavnagar Airport.

Recarpeting of runway, construction of shoulders, drainage system and development of basic strip, etc. at Porbandar Airport

Extension and strengthening of apron and widening of link taxiway at Agartala Airport.

## CNS AND ATM FACILITIES

Replacement of Instrument Landing System at Agartala, Patna, Ranchi, Vadodra, Trichy, Varanasi and Jammu Airports.

Provision of Flight Information Display System at Agartala, Coimbatore, Pune, Hyderabad, Trichy, Ahmedabad, Bhopal, Indore, Goa and Nagpur Airports.

Installation of Doppler Very High Frequency Omni Range (DVOR) (replacement) at Madurai, Udaipur, Vadodra, Kanchipuram, Chennai, Mangalore and Jodhpur Airports.

Commissioning of DVOR (new facility) at Leh.

Installation and commissioning of Distance Measuring Equipment (DME) (replacement) at Jaipur, Leh, Lucknow and Patna Airports.

Commissioning of Non-Directional Beacon (NDB) at Kadmath, Androth and Kalpeni Airports at Lakshadweep Islands.

Commissioning of Monopulse Secondary Surveillance Radar (MSSR) at Varanasi and Mangalore Airports.

Upgradation of Flight Data Processing System (FDPS) at Kolkata and Chennai Airports.

Installation of FDPS at Trivandrum, Ahmedabad, Nagpur and Varanasi Airports.

Installation and commissioning of Automatic Flight Inspection System in AAI Calibration Unit.

Installation of Radar Simulator at CATC Allahabad.

Procurement of 300 nos. of VHF Transmitters and Receivers with VDL Capability for various airports for air to ground communication.

Procurement of 45 sets of VHF FM handheld walkie talkie sets for CISF Personnel at various airports.

Procurement of 383 nos. of VHF FM sets for various airports.

Procurement of 30 nos. of UHF Link equipment for various airports.

Installation of HF Transmitters (Replacement) at Chennai, Trivandrum and Delhi airports for providing air to ground HF communication.

Procurement of 48 nos. of Non-Directional Beacon for replacement of existing equipment at various airports.



Newly renovated Customs Arrival Area, IGI Airport

## OTHER PASSENGER/OPERATIONAL FACILITIES

3600 Imported Trolleys with automatic parking brakes have been provided for convenience of passengers at IGI, CSI and Chennai International Airports.

10 Airfield Crash Fire Tenders commissioned at selected airports.

To improve passenger convenience further, additional 113 Door Frame Metal Detectors (DFMDs) and 351 Hand Held Metal Detectors (HHMDs) have been provided for faster security checking.

190 Dual Energy Colour X-Ray Machines have been installed at various airports.

Flight Information Display System has been upgraded with the installation of Split Flap Boards and Plasma monitors at NSCBI and IGI Airports.

Electronic Data Interchange has been established through internet in the Integrated Cargo Management System at the Cargo Complexes of Delhi, Kolkata, Mumbai and Chennai Airports.

Self-driven command post to deal with aerodrome emergencies put in operation at 5 International Airports.

## AIR TRAFFIC MANAGEMENT

Reduced Vertical Separation Minima (RVSM) has been implemented in Indian FIRs including the Oceanic airspace between FL 290 and FL410 [both inclusive] with effect from 27 November 2003. Implementation of RVSM ensures the availability of more optimum flight levels to the aircraft transiting through Indian FIRs and also improves airspace capacity.

ATS route P628 has been extended from ASOPO (Designated point) to Rahimyarkhan (in Pakistan FIR). Due to Military airspace restrictions this route segment was not implemented during Revised ATS Route Structure - Asia to Middle East / Europe, South of the Himalaya (EMARSSH) routes project in 2002.

Automatic Dependent Surveillance (ADS) / Controller Pilot Data Link Communication (CPDLC) - Trial operations commenced at Chennai and Kolkata.

The minimum enroute altitude on route L333 has been lowered to F300. (Due to IAF restrictions the

minimum enroute altitude was restricted upto F310 earlier).

A Contingency Plan for aircraft operation during fog/low visibility conditions has been implemented at IGI Airport, Delhi to reduce traffic congestion and minimize the diversion / disruption.

## SURVEY & CARTOGRAPHY

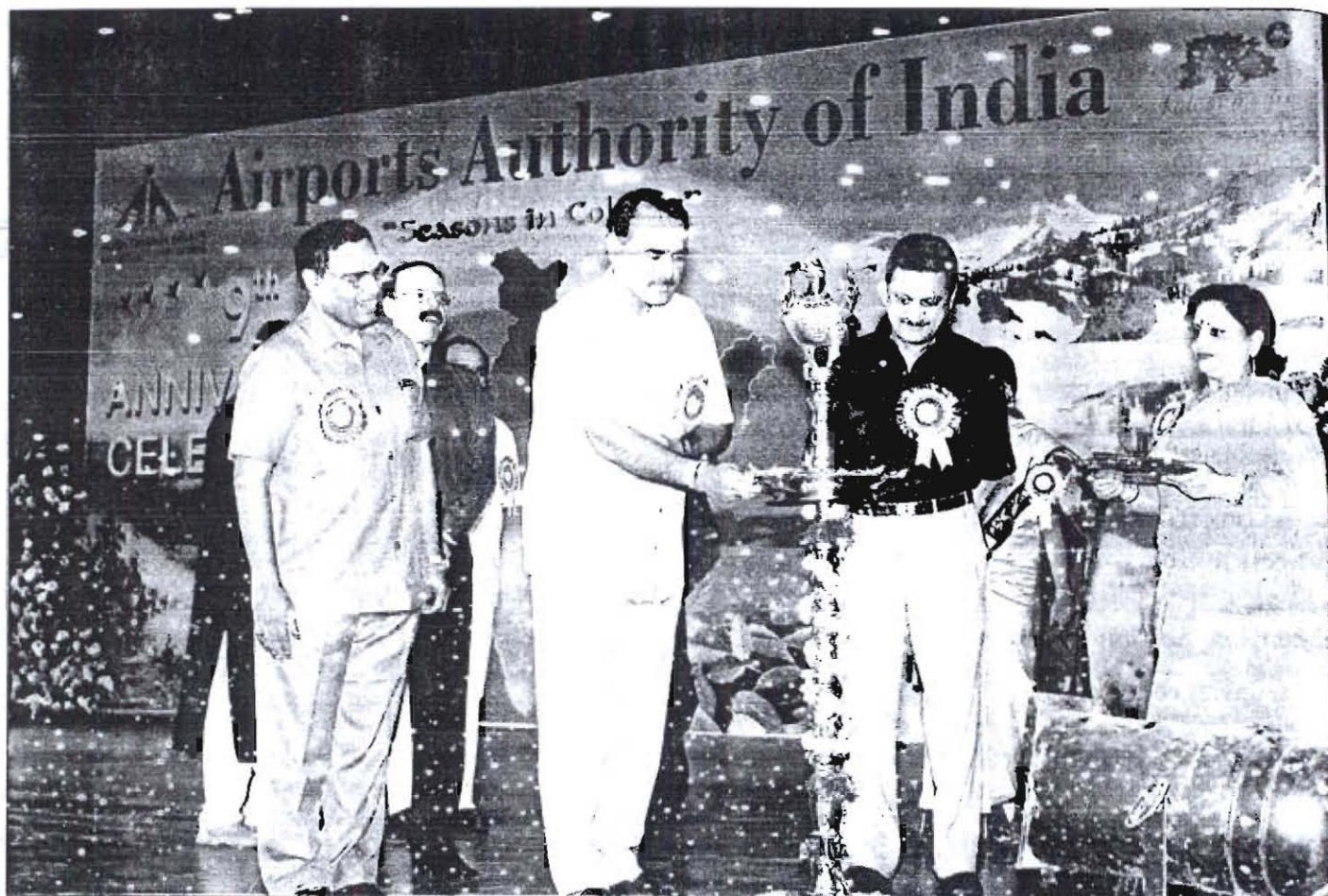
GPS Reference Stations were established for 3 airports, namely, Lucknow, Kanpur and Pondicherry to achieve the co-ordinates in WGS-84 system.

The ICAO requires mapping of Aerodrome Charts. The Cartography Unit has done the automation of mapping process. After computerizing the Aerodrome Charts and Parking and Docking Charts of 15 airports (including international and domestic custom airports), it is now heading towards the computerization of "ATS Routes Chart" of the Indian airspace covering the FIRs.

Consultancy services on payment basis were provided for the survey of proposed heliport site at Amby Valley, Sahara Lake City near Lonavala for M/s Sahara India Commercial Corporation Ltd. and to Andaman & Nicobar Administration.

## AIRPORTS AUTHORITY OF INDIA (AMENDMENT) ACT, 2003

The Airports Authority of India (Amendment) Act, 2003 was enacted in September, 2003. This Amendment to the AAI Act of 1994 inter-alia provides for (i) exclusion of private airports (like BIAL) from the ambit of AAI Act, but excluding Air Traffic Services and Security (ii) authorizing AAI to charge Advance Development Fee (ADF) for the development / upgradation of existing airports, (iii) setting up of Greenfield airports, (iv) authorizing AAI to transfer the operations and management of its existing airports by way of long-term lease to private players and (v) seeks to prevent and remove encroachments of airport lands. The provisions



Hon'ble Minister of Civil Aviation, Shri Praful Patel, lighting lamp on the occasion of 9th Anniversary Celebration of AAI

of Airports Authority of India (Amendment) Act, 2003 came into effect w.e.f. 1 July, 2004.

### STATUS ON THE RESTRUCTURING OF DELHI AND MUMBAI AIRPORTS

To advise AAI / MCA for the restructuring of Delhi and Mumbai airports through the formation of two separate Joint Venture Companies (**Transaction**), M/s. ABN - AMRO Asia Corporate Finance (I) Pvt. Ltd. were selected and appointed as Financial Consultant. M/s. ABN - AMRO (**FC**) commenced their work from the first week of January 2004. Based on the recommendations of FC and after getting the approval of Empowered Group of Ministers (**EGOM**), the Invitation to Register Expression of Interest (**ITREOI**) document was issued on 17 February, 2004 with the

last date of submission of Expression of Interest (EOI) on 4 June, 2004.

### STATUS - GREENFIELD AIRPORTS - BANGALORE INTERNATIONAL AIRPORT

The Concession Agreement (CA) finalized by the Working Group was approved by the Cabinet in its meeting held on 21 January 2004. On the approved version of the CA, BIAL had reservations on certain clauses as amended by the Law Ministry.

### STATUS - GREENFIELD AIRPORTS - HYDERABAD INTERNATIONAL AIRPORT

After signing the Shareholders Agreement, State Support Agreement and Land Lease Agreement on 30 September, 2003, the private promoters (GMR - MAHB) proceeded further to prepare the Detailed Project Report (DPR).



Refurbished Airside Corridor  
of Hyderabad International Airport

## CITY SIDE DEVELOPMENT OF NON - METRO AIRPORTS

The Ministry of Civil Aviation had circulated a concept paper in August 2002 for City Side Development of Non-Metro Airports through Private Sector participation. The airports identified for the purpose are - Ahmedabad, Amritsar, Guwahati, Goa, Jaipur, Lucknow, Mangalore, Madurai, Udaipur, Trivandrum.

Action has been initiated for appointment of Indian Financial Consultant (IFC) and Global Technical Advisor (GTA) who will assist AAI in identifying the viability of landside activities including the terminal building for private sector participation through joint venture company, specific to each airport.

The Architectural Design of Ahmedabad Airport has been selected by a Jury headed by Secretary, Ministry of Civil Aviation, Member (Planning), President, Council of Architecture, two renowned Indian Architects and one Architect from Hong Kong in favour of M/s Kothari Associates Pvt. Ltd., New Delhi and CPG Consultants Pvt. Ltd., Bangalore. As regards Trivandrum Airport, fresh design entries have been called from the short listed bidders.

## ISO CERTIFICATION OF AIRPORTS

AAI is committed to provide effective Quality Management System (QMS) at Airports. In this direction,

AAI has already obtained ISO 9001-2000 Certification for Ahmedabad, Chennai, Coimbatore, Jaipur, Kolkata and Mumbai Airports. During the year 2003-04, ISO Certification for Mangalore (1 July, 2003) and 2004-05 ISO Certification for Pune Airport (26 April, 2004) has been obtained. Certification of at least four more Airports is targeted as per MOU signed with the Ministry of Civil Aviation for the year 2004-05.

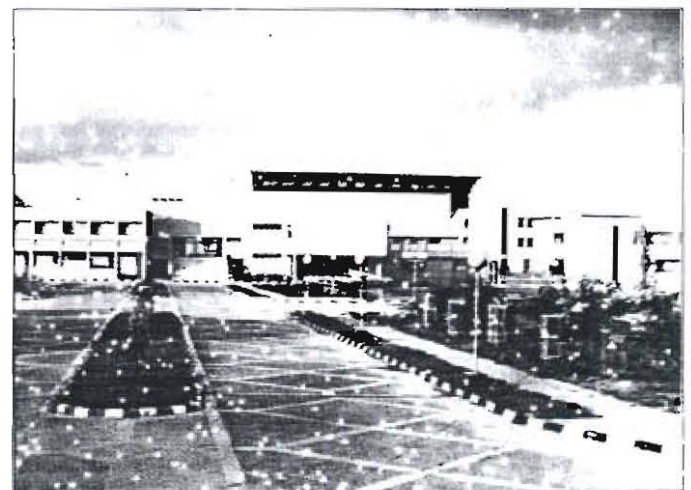
## TRAINING

### Civil Aviation Training College, Allahabad

The Civil Aviation Training College (CATC), popularly known as CATC-Allahabad was established in the year 1948. It is a training establishment of AAI dedicated to training in the area of Air Traffic Management (ATM) and Communication, Navigation & Surveillance (CNS). It is fully equipped with modern training aids and has 19 fully air-conditioned class-rooms, 22 lab rooms for CNS equipment, 7 labs for ATM, Library and Auditorium. The hostel accommodation at CATC consists of 42 single occupancy rooms, 136 double occupancy rooms and 28 single occupancy rooms for foreign visitors.

CATC-Allahabad is also having a TRAINAIR unit for STP development.

During the year in 26 courses 163 trainees were trained in CNS stream and in 29 courses 250 trainees were trained in ATM stream - totaling in 55 courses 413 trainees.



A view of CATC Campus at Allahabad





Workshop on Training & Standardization in ATM held from 18.2.2004 to 20.2.2004.

### **National Institute of Aviation Management and Research (NIAMAR)**

National Institute of Aviation Management & Research (NIAMAR), previously called "Institute of Aviation Management (IAM)", was established in the year 1986. It imparts training in all disciplines of Airport Management.

NIAMAR conducts specialized course in Airport Operations, Airport Engineering, Construction, Commercial, Cargo and Personnel Management. NIAMAR is a member of the ICAO-TRAINAIR Programme and has developed Standardized Training Packages (STPs) on 'Bird Hazard Control Management'. NIAMAR also conducts IATA recognized 'Dangerous Goods Regulations' course. To work together in the training area, NIAMAR has signed MoU with CATC, Thailand, Airport De Paris Training Centre, France and MDI, Gurgaon.

NIAMAR is fully equipped with the latest training aids. It has a residential complex with 30 fully furnished air-conditioned rooms and recreation facilities etc.

During the year NIAMAR conducted 89 programmes participated by 1272 employees.

This includes specialized training programmes on Dangerous Goods Regulations for handling dangerous / hazardous goods at the Cargo Terminals for the safe air carriage of export cargo through four metro airports. AAI has 46 IATA / DGCA trained professionals posted at four metro airports.

Three CISF Programmes on "Customer Care and Passenger Facilitation" were conducted at NIAMAR, which were attended by 71 officers (40 CISF personnel and 31 AAI officers) of the level of Assistant Commandants upto Senior Commandants from CISF and Airport Directors / Airport in-charge.

NIAMAR conducted 12 programmes for foreign participants which were attended by 50 foreign participants from different countries like Bangladesh, Brunei, Cambodia, China, Hong Kong, Japan, Maldives, Nepal, Phillipines, Republic of Korea, Singapore, Sri Lanka, Thailand, Tonga and Vietnam.

The following International Workshops were also conducted at NIAMAR:

1. International Workshop on "Aerodrome Safety Audit" in association with Air Services, Australia (18 -22 August, 2003).
2. Two International Programmes on "Airport Management" by INDO-EU Civil Aviation Project from 8 to 17 April and 7 to 16 October, 2003 respectively.

### **Fire Services Training College (FSTC), Kolkata**

The Fire Services Training College (FSTC) was established in 1960 and is engaged in providing Basic, Refresher and Advance fire fighting training to all grades of Fire Service personnel, including officers level, and prepares them for handling aircraft and airport installations fire. The training curriculum is upgraded from time to time to include requirement of latest Aviation Technology and it conforms to ICAO requirements.

During the year the total number of trainees passed out from FSTC, Kolkata - AAI 218 and IIPM 163.

Construction of new garages with model fire station and swimming pool at FSTC, Kolkata is currently being undertaken.

Trainees from Bhutan, IGRUA & CIAL Cochin are trained at FSTC.

Testing charges for Foam Compound in confirmation to BIS 4989 have been increased to Rs.6000/- per sample.

### **Fire Training Centre (FTC), New Delhi**

Fire Training Centre (FTC) at New Delhi was established in 1972 to provide training to Airport Fire Service

personnel as per ICAO guidelines. FTC imparts training with the prime objective of preparing fire personnel for dedicated roles and responsibilities, upgradation of knowledge, skills, understanding and attitude to enable them to perform their role effectively, competently and safely, minimizing the likelihood of accidents and injuries to personnel and handling & maintaining equipment in order to deal with the major aircraft fire by means of a most carefully planned and rigorously followed programme of training.

To achieve these aims, Drills, Simulation & Mock Exercises are conducted. The trainings imparted at FTC are registered in the ICAO Directory. The FTC has a residential complex with fully furnished 16 rooms and 8 dormitories to accommodate 64 persons.

The training standard has been upgraded from time to time as per the latest aviation requirements. The following training courses are organized at FTC - Basic Training Course (For new recruits), Promotional Courses (3 Categories) and Refresher Courses (3 Categories).

During the year 13 courses were organized at FTC and 172 trainees from various levels were trained.



Release of "Kalyanmayee Souvenir of Northern Region" by Chairman, AAI, Shri K. Ramalingam and President of Kalyanmayee Mrs. Uma Ramalingam

**KALYANMAYEE**

In Airports Authority of India, the Women Welfare Association called Kalyanmayee, has been actively involved in Womens' Welfare activities. The main aim of

Kalyanmayee is to carry out social, cultural and educational activities for the benefit of the Members and their families, so as to promote and imbibe a feeling of harmony and belongingness with the organization. The organization involves women in the activities such as yoga, beauty care, medical and health-awareness programme.



The latest state-of-the-art Flight Calibration Unit of FIU fitted in the FIU aircraft of AAI

**HUMAN RESOURCE MANAGEMENT**

The Authority has been making consistent efforts to impart training to as many personnel as possible so that they are better equipped and their skills upgraded for efficient discharge of their duties. Apart from sending of senior executives to various courses in reputed Management Institutes in India and abroad, the Authority has also taken steps to have collaboration with foreign institutions and universities to bring Guest Faculty to impart training to our officers at NIAMAR, CATC, etc. This is in addition to the various in-house refresher courses and training programmes conducted to keep employees abreast with the latest developments in technology and office methods. AAI also continued to lay stress on information sharing with the employees at all levels so that the employees come together with the management in meeting the targets set for the organization. Redressal of the grievances is also undertaken on a continuous basis so that the employees are responsive to the needs of the management in discharging their functions and responsibilities.

## INFORMATION TECHNOLOGY

Information Technology Directorate continued to make further progress in transforming the work culture of the organization with a view to bring about better efficiency and speed of working especially in areas like Project Monitoring of the various Civil and Electrical works etc. The following major projects were implemented by the IT Directorate during the year under review:

- i. On-line Project Monitoring System
- ii. Network Diagnostic Tools Project
- iii. Inventory & Maintenance Management Application Package
- iv. Air Traffic Billing System
- v. Integrated Financial & Personnel Information Management System

More employees have been provided with computer facilities to enhance their working capability with a view to meet the objectives of the organization. These facilities have been added at the Corporate Office of AAI, Operational Offices at Gurgaon Road and also at various airports across the country.

In addition, proposals are under way for implementation of the following projects:

- i. Airport Information Management System at IGI Airport
- ii. Virtual Private Network (VPN) Set-up for AAI for web connectivity of all 126 airports to Corporate Hqrs
- iii. Video Conferencing System at 13 Airports for interactive management meeting
- iv. GIS based Software for Cartography Mapping and Land Asset Management
- v. Frequency Management System for CNS-Operations
- vi. Flight Slot Allocation System for operations
- vii. No Objection Certificate (NOC) Clearance System for Public Utility
- viii. Extension of Intranet to 20 more airports to facilitate use of web based enterprise IT solutions
- ix. Content Management System to make AAI website interactive

Information Technology Directorate shall be the first Directorate in the Corporate Office of AAI to get ISO 9001:2000 Certificate for its functional responsibility.

## INDUSTRIAL RELATIONS

The industrial relations remained by and large cordial during the year.



Newly installed Radar Simulator at CATC Allahabad

## REPRESENTATION OF SCs / STs

It is a continuous endeavour on the part of the Management to implement, in letter and spirit, Presidential Directives on reservation of SCs and STs. Interactions with the Representatives of AAI SC & ST Employees Welfare Association and National Commission for SCs & STs have helped in achieving not only the requisite percentage in recruitment and promotions but has also helped in timely resolving grievances of employees. This year AAI has launched Special Recruitment Drive to fill up backlog of vacancies which will further improve the percentage of SC & STs in the services.

Representation of SCs / STs in Airports Authority of India as on 31.3.2004 is given below:

Total No. of employees	Total No. of SCs	% of SCs	Total No. of STs	% of STs
20285	5169	25.48	1033	5.09

## PROGRESSIVE USE OF HINDI

Implementation of Official Language & Rules made thereunder is ensured in AAI. During the year, workshops & seminars on Hindi were held at CHQ, Regional Offices & at various Airports to encourage the employees for the use of Hindi. Employees were given training in Hindi Typing, Stenography & Computers. Meetings of Official Language Implementation Committee were held to review the progress. During the year the following achievements were made in the implementation of Official Language policies and its promotion amongst the employees:-

All India Official Language training programmes were conducted by various agencies. Official Language Implementation Committees were organized on regular intervals to review the progress of Implementation of Official Language in CHQ, RHQ and field stations.

The second sub committee of the Parliamentary Committee on the Official Language has inspected Nagpur, Vizag, Silchar Airports and the office of Regional Executive Director, Northern Region, office of Airport Director, Chennai and Mumbai.

- AAI had organized 'Hindi Noting and Drafting Competition' for the employees of all PSUs of the Govt. of India and provided Official Language Shield to Delhi Town Official Language Implementation Committee (Undertaking).
- 'Hindi Pakhwara' was organized by almost all the offices of AAI during which various competitions were organized and cash prizes were given for Outstanding Performance.

## VIGILANCE DEPARTMENT

The vigilance Department continued to lay emphasis on strengthening preventive vigilance aspects in AAI. Complaints were promptly acted upon to check malpractices and prevent corrupt practices. Information Technology tools are being used for undertaking preventive vigilance. The guidelines of the Central Vigilance Commission are being followed while

undertaking vigilance work in AAI. Vigilance Awareness Week was observed at the various airports in November 2003 to create individual sensitivity as well as Organizational Awareness as an effective tool to achieve the Corporate Mission.



Shri P. S. Nair, Airport Director, IGI Airport receiving award instituted by Ministry of Tourism for best maintained International Airport from the then Tourism Minister, Shri Jagmohan

## EVENTS OCCURRED AFTER 31<sup>st</sup> MARCH, 2004

### RESTRUCTURING OF DELHI AND MUMBAI AIRPORTS

Subsequent to formation of the new Government in May 2004, the Hon'ble Minister of State for Civil Aviation discussed in detail few critical issues relating to the Transaction including the quantum of foreign direct investments. In order to address these critical issues, the last date of submission of EOI was extended to 20 July, 2004. The EGOM has been re-constituted by the Government under the Chairmanship of Defence Minister and comprising the Finance Minister, Civil Aviation Minister and Law Minister which will take the Transaction forward.

The EGOM in its meeting held on 21<sup>st</sup> June 2004 approved the appointment of a Global Technical Adviser (GTA) and the Legal Consultant besides certain changes in the ITREOI document. A proposal for appointment of an Accounting and Tax Advisor in connection with the Transaction is on hand.

## Greenfield Airports

### Bangalore International Airport

After discussions on those clauses on which BIAL had certain reservations and after making appropriate amendments or otherwise, the CA was put to the Cabinet once again for its approval. The Cabinet in its meeting on 15 June, 2004 approved the revised CA. The CA, as approved by the Cabinet, was signed on 5 July, 2004.

Other important Agreements, which are to be executed by BIAL after the signing of CA are Communication, Navigation, Surveillance / Air Traffic Management (CNS / ATM) Agreement with AAI, State Support Agreement, Land Lease Agreement with Government of Karnataka and Financing Agreement with Lenders (ICICI Bank).

The financial closure is expected to be achieved shortly. The target opening date for the new airport is 33 months from the date of financial close.

### Hyderabad International Airport

The Detailed Project Report (DPR) prepared by the private promoters is under scrutiny by AAI.

Hyderabad International Airport Limited (HIAL) have submitted draft Concession Agreement to MCA and AAI, which is under discussions.

### MoU between AAI and Concordia University

A Memorandum of Understanding (MoU) has been signed between Airports Authority of India and Concordia University, Montreal, Canada on 22.4.2004 for cooperation between the two institutions for developing National Institute of Aviation Management and Research (NIAMAR) as an Institute of excellence in the field of aviation management. The areas of cooperation are: development and training of aviation management, research and development, developing and delivery of specific short term certificate courses / programmes and training, any other field of mutual interests. This MoU will remain valid for a period of five years and may be renewed with mutual consent.

## Other Works Completed

Extension of runway, construction of isolated aircraft parking stand, perimeter road and allied works at Agartala Airport.

3 nos. escalators have been replaced with latest version of escalators having additional safety features at Indira Gandhi International Airport, Delhi.

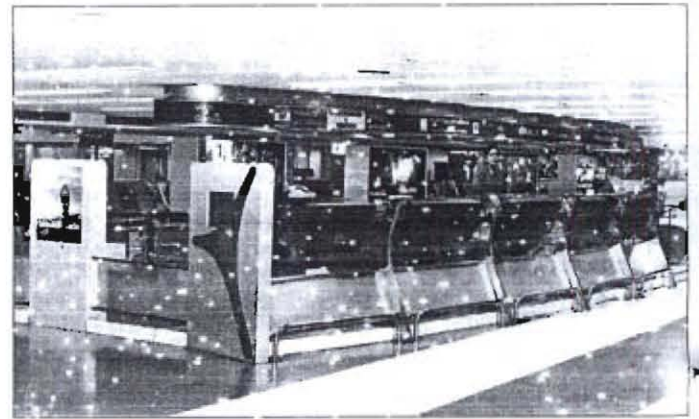
Installation of Surveillance CCTV at Imphal, Guwahati, Bagdogra and Agartala Airports.

Installation of Radar Simulator at CATC Allahabad.

Installation of DVOR at Mumbai, Bellary and Hyderabad Airports.

## MAJOR INFRASTRUCTURE WORKS PLANNED DURING 2004-2005

### Indira Gandhi International Airport, Delhi

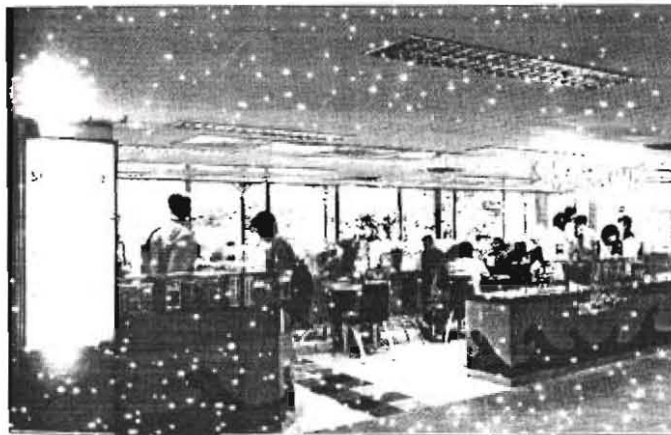


State-of-the-Art Facilitation Counter at Terminal-II, IGI Airport

- Modification and expansion of Terminal-1B, Arrival Block, Terminal-1A, roads and car park.
- Construction of multilevel car park.
- Construction of auditorium near NIAMAR for 400 persons capacity.
- Modifications of Domestic Terminal for Private Airlines.
- Creation of additional check-in-counters and conveyor system in departure lounge at International Terminal.

- Construction of parallel runway & connecting taxiways.
- Modification of existing aircraft parking stand no.37-40 to accommodate B-737-800 type of aircraft.
- Construction of barracks for commandos and security forces of CISF.
- Renovation of Ceremonial Lounge at International Terminal.
- Construction of administrative building.
- Provision of Visual Docking Guidance System at International Terminal.
- Additional standby air-conditioning plant at Domestic Terminal and replacement of 2 nos. air-conditioning plant at Domestic Departure Building.
- Construction of rapid taxiway.

#### Chhatrapati Shivaji International Airport, Mumbai



- Cyber Cafe situated at Terminal I-B, CSI Airport, Mumbai
- Expansion and modification of Terminal-1B, roads and car park.
- Construction of 14 nos. remote aircraft parking stands.
- Modification of Car park at International Terminal.
- Construction of Interim Cargo FACT shed.
- International Courier Terminal.
- Export Cargo terminal (Phase-I/A).

- Extension of B-3 taxiway towards runway beginning.
- Modification & extension of the existing International Terminal Building-2B.

Construction of Naval Aviation Enclave (Department work).

Strengthening and improvement of second runway.

Construction of taxiway parallel to second runway 14/32 beginning from 32 upto main runway & further extended upto B-3 taxiway.

Construction of link taxiway connecting new hangar area with the main runway.

Construction of additional 4 nos. domestic aircraft parking stands.

Construction of 2 nos. hangars for non-scheduled operators.

Construction of Heliport on the west side of Runway 32 beginning.

- Modifications to existing bridge over Mithi River main runway at 27 beginning.
- Extension of main runway 09/27 at the 09 beginning for clear length of 2 km from intersection holding runways.
- Construction of night parking aircraft parking stand including link taxiway from runway 14/32 on west of Runway 32.
- Construction of Office Building for BCAS.
- Provision of Visual Docking Guidance System (VDGS).

#### Netaji Subhas Chandra Bose International Airport, Kolkata

- Construction of Integrated Cargo complex.
- Modification / extension of International Terminal (Phase-II).
- Construction of facilitation lobby, linking corridor "Circular Railway" from Dum-Dum to NSCBI Airport.

- Up-gradation of fire fighting system for International terminal building and cargo complex.
- Construction of hangars (3 nos.).
- Extension of Secondary runway by 440 m.

#### **Chennai International Airport, Chennai**

- Construction of Phase-II of Administrative Building.
- Construction of car park and boundary wall at Anna International Terminal phase-I.
- Modification of Anna International Terminal (Ph-II)
  - Construction of building connecting old & new International Terminals.
  - Conversion of existing international departure hall into arrival hall.
- Construction of Integrated Cargo Terminal phase-II
- Construction of subway / flyover in front of Trishulam railway station.
- Construction of apron for aircraft parking stand no. 35 and hard stand.
- Construction of barracks for commandos and security forces of CISF.
- Extension of parallel taxiway from Delta taxiway to secondary runway.
- Provision of Visual Docking Guidance System (VDGS).
- Construction of hangars (5 nos.).

#### **Trivandrum International Airport, Thiruvananthapuram**

- Construction of new International Terminal Complex across Chakai Canal.
- Provision of aerobridge at International Terminal.

#### **Sardar Vallabhbhai Patel International Airport, Ahmedabad**

- Construction of new Domestic Arrival.
- Construction of new International Terminal Building.

#### **Aerodrome Works**

- Development of Dehradun Airport.
- Development of new Civil Enclave at Jaipur Airport.
- Construction of Terminal Building at Khajuraho, Kodaikanal, Udaipur, Varanasi, Agatti and Visakhapatnam Airports.
- Expansion of Terminal Building and allied works at Srinagar Airport.
- Extension of runway at Aurangabad Airport.
- Extension and resurfacing of runway at Raichur Airport.
- Strengthening and extension of runway at Madurai Airport.
- Construction of International Terminal Building at Madurai Airport.

#### **CNS and ATM Facilities**

- Procurement of 26 High Power DMEs and 14 Low Power DMEs.
- Provision of Digital Voice Recorders at 31 locations.
- Dedicated Satellite Communication Network for 10 airports.
- Provision of Voice Communication & Control System (VCCS) at Mumbai, Delhi, Hyderabad, Ahmedabad, Trivandrum, Guwahati, Nagpur airports and Calcutta, Allahabad.
- Networking of radars located at Nagpur, Varanasi, Guwahati and Berhampur.
- Aerodrome Simulator at CATC, Allahabad.
- Procurement of a high altitude aircraft with Automatic Flight Inspection System for calibration purposes.



Chairman, AAI, along with Delegates and Regional Director, ICAO, Bangkok Regional Office during the APANPIRG/15 Meeting

## BOARD OF DIRECTORS

During the year, the following changes took place in the composition of the Board:

Shri S.K. Narula retired from the services of Airports Authority of India on attaining the age of superannuation on 31 January, 2004. He was Member (Personnel & Administration) from 26 August, 1997 to 31 January, 2004 and was also officiating Chairman of AAI from 1.1.2002 to 31.1.2004.

The Ministry of Civil Aviation vide their letter Number AV-11015/001/2001 - AAI dated 31 January, 2004 appointed Dr. Nasim Zaidi, Joint Secretary, Ministry of Civil Aviation, to hold full additional charge of the post of Chairman, Airports Authority of India, in addition to his own present duties and responsibilities with effect from afternoon of 31.01.2004 till 16.03.2004 or till a regular incumbent is appointed, whichever is earlier.

The Ministry of Civil Aviation vide their letter No. AV.11015/001/2001 - AAI dated 9 March, 2004 appointed Shri K. Ramalingam, Member (Planning) and holding additional charge of the post of Member (Operations), as Chairman of Airports Authority of India for a period of five years from the date of his taking over charge of the post or till the date of his superannuation or until further orders whichever event occurs earlier. Shri Ramalingam assumed charge of the post of Chairman on 11.03.2004.

The Board placed on record its highest appreciation of the valuable and distinguished services rendered by Shri S.K. Narula during his tenure both as Member (Personnel & Administration) and Chairman of Airports Authority of India. The Board also placed on record its highest appreciation of the valuable services rendered by Dr. S.N.A. Zaidi, Joint Secretary, Ministry of Civil Aviation during his tenure as Officiating Chairman of Airports Authority of India.

As on 31 March, 2004, the Board of Airports Authority of India consisted of the following Members:

1. Shri K. Ramalingam - Chairman
2. Shri Satendra Singh - DGCA & Ex-officio Member
3. Shri V. Subramanian - Part-time Member
4. Dr. S.N.A. Zaidi - Part-time Member
5. Shri Sunil Arora - Part-time Member
6. Shri T.K. Mitra - Part-time Member
7. Shri V.D.V. Prasad Rao - Member (Finance)

## ACKNOWLEDGEMENTS

The Authority places on record its appreciation of the sincere efforts and contribution made by the employees at all levels.

The Authority also acknowledges the assistance and support given by the Ministry of Civil Aviation, DGCA, Comptroller & Auditor General of India and other Government Departments, Airlines and other agencies. The Authority also wishes to place on record the support and cooperation received from the Regional Office of ICAO at Bangkok as well as the ICAO Headquarters at Montreal in various facets of the functioning of the Authority.

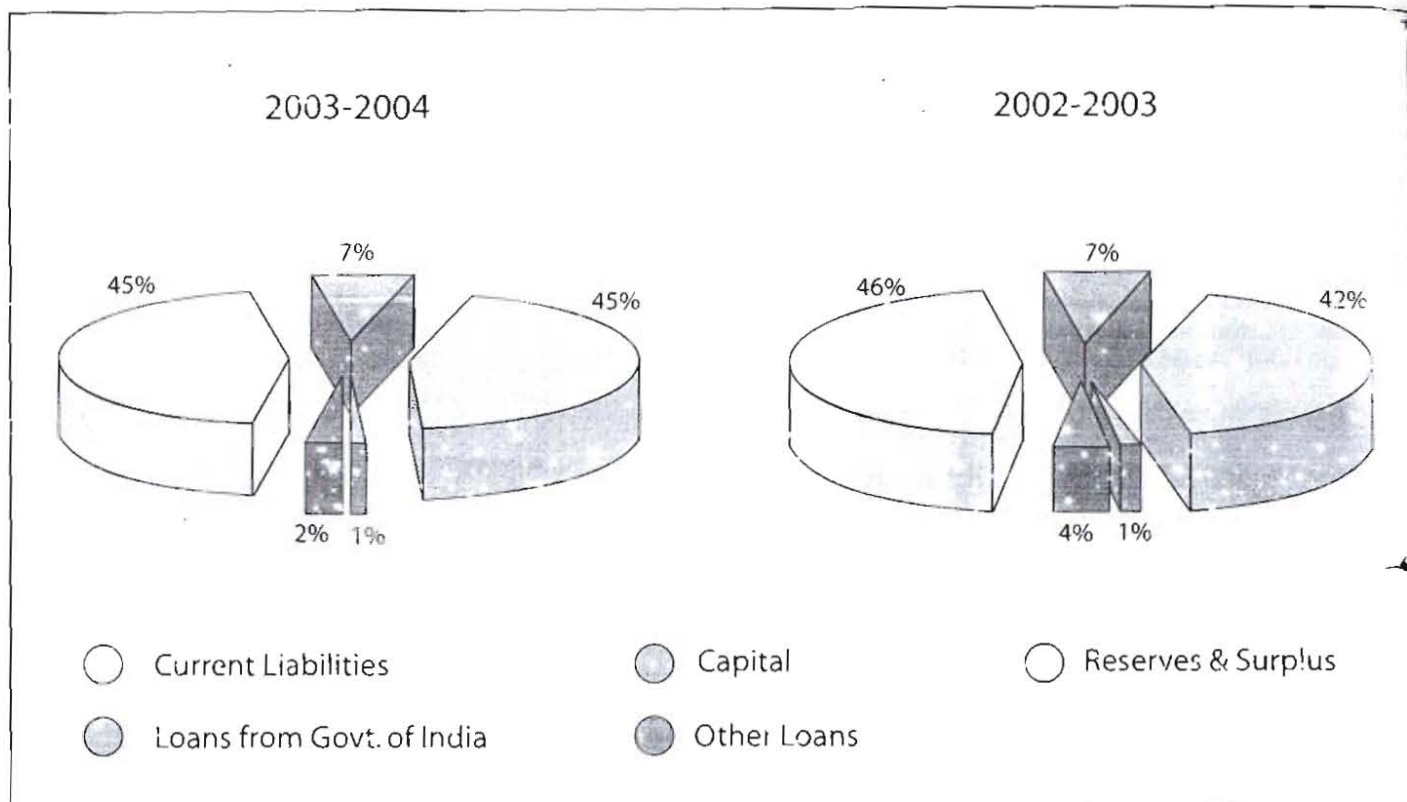
On behalf of  
AIRPORTS AUTHORITY OF INDIA



(K. RAMALINGAM)  
CHAIRMAN

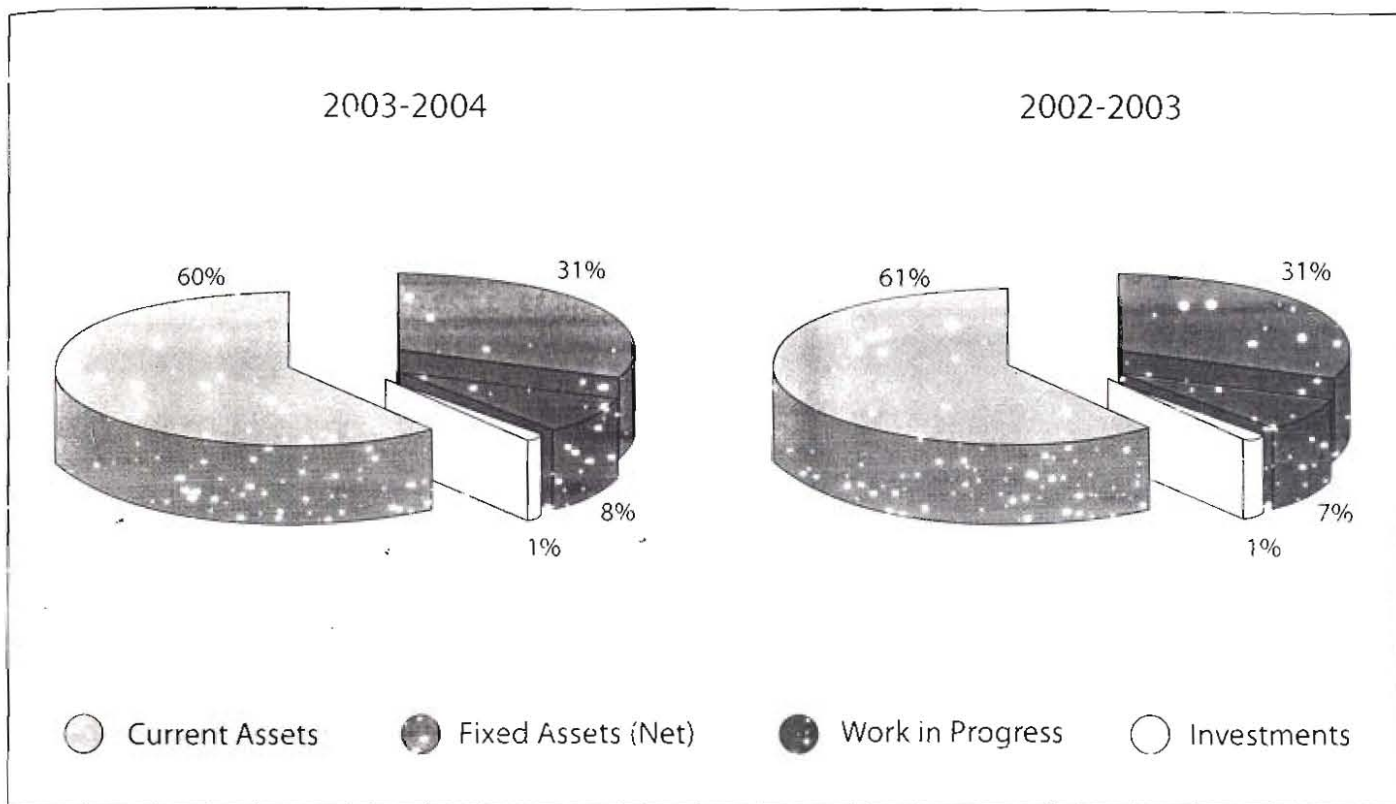
Place: New Delhi  
Date: 28 July, 2004



**FINANCIAL HIGHLIGHTS**

**WHAT WE OWE**
*Rs. in crores*

Particulars	2003-2004	2002-2003
Capital	416.63	405.59
Reserves & Surplus	2602.55	2317.07
Loans from Govt. of India	2.04	16.80
Other Loans	143.19	208.93
Current Liabilities	2612.64	2501.76
<b>Total</b>	<b>5777.05</b>	<b>5450.15</b>

**FINANCIAL HIGHLIGHTS**



**WHAT WE OWN**

*Rs. in crores*

Particulars	2003-2004	2002-2003
Fixed Assets (Net)	1801.56	1714.16
Work in Progress	456.15	402.56
Investments	10.00	11.15
Current Assets	3509.34	3322.28
<b>Total</b>	<b>5777.05</b>	<b>5450.15</b>

**PERFORMANCE AT A GLANCE**

PARTICULARS	UNITS	2003-04	2002-03	2001-02	2000-01	1999-00	1998-99
<b>SOURCES OF FUNDS</b>							
Paid up Capital	Rs. in crores	416.63	405.59	388.79	355.09	350.13	337.63
Loans from Govt. of India	"	2.04	16.80	26.87	35.55	57.35	49.12
Loan portion of Commencing Capital	"	—	—	26.25	63.00	73.50	84.00
Loans - Others	"	143.19	208.93	262.69	296.22	314.97	332.94
Reserves & Surplus	"	2,602.55	2,317.07	2,023.49	1,715.58	1,534.73	1,273.53
<b>Total</b>		<b>3,164.41</b>	<b>2,948.39</b>	<b>2,728.09</b>	<b>2,475.44</b>	<b>2,330.68</b>	<b>2,077.22</b>
<b>APPLICATION OF FUNDS</b>							
Fixed Assets (Less Deprec.)	"	1,801.56	1,714.16	1,654.97	1,555.39	1,447.86	1,175.05
Work in Progress	"	456.15	402.56	317.38	409.27	444.72	591.99
Investments	"	10.00	11.15	14.12	18.28	18.28	18.28
Working Capital	"	896.70	820.52	741.62	492.50	404.59	261.45
Deferred Revenue Expenditure	"	—	—	—	—	15.23	30.45
<b>Total</b>		<b>3,164.41</b>	<b>2,948.39</b>	<b>2,728.09</b>	<b>2,475.44</b>	<b>2,330.68</b>	<b>2,077.22</b>
<b>INCOME &amp; PROFIT</b>							
Revenue	"	2,630.59	2,384.49	2,244.84	1,873.44	1,691.28	1,591.27
Expenditure	"	2,086.63	1,887.44	1,767.86	1,514.36	1,346.55	1,255.49
Profit before tax	"	543.96	497.05	476.98	359.08	344.73	335.70
Provision for tax	"	229.00	215.00	210.00	145.00	133.35	127.37
Profit after tax	"	<b>314.96</b>	<b>282.05</b>	<b>266.98</b>	<b>214.08</b>	<b>211.38</b>	<b>208.41</b>
<b>APPROPRIATION</b>							
General Reserve	"	141.59	127.27	194.82	136.67	127.30	140.38
Specific Reserves	"	94.40	84.84	17.15	22.31	32.50	22.18
Proposed Dividend	"	70.00	62.00	55.00	50.00	42.28	41.68
Tax on Proposed Dividend	"	8.97	7.94	—	5.10	9.30	4.17
<b>Total</b>		<b>314.96</b>	<b>282.05</b>	<b>266.98</b>	<b>214.08</b>	<b>211.38</b>	<b>208.41</b>
<b>NET WORTH</b>							
(Share Capital + Gen. Reserve + Specific Reserves - Def. Rev Exp)	"	2,617.95	2,370.93	2,142.01	1,880.32	1,691.15	1,417.23
<b>CAPITAL EMPLOYED</b>							
(Net Fixed Assets + Working Capital)	"	2,698.26	2,534.68	2,396.59	2,047.89	1,852.45	1,437.03
<b>Current Assets</b>	"	3,509.34	3,322.28	2,881.91	2,609.20	2,356.14	2,006.61
<b>Current Liabilities</b>	"	2,612.64	2,501.76	2,140.29	2,116.70	1,951.55	1,745.16
<b>Working Capital</b>	"	<b>896.70</b>	<b>820.52</b>	<b>741.62</b>	<b>492.50</b>	<b>404.59</b>	<b>261.45</b>

**PERFORMANCE AT A GLANCE**

PARTICULARS	UNITS	2003-04	2002-03	2001-02	2000-01	1999-00	1998-99
<b>OTHER FACTORS</b>							
Addition to Fixed Assets	Rs. in crores	464.93	400.54	411.38	382.75	507.90	384.51
Sundry Debtors less Provision	"	530.13	536.68	426.39	315.57	271.60	300.62
No. of employees in position	Nos.	20285	21015	20807	20541	20614	20813
Aircraft Movements	Nos.'000s	637	561	510	490	468	424
Passenger Movements	"	48691	43988	40003	42025	39004	36974
Cargo Handled	Tons'000s	1068	982	853	846	797	699
<b>RATIOS</b>							
Profit After Tax to Net Worth	Percentage	12%	12%	12%	11%	12%	15%
Profit Before Tax to Capital Employed	"	20%	20%	20%	18%	19%	23%
Profit After Tax to Capital Employed	"	12%	11%	11%	10%	11%	15%
Dividend to Capital Employed	"	97%	94%	94%	91%	91%	111%
Current Ratio		1.38:1	1.35:1	1.35:1	1.23:1	1.20:1	1.15:1
Profit Before Tax to Total Revenue	Percentage	21%	21%	21%	19%	20%	21%
Profit After Tax to Total Revenue	"	12%	12%	12%	11%	12%	13%
Average Debt Collection Period	Days	200	188	164	134	130	147
No. of Aircraft Movements per employee	Nos.	32	27	25	24	23	20
Revenue per employee	Rs. in '000	1,297	1,135	1,079	912	820	765
Revenue Exp. Per employee	Rs. in '000	1,029	898	850	737	653	603
<b>ANNUAL PLAN</b>							
Plan Outlay	Rs. in crores	800.00	717.29	554.59	527.24	625.04	538.12
Actual Capital Expenditure	"	566.22	445.66	319.49	348.00	360.63	319.87
<b>FINANCED AS UNDER:</b>							
Internal Resources Utilised	"	516.14	383.04	255.15	282.80	313.13	278.62
North Eastern Council Grant	"	4.50	25.00	20.00	20.00	15.00	—
Budgetary Support Received from Govt	"	22.08	33.59	40.24	25.20	25.00	25.00
Other Resources	"	—	—	—	—	—	—
Loan from MIADS	"	—	—	—	—	7.50	7.00
Funded from MOD/AP Govt.	"	23.50	—	—	—	—	—
Scheme funded by HP Govt	"	—	4.03	—	—	—	—
Foreign Loans	"	—	—	4.10	20.00	—	9.25
<b>TOTAL</b>		<b>566.22</b>	<b>445.66</b>	<b>319.49</b>	<b>348.00</b>	<b>360.63</b>	<b>319.87</b>

**BALANCE SHEET AS ON 31ST MARCH 2004**

Sl. No.	CAPITAL & LIABILITIES	SCHEDULE	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
1.	<b>CAPITAL ACCOUNT</b>	<b>A</b>	416,62,64,749	405,58,64,749
2.	<b>RESERVES AND SURPLUS</b>			
	(i) Capital Reserve		266,53,25,764	262,03,25,765
	(ii) General Reserve		1721,68,15,570	1580,08,91,400
	(iii) Any Other Reserve		134,70,00,000	89,70,00,000
	Fixed Assets Replacement Reserve		390,01,69,707	342,81,94,986
	Obsolescence Reserve		44,80,98,128	21,21,10,768
	Contingency Reserve		44,80,98,128	21,21,10,768
	(iv) P & L A/c balance as per Appropriation A/c		—	—
3.	<b>CAPITAL GRANTS</b>	<b>B</b>	—	—
4.	<b>BORROWINGS</b>	<b>C</b>		
	- SECURED		—	—
	- UNSECURED		145,23,00,859	225,73,37,472
5.	<b>CURRENT LIABILITIES &amp; PROVISIONS</b>			
	(i) Liabilities	<b>D</b>	1063,02,78,224	996,94,17,647
	(ii) Provisions	<b>E</b>	1549,61,25,118	1504,82,32,248
		<b>TOTAL</b>	<b>5777,04,76,247</b>	<b>5450,14,85,803</b>

CONTINGENT LIABILITIES S  
 NOTES FORMING PART OF THE ACCOUNTS T  
 ACCOUNTING POLICIES U

SCHEDULES A TO U ATTACHED FORM AN INTEGRAL PART OF BALANCE SHEET AND PROFIT AND LOSS ACCOUNT.


Place : New Delhi  
 Dated : 18.06.2004

  
 (M.C. KISHORE)  
 Company Secretary

  
 (J.M. KHARBANDA)  
 Executive Director (F&A)

## BALANCE SHEET AS ON 31ST MARCH 2004

Sl. No.	PROPERTY & ASSETS	SCHEDULE	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
6.	<b>FIXED ASSETS</b>			
	i) Gross Block	F	4788,21,11,747	4323,27,61,974
	Less: Depreciation		2986,64,91,555	2609,11,83,248
	<b>Net Block</b>		1801,56,20,192	1714,15,78,726
	ii) Capital Work-in-Progress	G	456,15,27,177	402,55,88,368
7.	<b>INVESTMENTS</b>	H	9,99,76,350	11,15,00,000
8.	<b>CURRENT ASSETS</b>			
	i) Stores & Spares		4,08,44,073	3,39,95,939
	ii) Sundry Debtors	I	530,13,09,232	536,67,99,335
	iii) Cash & Bank Balance	J	1250,63,00,827	1110,12,31,492
	iv) Deposits, Loans and Advances	K	1581,78,77,376	1451,03,83,476
	v) Interest Accrued on Investments/Deposits		49,51,89,431	114,98,16,632
	vi) Any Other item			
	(a) Prepaid Expenses		3,67,67,037	4,21,99,869
	(b) Income accrued but not due		89,50,64,552	101,83,91,966
9.	<b>MISCELLANEOUS EXPENDITURE</b> (to the extent not written off or adjusted)		—	—
10.	<b>PROFIT &amp; LOSS ACCOUNT</b> (Debit Balance)		—	—
11.	<b>ASSETS EARMARKED AGAINST DEPOSITS HELD ON ACCOUNT OF OTHERS</b>		—	—
<b>TOTAL</b>			<b>5777,04,76,247</b>	<b>5450,14,85,803</b>

  
 (V.D.V. PRASAD RAO)  
 Member (Finance)

  
 (K. RAMALINGAM)  
 Chairman

**PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2004**

Sl.No.	EXPENSES	SCHEDULE	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
1.	PAY AND ALLOWANCES	L	576,54,26,028	657,49,32,111
2.	OTHER STAFF COST	M	164,06,23,828	116,72,55,751
3.	OPERATING EXPENSES	N	684,41,51,541	598,72,27,832
4.	OTHER ADMINISTRATIVE AND MISC. EXPENSES	O	148,44,34,210	75,96,47,615
5.	DEPRECIATION		376,97,81,978	343,33,54,792
6.	FINANCING CHARGES		8,24,88,743	14,37,22,866
7.	PROVISIONS			
	Provision for Doubtful Debts		114,20,16,438	51,35,07,203
	Provision for Income Tax		229,00,00,000	215,00,00,000
8.	LOSS FROM FOREIGN PROJECTS (NET)		—	—
9.	EXTRA-ORDINARY ITEMS	P	—	—
10.	PRIOR PERIOD ADJUSTMENTS (NET)	Q	13,74,36,337	29,47,10,497
11.	NET PROFIT CARRIED OVER TO PROFIT AND LOSS APPROPRIATION ACCOUNT		314,95,61,111	282,05,45,181
<b>TOTAL</b>			<b>2630,59,20,214</b>	<b>2384,49,03,908</b>

Note:- Expenditure incurred in Foreign Currency during the Financial year on account of Purchase of Capital Goods, Spare parts, Foreign Travel, Consultancy, Repayment of foreign Loans & Interest and other matter was Rs.154.32 crores.


  
(M.C. KISHORE)  
Company Secretary

  
(J.M. KHARBANDA)  
Executive Director (F&A)

Place : New Delhi  
Dated : 18.06.2004

**PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2004**

Sl.No.	INCOME	SCHEDULE	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
12.	<b>TRAFFIC REVENUE</b>			
	Route Navigational Facilities Charges		738,24,82,685	684,84,22,524
	Landing Fees		477,57,85,796	439,27,98,619
	Parking and Housing Fees		18,24,31,589	16,57,02,490
	Terminal Navigational Landing Charges		103,47,56,000	120,23,36,811
	Passenger Service Fees		426,60,37,379	395,81,60,220
13.	<b>NON TRAFFIC REVENUE</b>			
	Public Admission Fees		20,95,95,882	19,08,09,380
	Trading Concessions		173,01,22,057	167,42,04,256
	Rent & Services		147,73,93,068	126,30,58,597
14.	<b>CARGO REVENUE</b>		249,19,57,691	242,54,69,601
15.	<b>OTHER MISCELLANEOUS INCOME</b>	R	248,66,04,075	171,92,02,164
16.	<b>PROFIT FROM FOREIGN PROJECTS</b>		—	47,38,646
17.	<b>EXTRA-ORDINARY ITEMS</b>	P	21,87,54,012	—
18.	<b>PRIOR PERIOD ADJUSTMENTS (NET)</b>	Q	—	—
19.	<b>NET LOSS CARRIED OVER TO PROFIT AND LOSS APPROPRIATION ACCOUNT</b>		—	—
	<b>TOTAL</b>		<b>2630,59,20,214</b>	<b>2384,49,03,908</b>

  
 (V.D.V. PRASAD RAO)  
 Member (Finance)

  
 (K. RAMALINGAM)  
 Chairman



**PROFIT & LOSS APPROPRIATION ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2004**

SL. NO.	PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
	Net Loss brought forward from Profit & Loss Account, if any, or transferred to Balance Sheet as Accumulated Loss	—	—
2.	Transferred to Fixed Assets Replacement Reserve	47,19,74,721	42,42,21,536
3.	Transferred to Other Reserves		
	(i) Contingency Reserve	23,59,87,360	21,21,10,768
	(ii) Obsolescence Reserve	23,59,87,360	21,21,10,768
4.	Proposed Dividend	70,00,00,000	62,00,00,000
5.	Tax on Proposed Dividend	8,96,87,500	7,94,37,500
6.	Transferred to General Reserve	141,59,24,170	127,26,64,609
	<b>TOTAL</b>	<b>314,95,61,111</b>	<b>282,05,45,181</b>


Place : New Delhi  
Dated : 18.06.2004

  
(M.C. KISHORE)  
Company Secretary

  
(J.M. KHARBANDA)  
Executive Director (F&A)

**PROFIT & LOSS APPROPRIATION ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2004**

SL.NO.	PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
7.	Net Profit brought forward from Profit & Loss Account	314,95,61,111	282,05,45,181
<b>TOTAL</b>		<b>314,95,61,111</b>	<b>282,05,45,181</b>

  
(V.D.V. FRASAD RAO)  
Member (Finance)

  
(K. RAMALINGAM)  
Chairman

**SCHEDULE - A -**
**CAPITAL ACCOUNT**

PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
Commencing Capital	209,00,00,000	209,00,00,000
Equity Portion of Budgetary Support	207,62,64,749	196,58,64,749
<b>TOTAL</b>	<b>416,62,64,749</b>	<b>405,58,64,749</b>

**SCHEDULE - B**
**CAPITAL GRANTS**

PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
<u>Grants received from:</u>		
1. Central Government	—	—
2. State Government	—	—
3. Any other Agency	—	—
<b>TOTAL</b>	<b>—</b>	<b>—</b>

**SCHEDULE - C**
**BORROWINGS**

PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
<b>A. Secured:</b>		
1. Domestic	—	—
2. Foreign	—	—
<b>B. Unsecured:</b>		
1. Provided by the Central Government U/s.23(b) of AAI Act.	2,04,00,000	16,79,50,000
2. Foreign Loans		
(a) Guaranteed to the extent by		
I. Govt. of India	114,49,39,775	159,41,88,248
II. Other loans & advances	—	—
3. Other Loans	28,69,61,084	49,51,99,224
<b>C. Interest accrued &amp; due on the above</b>	—	—
<b>TOTAL</b>	<b>145,23,00,859</b>	<b>225,73,37,472</b>

Note:

Out of above loans, Rs.79.76 crores are Short-term loans.

**SCHEDULE - D**
**CURRENT LIABILITIES**

PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
LIABILITY FOR :		
– Goods Supplied/Work Done - Capital	57,65,63,348	57,59,12,684
– Goods Supplied/Work Done - Revenue	28,42,82,842	17,02,98,560
– Pay & Allowances and Exgratia	142,41,65,806	162,79,80,050
– Provident Fund	–1,88,22,743	37,07,245
– Municipal Taxes	25,62,17,937	20,62,78,075
– Arbitration	16,09,269	16,09,269
– Recoveries Awaiting Remittance	6,61,53,075	5,95,51,200
– Benevolent Fund	–1,19,64,406	–81,83,539
– Met Expenses	143,42,32,145	125,19,22,269
– Other Expenses	124,94,15,288	103,22,59,643
Sundry Creditors	2,72,54,859	3,68,73,372
Liquidated Damages	6,50,77,060	4,33,26,418
Anti-hijacking Expenses	156,90,52,223	150,49,48,180
Works Tax Pending Remittance	75,06,747	81,42,211
CISF Expenditure	49,91,67,003	28,32,05,555
Government Reconciliation Account	3,56,01,192	20,01,192
Security Deposits, Earnest Money Deposit	70,63,02,629	57,56,54,549
Interest Accrued But Not Due on Loans:		
– Indian Loans	1,01,18,202	1,50,67,196
– Foreign Loans	1,59,64,313	2,53,43,150
– Commencing Capital	167,60,56,849	167,60,56,849
Income Received in Advance But Not Due	18,17,50,994	11,74,96,843
Advances From Clients	17,72,56,039	22,16,15,756
Deposit for Deposit Works	22,56,94,784	28,97,12,094
Deposit Work by CPWD	12,18,220	12,18,220
Bureau of Civil Aviation Security Deposit	—	58,17,046
Income Held Under Suspense	—	—
Miscellaneous Deposits	17,04,04,547	24,16,03,560
<b>TOTAL</b>	<b>1063,02,78,224</b>	<b>996,94,17,647</b>

**SCHEDULE - E**
**PROVISIONS**

PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
Income Tax		
- India	970,50,11,119	958,11,66,120
- Abroad	—	15,12,35,456
Exchange Fluctuation	—	29,56,25,181
Proposed Dividend	70,00,00,000	62,00,00,000
Tax on Dividend	8,96,87,500	7,94,37,500
Others	500,14,26,499	432,07,67,991
<b>TOTAL</b>	<b>1549,61,25,118</b>	<b>1504,82,32,248</b>

**SCHEDULE - F -**
**FIXED ASSETS**

PARTICULARS	DEP RATE %	GROSS BLOCK			AS ON 31.03.2004 Rupees
		AS ON 1.04.2003 Rupees	ADDITIONS INCLUDING TRANSFERS Rupees	ADJ. DELETIONS INCL. TRANSFERS Rupees	
LAND					
Freehold		129,69,66,942	8,08,80,826	6,15,11,504	131,63,36,264
Leasehold		62,31,241	—	—	62,31,241
RUNWAYS, TAXIWAYS, APRONS, ROADS, BRIDGES & CULVERTS	12.17	933,41,01,965	66,10,07,141	30,36,186	999,20,72,920
BUILDINGS FREEHOLD					
a) Terminals/Other Buildings	7.31	837,41,75,363	106,29,04,056	24,12,94,504	919,57,84,915
b) Temporary Buildings	100.00	12,91,32,139	76,21,295	20,97,989	13,46,55,444
c) Residential	4.00	102,16,28,496	15,25,24,094	2,62,36,843	114,79,15,747
d) Others	7.31	27,65,15,746	1,14,40,513	16,08,717	28,63,47,543
BUILDINGS LEASEHOLD	7.31	3,04,48,626	—	—	3,04,48,626
SECURITY FENCING	100.00	26,39,20,949	2,57,55,417	62,31,621	28,34,54,744
BOUNDARY WALL (OPERATIONAL)	7.31	54,70,33,399	7,87,75,634	59,51,376	61,98,57,658
BOUNDARY WALL (RESIDENTIAL)	4.00	65,56,498	2,50,87,864	—	3,16,44,362
PLANT & MACHINERY	12.17	1119,92,39,772	87,70,50,309	13,44,42,434	1194,18,47,646
TOOLS & EQUIPMENTS					
X-Ray Baggage Machines	12.17	83,02,49,750	42,74,83,245	4,41,95,073	121,35,37,922
Others	12.17	67,16,04,035	15,23,10,064	82,01,367	81,57,12,732
FURNITURE & FIXTURES	20.00	88,20,00,107	19,04,72,832	5,15,96,998	102,08,75,940
VEHICLES					
Crash Fire Tenders & Fire Fighting Equipments	19.19	99,83,60,954	40,62,71,752	31,17,017	140,15,15,689
Others	12.17	49,95,34,654	5,58,48,731	5,42,53,632	50,11,29,754
AIRCRAFT	24.34	29,35,00,000	26,04,02,886	—	55,39,02,886
ELECTRICAL INSTALLATIONS	12.17	622,13,03,982	88,50,09,475	17,18,56,733	693,44,56,723
OTHER OFFICE APPLIANCES	20.00	28,37,09,145	6,60,22,507	8,28,194	34,89,03,458
LIBRARY BOOKS	100.00	11,99,435	56,000	56,000	11,99,435
ANY OTHER ASSET	12.17	2,63,96,993	3,62,32,031	52,506	6,25,76,517
<b>TOTAL</b>		<b>4319,38,10,192</b>	<b>546,31,66,670</b>	<b>81,65,68,695</b>	<b>4784,04,08,167</b>
ASSETS AT PROJECTS					
a) Domestic Projects		3,89,51,782	30,03,521	2,51,723	4,17,03,580
b) Foreign Projects		—	—	—	—
<b>GRAND TOTAL</b>		<b>4323,27,61,974</b>	<b>546,61,70,192</b>	<b>81,68,20,419</b>	<b>4788,21,11,747</b>
<b>PREVIOUS YEAR FIGURES</b>		<b>3922,73,78,767</b>	<b>431,73,57,462</b>	<b>31,19,74,255</b>	<b>4323,27,61,974</b>

**DEPRECIATION**

PROVIDED UPTO 1.04.2003 Rupees	PROVIDED DURING THE YEAR Rupees	ADJ. OF SALE/ TRANSFER Rupees	UPTO 31.03.2004 Rupees	NET BLOCK AS ON 31.03.2004 Rupees	NET BLOCK AS ON 31.03.2003 Rupees
—	—	—	—	131,63,36,264	129,69,66,942
1,11,015	12,335	—	1,23,350	61,07,891	61,20,226
596,49,76,923	80,68,69,921	—	677,18,46,844	322,02,26,076	336,98,76,983
425,67,67,814	57,19,57,194	1,65,882	482,85,59,126	436,72,25,789	411,66,55,610
12,91,32,139	55,23,305	—	13,46,55,444	—	—
29,25,25,756	4,49,37,818	—	33,74,63,573	81,04,52,173	72,91,02,741
17,40,05,142	1,88,04,823	—	19,28,09,965	9,35,37,578	10,25,10,604
3,04,37,224	8,141	5,645	3,04,39,720	8,907	11,402
26,39,20,950	1,95,33,795	—	28,34,54,744	—	—
10,37,82,400	6,36,59,948	—	16,74,42,349	45,24,15,309	44,33,01,728
65,05,771	-2,05,103	—	63,00,668	2,53,43,694	—
768,61,43,058	108,39,64,690	-1,08,70,590	878,09,78,339	316,08,69,307	351,30,96,713
56,22,85,859	10,09,93,983	1,99,33,544	64,33,46,298	57,01,91,624	26,79,63,892
51,90,62,072	5,04,48,263	-2,66,23,922	59,61,34,257	21,95,78,475	15,25,41,963
66,97,34,949	11,50,77,993	24,465	78,47,88,476	23,60,87,464	21,22,65,158
80,07,23,925	13,18,12,259	7,05,470	93,18,30,714	46,96,84,975	19,76,37,028
34,88,04,661	3,99,60,159	4,10,26,802	34,77,38,017	15,33,91,736	15,07,29,994
29,35,00,000	6,33,82,063	—	35,68,82,063	19,70,20,824	—
372,49,15,291	65,14,74,326	2,41,27,348	435,22,62,269	258,21,94,455	249,63,88,690
22,45,06,110	4,36,60,083	8,28,194	26,73,37,999	8,15,65,459	5,92,03,035
11,99,435	—	—	11,99,435	—	—
39,99,378	1,03,56,368	—	1,43,55,746	4,82,20,771	2,23,97,615
<b>2605,70,39,871</b>	<b>382,22,32,361</b>	<b>4,93,22,838</b>	<b>2982,99,49,395</b>	<b>1801,04,58,773</b>	<b>1713,67,70,323</b>
3,41,43,378	25,09,901	1,11,119	3,65,42,160	51,61,419	48,08,403
609,11,83,249	382,47,42,262	4,94,33,957	2986,64,91,555	1801,56,20,192	1714,15,78,726
2267,77,06,101	344,86,29,370	3,51,52,223	2609,11,83,248	1714,15,78,726	1654,96,72,666



**- SCHEDULE - G****CAPITAL WORK IN PROGRESS**

<b>PARTICULARS</b>	<b>CURRENT YEAR 2003-04 Rupees</b>	<b>PREVIOUS YEAR 2002-03 Rupees</b>
W.I.P. - Airports	269,72,40,099	217,34,14,976
W.I.P. - Projects	186,42,87,078	185,21,73,392
<b>TOTAL</b>	<b>456,15,27,177</b>	<b>402,55,88,368</b>

**SCHEDULE - H****INVESTMENTS AT COST**

<b>PARTICULARS</b>	<b>CURRENT YEAR 2003-04 Rupees</b>	<b>PREVIOUS YEAR 2002-03 Rupees</b>
Long Term Investments (at Cost)	9,99,76,350	11,15,00,000
Short Term Investments (Lower of Cost and Fair Value/Market Value)	—	—
<b>TOTAL</b>	<b>9,99,76,350</b>	<b>11,15,00,000</b>

**SCHEDULE - I**
**SUNDRY DEBTORS**

PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
SUNDRY DEBTORS		
Debts outstanding for a period less than 6 months	304,47,18,251	238,35,75,363
Debts outstanding for a period more than 6 months	605,32,94,041	563,79,10,595
<u>Less:</u> Provision for Bad and Doubtful Debts	379,67,03,060	265,46,86,623
<b>TOTAL</b>	<b>530,13,09,232</b>	<b>536,67,99,335</b>

**Particulars of Sundry Debtors**

a) Debts considered good and in respect of which the Authority is fully secured	45,95,56,808	46,60,84,637
b) Debts considered good for which the Authority holds no security other than the Debtors' personal security	484,17,52,424	490,07,14,698
c) Debts considered doubtful and provided for	379,67,03,060	265,46,86,623
<b>TOTAL</b>	<b>909,80,12,292</b>	<b>802,14,85,958</b>

**SCHEDULE - J**
**CASH AND BANK BALANCES**

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04 Rupees	2002-03 Rupees
Cash and Stamps	1,60,41,943	1,20,65,776
Cheques in Hand	11,87,84,766	11,28,53,248
Remittances in Transit	14,28,87,727	6,22,73,311
Short Term Deposits with Banks		
Abroad	—	—
India	1095,49,10,630	922,74,72,200
Bank Balances in Current Account		
Abroad	—	—
India	124,31,32,786	165,21,32,498
Exchange Earners Foreign Currency Accounts	3,05,42,975	3,44,34,459
Cash in Transit	—	—
<b>TOTAL</b>	<b>1250,63,00,827</b>	<b>1110,12,31,492</b>

Note:

- The balance lying with Scheduled banks on current accounts, call accounts and deposit accounts is Rs.1222,85,86,391.
- Details of name of the banker other than Scheduled banks and the balances lying with each banker on current accounts, call accounts and maximum amount outstanding at any time during the year from each such banker is as under:-  
NIL
- The nature of interest, if any of any member or his relative in each of the bankers (other than Scheduled banks) referred to in (2) above.  
NIL

**SCHEDULE - K**
**DEPOSITS, LOANS & ADVANCES**

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04 Rupees	2002-03 Rupees
Inter-Divisional Balances	—	—
Advances to Staff	280,50,74,476	260,52,43,458
Advances for Purchases	10,19,48,470	20,60,43,112
Other Advances	45,10,54,077	64,00,89,343
Deposits	10,62,13,403	11,31,67,548
Loan to Vayudoot	10,89,28,187	10,89,28,187
Advance Income Tax & TDS		
India	1197,54,01,544	1053,55,92,025
Abroad	—	4,24,63,212
Interest Accrued/Due on Loans	—	—
Prepaid Expenses (Please refer Balance Sheet)	—	—
Amount Due from Government Budgetary Support	—	—
Deposits with State Electricity Board	18,40,54,928	17,07,15,232
Other Deposits	8,52,02,291	8,81,41,359
<b>TOTAL</b>	<b>1581,78,77,376</b>	<b>1451,03,83,476</b>

**PARTICULARS OF DEPOSITS, LOANS & ADVANCES**

a) Deposits, loans & Advances considered good and in respect of which the Authority is fully secured	1535,67,79,946
b) Deposits, Loans & Advances considered good for which the Authority holds no security other than the debtors personal security	46,10,97,430
c) Deposits, Loans & Advances considered doubtful and provided for	NIL

Note: During the year, loans and advances granted to Members and Chairman are as follows:

- i) Debts/Loans and advances due from Chairman/Members on 31.03.2004 Rs. 4.45 Lakhs.
- ii) Maximum amount due from Members/Chairman at any time during the year Rs. 5.71 Lakhs.

**SCHEDULE - L**
**PAY AND ALLOWANCES**

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04 Rupees	2002-03 Rupees
Pay and Allowances	447,90,97,973	477,01,61,923
Contribution to Provident Fund	43,89,80,707	40,64,02,193
Gratuity	27,66,82,000	87,90,94,500
Overtime	35,72,04,118	29,67,12,834
Leave Salary	27,97,904	32,54,228
Bonus/Exgratia	20,85,49,360	21,71,59,079
Wages to Daily Wage Staff	21,13,966	21,47,354
<b>TOTAL</b>	<b>576,54,26,028</b>	<b>657,49,32,111</b>

**SCHEDULE - M**
**OTHER STAFF COST**

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04 Rupees	2002-03 Rupees
Stipend	17,32,212	29,55,025
Conveyance Reimbursement	23,36,03,303	20,63,18,253
HRD Expenses	6,70,59,755	6,28,29,579
Uniform/Liveries	25,76,32,246	7,93,50,270
Medical Reimbursements	34,24,98,561	29,17,20,327
L.T.C.	5,54,95,761	10,99,62,194
Canteen Subsidy	15,74,82,148	15,14,21,834
Other Expenses	43,19,59,016	17,55,52,244
Departmental Canteen	8,25,777	10,46,261
Rent of Residential Building	9,23,35,049	8,60,99,764
<b>TOTAL</b>	<b>164,06,23,828</b>	<b>116,72,55,751</b>

**SCHEDULE - N**
**OPERATING EXPENSES**

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04 Rupees	2002-03 Rupees
<b>Repairs and Maintenance</b>		
R & M- Civil Works	91,43,97,951	69,00,48,134
R & M- Electrical Works	31,45,42,275	40,05,58,954
R & M- Vehicles	4,57,08,359	5,41,79,415
R & M- Plant and Machinery	12,38,02,224	10,94,56,008
R & M- Electronics	33,99,49,373	7,76,31,775
R & M- Equipments	5,40,49,131	4,81,34,873
<b>Consumption of Stores and Spares</b>	65,78,50,226	67,75,24,583
<b>Electricity and Water Charges</b>		
Gross Charges	165,86,64,410	157,25,01,472
Less: Recoveries	-45,09,98,483	-42,30,06,950
<b>Rent, Rates and Taxes</b>	47,70,098	33,77,204
<b>Insurance Premium</b>	4,54,60,838	3,99,34,375
<b>Advertisement and Publicity</b>	8,50,64,878	6,81,44,540
<b>External Services</b>	—	—
<b>Municipal Taxes</b>	20,22,80,281	17,27,63,728
<b>Meteorological Charges</b>	22,00,00,000	20,00,00,000
<b>Other Operating Expenses</b>		
- <b>Security Expenditure:</b>		
CISF	176,26,15,499	157,88,23,917
State Police & Others	11,25,45,189	10,82,15,860
- <b>Other Expenses</b>	75,34,49,293	60,89,39,944
<b>TOTAL</b>	<b>684,41,51,541</b>	<b>598,72,27,832</b>

**SCHEDULE - O****OTHER ADMINISTRATIVE AND MISCELLANEOUS EXPENSES**

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04 Rupees	2002-03 Rupees
Expenditure of CHQ on:		
(I) Repairs and Maintenance	4,44,21,483	3,86,18,334
(II) Insurance Premium	55,66,926	15,72,747
(III) Electricity and Water Charges	1,44,83,314	1,46,46,723
(IV) Rent, Rates and Taxes	2,652	—
Advertisement	3,02,49,187	1,72,98,256
Board Member's Remuneration	24,25,322	25,53,948
Interest:		
(I) On Long Term Loans (Please refer P&L Account)	—	—
(II) On Cash Credit	—	—
(III) On Bonds / Debentures etc	—	—
Legal Expenses	3,37,52,104	2,49,34,584
Audit Fees	1,10,72,520	95,07,816
Consultancy Services		
(I) Expenditure on Domestic Projects	81,96,435	3,13,93,998
(II) Expenditure on Foreign Projects	94,98,102	7,350
Donations	—	—
Postage, Telegrams and Telex Charges	72,79,711	69,34,626
Telephone, Fax, Internet Charges etc.,	12,18,07,769	10,50,40,724
Printing & Stationery	7,15,34,635	5,65,45,734
Lease Rentals	70,424	1,14,100
Fees Paid to Outsiders for Services	1,51,11,927	1,42,11,049
Training of Workers and Supervisors	69,29,837	54,54,137
Freight Charges	29,04,690	27,90,186
Travelling Charges	25,77,42,444	24,38,95,071
Research and Development - Airport Development	7,09,880	17,65,739
Loss on Assets Sold or Scrapped	—	4,69,655
Miscellaneous Expenses	84,06,74,848	18,18,92,838
<b>TOTAL</b>	<b>148,44,34,210</b>	<b>75,96,47,615</b>

**SCHEDULE - P****EXTRA-ORDINARY EXPENSES/INCOME**

<b>PARTICULARS</b>	<b>CURRENT YEAR 2003-04 Rupees</b>	<b>PREVIOUS YEAR 2002-03 Rupees</b>
EXPENSES	-76,10,007	—
INCOME	22,63,64,019	—
<b>TOTAL</b>	<b>21,87,54,012</b>	<b>—</b>





**SCHEDULE - Q**

**PRIOR PERIOD ADJUSTMENTS (NET)**

PARTICULARS	CURRENT YEAR 2003-04 Rupees	PREVIOUS YEAR 2002-03 Rupees
<b>EXPENDITURE</b>		
Pay & Allowances	14,89,934	-7,89,94,887
Other Staff Cost	1,25,134	-2,58,63,677
Operating Expenses	14,16,42,725	-3,15,22,033
Other Administrative and Misc. Expenses	70,76,431	-10,51,77,175
Depreciation	5,49,60,286	2,52,74,576
Financing Charges	-49,55,981	—
<b>Grand Total</b>	<b>20,03,38,529</b>	<b>-21,62,83,197</b>
<b>INCOME</b>		
<b>Traffic Revenue</b>		
Route Navigational facilities charges	-6,40,39,851	-2,36,85,860
Landing Fees	-9,78,985	-2,35,08,654
Parking and Housing Fees	-1,653	—
Terminal Navigational Landing Charges	—	17,856
Passenger Service Fees	3,26,57,749	-7,572
<b>Total</b>	<b>-3,23,62,739</b>	<b>-4,71,84,229</b>
<b>Non Traffic Revenue</b>		
Public Admission Fees	-18,007	—
Trading Concessions	-9,67,41,787	1,56,32,570
Rent & Services	2,71,59,514	-37,80,72,693
<b>Total</b>	<b>-6,96,00,280</b>	<b>-36,24,40,122</b>
<b>Cargo Revenue</b>	—	—
<b>Other Misc. Income</b>	16,48,65,212	-10,13,69,343
<b>Total Misc. Income</b>	<b>16,48,65,212</b>	<b>-10,13,69,343</b>
<b>Grand Total</b>	<b>6,29,02,192</b>	<b>-51,09,93,694</b>
<b>Prior Period Adjustment (Net)</b>	<b>13,74,36,337</b>	<b>29,47,10,497</b>

### SCHEDULE - R

#### OTHER MISCELLANEOUS INCOME

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04	2002-03
	Rupees	Rupees
Interest on Term Deposits	99,12,72,699	100,55,20,255
Income from Consultancy Services	13,07,112	8,16,750
Car Parking	26,60,95,423	20,79,47,736
Left Luggage Facilities	29,32,360	27,97,053
Profit on Sale of Fixed Assets	7,90,75,631	37,43,994
Interest on Staff Advances	2,40,97,541	2,02,24,983
Other Interest Income	48,62,90,431	64,53,852
Miscellaneous Income	63,55,32,878	47,16,97,541
<b>TOTAL</b>	<b>248,66,04,075</b>	<b>171,92,02,164</b>

### SCHEDULE - S

#### CONTINGENT LIABILITIES

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
	2003-04	2002-03
	Rs. in Lakhs	
I. Claims not acknowledged as Debts:		
1. Land Cases	8,350	12,964
2. Compensation claims of Accident	5,193	2,087
3. Cases under Arbitration	17,057	22,200
4. Claim against Cargo	2,084	1,796
5. Court Cases	17,214	12,006
6. Sales Tax/Municipal Tax/Income Tax etc.	12,561	4,605
II. Counter Guarantee given to State Bank of India for loan from M/s.Eksport Finans, Norway outstanding at the end of the year.	—	—
III. Others	2,437	894
<b>TOTAL</b>	<b>64,896</b>	<b>56,552</b>

## SCHEDULE - T

## NOTES FORMING PART OF THE ACCOUNTS : 2003-2004

The Accounts are presented in the format notified by the Government vide Notification No. 515 dated 6 June 2003 under Airports Authority of India (Annual Report and Annual Statement of Accounts) Rules, 2003.

The terms and conditions of transfer of land between the Ministry of Defence and the erstwhile NAA/IAAI are yet to be decided.

The levy of Royalty on Gross Turnover from Ground Handling Services at Airports by national carriers - Air India and Indian Airlines has been taken up through Ministry of Civil Aviation. These airlines are disputing levy of such charges. Pending directives from the Ministry, no effect has been considered during the year on account of the same.

MOU was signed between AAI and Cochin International Airport Limited (CIAL) in June 1999, which is not being honoured by CIAL. As CIAL has not agreed for treating the value of the equipments installed at CIAL as AAI's equity, the same are shown under the assets of AAI. As the matter regarding payment for the CNS ATM Services being provided by AAI to CIAL is under discussion with Ministry of Civil Aviation, the amount due from CIAL on this account has not been considered. CIAL Board has not accepted the MOU signed with AAI.

In respect of Hulule Airport project Maldives, arbitration claims have been lodged by AAI against M/s Dalmiya to an extent of US \$ 10,76,297 and M/s Dalmiya has also made counter claims to an extent of US \$ 1,76,40,447 against erstwhile IAAI. The arbitration award which was in favour of M/s Dalmiya in respect of Hulule Airport Project, Maldives has been contested in Court and pending final decision in the High Court an amount of Rs. 2.42 crores (including interest of Rs. 0.61 crores) and Rs. 0.22 crore towards differential interest have been deposited as per directives of the Court. The Hon'ble Court has further directed AAI to pay an interest of Rs. 2.61 crores for the period from the date of arbitration till the date of award. AAI has gone on appeal against this direction which is pending before Hon'ble High Court at Delhi.

The Government has appointed an arbitrator to arbitrate between Indian Airlines Ltd. and the Authority to resolve the disputes between both the parties. Arbitration award is awaited.

Balances in Advances/ customers accounts/liabilities are subject to confirmation and reconciliation..

702 acres (approx.) of Land of AAI is under encroachment at various Airports. The process of construction of Land records is in progress.

During the current year, 250 acres of land from Madhya Pradesh Govt. (Khajuraho airport) and 772 acres of land from Gujarat Govt. (Surat airport) were handed over to AAI free of cost.

Raytheon Co., USA has gone into arbitration proceedings against AAI and has claimed US \$ 2,03,76,665 (approx. Rs. 90 Crores as on 31.3.04) and interest thereon till their realization, as per their claim in 2001-02 in respect of MATS-BD Project. The Authority has also raised a claim of US \$ 3,73,40,873 (approx. Rs. 165 crores as on 31.03.04) and interest thereon up to the date of payment against Raytheon Co., USA. Arbitration proceedings are in progress.



1. A Standby Letter of Credit (SLOC) for US \$ 65,54,000 (approx. Rs. 30 crores as on 31.03.04) was received from Raytheon Company, USA as a security against the liquidated damages that might be levied on them under the terms of the Contract. The SLOC had expired on 31.12.2002. In September 2003, another SLOC for US \$ 65,54,000 valid upto 31.12.2003 was issued by Raytheon Company, USA. The matter was deliberated upon in the arbitral meeting on 5 December 2003. As per the directions of the Hon'ble Arbitrators, the Authority has moved an application dated 17 December 2003 for extension of the SLOC upto 31 December 2004, with the Arbitrators and served a copy to the Raytheon Company, USA for filing their reply. After Raytheon's reply, which is still awaited, the case for extension of SLOC will be taken up with the Arbitrators.
11. The Government has directed the Authority to bear all security expenditure w.e.f. 1.1.97 including outstandings payable for the period prior to 1.1.97. The expenditure is to be met out of the security component of PSF. In order to meet the future capital expenditure on security, the Authority has created a Reserve of Rs. 45 crores during the year out of the receipts from security component of Passenger Service Fee. Arms and Ammunitions belonging to AAI for Airport Security purposes are in the custody of CISF.
12. (i) The Authority has contributed Rs. 5 lakhs towards AAI's equity in Bangalore International Airport Limited (BIAL). Further, an amount of Rs. 187.50 lakhs was remitted by AAI to BIAL in 2002-2003 towards Pre Financial Close Development Costs (PFCD). During the year, AAI has made a claim with BIAL for Rs. 11,89,495/- towards travelling expenses incurred by AAI on behalf of BIAL. The amounts have been shown under advance against equity - BIAL (under the head 'Deposits, Loans and Advances' in schedule 'k') in terms of Share Holders' Agreement signed with BIAL on 23 January 2002.
- (ii) The Authority has contributed Rs. 76,350/- as equity in Hyderabad International Airport Limited (HIAL). Further, an amount of Rs. 2,78,67,000/- has been paid as advance against equity for funding the Pre Closing Date Development Costs. This amount has been shown under advance against equity - HIAL (under the head 'Deposits, Loans and Advances' in schedule 'k') in terms of Shareholders' Agreement signed with HIAL on 30 September 2003.
13. During the year, the Authority has taken over Surat Airport from the State Government. Pending valuation of the assets taken over, no effect in the Accounts has been considered.
14. In pursuance to MOCA's directions, the Authority has transferred the facility developed by APEDA towards Centre for Perishable Cargo at Mumbai to Air-India during the current year. The amount payable to APEDA by AAI amounting to Rs. 14.03 crores is now liable to be discharged by Air-India. This amount of Rs. 14.03 crores is shown as 'Amount recoverable from Air-India' pending formal execution of agreement.
15. Previous year's figures and schedules have been regrouped wherever necessary. The figures are rounded off to the nearest Rupee.

(M.C. KISHORE)  
Company Secretary

(J.M. KHARBANDA)  
Executive Director (F&A)

(V.D.V. PRASAD RAO)  
Member (Finance)

(K. RAMALINGAM)  
Chairman

Place: New Delhi  
Dated: 18.06.2004

## SCHEDULE U

**ACCOUNTING POLICIES**

Grants/Subsidies received from the Government and Foreign Financial Institutions for acquisition of assets under agreements approved by the Government are treated as Promoters' contribution and shown under Capital Reserve.

- (i) Depreciation is provided on Straight Line Method at the rates indicated in the Fixed Assets Schedule.
- (ii) Depreciation on additions to fixed assets is charged for the full year irrespective of the month of installation/ completion.
- (i) Amounts received in foreign exchange and credited in Indian rupees during the year are accounted for at the rates at which the conversions took place.
- (ii) The Assets and Liabilities as on 31.03.2004 in foreign currency are reflected at the exchange rate prevailing at the end of the year.
- (iii) The balance in Exchange Earners Foreign currency (EEFC) Account at the end of the year is accounted for at the rate prescribed by RBI for such Account.

Debts more than 2 years old recoverable from parties other than Government Departments are considered doubtful and provided for.

Special Repair Works on Runways, Taxiways and Aprons to restore Pavement Classification Number (PCN) value to their original level are treated as Revenue Expenditure.

Consumable stores and spares are charged off during the year of purchase due to high risk of obsolescence on account of technological considerations.

Transactions against which the ability to assess the ultimate collection with reasonable certainty is lacking at the time of raising bills like Revenue for the period beyond the validity of the contracts which are under legal disputes, Revenue from parties with whom cases are pending under PPE Act, Revenue from Government Departments, Interest on delayed payments, Cargo handling & demurrage charges (except where bills are raised on Airlines/Agencies), Share of Foreign Travel Tax, Insurance Claims, Interest on Staff advances, Passenger Service Fee from IAL and Air India etc. are accounted on cash basis.

Deposits made with the Telephone Authorities for new connections are charged off in the year of deposit.

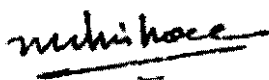
In respect of Deposit Works undertaken by the Authority, net income accrued as departmental charges is accounted for either on receipt or on lodging of the final claim, whichever is earlier.

The provision for Gratuity, Earned leave and Half-pay leave has been made on the basis of actuarial valuation. The Authority has its own Provident Fund Trust to which contributions are made regularly.

Insurance claims are preferred on replacement cost basis. Any surplus in the claims received over the actual cost incurred for the restoration of assets to their original condition is taken to Capital Reserve Account.

For making adjustments of Income Tax Provision and Advance Tax thereon, order u/s 250 of Income Tax Act 1961 is taken as the basis.

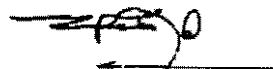
Revenue expenditure in respect of projects is charged off to the Profit and Loss account.



(M.C. KISHORE)  
Company Secretary



(J.M. KHARBANDA)  
Executive Director (F&A)



(V.D.V. PRASAD RAO)  
Member (Finance)



(K. RAMALINGAM)  
Chairman



## AUDIT REPORT OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA ON THE ACCOUNTS OF AIRPORTS AUTHORITY OF INDIA FOR THE YEAR ENDED 31 MARCH 2004.

We have audited the attached Balance Sheet of the Airports Authority of India (Authority) as at 31 March 2004 and the Profit and Loss Account for the year ended on that date annexed thereto, under Section 19(2) of the Comptroller and Auditor General's (Duties, Power and Conditions of Services) Act, 1971 read with Section 28(2) of the Airports Authority of India Act, 1994 (AAI Act 1994) and Airports Authority of India (Annual Reports and Annual Statement of Accounts) Rules, 2003 (AAI Rules 2003). These financial statements includes the accounts of 126 airports. These financial statements are the responsibility of the Authority's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the auditing standards generally accepted in India. These Standards require that we plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

Based on our audit, we report that:

- a. We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our Audit.

- b. The balance sheet and profit and loss account dealt with by this report have been drawn in the format approved by Government of India under clause (g) sub section (2) of Section 19 of the AAI Act, 1994 and Rules of AAI 2003.
- c. In our opinion, proper books of accounts and other relevant records have been maintained by the Authority as required under Section 28(2) of the AAI Act, 1994 in so far as it appears from our examination of such books except that:

### A BALANCE SHEET

#### 1.1 Current Liabilities and Provisions

##### 1.1.1 Current Liabilities (Schedule - D) Rs.1063.03 crore

- (i) This is understated by Rs 1.53 crore as it has been arrived at taking in to account minus balance under the head-provident fund.
- (ii) This is understated by Rs.1.30 crore due to non inclusion of liability towards interest on Govt. loan (Rs.94.26 lakh) as per the Court orders, advertisement and publicity expenditure (Rs.25.45 lakh) and overtime allowance (Rs.1.01 lakh). This also resulted in overstatement of profit by Rs.1.30 crore.
- (iii) This is overstated by Rs.1.01 crore due to non withdrawing balance liability (Rs.83 lakh) towards penal interest and interest (Rs.1.01 lakh) on Govt. loan which are payable non interest free. This also resulted in understatement of profit by Rs.1.01 crore.



**1.1.2 Provisions : (Schedule - E) Rs.1549.61 crore**

- (i) This is understated by Rs.26.19 crore as Rs.279.12 crore were provided as provision towards Gratuity, Leave encashment and half pay leave encashment against Rs.305.31 crore valued by Actuary. This resulted in overstatement of profit to the same extent.
- (ii) This is understated by Rs.13.32 crore due to non-provision of dividend as per the directions of Government of India. Consequently, tax on dividend has also been understated by Rs.1.71 crore.
- (iii) This is overstated by Rs.2.25 crore due to non adjusting of excess provision made for Income Tax for the period upto 1998-99 with Advance Tax for the same period even after receipt of order under section 250 of Income Tax Act. As per the accounting policy of the Authority, adjustment of provision for tax and advance tax has to be carried out on receipt of order under Section 250 of the Income Tax Act. This also resulted in overstatement of Advance Tax (Current Assets) to the extent of Rs.2.25 crore.

**1.2 Fixed Assets (Schedule - F) Gross Block: Rs.4788.21 crore**

- (i) This includes Fixed Assets amounting to Rs.9.57 crore which were retired from active use and pending disposal. These should have been shown separately at lower of their net book value and net realizable value as required under AS-10.
- (ii) This is understated by Rs.4.88 crore due to classifying the completed works as Capital work-in-progress at Barapani and Agartala Airports. Consequently, depreciation is also understated by Rs.36 lakh.

- (iii) This is overstated by Rs.1.69 crore due to incorrect capitalisation. Consequently, depreciation is overstated by Rs.29 lakh.
- (iv) This is overstated by Rs.58.86 lakh due to incorrect capitalisation of expenditure of revenue nature at Bangalore and Hyderabad airports. This has resulted in understatement of operating expenses by Rs. 53.88 lakh and overstatement of depreciation by Rs. 4.98 lakh and consequently overstatement of profit by Rs.53.88 lakh.
- (v) Register of Fixed Assets had not been maintained at IAD Headquarters.
- (vi) Physical verification of Fixed Assets had not been done at Corporate Headquarter Office and 4 stations in Northern Region, Palam. Further no reconciliation of excesses/shortages found during physical verification had been carried out at 13 stations of Northern Region, Palam, few stations of Southern Region, Chennai, Guwahati, Hyderabad, Bangalore, IAD (HQ), IGI Cargo, IGI Airport and Chennai Airport selected for audit.

**1.3 Land Freehold (Schedule - F) (Gross Block): Rs.131.63 crore**

The note No. 8 of Notes Forming Part of the Accounts (Schedule T) is deficient, as it does not quantify land area under possession of the Authority for which title deeds are not executed in its name. A test check in audit revealed that:-

- (i) Title deeds for land measuring 6389.66 Acres in possession of the Authority at 24 Airports in Northern Region were not executed in the name of the Authority.
- (ii) Land Records & Title deeds were not available in respect of Bangalore Airport, Hyderabad Airport and Warrangal Airfield.

- (iii) Title deeds were not available for land measuring 1088 Acres in possession of the Authority at Jabalpur, Kandwa, Rajkot and Surat airports.
- (iv) No land records were available in respect of land under AAI (NAD) Kolkata.
- (v) Land records/title deeds were not available in respect of Southern Regional Office, Calicut, Coimbatore, Madurai, Mangalore, Trichy, and Trivandrum Airports.
- (vi) Land record/title deed for land measuring 6375.55 acres in possession of Authority at IAD Chennai, Delhi and Mumbai were not executed in the name of the Authority. Further 31 acres of land in possession of the Authority at Mumbai is under dispute.
- (vii) Further a test check revealed that land under encroachment does not include 151.88 acres of land under encroachment in respect of Eastern Region, Kolkata, IAD Mumbai and 7 airports of Northern Region, Palam.

#### 1.4 Current Assets

##### 1.4.1 Sundry Debtors (Schedule - I) Rs.530.13 crore

This is overstated by Rs.51.52 lakh being the amount due from private parties relating to licence fee for which legal suit for recovery initiated under Public Property Eviction (PPE) Act. This has been accounted as income in contravention to Accounting Policy No. 7 of the Authority. Consequently, Sundry Debtors and Profit are overstated by Rs.51.52 lakh.

##### 1.4.2 Deposits, Loan and Advances (Schedule - K): Rs.1581.79 crore

- (i) This is overstated by Rs.5.30 crore due to treating of cost paid towards purchase of land as advance

though possessions of land have been taken over by the Authority. This resulted in overstatement of Advances and understatement of Freehold Land by Rs.5.30 crore.

- (ii) This is overstated by Rs.34.27 lakh due to non-adjustment of advance paid for maintenance services. This also resulted in overstatement of Profit and understatement of Operating Expenses to the same extent.

#### B PROFIT AND LOSS ACCOUNT

##### 1.5 Expenses Provisions for Doubtful Debts: Rs.114.20 crore

This is overstated by Rs.35.75 lakh due to incorrect provision for the amount already received. This also resulted in understatement of Profit to the same extent.

##### 1.6 Prior Period Adjustment Net: (Schedule - Q) Rs.13.74 crore

- (i) This includes Rs.11.01 crore being excess liability withdrawn relating to works (Rs.80 lakh) amount adjusted against arbitration award of June 2003 (Rs.9.46 crore) and income relating to land rent accounted as per settlement (Rs.75.37 lakh) reached in January 2004 which have been accounted under prior period instead of current year in violation of AS 5.
- (ii) The prior period income is overstated by Rs.5.59 crore due to withdrawing the current year income instead of prior period income, which arose due to revision in rates and treating of income received during the year on account of arbitration award as previous year income.
- (iii) The prior period expenditure is overstated by Rs.1.77 crore due to incorrect depreciation charged upto 2002-03 in respect of Bhuj and Bagdogra Airports. This also resulted in



overstatement of Depreciation and understatement of Net Assets to the same extent.

#### CONTINGENT LIABILITIES (SCHEDULE - S)

Contingent liability is understated by Rs.15.26 crore due to:

- (i) Authority having been made party to an arbitration case between Engineering Projects (India) Limited & its Sub contractor to the tune of Rs.9.27 crore.
- (ii) penalty of Rs.2.20 crore levied by Income Tax Authorities U/s 271 (1)(e) on the Authority for the Assessment year 2000-01.
- (iii) not finalising the amount of Rs. 3.79 crore payable by Authority to Bharat Electronics Limited after mutual discussion relating to Airports Surveillance Radars and Monopulse Secondary Surveillance Radars. The BEL has shown a sum of Rs.3.79 crore as recoverable from the Authority as on 31.03.2004.

#### ACCOUNTING POLICY (SCHEDULE - U)

- (i) The Accounting Policy No. 6 of the Authority is deficient as it allows the charging of full value of stores and spares during the year of purchase irrespective of actual consumption. Stores and spares valuing Rs.80.81 crore already charged to Profit and Loss Account were lying unconsumed as on 31 March 2004 in respect of units test checked.
- (ii) The fact that there exist post retirement medical benefit scheme has not been disclosed. The accrued actuarial liability has not also been provided for. The provisions of Accounting Standard 15 have not been compiled with in this regard.

#### E GENERAL

The Authority had not laid down any mechanism for Member's Responsibility Statement indicating therein that in the preparation of annual accounts, the Members had selected such accounting policies and applied them consistently, and that the Members had taken proper and sufficient care for maintaining adequate accounting records etc.

Subject to our observations in the preceding, we report that the Balance Sheet and Profit and Loss account dealt with by this report are in agreement with the books of accounts.

In our opinion and to the best of our information and according to the explanations given to us, the said Balance Sheet and the Profit and Loss Account read together with the Accounting Policies and Notes thereon and subject to the significant matters stated above and the summarized financial results presented in the Annexure to the Audit Report, give a true and fair view:

- (i) In so far as it relates to the Balance Sheet, on the State of Affairs of the Authority as at 31 March 2004.
- (ii) In so far as it relates to the Profit and Loss Account of the Authority, Profit for the year ended on that date.

*Revathi Bedi*

(Revathi Bedi)  
Principal Director of Commercial Audit  
& ex-officio Member, Audit Board /  
New Delhi.

Dated : 10 November 2004  
Place : New Delhi

**Summarised Financial Results of Airports Authority of India for the year ended  
31 March 2004 by the Comptroller and Auditor General of India.**

**1 Financial Position**

(Rupees in crore)

The table below summarises the financial position of the Authority as on 31 March 2004 :

	(Rupees in Crore)		
LIABILITIES	2001-02	2002-03	2003-04
(A) Capital Account	388.79	405.59	416.63
(B) Borrowings			
(i) Loans	315.81	225.73	145.23
(ii) Interest Accrued & due	0	0	0
(C) Reserves & Surplus			
(i) Capital Reserve	225.57	262.03	266.53
(ii) General Reserve	1452.82	1580.09	1721.68
(iii) Any Other Reserve	345.1	474.95	614.34
(D) Current Liabilities & Provisions			
(i) Current Liabilities & Provisions	2045.88	2329.59	2422.16
(ii) Provision for Gratuity	94.41	172.17	190.48
<b>Total</b>	<b>4868.38</b>	<b>5450.15</b>	<b>5777.05</b>

ASSETS	2001-02	2002-03	2003-04
(E) Gross Block	3922.74	4323.28	4788.21
(F) Less Cumulative Depreciation	2267.77	2609.12	2986.65
(G) Net Block	1654.97	1714.16	1801.56
(H) Capital Work-in-progress	317.38	402.56	456.15
(I) Investments	14.12	11.15	10.00
(J) Current Assets, Loans and Advances	2881.91	3322.28	3509.34
(K) Deferred Revenue Expenditure	0.00	0.00	0.00
<b>Total</b>	<b>4868.38</b>	<b>5450.15</b>	<b>5777.05</b>
(L) Working Capital (J-D(i)-B(ii))	836.03	992.69	1087.18
(M) Capital Employed (G+L)	2491.00	2706.85	2888.74
(N) Net Worth (A+C(ii)-K)	1841.61	1985.68	2138.31
(O) Net Worth per Rupee of Capital	4.74	4.90	5.13

**2. SUMMARY OF WORKING RESULTS**

The working results of the Authority as on 31 March 2004 are summarised below:

(Rupees in crore)

Particular	2001-02	2002-03	2003-04
(a) Revenue			
(i) Traffic Revenue	1531.28	1656.74	1764.15
(ii) Non-Traffic Revenue	713.56	727.75	866.44
<b>Total</b>	<b>2244.84</b>	<b>2384.49</b>	<b>2630.59</b>
(b) Expenditure	1767.86	1887.44	2086.63
(c) Net Profit Before Tax	476.98	497.05	543.96
(d) Less. Provision for Tax	210.00	215.00	229.00
(e) Profit after Tax	266.98	282.05	314.96
(f) Percentage of Profit after Tax to:-			
(i) Total Revenue	11.89	11.83	11.97
(ii) Capital	68.67	69.54	75.60
(iii) Net Worth	14.50	14.20	14.73

**3. RATIO ANALYSIS**

(i) Liquidity ratio: The percentage of current assets to current liabilities (including provisions and interest accrued and due but excluding provision for gratuity) $(J/(D(I)+B(ii))) * 100$	140.86	142.61	144.88
(ii) Debt-equity ratio:- $(B(I))/(A+C(ii))$	0.17:1	0.11:1	0.07:1

*Revathi Bedi*

(Revathi Bedi)

Principal Director of Commercial Audit  
& ex-officio Member, Audit Board-I,  
New Delhi

Dated:- 10 November 2004

Place: New Delhi