



सत्यमेव जयते

Report of the
Comptroller and Auditor General of India
on
**Turnaround Plan and Financial Restructuring
Plan of Air India Limited**



Union Government (Commercial)
Ministry of Civil Aviation
Report No. 40 of 2016
(Performance Audit)

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PREFACE

This Performance Audit Report has been prepared under the provisions of Article 151 of the Constitution. The audit has been carried out in accordance with the Performance Audit Guidelines and the Regulations on Audit and Accounts, 2007 of the Comptroller and Auditor General of India.

This Report contains the results of the Performance Audit on the “Turnaround Plan (TAP) and Financial Restructuring Plan (FRP) of Air India Limited”. The Audit covered the period from 2010-11 to 2015-16. The Report is based on the scrutiny of documents pertaining to the Ministry of Civil Aviation (MoCA), Director General of Civil Aviation (DGCA), Air India Limited etc. The Report has been prepared for submission to the President of India under Article 151 of the Constitution and is in furtherance to Report No. 18 of 2011-12, which covered the Performance of Civil Aviation of India.

The Turnaround Plan and Financial Restructuring Plan of AIL was approved by Government of India in April 2012. Several of the turnaround measures were to be completed by March 2015. Government had committed to infuse equity of ₹42182 crore during the period from 2011-12 to 2031-32. It is in this context that the audit of TAP and FRP was taken up for review in audit.

The audit revealed erosion of the benefits of financial restructuring due to high volume of short term loans of AIL, shortfall in equity releases in the initial years and shortfall in monetisation of assets. AIL faced an acute shortage of narrow body aircraft, requiring expeditious leasing of additional aircraft. Operational performance of AIL relating to utilisation of aircraft, on-time-performance has to improve to achieve the targets in TAP. While AIL has achieved surplus over its variable cost and all services recovered their fuel costs, this could be attributed largely to the sharp fall in Air Turbine Fuel prices. The Company is yet to recover its total cost of operation. Improvements in human resource management and integration of IT systems are required for successful implementation of TAP. While granting bilateral rights to foreign carriers government should also take into consideration its impact on AIL.

Audit wishes to acknowledge the co-operation and assistance extended by the officers and Staff of MoCA, DGCA and AIL during the Performance Audit.



Executive Summary

Executive Summary

Background

Air India Limited (AIL), wholly owned by the Government of India (GoI), is engaged in Domestic as well as international air transport operations. The unfavorable industry scenario coupled with operational difficulties of the Company strained the financial position of Air India Limited. The high debt burden of the Company further contributed to liquidity stress and the Company lost significant market share in recent years.

The Company formulated a comprehensive Turnaround Plan (TAP) which was approved by the Cabinet Committee on Economic Affairs (12 April 2012). This Report examines the implementation of the Turnaround Plan. Report No. 18 of 2011 of the C&AG of India, had reviewed the Performance of Civil Aviation in India.

Financial Restructuring

Turnaround Plan/Financial Restructuring Plan (FRP) of AIL included infusion of equity of ₹42182 crore over the period from 2011-12 to 2031-32, restructuring of working capital of ₹22157 crore, earning of revenue of ₹5000 crore over ten years from 2012-13 to 2021-22 through monetisation of assets. The Company was expected to earn positive Earning before Interest Taxes Depreciation and Amortisation (EBITDA) from Financial Year (FY) 2012-13 and cash surplus from FY 2017-18.

AIL sold five B-777-200 Long Range (LR) aircraft during the period from 2013 to 2015. The sale proceeds were utilised to liquidate the outstanding loan amounting to ₹1804.96 crore. However, the equity commitment towards repayment of aircraft loans (during 2014-15) had not been adjusted to account for premature liquidation of aircraft loan taken for five aircraft.

(Para 3.3.1)

Equity commitment for Non-convertible debentures was worked out considering the interest rate at 9.50 *percent*. However the actual rate of interest payable was 9.08 *percent*. Considering this difference in rates, the equity sanctioned by GoI was higher by ₹521.53 crore over the entire repayment period (up to 2032).

(Para 3.3.2)

The working capital requirement of AIL exceeded the FRP limit which resulted in availing of additional short term loans. This increase in working capital requirements and consequent increase in short term loans was due to failure in generating projected revenue, mainly on account of non-achievement of asset monetisation target, increase in staff costs due to delay in operationalisation of subsidiaries and non-implementation of recommendations of Justice Dharmadhikari Committee (JDC), for harmonisation of wages and increase in interest charges.

(Para 3.4.1)

Monetisation of Assets

AIL failed to achieve the target mainly due to improper selection of properties not based on actual feasibility of monetisation.

Four properties viz. Plot at Vasant Vihar, Delhi, Plots in Nerul, Navi Mumbai, Buildings at Old Airport-Mumbai & Land at Baba Kharak Singh Marg, Delhi listed in the TAP could not be monetised due to various deficiencies in ownership and conditions attached to the ownership. Further, four properties identified in TAP for monetisation could not be monetised as the same were being utilized by the company for its own use.

(Para 3.5.1 and 3.5.2)

108 properties were given for valuation to M/s DTZ, out of which most of the properties had been given on lease by State Govt. / Airport Authority of India (AAI) / Govt. Agencies for specific purpose. Further, 18 properties did not have clear title. Hence, monetisation of these properties was uncertain. Only six properties had been put up for e-auction, out of which only two properties were sold till date.

(Para 3.5.3.1 and 3.5.3.3)

Due to non-achievement of yearly monetisation target of ₹500 crore, there was additional interest and debt burden on the Company.

(Para 3.5.4)

Availability of Aircraft

AIL executed purchase agreement with M/s. Boeing and M/s. GE for supply of fifty aircraft. Delivery of these aircraft started in 2007.

A month after the last B-777-200 LR aircraft was delivered to AIL, the company decided to lease out three B-777-200 LR aircraft as surplus capacity of wide body aircraft was likely after receipt of B-777-300 ER. This did not however materialise and led to operational losses of the airline. With the decision to utilise B-777-300 ER with re-despatch method for long haul operation, the B-777-200 LR aircraft, which were initially procured for long haul operation, were rendered redundant.

(Para 4.2.1)

Five B-777-200 LR aircraft were sold to Etihad Airways at significantly lower price than the indicative market price of USD 86 to 92 million per aircraft obtained by the company before initiating the sale process. Another valuation exercise was carried out after opening the financial bids and the market value of the aircraft could not be realised in the sale. AIL incurred a book loss of ₹671.07 crore on the sale of five aircraft and payment of ₹324.67 crore towards interest on loans availed for procurement of these aircraft.

(Para 4.2.2 and 4.2.3)

Delay in induction of the B-787-800 aircraft led to AIL operating existing inefficient aircraft on the routes earmarked for B-787-800 aircraft. AIL lodged an initial claim of USD 710 million against which the company received only USD 328 million for compensation from M/s Boeing.

(Para 4.2.6)

The Company, though aware of the shortage of narrow body aircraft as early as May 2010, delayed leasing of A-320 aircraft. This resulted in non-availability of aircraft as targeted. Against the requirement of 19 aircraft, the Company inducted only five aircraft till March 2016.

(Para 4.3 and 4.3.1)

Deployment and utilisation of Aircraft

Deployment of aircraft remained low as they were grounded for considerable period. The main cause of grounding of AIL aircraft was non-availability of spares, leading to cannibalisation of spares from one aircraft to another, compounding the grounding period and loss of flying hours. In case of some aircraft, the initial provisioning of spares was lower compared to that recommended by manufacturers/ suppliers. Orders for spares were placed only as and when the need arose. There was excess grounding due to delay in completion of regular scheduled checks. Further, there were instances of prolonged grounding exceeding six months where the aircraft were cannibalised. For the period the aircraft was grounded, the Company continued to pay finance charges and lease rent.

(Para 5.1 and 5.2)

Six B-787-800 aircraft had to be grounded soon after induction for over four months on account of reported malfunctioning of Lithium-ion-Battery. The purchase agreement did not contain any provision for levying penalty on the manufacturer in case of inherent technical fault. In the absence of specific provision in the agreement, AIL failed to recover claim of USD 50 million, preferred on M/s Boeing in full. As against AIL's claim M/s. Boeing agreed to pay USD 24 million in cash and USD 3.4 million towards waiver of late fee on AIL's spare account. In the meanwhile, AIL incurred substantial expenditure due to unplanned grounding on account of mechanical defect in the aircraft which was a design deficiency attributable to M/s Boeing. Further, the Dreamliner (B787-800) which had been identified as the workhorse of AIL suffered continuous technical snags since its introduction in AILs fleet.

(Para 5.2.2.1 and 5.2.2.2)

TAP had set targets for utilisation of aircraft in terms of hours to be flown. The utilisation of the aircraft were, however, below the target in TAP. The aircraft were grounded for prolonged periods leading to low utilisation. The Available Seat Kilometer (ASKM) of the newly acquired B-777-200 LR, B-777-300 ER and B-787-800 aircraft had been lower than the targets fixed for the period from 2010 to 2016.

(Para 5.3)

The empty weight of the B-787-800 aircraft was observed to be higher than the prescribed weight by ten tons. The increased weight of the aircraft would result in additional fuel consumption. M/s Boeing however, admitted that performance of B-787-800 aircraft had been below what has been promised and AIL would be compensated by providing suitable discount in future delivery of three B-777-300 ER aircraft. The procurement contract did not have adequate safeguards to enforce compensation and as such the company had to resort to negotiation. M/s Boeing refused to negotiate the ceiling on compensation but offered negotiation in good faith.

(Para 5.3.1)

The Company could not achieve the TAP targets for utilisation of available fleet in respect of narrow body aircraft.

(Para 5.5.2 and 5.5.3)

Aircraft grounded for routine checks remained grounded for prolonged periods owing to non-availability of components, serviceable engines and other parts which led to cannibalisation of parts.

(Para 5.4.2, 5.4.3, 5.4.4 and 5.4.5)

Considerable delays in operationalising the CFM engine facility led to engines being sent abroad for repair and maintenance.

(Para 5.4.5.1)

Inefficiency of maintenance of aircraft also resulted in compensations that the airline had to pay to lessors for non-fulfilment of re-delivery conditions of the aircraft.

(Para 5.4.5.3)

Management of bilateral agreements and slot management

Enhancement in bilateral entitlement between India and foreign countries resulted in seat capacity allowed in the bilateral far exceeding the genuine passenger traffic requirements between two destinations leading to its use for 6th freedom traffic by foreign airlines impacting the interest of AIL. Enhancement of bilateral entitlements had greater impact on operations in gulf sector particularly Dubai and Abu Dhabi.

(Para 6.1)

Enhancements in bilateral entitlements between India and foreign countries had resulted in seat capacity allowed in the bilateral agreements significantly exceeding the “point-to-point” passenger traffic requirements between the two destinations. The sixth freedom traffic carried by the 17 foreign airlines continued to significantly exceed the point-to-point traffic between the countries during the years 2014-15 and 2015-16. During 2014-15, 6th freedom traffic constituted 59.15 *percent* of the total carriage. This increased to 61.14 *percent* during 2015-16

(Para 6.1.1)

AIL had been granted 5th freedom rights in a majority of the bilateral agreements. Out of the 50 MoUs reviewed, Audit noticed that designated carriers of India had clear intermediate/beyond 5th freedom rights in 28 agreements. In 41 out of 50 countries reviewed, AIL had the option of utilising 5th freedom rights. However, Audit observed limited utilisation of 5th freedom rights by AIL

(Para 6.1.3.1)

AIL had utilised 100 *percent* of the allocated capacity of bilateral entitlements *vis-a-vis* 13 countries. Yet the company made no efforts to enhance these allocations or to provide for future enhancements in capacity, despite increase in fleet size following procurement of aircraft. In India-Oman sector and in India-Qatar sector MoCA withdrew seats allocated to AIL and transferred it to Indigo airlines, due to non-utilisation of allocated seats by AIL.

(Para 6.1.3.2)

Network and Route Strategy

AIL was able to operate only a single hub at Delhi as against the envisaged hubs at Delhi and Mumbai, even after four years of approval of TAP. AIL had also moved away from the TAP strategy of launching of 'Indian Shuttle Service' to utilise all economy narrow body aircraft to target new passenger segment and taken a conscious decision to adopt hybrid model of Full service carrier and Low cost carrier.

(Para 7.1 and 7.2)

While the Company envisioned re-emergence of Air India as the market leader in Indian aviation sector by providing seamless travel within India and the world with the introduction of appropriate network model, the Company failed to utilise its available resources optimally, particularly for the narrow body fleet of A-319 and A-321.

(Para 7.3)

All international services and domestic services of AIL recovered their fuel cost during 2012-13 and 2014-15 respectively. AIL achieved surplus over variable cost in 2012-13. This surplus over variable cost increased from ₹686 crore in 2012-13 to ₹4103 crore in 2015-16. AIL however failed to generate surplus to meet the total cost, the deficit over total cost being ₹5514 crore in 2015-16. Operations in International sector was the major contributor to the overall deficit.

(Para 7.4)

Human Resource Management Initiatives

Milestones that AIL had to achieve for release of equity included ceasing of payment of Productivity Linked Incentive (PLI) till the achievement of Profit Before Tax by AIL and working out VRS package by December 2011. Report of Group of Officers, approved by CCEA, also included need for rationalising of costs, trimming of management and employee groups to drive the productivity of airline.

Despite direction of CCEA to stop payment of PLI till the time AIL could generate profit before tax, AIL made payment of ₹734 crore being 75 percent of PLI to the employees as adhoc pay. Further, one step-up benefit given to the Aircraft Maintenance Engineers and Technical Officers in contravention of the recommendation of JDC report resulted in annual expenditure of ₹13.92 crore.

(Para 8.1.A and 8.2.1)

In contravention of the recommendation of JDC report, AIL approved promotion of 2482 managerial employees, allowed accommodation of crew in five star hotels leading to excess expenditure and extended free passage to family members.

(Para 8.2.2 to 8.2.4)

AIL had excess manpower compared to the approved standard force. However AIL hired consultants, temporary and casual employees, etc. which added to staff expenses.

(Para 8.3)

The crew of AIL has not been optimally utilised which resulted in additional payment of ₹48.89 crore. The existing Cabin crew were also underutilised.

(Para 8.5 and 8.5.1)

Hiving off of Maintenance Repair and Overhaul and ground handling business to subsidiaries

TAP envisaged the hiving off activities of Maintenance Repair & Overhaul (MRO) services and Ground Handling services to subsidiaries by January 2012.

Hiving off activities of MRO to Air India Engineering Services Limited (AIESL) and Ground Handling to Air India Air Transport Services (AIATSL) were achieved only on 1 January 2015 and 1 April 2014 respectively, after considerable delay.

(Para 9.1)

AIL inaccurately reported to the Oversight Committee (August 2013) that employees of AIL performing ground handling activities had been transferred to AIATSL, even though, all staff continued to be on the rolls of AIL with actual transfer of payrolls for AIATSL taking place w.e.f. April 2014. Similarly AIL informed (August 2014), that both AIESL and AIATSL had been operationalised by February 2013 even though, AIATSL could be operationalised only by April 2014 and AIESL by January 2015.

(Para 9.2)

AIL was to provide a total equity of ₹375 crore to AIESL during the first three years commencing from the date of operationalisation of AIESL. Likewise, AIATSL was to be provided an equity of ₹393 crore, of which ₹150 crore was to be infused in the first year. However, AIL did not infuse this equity towards capital expenditure in AIESL and AIATSL (March 2016).

(Para 9.3)

M/s Boeing had committed to invest upto USD 100 million for establishing and operating a facility in India dedicated to provide maintenance and logistics services as a part of the purchase agreement signed in December 2005. As per the original agreement, the MRO facility was to be operational by August 2009. However the facility was completed only in January 2014 and operationalised in August 2015.

(Para 9.4)

Consequent to the purchase of new Boeing aircraft fitted with GE engines, AIL decided to set up GE branded GENx and GE 90 overhaul facility at Nagpur. The facility was to be operational by 2013. The facility was still under construction and was expected to be fully operationalised only by December 2017. Due to delay in completion of overhaul facility, AIL had to pay higher amounts to GE for engine overhaul services. The avoidable amount incurred by AIL over January 2013 to March 2016 on this account was ₹ 64.75 crore.

(Para 9.4)

Integration of IT Systems

TAP had envisaged integration of Central Planning and Control System (CPCS) and Flight Planning System (FPS) with the existing Passenger Service System (PSS) and RAMCO Systems. The CPCS, comprising Network Planning and Control System (NP&S), System for Operations and Hub Control (HCC-OCC) and Crew Management System (CMS) were to be procured and implemented before Commonwealth Games beginning in October 2010.

AIL was not utilising three out of the five modules of NP&S (a component of CPCS) despite their implementation as early as in May 2010-July 2010 though, it was paying the monthly recurring System Usage and Support fee for these. AIL failed to arrange for vital input data and skilled man-power necessary for optimum utilisation of Profit Manager, in time. AIL also failed to calibrate the Profit Manager System necessary for a meaningful output. This rendered the expenditure incurred on the procurement of input data, infructuous.

(Para 10.4 - A and B)

AIL did not insist on Performance Bank Guarantee (PBG) in the contract for Data Services, Sales and Network Analyzer Module required for utilisation of Profit Manager. Therefore, no penalty could be imposed on the service provider for non-performance, eventually leading to the termination of the contract. AIL also did not make adequate efforts to develop and retain trained manpower for complete utilisation of the sophisticated NP&S Tools.

(Para 10.4 - C)

The Crew Management System (CMS), a key component of CPCS, to be implemented by Commonwealth Games October 2010, was yet to be implemented by the contracted solution provider forcing AIL to adopt an alternate inferior solution as an interim measure. The delays were attributable to absence of timely follow-up by AIL and penalty clause for delays in the Contract.

(Para 10.5)

There had been a significant delay in the implementation of FPS and a corresponding delay in accrual of substantial savings in terms of fuel cost.

(Para 10.6)

Operational Performance

Cabinet Committee on Economic Affairs (CCEA), as well as Master Restructuring Agreement (MRA) had fixed milestones for operational efficiencies to be achieved by AIL by 2015.

Though AIL achieved the overall milestone for Passenger Load factor and network Yield, it did not meet individual target in respect of B-777-200 LR and B-787-800 fleet.

(Para 11.1 and 11.2)

AIL was to achieve an overall On Time Performance (OTP) of 85 *percent* in 2012-13 and 90 *percent* by 2013-14. However till 2015-16, the target of 85-90 *percent* in OTP had not been achieved. Moreover, OTP of AIL had been lower as compared to the other domestic carriers at Delhi and Mumbai airports both in 2014-15 and 2015-16. While AIL had recorded the lowest OTP for Mumbai, it was the second lowest performer for Delhi.

An OTP analysis (as per delay codes) for 50 *percent* of the domestic AIL flights in the Delhi-Mumbai-Delhi (domestic) sector (2014-15), revealed that 23 *percent* of the delay in Delhi and 26 *percent* of the delay in Mumbai airport was entirely attributable to AIL. Another 20 *percent* to 30 *percent* of the delay could also have been partially controlled by AIL. Further OTP analysis of 50 *percent* of flights with lower OTP operating to major international destinations from Delhi and Mumbai airports, revealed that nearly half the delays were within the control of AIL. Similarly for 2015-16, 19 *percent* of the delays in Delhi and 23 *percent* of the delays in Mumbai were entirely attributable to AIL. In addition 26 to 38 *percent* of the

delays could have been partially controlled by AIL. Further in International sector (Ex-Delhi and Ex-Mumbai) nearly one-third of the delays were entirely within the control of AIL along with another one third of the delays which were partially controllable. Action by the airline could, thus, improve the OTP significantly.

(Para 11.3)

The percentage of rescheduling of flights within three days of flights increased after 2013-14. In significant number of cases the reason recorded for rescheduling was "Miscellaneous". Audit studied the actual reasons for rescheduling in case of Ex-Delhi flights and Ex-Mumbai flights. In respect of Ex-Delhi flights 59.78 percent and 65.66 percent of the reason for 2014-15 and 2015-16 respectively were within the control of AIL. In respect of Ex-Mumbai flights 62.65 percent and 67.28 percent of the reasons for 2014-15 and 2015-16 respectively were within the control of AIL. Moreover no mechanism existed in AIL to monitor/control rescheduling of flights.

(Para 11.5)

Recommendations:

- (i) As a result of the considerable erosion of the benefits of financial restructuring due to high volume of short term loans of AIL, the value of which was nearly four times the cash credit limits laid down in the Turnaround Plan–Financial Restructuring Plan (TAP-FRP), the Company and the Ministry may need to reassess the requirement of fund envisaged in the Plan.*
- (ii) Monetisation of assets which failed to take off in the four years ended 31 March 2016 should be fast tracked. Efforts should be taken to ensure that assets identified for monetisation had proper title deeds and the lease agreements did not contain any limiting provision/conditions impacting their monetisation.*
- (iii) Considering the acute shortage of narrow body aircraft faced by the Company, the process of leasing additional A-320 aircraft should be expedited. All efforts should be made to eliminate abnormal grounding of aircraft. Considering the significant expenditure of the airline on lease rent (for leased aircraft) and finance cost (for owned aircraft) for the period the aircraft were grounded, effective action should be taken for optimising the stock of spares, parts, components and serviceable engines required for repair and maintenance of the acquired fleet. Utilisation of aircraft, particularly the narrow body aircraft should also be improved to meet targets prescribed in TAP and contribute to higher revenues for the airline.*
- (iv) The Company should focus on recovery of total cost of operation rather than variable cost alone for an effective turnaround for the airline. Rationalisation of routes should be continued. Concerted efforts should be made for maintaining and improving the market share of the airline, particularly on routes where the presence of AIL has been traditionally strong.*
- (v) The recommendations of Justice Dharmadhikari Committee on harmonisation and rationalisation of staff costs should be implemented by AIL in letter and spirit. The excess manpower compared to the standard force fixed by the Company needed to be*

rationalised and the practice of hiring of temporary manpower should be reviewed. The crew should be optimally utilised and their availability should be aligned to the station of their operation to address crew shortages leading to poor On Time Performance, re-scheduling, cancellation of flights. AIL should also rationalise costs on Staff on Duty travel, related allowances and hotel expenses in positioning the staff.

- (vi) The IT application Central Planning and Control System, should be fully implemented expeditiously. Efforts should be made for development and retention of trained manpower for operating these sophisticated IT systems.*
- (vii) Systems should be put in place for better coordination of crew and more efficient maintenance of aircraft so that delays, re-scheduling and cancellation of flights were minimised.*
- (viii) Since equity commitment of Government of India (GoI) is specific to identified purposes, equity releases of GoI should be adjusted to match the reduction of loans of AIL guaranteed by GoI and the lower interest liability on non-convertible debentures issued by AIL.*
- (ix) Considering the significant equity funds committed by GoI to AIL, a decision regarding grant of additional bilateral rights to foreign carriers should take into consideration its impact on AIL, as recommended by the Public Accounts Committee of Parliament in its 93rd report (2013-14).*



Chapter 1: Introduction

1.1 Organisational Structure of Air India Limited

Ministry of Civil Aviation (MoCA) is the administrative Ministry of Air India Limited (AIL). The Board of Directors of AIL consists of Chairman and Managing Director (CMD), three functional Directors, Additional Secretary and Joint Secretary-cum-Financial Advisor, representing the Ministry of Civil Aviation. AIL is divided functionally with each function headed by a Director, who reports to the CMD of AIL. Geographically Regional Executive Director reports directly to the CMD.

AIL owns the following subsidiaries

- i. **Air India Air Transport Services Limited (AIATSL):** The Company provides ground handling services (cargo, passenger, baggage) at various airports in India to AIL and other airlines.
- ii. **Air India Charters Limited (AICL):** AICL operates a low cost airline “Air India Express”, launched in April 2005, operating services from India to primarily Gulf and Southeast Asia.
- iii. **Air India Engineering Services Limited (AIESL):** The Company handles Maintenance Repairs and Overhaul (MRO) of Airbus and Boeing aircraft of AIL and other airline.
- iv. **Airline Allied Services Limited (AASL):** AASL incorporated in 1983, provides support services such as air transport services and manages airplane purchase, lease and sale transactions. As a subsidiary of Air India, AASL also provides air transport services under the brand name "Alliance Air".
- v. **Hotel Corporation of India Limited (HCI):** HCI is wholly owned by Air India Limited and was incorporated on 8 July 1971 for providing in-flight catering services to the national carrier and for operating a chain of hotels. HCI operates two hotels under the brand name of "Centaur Hotels" in Delhi and Srinagar.

1.2 Background of the Turnaround Plan

Air India Limited (“Air India” or “the Company”), wholly owned by the Government of India (“GoI”/“the Sponsor”), is engaged in air transport operations, under the brand “Air India” in domestic and international sectors. AIL is the national flag carrier and operates a fleet including Airbus and Boeing, serving destinations in Asia, Europe, Australia and North America apart from domestic destinations.

The difficulties of aviation industry in recent years, coupled with operational problems of the Company strained the financial position of Air India Limited. The high debt burden of the Company further reduced its liquidity and the Company lost significant market share in recent years.

The Company registered a cumulative negative EBITDA¹ of ₹9866 crore and incurred cumulative net losses of ₹20192 crore (approximately), between Financial Year (FY) 2007-08 and Financial Year 2010-11. The Company resorted to high cost working capital borrowings in order to continue its operations. The working capital borrowings of AIL increased from ₹16328 crore as on 31 March 2009 to ₹22468 crore as on 30 September 2011. In addition, the Company also availed long term borrowings to finance acquisition of aircraft. The combined increase in borrowings led to an outstanding debt of around ₹43112 crore as on 30 September 2011.

1.3 Turnaround Plan

The Company formulated (July 2010) a comprehensive Turnaround Plan (TAP) along with a Financial Restructuring Plan (FRP) to improve its operations and its financial position. The operational turnaround envisaged improvements in its business operations, network planning, integration of Information Technology System (IT) and management of Human Resources (HR). It also included cost reduction measures like route rationalisation. The assumptions made in TAP had been vetted by an independent consultant, M/s Deloitte Touché Tohmatsu India Pvt. Ltd. (Deloitte). The Financial Restructuring Plan included debt realignment and induction of equity by GoI. A Group of Officers (GoO) appointed by the Group of Ministers (GoM) examined (October 2011) the provisions of TAP before it was approved (April 2012) by the Government.

TAP encapsulated tangible goals with respect to passenger traffic, load factors, on-time performance and customer service. The proposed business strategy of the Company was to focus on the following key areas:

- Optimisation of fleet deployment
- Hiving off of allied business such as MRO² and GH³
- Integration of IT⁴ platforms
- Improvement of Operational efficiency
- Monetisation of assets

Implementation of the above business strategies was key to successful turnaround of the Company.

1.4 Financial Restructuring Plan (FRP)

The low earning capacity and accumulated losses of the Company affected its capacity to serve high level of debt. Accordingly, a comprehensive FRP, to provide relief to the Company from its debt servicing obligations while providing necessary time to improve its operational efficiency and to implement TAP was proposed. Air India appointed M/s SBI

¹ EBITDA –Earnings before Interest, Tax, Depreciation and Amortisation.

² MRO –Maintenance, Repairs and Overhaul

³ GH-Ground Handling

⁴ IT-Information Technology

Capital Markets Limited (“SBICAP”) as its Financial Advisor to advise on the Financial Restructuring Plan.

The FRP was formulated based on the assumptions made in the Turnaround Plan. The FRP, *inter-alia*, intended to convert part of the existing Working Capital (WC) loan into Short term loan which would be paid through proceeds from issue of Non-convertible debentures. A part of the working capital was to be converted into Long Term Loan with interest on the long term loans also being converted to a Funded Interest Term Loan. In addition, substantial equity infusion from GoI was envisaged.



Chapter 2: Audit Methodology

2.1. Performance Audit of Turnaround Plan and Financial Restructuring Plan of AIL

The TAP and FRP of AIL was approved by Government in April 2012. Several of the turnaround measures were to be completed by March 2015. A significant quantum of Government equity had also been infused into the Company. It was in this context that a Performance Audit of turnaround plan of AIL and its effect on the financial condition of the company was taken up. The Performance Audit was carried out on the basis of the records and documents made available by AIL, Ministry of Civil Aviation (MoCA) and Director General of Civil Aviation (DGCA).

2.2. Audit Objectives

The audit objectives included examining whether

- The financial restructuring of Air India Limited was implemented as per Financial Restructuring Plan and whether it achieved the intended goals.
- Bilateral entitlements were effectively utilised by the Company and slots available to AIL in various airports were managed efficiently.
- Activities of the Company were carried out as per Turnaround Plan and in a manner contributing to turnaround in its operations.
- The restructuring efforts of the Company (financial and operational) were monitored effectively.

2.3. Audit Criteria

The criteria on the basis of which the performance on TAP/FRP was assessed included provisions of:-

- Turnaround Plan and Financial Restructuring Plan of Air India Limited as approved by Government
- Recommendations of Group of Officers, Group of Ministers and Oversight Committee constituted by Government.
- Internal guidelines, manuals of the Company
- Directives of Ministry of Civil Aviation, Director General of Civil Aviation and
- Decisions of Board of Directors of AIL

2.4. Scope of Audit

The scope of audit included assessment of the operational and financial management of AIL, during the period from 2010-11 to 2015-16, with a focus on its turnaround plan. In particular, Audit assessed the fleet induction, deployment and operation of fleet, network planning, route rationalisation, management of bilateral rights, slot management, asset monetisation, hiving

off MRO and GH activities, human resources management, integration of IT platform of the Company and the resultant operational efficiency achieved by the Company during this period.

2.5. Audit Methodology

An entry conference was held on 6 May 2015 where audit objectives, scope and methodology were discussed with the Management.

Field audit was undertaken from May 2015 to November 2015. This included collection of information, verification of records including scrutiny of agenda and minutes of Board Meetings of AIL. The draft audit report was issued to the Management on 27 November 2015 and its replies received during February 2016. The draft audit report after examination of the responses of Management was issued to MoCA on 27 June 2016. Replies of MoCA were received on 30 August 2016, 2 September 2016 and 6 September 2016.

An Exit Conference with MoCA and Management of AIL to discuss the audit findings and recommendations of the Report was held on 26 October 2016. The views expressed by MoCA and AIL, during this meeting have been suitably incorporated in the Report.

Audit has attempted to examine the operational and financial functioning of AIL that would impact its Turnaround Plan. It is evident that the Management continued to face challenges in their efforts to turn around the Airline.

Chapter 3: Financial Restructuring and Turnaround Plan of AIL

3.1 Approved Financial Restructuring Plan (FRP)

AIL had an outstanding debt liability of ₹42350 crore as on 31 March 2011. This included aircraft loan of ₹20185 crore (of which ₹15400 crore was guaranteed by GoI) and working capital loan of ₹22165 crore. Besides, AIL had outstanding payments of ₹4600 crore (approx.) due to oil marketing companies, tax authorities, vendors etc. The cash flow from operation of the company was not sufficient to service the high level of aircraft loan and working capital borrowings. Financial Restructuring Plan (FRP) including equity support and debt realignment to the operations and financial turnover of AIL was approved by the Cabinet Committee on Economic Affairs (CCEA) on 12 April 2012. The approved FRP included infusing of equity, restructuring of working capital and monetisation of assets.

A. Infusing of Equity

Government agreed (12 April 2012) to infuse equity of ₹42182 crore during the period from FY 2011-12 to FY 2031-32. The equity would consist of the following:

- Upfront equity infusion of ₹6750 crore towards payment of pending dues to Oil Marketing companies/vendors, Airport/Tax Authorities etc.
- Cash Deficit Equity of ₹4552 crore to be paid upto FY 2017-18, by which time AIL was expected to turn cash positive.
- Equity of ₹11951 crore to be paid upto FY 2031-32 for servicing interest on Non-Convertible Debentures (NCDs) which were to be issued by the Company.
- Equity of ₹18929 crore to be paid upto FY 2020-21, towards repayment of GoI guaranteed aircraft loans of ₹ 15400 crore.

B. Restructuring of Working Capital

The working capital loan of ₹ 22157 crore⁵ (31 March 2011) was to be restructured in the following manner:

⁵ ₹22157 crore was as approved by CCEA. As of September 2011 the working capital loan outstanding was reduced to ₹21474.43 crore which was as per the Master Restructuring Agreement (MRA) between AIL and its bankers.

Table 3.1: Restructuring of working capital loan

	Components	Details
1	Cash Credit Limit: ₹3645.87 crore	This amount was expected to be sufficient to meet the working capital requirements of AIL, post restructuring. Interest at average rate of 6% per annum for FCNR ⁶ (B)/Buyers Credit and at 11% p.a. towards remaining cash credit
2	Long Term Loan: ₹11112 ⁷ crore	This was towards Part of working capital loan being restructured as a long term loan over a 15-year tenure. Interest at the rate of 11% p.a. Interest moratorium-1 year, Principal moratorium-2 years Repayment Period- 15 years.
3	Short Term Loan (STL) to be repaid from proceeds of NCDs: ₹7400 ⁸ crore	The balance working capital loan was to be met from issuing non-convertible debentures, which would be repaid by Government through equity over the period from 2011-12 to 2031-32 Interest Rate on interim short term loan was 11% p.a. Interest on NCD was 9.5% p.a. Interest on NCD to be repaid by GoI through equity

Source: MoCA note to CCEA

C. Monetisation of Assets

It was agreed that AIL would monetise its assets and it was estimated that asset monetisation would result in revenues of ₹5000 crore to AIL over a span of ten years (FY 2012-13 to FY 2021-22) with approx. ₹500 crore revenue being earned each year.

It was expected that post restructuring, AIL would generate positive EBITDA from FY 2012-13, become cash positive from FY 2017-18 and generate positive Profit before Tax (PBT) from FY 2019-20.

3.2 Status of financial restructuring in AIL

Following the approval of the FRP by GoI, the Company received equity from Government, the year-wise equity received being as shown in the table below:

Table 3.2 Commitment vis-à-vis release of equity

(₹ in crore)

Year	MoCA	MoCA	Shortfall (-) /Excess	Progressive total of shortfall/excess at the end of year
	Commitment	Release		
2011-12	8536	1200	(-7336)	(-7336)
2012-13	3678	6000	2322	(-5014)
2013-14	3560	6000	2440	(-2574)
2014-15	3441	5780	2339	(-235)

⁶ Foreign Currency Non-Resident (Bank)⁷ Long term loan of ₹11112 crore decreased to ₹10436.89 crore as on September 2011 as per the MRA.⁸ Short term loan of ₹7400 crore decreased to ₹7391.67 crore as on September 2011 as per the MRA

Year	MoCA	MoCA	Shortfall (-) /Excess	Progressive total of shortfall/excess at the end of year
	Commitment	Release		
2015-16	3394	3300	(-)94	(-)329
Total	22609	22280	(-)329	-

Source: Data received from Finance department of AIL.

As can be seen, the overall equity infusion over FY 2011-12 to FY 2015-16 broadly matches with the commitments. However, there was a significant shortfall in FY 2011-12 which was made good subsequently. The short release in these years led to increase in short term borrowings of AIL during those years.

The financial restructuring of the working capital loan was implemented through the Master Restructuring Agreement (MRA) between AIL and its bankers (SBI and 18 other lender banks). Non-convertible debentures of ₹7,400 crore were issued by December 2012 as against the schedule of September 2012. Working capital loans of ₹10,436.89 crore were restructured as long term loans. Outstanding aircraft loan as of March 2016 reduced to ₹13,340 crore (of which ₹6,574.60 crore was guaranteed by GoI).

Monetisation of assets in AIL has, however, not progressed as intended. The specific findings regarding equity infusion by GoI, restructuring of working capital loans and monetisation of AIL assets are summarized in the paragraphs below.

3.3 Audit findings relating to infusion of Equity by GoI

3.3.1 Reduction in GOI guaranteed aircraft loan and consequent need for adjustment of GOI equity

A significant portion of the equity amounting to ₹18,929 crore out of ₹42,182 crore committed by GoI was for repayment of aircraft loans taken from various banks which had already been guaranteed by GoI (as on March 2011). The aircraft loan of ₹15,400 crore as on March 2011 guaranteed by GoI included loan taken for purchase of eight B-777-200 LR aircraft. Five of these B-777-200 LR aircraft were sold by the Company during the period from 2013 to 2015. The sale proceeds were utilised to liquidate the outstanding loan amounting to USD 298.44 million (₹1,804.96 crore⁹) for these five aircraft during February to May 2014. However, equity released by GoI during 2014-15 had not been adjusted (reduced) to account for premature liquidation of aircraft loan taken for these five B777-200LR aircraft. As the equity committed by Government was specific to repayment of GoI guaranteed aircraft loans, future equity releases need to be adjusted for the reduction in the loan component arising out of sale of five aircraft and consequent repayment of loan pertaining to them.

⁹ @1 USD = ₹60.48- average of 2013-14 and 2014-15 exchange rates

MoCA in its reply (30 August 2016) accepted the fact and stated that reduction in equity has to be made on yearly basis and accordingly appropriate adjustments will be made from equity from 2014-15 onwards. However, adjustment of equity has not been made by the MoCA till date (August 2016).

3.3.2 Excess payment of equity toward payment of interest on NCD

The equity proposed to be infused for servicing interest on non-convertible debentures (NCD) was ₹11951 crore. The interest rate envisaged on NCD was 9.5 percent. The equity commitment of Government for repayment of interest on NCD amounting to ₹11951 crore (till 2031-32) was worked out considering this rate. The actual interest rate on NCD was 9.08 percent. Considering the difference in the interest rates (9.5 percent vis-à-vis 9.08 percent), the equity sanctioned by GoI for this purpose was higher than the requirement by ₹521.53 crore over the entire repayment period (up to 2032).

During the period under audit (FY 2012-13 to 2015-16), actual commitment towards interest worked out to ₹2022.59 crore against which GoI total equity commitment was ₹2461 crore. This resulted in excess equity commitment by GOI to the tune of ₹438.41 crore which included ₹103.54 crore on account of interest differential and equity commitment of ₹334.87 crore due to delayed issue of NCD in November-December 2012.

AIL in reply (02 February 2016) accepted the facts and stated that equity requirements would be modified in future to take care of the differential.

MoCA in its reply stated (30 August 2016) that the equity sanctioned was higher by ₹528.36 crore due to difference in rates of interest over the average maturity of 17 years. The difference for the period 2012-13 to 2014-15 worked out to ₹93.24 crore instead of ₹407.33 crore. This difference of ₹93.24 crore had not yet been adjusted in the equity commitment because of variations in exchange rate and variations in date of infusion of equity.

The calculation of the excess equity by MoCA was on estimation basis whereas audit considered the actual sanction of equity commitment as well as actual outgo on yearly basis. The contention of MoCA that due to considerable Foreign Exchange fluctuation which was not factored in TAP, equity commitment has not been adjusted is not relevant as AIL took advantage of the substantial reduction in fuel cost. This element also had not been factored in TAP. Further to overcome the delay in release of government equity, GoI extended guarantee for additional loan which made it possible to bridge the gap. Non-adjustment of the excess interest after knowing actual quantum of NCD interest amounted to extension of implicit subsidy to AIL.

3.4 Audit findings on debt restructuring

3.4.1 Cash credit exceeding limits set by FRP

The FRP had envisaged a future working capital (cash credit) requirement of AIL as ₹3645.87 crore, post restructuring. Audit, however, noticed that the actual working capital requirements of the Company were far in excess of this limit resulting in additional short term loans taken by the Company. The actual short term loans of AIL during 2012-16 are tabulated below:

Table 3.3: Short term loans of AIL

(₹ in crore)

Year	2012-13	2013-14	2014-15	2015-16
Short term loans as on 31 March	9,160.51	12,005.47	14,416.85	14550.88

Short term loans were on the rise and amounted to ₹14416.85 crore as on March 2015 and of ₹14550.88 as on March 2016. The high volume of short-term loans had eroded the benefits of the financial restructuring exercise carried out under the FRP which intended to provide relief to the Company from its debt servicing obligations.

Audit analysed the reasons for the increase in working capital requirements and consequent short term borrowings. It was seen that the actual revenues earned by the Company were consistently lower than the projected revenues as could be seen in the table below

Table 3.4: TAP Projected vs Actual revenue

(₹ in crore)

	2012-13	2013-14	2014-15	2015-16
TAP targets	18511	21521	24069	26889
Actual revenue as per financial statements	16072	19093	20613	20526
Difference	2439	2428	3456	6363

The shortfall in revenue coupled with the delay in release of overall equity in the initial years (later bridged by release of additional equity in the subsequent years) and non-realisation of ₹1935.94 crore asset monetisation resulted in a deficit which needed to be addressed through additional short term borrowings. Some of the significant items of income and expenditure, controllable by AIL, which showed considerable divergence from projection in the Plan during the period from 2012 to 2016 are tabulated below:

Table 3.5: Projected vis-à-vis Actual significant items of Income and Expenditure

(₹ in crore)

Major items – FY	Mar-2013		Mar-2014		Mar-2015		Mar-2016	
	Projected	Actual/% of variation (A) w.r.t (P)	Projected	Actual/% of variation (A) w.r.t (P)	Projected	Actual/% of variation (A) w.r.t (P)	Projec ted	Actual/% of variation (A) w.r.t (P)
	(P)	(A)	(P)	(A)	(P)	(A)	(P)	(A)
Income								
Operating Revenue	16700	16027.84 (-4.02%)	19564	18370.87 (-6.1%)	22277	19801.71 (-11.11%)	24730	19992.34 (-19.15)
Passenger Revenue	14253	12573.86 (-11.78%)	16725	14290.4 (-14.56%)	19139	15919.33 (-16.82%)	21297	15773.86 (-25.93)
SESF ¹⁰ /VVIP and Charter	668	1074.02 (60.78%)	668	1119.85 (67.64%)	668	1136.31 (70.11%)	668	1075.34 (60.97)
Other Operating Revenue	1778	1559.02 (-12.32%)	2171	1920.7 (-11.53%)	2470	2093.54 (-15.24%)	2765	2324.67 (-15.92)
Revenue From in-house MRO & GH	0	598.22 (-)	0	748.84 (0%)	0	261.48 (0%)	-	399.58 (0%)
Monetisation of Assets (Net of Taxes)	500	0 (-100%)	500	0 (-100%)	500	0 (-100)	500	64.06 (-83%)
Staff Costs	2325	3254.73 (39.99%)	2355	3152.19 (33.85%)	2478	2466.64 (- 0.46%)	2659	2345.52 (-11.78)
Expenditure								
Aircraft Maintenance	1672	830.81 (-50.31%)	1901	1484.04 (-21.93%)	2059	2280.2 (10.74%)	2260	2125.52 (-5.95)
Interest & Financial Charges	2553	3868.96 (51.55%)	2542	4071.34 (60.16%)	2518	4028.28 (59.98%)	2447	4474 (82.84)

Source: FRP and Annual report of AIL

- **Reduced operating revenue:** AIL failed to generate its projected revenue even though it achieved the projected passenger load targets¹¹. This was largely on account of lesser operations arising from lack of adequate number of appropriate aircraft and efficient operation of available fleet. The problems regarding aircraft availability, deployment and operation are discussed in Chapters 4 and 5 of this Report. Besides passenger operations, AIL also did not enhance its revenue arising from other activities like ground handling, engineering, cargo activities.

¹⁰ SESF-Special Extra Section Flights¹¹ Refer table 11.1 of Chapter 11.

- Monetisation: AIL could not achieve the monetisation target of ₹500 crore annually. In 2015-16, AIL was able to earn only ₹64.06 crore. Specific audit findings on monetisation are included at Para 3.5.
- Staff costs: The staff costs were consistently higher than the projected cost (other than 2014-15 and 2015-16 when it was marginally lower). This was partly on account of delay in operationalisation of subsidiaries (AIATSL and AIESL) besides non-implementation of recommendations of Justice Dharmadhikari Committee as discussed at Chapter 8 of this report.
- Aircraft maintenance: The aircraft maintenance charges remained lower than projections (except 2014-15 and 2015-16 which indicates a sharp rise). The lower expenditure on maintenance proved detrimental to AIL as seen in AIL's admission that the A 320 fleet was more than 20 years old. Their grounding was on account of engineering issues besides shortage of funds for maintenance. Audit also noticed numerous instances of grounding of aircraft on account of shortage of spares. These issues have been elaborated at chapter 5 of this report.
- Interest charges: The interest charges exceeded the projection as the Company availed short term loans to meet the working capital shortfall.

AIL in reply (02 February 2016) stated that increase in working capital debt was on account of multiple factors such as increase in fuel costs, exchange rate, constraints in capacity addition, delay in operationalisation of subsidiary companies, lower proceeds of monetisation of assets, etc.

MoCA in its reply (30 August 2016) attributed the increase in the working capital to the Bridge loan taken for sale and lease back of B787 aircraft, pending receipt of government sanction for its guarantee besides impact of foreign exchange variations and increased fuel cost. It admitted the fact that shortfall in passenger revenue, delay in monetisation of assets and operation of subsidiary companies had adversely affected the working capital.

However, even after exclusion of the bridge loan there was increase in the short term loan taken for working capital requirement. Further, substantial reduction in the fuel cost in 2014-16 had offset the impact of foreign exchange variation. There was an increase in short term debts in 2014-15 and 2015-16 while the fuel costs were lower than the projected levels. The subsidiaries had been operationalised leading to lower burden of staff costs on AIL.

3.4.2 Additional interest burden of ₹11.30 crore

As per the FRP, the non-convertible debentures (NCD) were to be issued by 30 September 2012. However, the NCD could be issued only by 18th December 2012. The proceeds from the NCD were to liquidate the short term borrowings of the Company. The delay in issue of NCDs led to additional interest payment on the short term borrowings for the interim period (September to December 2012) amounting to ₹11.30 crore¹².

¹² Considering the payment of differential interest between 11 percent (Bank rate of interest) and 10.08 percent (NCD interest of 9.08%+ GOI guarantee fee of 1%) for the delay in refund of Short Term Loans.

AIL/MoCA in its reply (02 February 2016/30 August 2016) stated that the delay in issue of NCD was due to procedural formalities and contended that AIL or MoCA was not responsible for the delays.

AIL as well as MoCA, have accepted that there was an additional expenditure of ₹11.30 crore towards payments of interest on banks short term loans in the interim period due to delay in issue of NCDs. Considering the significant financial impact of the delay in issue of NCD, the processes involved in issue of NCD ought to have been fast-tracked.

3.5 Monetisation of assets

The financial restructuring plan approved by CCEA (in its meeting of 12 April 2012) envisaged monetisation of AIL assets to generate ₹5000 crore over a ten-year period with annual revenues anticipated at ₹500 crore. Subsequently, the Company signed a Master Restructuring Agreement (MRA) with State Bank of India (SBI) and other bankers which listed an indicative set of twelve properties for monetisation. The list of these properties is at Annexure 1.

3.5.1 Assets of which immediate monetisation is not feasible

Audit noticed that monetisation of five out of twelve properties was not feasible owing to their status or terms and conditions of their lease to AIL as discussed below:

Table 3.7: Status of five properties

S.no	Name of the property	Purpose for allotment
1	Property at Vasant Vihar, Delhi	27.2 acres of land allotted in 1967 for construction of staff quarters
2	Two CIDCO plots in Navi Mumbai	<ul style="list-style-type: none"> • 100021 sq. mtrs area allotted to erstwhile AI in 1983 for construction of staff quarters. • 5 hectares and 2 hectares of land allotted in 1984 & 1985 respectively to erstwhile IA for construction of staff quarters.
3	Building at Old Airport, Kalina, Santa Cruz, Mumbai	Land allotted by AAI which was subsequently taken over by MIAL.
4	Office Building, NITC, Santa Cruz, Mumbai	
5	Land at Baba Kharak Singh Marg, Delhi	Land allotted in 1983 for construction of city terminal office.

Land in Vasant Vihar, Delhi was allotted to erstwhile Indian Airlines (IAL) for construction of staff quarters. However due to unauthorised constructions in contravention of clause no. 2(iv) of the allotment letter, Land and Development Officer (L&DO) imposed additional premium and ground rent along with interest on the unauthorised constructed area in October 1980. As IA did not pay, L&DO cancelled (October 1983) the allotment of land and also served (November 2014) a demand notice of ₹373 crore for unauthorised occupation of Govt. land/unauthorised construction/misuse of staff quarters. The lease has not been reinstated till 31 March 2016.

Plots were allotted by CIDCO to erstwhile IA and AI for construction of staff quarters. Company did not possess the lease deed for AI plot till date. Further Company failed to execute the agreement in respect of 7 hectare plots allotted to erstwhile IA. CIDCO clarified

that it should not allow monetisation of the said properties as they were given for specific purpose. The only option was to give the land back to CIDCO at 50 percent of the market value, subject to Board Approval of CIDCO.

Airport Authority of India (AAI) had entered into an agreement with AIL (March 2006) for leasing land at Chatrapati Shivaji International Airport (CSIA), Mumbai for a period of 10 years (from 1 April 2001 to 31 March 2011). The AIL buildings at old airport, Kalina and NITC, Santa Cruz were on this leased land. Mumbai International Airport Ltd (MIAL) took over CSIA, Mumbai in May 2006. An interim agreement was entered into by AIL with MIAL on 22 February 2010 for facilities at CSIA. The agreement for facilities had since expired and fresh agreement with MIAL was yet to be finalised. Thus, these buildings could not be monetised.

AIL had earmarked a plot of land (3.54 acres) at Baba Kharak Singh Marg, Delhi for monetisation. Ministry of Urban Development (MoUD) allotted the plot in November 1983 to erstwhile IA on lease for construction of city terminal offices and related facilities. M/s DTZ had estimated the value of the plot at ₹584 crore. Further in 2008, MoUD allotted 1565.25 sq.mtrs of the plot to Delhi Metro Rail Corporation (DMRC). The current estimated value of this area is ₹63.8 crore (considering the valuation report of M/s DTZ). However DMRC did not pay any amount to Air India. AIL does not possess title deeds of such land and the land is still vacant. MoUD refused to give permission for Monetisation (March 2014 & August 2014) on ground that land is to be used only for the intended purpose.

Thus the above properties could not be monetised as the same were allotted for specific purposes and also the concerned authorities denied the permission for monetisation.

MoCA in its reply (30 August 2016) stated that meetings have taken place at the level of Secretary with MoUD and Land and Development Officer (L&DO) and a request had been made to withdraw the penalty of ₹373 crore and regularisation of the allotment of land in Vasant Vihar, Delhi. CIDCO had not yet agreed to change the end use of the plot at Nerul, Mumbai and hence the same could not be monetised. Properties at old airport could not be monetised as the land belonged to AAI. Efforts were on to monetise land at Baba Kharak Singh Marg, Delhi through NBCC (India) Limited. The issues of restoration of title and modalities for monetisation were under discussion with MoUD.

The facts remained that at present there was no certainty regarding possible monetisation of the land by AIL even in future. Ministry has also confirmed that the waiver of penalty had still not been done. Further, as the Company was aware of the issues relating to the buildings at old airport, Kalina and NITC, Santa Cruz, these properties ought not to have been earmarked for monetisation in the first place.

3.5.2 Assets for which no efforts at monetisation was made

Audit observed that following four properties, though earmarked for monetisation, were currently in use by AIL, thereby impacting their immediate monetisation:

- Freehold land and residential flats at Palavanthangal village and IA staff housing colony, Chennai.

- Airlines House, 113, Gurudwara Rakabganj Road, Delhi. This is the registered office and corporate headquarters of AIL.
- Unit no. 264, 297, 310, 489, 631, 678, 684, 714, Asiad Village complex, New Delhi.
- Freehold land and buildings in Central Training Establishment complex, Hyderabad which has been marked for development into a profit centre as per the GOM/Oversight Committee decision.

No action for monetisation of the freehold properties viz. flats at Asiad Village complex New Delhi and residential flats in Chennai had been initiated.

Management in reply (02 February 2016) stated that assets illustrated for monetisation under TAP were indicative and might differ from actual monetisation program considering prevailing market conditions, its utility and future requirements etc. on advice of the Oversight Committee on monetisation and recommendations of Utilisation & Survey Committee.

MoCA in its reply (30 August 2016) further stated that the properties mentioned by Audit were being used by Air India either as an office or as residential quarters and hence the management had decided to retain the properties.

It was observed that even after a lapse of four years, the company had not exercised due diligence by substituting the identified properties for monetisation which has resulted in non-achievement of the monetisation target.

3.5.3 Audit findings on efforts made by AIL for monetisation of properties during the period from 2012-13 to 2015-16

3.5.3.1 Appointment of consultant for valuation of properties for monetisation

AIL appointed (January 2012) M/s DTZ International Property Advisers Private Limited (DTZ) for valuation of 108 properties including three properties located outside India.

Audit noticed that the selection of 108 properties for monetisation was improper. Of the 108 properties 48 properties had been given on lease by state government/Airport Authority of India/other government agencies of which 31 properties were given only for the purpose for which they were allotted. 18 properties did not have a clear title. Hence monetisation of these properties was uncertain.

Title deeds relating to 35 properties were not made available to Audit and as such their availability could not be assured in Audit.

Management in reply (02 February 2016) stated that at the time of formulating the TAP/FRP, no “reality check” was done on whether assets could actually be monetised or not. The list given was only indicative and not “final”. Efforts were being taken for regularisation of the title deeds, reinstatement of the properties with various restrictions as well as certain defects in the title as well as disposal of assets. Properties identified initially in RFP (for M/s DTZ) are based on property found surplus, vacant, not required on long term basis, balance FSI

which could be monetised through JV/developer. However, properties actually selected for monetisation were based on management decisions from time to time.

MoCA in its reply (30 August 2016) stated that a database of all the properties belonging to AI giving the latest status of each of these properties had been prepared by Air India. Based on this database, AI had selected certain properties for the next phase of monetisation.

The company was aware that most of the properties given for valuation to M/s DTZ had title issues, were allotted for specific purpose and required prior permission of Ministry/Authority, etc for monetisation. Despite this most of the properties were given for valuation and also shown in the TAP for monetisation.

3.5.3.2 Leasing of Air India building at Nariman Point, Mumbai

In February 2012, the Management decided to lease out vacant space in 19 floors of AIL building at Nariman Point, Mumbai, with expected revenue of ₹5.77 crore per month from nine floors. The actual procedure for leasing out the vacant space was, however, initiated only in October 2012. Presently (March 2016) 17 floors had been leased to SBI, Income Tax and Service Tax Departments with most of the leases finalised after April 2015. The leases will result in a revenue of ₹85 crore per annum to the Company. Leasing of the balance space on two floors is pending.

Management in reply (02 February 2016) stated that the delay in leasing was on account of poor response. The tender issued by AIL in October 2012 and March 2013 had to be postponed twice due to poor response. The quote received was much below the market rate. The lease to Income Tax and Service Tax departments was finalised with a clause to hand over the floors in a phased manner as the space was occupied by AIL offices and had to be relocated before vacant floors could be handed over. AIL had kept minimum space with them at Air India building for the essential offices/ maintenance office and booking office.

MoCA in its reply (30 August 2016) stated that AI has finalised the lease of all floors except 21st, 22nd, ground, first and second floors. These floors were being retained by AI for its own use. The only floors remaining to be leased out were some portions of 8th and the entire 10th floor. Formalities for completing the documentation would be finalised shortly.

Based on the Audit observation, the management had expedited the process of leasing of most of the floors. However, some space was still lying vacant due to documentation formalities which need to be expedited so as to increase the revenue.

3.5.3.3 E-auction of properties of AIL

Six properties were identified for monetisation in phase-I in line with the decision taken by the Board on 14 February 2013. These properties and the current status of their monetisation are summarized in the table below:

Table 3.8: Status of properties for monetisation

S. No.	Property	Result of e-auction
1	Residential Flat no. 6B, Middleton Street, Kolkata.	No bid received against the auction carried out during November 2013 to January 2014.
2	Land & Building at AI Colony, Kaikhali, Kolkata.	Bid received was for ₹19.71 crore. However, the value of the property, as determined by the Vigilance Department of the Company was ₹27.96 crore. The bid was rejected. Presently, it is intended to hand over the property to NBCC. Board approval for this was awaited.
3	Land at Coimbatore.	The highest bid received for land was for ₹19.81 crore from NBCC. Approval of Cabinet for sale was received late and the property had been offered to NBCC.
4	Plot of Land (Lakshmi House) at Mount Road, Teynampet, Chennai.	Bid received was rejected since it was lower than the reserve price. No efforts had been seen thereafter for its monetisation.
5	04 Flats at Sterling Apartment, Mumbai.	No bids received. However subsequently, received an offer for the four flats at Sterling Apartment, Mumbai from SBI which was negotiated and proposed to be sold to them for a price of ₹88 crore. The approval of CCEA for the sale had been received in November 2015.
6	AI plot no. V-37/13 at DLF Qutab Enclave, Phase-III, Gurgaon.	No bids received

In two cases, where bids were not received by the Company, no further progress was noticed. AIL was yet to complete monetisation of the above six properties identified as early as February 2013. It was noticed however, that AIL had incorrectly informed the Oversight Committee (7th meeting held on 23 January 2014) that the properties at Coimbatore and Kolkata had already been sold at ₹40 crore. In fact, both sales were yet to be formalised even a year later.

Management in reply (02 February 2016) stated that specific approval of Cabinet was required in each case of sale or long term lease of land belonging to government or government controlled statutory authorities after discovering sale price of each property through proper tender process. Cabinet approval for the sale of land in Coimbatore was received two years later, after close follow up with the ministry by AIL.

MoCA in its reply (30 August 2016) stated that the property at Coimbatore was sold to NBCC being the highest bidder and the same was subject to Cabinet approval which was received in November 2015. It is pertinent to note that both the properties i.e. at Coimbatore and Kolkata were put up for sale by E-auction on 12 November 2013 and M/s NBCC was declared as the highest bidder. Normally, when a party was the highest bidder, the property is sold to him under the auction rules. In the case of Kolkata, the Vigilance Department had opined that the “bid price” is much lower than the circle rate, and hence the sale of the property in Kolkata to NBCC was held up. The property at Coimbatore and 4 flats at Sterling Apartment had been sold for ₹19.81 crore and ₹88 crore respectively. NBCC had been given the mandate to finalise the project plan for rest of the properties selected for monetisation.

The fact remained that the management was aware that even when a party was the highest bidder, the property could be sold to it only after the approval of the government and delay should have been avoided.

3.5.4 Additional debt and interest burden due to non-monetisation of AIL properties

The FRP had fixed a target of ₹500 crore per annum for monetisation of assets by AIL. AIL had initially identified 12 properties in the TAP. However 108 properties were given to M/s DTZ for valuation. So far (February 2016), the Management has identified only six properties with overall value of ₹224 crore for monetisation (as determined by M/s DTZ). The sale of these properties is yet to be finalised even after three years. The short-receipt of funds from monetisation during the period from 2012-13 to 2015-16 contributed to reduced cash flow over these years leading to additional debt burden and interest payouts.

Management in reply (02 February 2016) stated that actual implementation of monetisation plan was on the basis of relevant rules and regulations in vogue at the time of taking a decision. Management also stressed that there was no additional payment of interest as a result of non-monetisation since banks waived their penalty charges due to the problems encountered by AIL.

MoCA in its reply (30 August 2016) stated that the observations of Audit that shortfall in meeting the monetisation target had led to increased payouts of interest was valid. However, AIL was able to sell four flats at Sterling Apartments and land at Coimbatore at value of ₹88 crore and ₹19.81 crore respectively. In addition, AI has also monetised by way of leasing the area lying idle in AI building, Nariman Point wherein nearly 17 storeys have been rented out at an annual rental of ₹85 crore p.a. (2016-17). The rentals will be escalated at 8 percent p.a. Further, the real estate market had also fallen in the intervening period which had also hampered the process. Continuous efforts were being made by Air India to monetise the properties by identifying the properties that could be sold easily.

Although the management sold two properties for ₹108 crore and also earned rental income of ₹85 crore during 2016-17, the same was short of the monetisation target of ₹500 crore per year.

3.6 Delay in payment of dues by GoI for VVIP flights

AIL had earmarked three B747-400 aircraft for the sole purpose of operating special extra section flights for VVIP operation.

Audit noticed that dues worth ₹452.54 crore towards operation of VVIP flights during 2011-12 to 2014-15 were pending. In addition, ₹15.32 crore were due from the Ministry of External Affairs for the evacuation flight services provided during June 2006 to November 2014. The total unpaid dues amounted to ₹467.86 crore. The Company had taken six months to raise formal invoices for claiming these expenses despite its revenue constraints.

AIL in its reply (02 February 2016) stated that the delay was on account of information to be gathered from various stations and that in view of audit observations, efforts were being made to speed up the invoices.

In addition, MoCA stated (30 August 2016) that continuous efforts were being made by AIL for recovery of dues with the various ministries.

Though with continuous efforts, AIL was able to recover 50 percent of the old dues, the position of dues outstanding as on 31 March 2016 indicated that the total unpaid dues as on 31 March 2016 were ₹513.27 crore (₹472.09 crore for operation of VVIP flights and ₹41.18 crore for MEA). Hence considering the significant quantum of pending dues and in the context of government support to AIL for turnaround, more efforts need to be made for early action for reimbursement of dues by both AIL and government.

3.7 Status of Implementation of Turnaround Plan

The approved Turnaround Plan identified specific milestones relating to various functional areas of the Company to be achieved, which were linked to release of equity. Audit noticed that deadlines of certain milestones viz. Productivity Linked Incentive (PLI), operationalisation of MRO/GH, IT system, monetisation of assets etc. had already expired before the period of approval of TAP/ FRP. Status of implementation and achievement of the milestones/objectives set by the TAP in major functional areas are highlighted below (refer Annexure 2 for details).

- 1. Human Resources:** The Turnaround Plan (TAP) intended to stop the payment of Productivity Linked Incentive (PLI) till AIL generated Profit Before Tax(PBT). TAP also required that a Voluntary Retirement Scheme (VRS) be worked out by the end of December 2011. However, AIL failed to fulfil these requirements as a significant component of PLI continued to be paid as 'ad hoc pay'. AIL had decided not to implement VRS.
- 2. Hiving Off Subsidiaries:** Subsidiaries for MRO and Ground Handling (GH) were required to be operationalised by January 2012. As against this target date, the MRO subsidiary was operationalised only in January 2015 and GH subsidiary in April 2014.
- 3. IT Integration :** As per Turnaround Plan, AIL was required to implement IT systems for ticket pricing and sales, network planning, crew scheduling and operational efficiency by December 2011. However, till March 2016 though the remaining systems were in place, AIL could partially implement only the Central Planning and Control System and the Flight Planning System.
- 4. Financial Restructuring:** The Turnaround Plan objective to earn the targeted annual revenue of ₹ 500 crore per annum from monetisation of assets could not be achieved by AIL. AIL could generate revenue of only ₹64.06 crore from 2012 to 2016. The Financial Restructuring Plan of AIL had also envisaged that AIL would achieve positive EBITDA by 2012-13. Though AIL reported a positive EBITDA of ₹166 crore (April-December 2014) from a negative ₹191 crore (April-December 2013) both statutory auditors and CAG of India had expressed qualified opinion on the accounts of AIL for all the three years (2012-13 to 2014-15) pointing out significant understatement of losses in the financial statements presented by the Company. The understatement of losses were ₹1455.8 crore (2012-13), ₹2966.66 crore (2013-14) and ₹1992.77 crore (2014-15).

Considering the effect of these qualifications on the financial statement, the EBITDA of AIL would be negative (up to March 2015).

- 5. Operational Performance:** There was shortfall in achievement of TAP targets relating to operational performance of the Company relating to on-time performance. AIL could however achieve the targets set by the FRP for achievement of Passenger Load Factor (PLF) and Network Yield. AIL was required as per TAP to improve the on-time performance (OTP) from 71.7 percent (October 2011) to 90 percent within two years. However in 2015-16, AIL could achieve OTP of 78 percent as against the TAP target of 90 percent. AIL claimed (October 2016) that the OTP in 2015-16 was 79.2 percent.

AIL was required to achieve Passenger Load Factor (PLF) of 73.4 percent by 2016 and 75 percent by 2020. As against this, AIL was able to achieve overall PLF of 75.8 by the end of FY 2015-16. AIL achieved by FY 2015-16 a PLF of 74.5 percent and 78 percent for wide body and narrow body aircraft respectively as against the corresponding TAP targets of 73.5 percent and 73.2 percent.

The TAP target for Network Yield was ₹3.76 per Passenger km and ₹3.75 per passenger km during 2014-15 and 2015-16 respectively against which AIL could achieve Network Yield of ₹4.27 per passenger km and ₹4.0 passenger km in the respective years. During these years the yield performance of wide body aircraft was ₹3.49 per passenger km and ₹3.46 per passenger km respectively against the target of ₹3.36 per passenger km. For the same period the yield performance of narrow body aircraft was ₹5.46 per passenger km and ₹4.87 per passenger km respectively against target of ₹4.39 per passenger km and ₹4.40 per passenger km for the respective years.

- 6. Aircraft Utilisation :** Against the TAP target of 12.25 hours of utilisation for narrow body aircraft, the actual utilisation was 9.57-10.57 hours in 2014-15 and 9.22-11.16 hours in 2015-16. Similarly, against a TAP target of 13-15 hours for the same period for wide body aircraft, the Company could achieve 2.04-12.94 hours in 2014-15 and 6.89-12.07 hours in 2015-16.

Reasons for short achievement of TAP have been discussed in the succeeding chapters.

3.8 Audit findings on monitoring of achievement of objectives envisaged in TAP

3.8.1 Monitoring framework

Cabinet Committee on Economic Affairs (CCEA) while approving the Turnaround Plan (TAP) and Financial Restructuring Plan (FRP) of AIL had stipulated (April 2012) periodic monitoring of their implementation by an oversight committee, regular review by Group of Ministers (GoM) and directed that report on progress on implementation be placed before the CCEA every six months.

MoCA constituted (May 2012) an Oversight Committee (OC) headed by 'Secretary, MoCA' (other members included Secretary, Department of Expenditure, Additional Secretary & Financial Advisor, MoCA, CMD, AIL, Chairman, SBI Capital Markets Limited and Joint

Secretary handling AI matters at MoCA). It was intended that OC would prepare actionable items of milestones to be achieved by AIL and review them rigorously on a monthly basis.

3.8.2 Shortfall in review meetings by Oversight Committee (OC)

Against the mandatory 50 meetings to be held from May 2012 to June 2016 audit noticed that the OC had met only 14 times during this period. The long intervening gap between meetings (upto seven months) assumed significance in view of the direction of CCEA to report on the progress of TAP and FRP every six months.

MoCA attributed (02 February 2016) delays in meeting to the non-availability of the senior officials and stated that it was of the view that quarterly review by the OC was desirable. AIL further stated that as and when the Prime Minister's Office (PMO) desired information on the implementation of TAP, the same was furnished and it was not considered necessary to report progress of implementation to CCEA.

The response of AIL was not tenable as even the quarterly meetings were not held as desired. After FY 2012-13, the meetings were held after considerable gap with the period intervening between two OC meetings ranging from three to seven months. Further, many of the TAP targets remained elusive or were unduly delayed. The need for appropriate monitoring had also been emphasised by the Secretary, MoCA in October 2014 by setting up an Expert Committee consisting of senior professionals to review the implementation of TAP due to mismatch between achievements and projections in TAP.

MoCA further replied (30 August 2016) that a mechanism for regular monitoring of performance of Air India through a process of information gathering, whereby regular reports on on-time performance (OTP), route profitability and financial performance were obtained on a monthly basis from AI. In addition, Secretary (Civil Aviation) reviewed the performance of AI through fortnightly review meetings.

However, the mechanism prescribed for monitoring the progress of TAP/FRP involved reporting by OC to a supervisory inter-ministerial body, rather than reporting only to the head of a particular Ministry. This mechanism was bypassed in favour of a process of review by only the Secretary. Thus, the failure to adhere to the stipulated mechanism affected the efficient implementation of TAP.

3.8.3 Non- Review of Monitoring by Group of Ministers

The Group of Ministers (GoM) was to meet periodically to review the achievement of the prescribed milestones and the progress/report thereof was to be placed before the CCEA every six months. The GoM was re-constituted on 17th July 2012. Scrutiny of records, however, did not reveal any evidence of meetings to review the progress of the TAP/FRP (2012-2014) having been conducted. The GoM was abolished in June 2014. Thus, monitoring by GoM and CCEA were not carried out as envisaged.

MoCA (30 August 2016) accepted the audit observations.

3.8.4 Non linking of achievement of milestones to release of equity

Infusion of equity was dependent upon achievement of specified milestones by AIL. AIL was initially directed to present its performance against the milestones before the OC in order to enable any request for further equity infusion to be considered. However, MoCA in its note to CCEA preferred to take into consideration the request of the restructuring lenders and the direction of Reserve Bank of India that equity infusion by the Government of India (GoI) should be unconditional and not linked to any milestones.

MoCA stated (02 February 2016) that it would not be possible to strictly link the release of equity to achievement of milestones due to various factors which were not under the control of AIL. Ministry further stated (September 2016) that non-infusion of equity as laid down in the TAP, would have resulted in serious liquidity issues/constraints for AI. The position of AI vis-à-vis its creditors/lenders would have deteriorated and that the very purpose of the TAP/FRP would have been defeated if it was starved of funds from Government.

The reply of the Ministry was not acceptable as the approval of the TAP clearly indicated that infusion of equity was to be made on achievement of specified milestones by AIL resulting in turnaround of the financial position of AIL.

In the report of the Comptroller and Auditor General of India No. 18 of 2011-12 on Civil Aviation equity infusion was recommended to be clearly and categorically linked to demonstrable, realistic operational improvements (in line with the performance of competitors) according to specified timelines, and also undertaking necessary reforms (e.g. linkage of PLI to specific performance), such as those delineated in that report. Audit however noticed that equity had been released to AIL regularly without linking such releases with achievement of prescribed milestones. As seen from para 3.7 above and table at Annexure II of this Report, some of the milestones which were to be achieved by March 2015 were yet to be achieved by the Company (September 2016).

Financial Restructuring Plan sanctioned by the Government in April 2012 envisaged infusion of equity of ₹42,182 crore during the period from 2012 to 2032. The outstanding liabilities were re-structured over a longer term with the expectation that in future, cash credit would be within the limit of ₹3645.87 crore. It was also expected that in addition to incremental cash flow from core air transport operations, AIL would earn annual revenues of ₹500 crore through monetisation of its assets, totaling ₹5000 crore over ten years.

However, the targets for financial restructuring of the Company were not met fully. Though GoI released almost the entire equity commitment during the period from 2011-12 to 2015-16, the release of equity during the initial years was lower than planned. The cumulative release planned upto the end of FY 2015-16 was however achieved through additional releases of funds over and above that planned during subsequent years (FY 2012-13 and 2015-16). The short release of equity led to higher borrowings of AIL during those years. Besides, as equity committed by GoI was for specific purpose, its quantum should have

been adjusted (reduced) due to the reduced requirements of AIL arising from lower levels of GoI guaranteed aircraft loans and lower interest rate on NCD than envisaged.

The Company failed to meet its cash credit limits leading to short term loans rising to ₹14,550.88 crore as on 31 March 2016 against the TAP target of ₹3645.87 crore. The significantly higher working capital shortfall was on account of lower revenue generation. Revenue generated by AIL in 2014-15 and 2015-16 were lower than the targets in TAP by 14 percent and 24 percent respectively. The positive impact of lower fuel costs and lower staff costs arising from rationalisation and transfer of staff to subsidiaries could not offset the shortfall in working capital.

The cash deficit worsened as the company was able to earn only ₹64.06 crore from monetisation during the period from 2012-13 to 2015-16 against the TAP target of ₹2000 crore over the four years. The assets identified by AIL for monetisation were not available for monetisation due to absence of title deeds or due to conditions attached to the terms of lease.

Considering the qualifications of statutory auditors and that of C&AG of India, the Company was yet to achieve positive Earnings before Interest, Tax, Depreciation and Amortisation (EBITDA) by March 2015.

Achievement of milestones prescribed in TAP for rationalisation of staff costs, hiving off subsidiaries, integration of IT systems, monetisation of assets, aircraft deployment and operational performance targets were partial or were significantly delayed.

The monitoring framework for ensuring achievement of milestones did not function effectively. The linkage of equity release to achievement of milestones was not adhered to. Even as the Company failed to achieve its objectives, equity continued to be released to the Company.

Chapter 4: Aircraft Availability

4.1 Acquisition of aircraft

Erstwhile Air India Limited had executed a purchase agreement (30 December 2005) with M/s Boeing and M/s General Electric (GE) for supply of 50 Boeing aircraft (with GE engines) at an estimated cost of ₹33197 crore consisting of 8 B-777-200 LR¹³, 15 B-777-300 ER¹⁴ and 27 B-787-800. At the same time, erstwhile Indian Airlines Limited (IAL) had also executed a purchase agreement (February 2006) with M/s Airbus/CFM for supply of 43 Airbus aircraft (with CFM engines) at an estimated cost of ₹8399.60 crore consisting of 19 A-319 aircraft, four A-320 aircraft and 20 A-321 aircraft. Both the companies, Air India Limited and Indian Airlines Limited merged in the year 2007.

The results of review in audit of acquisition of aircraft by the two companies were discussed in the Report of the Comptroller and Auditor General of India no.18 of 2011-12 on Civil Aviation. The impact of the acquisition on AIL and the present aircraft availability with the airline is discussed below for wide body (primarily Boeing) and narrow body (Airbus) fleet.

Wide Body fleet

4.2 Fleet of Wide Body aircraft

As per Turnaround Plan (TAP), the fleet size as on March 2016 was to be 41 aircraft against which the actual fleet size was 40 aircraft as shown in the table below:

Table 4.1 TAP target of Fleet size vis-a-vis actual fleet of wide body

Sr.No.	Type of Aircraft	Fleet envisaged in TAP		Actual Fleet March 2015	As per TAP March 2016	Actual Fleet March 2016
		September 2011	March 2015			
1	B-777-200 LR	08	08	03	08	03
2	B-777-300 ER	12	12	12	15	12
3	B-787-800	-	14	19	16	21
4	B-747-400	05	-	05	-	04
5	A-330-200	02	-	-	-	-
6	A-340	-	02	-	02	-
	Total	27	36	39	41	40

Source: SBI Cap Information Memorandum (Feb 2012) and information received from AIL

¹³ LR-Long Range

¹⁴ ER-Extended Range

As seen in the table 4.1, there is a reduction in B-777-200 LR aircraft (from envisaged eight in TAP to three) which was offset by additional B-787-800 aircraft (an increase of five vis-à-vis TAP). The specific issues noticed in acquisition, disposal and operation of these aircraft are detailed below.

4.2.1 B-777-200 LR: Over provisioning of aircraft

The C&AG of India had reported in Report No. 18 of 2011 on Civil Aviation in India that the purchase order for 50 wide body aircraft was much higher than the original plan of AIL (which was to procure 35 aircraft on firm basis and 15 on optional basis). It was also pointed out in the Report that the assumption that the acquisition of eight Ultra Long Range (ULR) aircraft would result in a further one-time yield increase of 10 percent for non-stop service to New York and Chicago, was unduly optimistic.

Subsequently, M/s SH&E, United Kingdom, a network consultant, appointed by AIL, post-merger (2009), also pointed out that the wide body fleet was oversised. The consultant suggested that the overall goal of the fleet plan should be to consolidate only two wide body types (B-777-300 ER and B-787-800) and recommended sale/lease out of B-777-200 LRs consequent to induction of B-787-800.

AIL had planned to acquire eight B-777-200 LR aircraft. These aircraft had a maximum range of 7400 nautical miles (nm). Operations planned for these eight aircraft were to New York, Chicago, Dubai, Singapore and Kuala Lumpur. As against the scheduled delivery by June 2009, the actual delivery could be completed by August 2009.

Audit observed the following with regard to procurement and utilisation of B-777-200 LR aircraft:

- In September 2009, a month after the last B-777-200 LR aircraft was delivered to AIL, the Company decided (22nd Board meeting held in September 2009) to lease out three B-777-200 LR aircraft as surplus capacity of wide body aircraft was likely after receipt of the B-777-300 ER aircraft.
- The proposed lease out of the three aircraft did not materialise and the airline deployed the B-777-200 LRs for operations. The aircraft were initially deployed for nonstop flights to Newark and New York. The operation of B-777-200 LRs on these non-stop services contributed to losses of the airline. With progressive delay in delivering of B-787-800, AIL continued to operate B-777-200 LR on medium haul routes like Frankfurt, London, Paris, Tokyo, Toronto (since 2009-10) to maintain the network, which added to losses.
- The network consultants, SH&E had recommended that operation of B-777-300 ERs, with re-despatch¹⁵ method, for non-stop operations to USA would lead to a much lower unit cost compared to B-777-200 LRs. This rendered the B-777-200 LRs redundant as the prime justification for their induction was non-stop operations to US.

¹⁵ Redespatch method: *The contingency fuel from the origin to the initial destination is essentially used to fly to the destination from the Redespatch point (RP). Hence determination of the initial destination and RP decides the quantum of benefit in terms of payload or fuel saving achieved for the flight.*

- It was also seen that B-777-200 LR aircraft was unviable due to higher unit cost (per ASKM¹⁶), the number of seats on this aircraft being less by 104¹⁷ seats as compared to B-777-300 ER.

These facts indicated that procurement of B-777-200 LR aircraft was ill advised. In November 2011, AIL decided (41st Board meeting) that five B-777-200 LRs would be leased out/sold outright.

Management in their reply (02 February 2016) stated the following:

- (i) The detailed techno-economic feasibility report prepared by a panel of internal experts at the time of procurement had stated that AIL should introduce ultra-long range type of aircraft to fly non-stop to destinations in US from India to match the competition and to capture traffic which was moving away to the Gulf and Middle East carriers as also to South East Asian carriers like Singapore Airlines.
- (ii) Acquiring B-777-200 LRs was a conscious decision and there was no over provisioning at the time of initial ordering since these aircraft were to replace old aircraft i.e B-747-200 /300/400, then deployed on India-USA sector.
- (iii) Though these aircraft failed to achieve the expected 10 percent increase in yield, this was on account of global recession and competition from other airlines which carry 6th freedom traffic over their hubs from India.
- (iv) The attempt to lease out these aircraft after acquisition was made mainly due to the recession (2008). The LRs were now being deployed for operations to San Francisco due to the steep fall in fuel prices, the product per se was good and due to changes in the circumstances and the high cost environment, the operations with LR became unprofitable.

The reply of the Management's was not tenable in view of the following:

1. The original plan of AIL arising from the techno-economic feasibility quoted in response, was to acquire 35 aircrafts on firm basis and 15 on optional basis. The order for fifty aircrafts was finalised only later.
2. Though the B-777-200 LRs were acquired for non-stop operations to US, they have actually been utilised in short haul routes as well. Besides M/s SH&E had recommended that B-777-300 ER be operated on US route for better viability which was implemented by the airline and which rendered the B-777-200 LR aircraft excess.

MoCA (30 August 2016) accepted the fact that volatility in fuel prices was not considered at the time of the Project report. The Ministry stated in addition that EGOM has obtained additional concession of ₹1800 crore from Boeing/GE at the time of changing the order of aircraft in the form of construction of MRO facility, supply of Simulators, Aircraft Training Institute, setting up of GE Engine overhaul facility and concessions for engines.

¹⁶ ASKM-Available Seat Kilometres

¹⁷ B777-300ER-342 seats, B777-200 LR 238 seats

The reply was not tenable as the additional concession in the form of MRO facility had not materialised since this facility was not fully operational even after 9 years. The GE facility was not operational till date. In addition, the company suffered a loss of ₹671.07 crore in the sale of five B-777-200 LR aircraft towards payment of interest of ₹324.67 crore and incurred operational losses of ₹1214.49 crore. Company also incurred additional expenditure of ₹163.31 crore due to grounding of B-777-200 LR aircraft.

4.2.2 Sale of five B-777-200 LR aircraft

The Company issued Request for Quote (RFQ) for leasing out three B-777-200 LR aircraft in November 2009. The RFQ was re-issued in January, February and April 2010. Though four offers were received, the aircraft were not leased out, reasons for which could not be ascertained from the records made available to Audit. RFQ was again issued (February 2012) against which offer of Air Canada for a lease rental of USD 7.5 million per month per aircraft was approved (March 2012). However this deal did not materialise as Air Canada asked for terms and conditions which were not acceptable to AIL. In a subsequent tender, (November 2012) the offer of Alfacco Aviation Lease and Finance Company, Kuwait to sell the aircraft for an average net sale price of USD 68 million per aircraft was approved. However, ALAFCO later withdrew their offer.

Two parties, namely, Etihad Airways of UAE and German Aviation Capital, Frankfurt responded to the open tender of May 2013. The offer of Etihad for a sum of USD 336.5 million for five aircraft (₹2071 crore) was highest and was approved by Board (October 2013). The aircraft have been delivered to Etihad Airways, during the period from January 2014 to April 2014.

Audit observed that the price (of USD 67.3 million per B-777-200 LR aircraft) at which the five aircraft were sold to Etihad Airways was significantly lower than the indicative market price of USD 86 to 92 million per aircraft obtained by the Company from two parties, M/s AVITAS and M/s ASCENT before initiating the sale process. These reports were not made available to Audit, despite request. After opening the financial bid on 3 October 2013, Air India obtained another valuation of the aircraft from Aviation Specialist Group (ASG) who estimated the then market value at USD 93 million to 96 million and the realisable value to be between USD 65 million to USD 72 million per aircraft (5 October 2013). Considering that the price offered by Etihad Airways (USD 67.3 million) was within this range of realisable value, AIL accepted the offer. However, it needs to be appreciated that the basis of acceptance was a valuation exercise carried out after opening the financial bids and that the market value of the aircraft could not be realised in the sale.

Management replied (02 February 2016) that:

- (i) The valuation carried out by the outside experts was mainly with a view to find out the current values of B-777-200 LR. However the valuers had themselves indicated that there were no sale and purchase of these aircraft in the market since a limited number of LR aircraft were produced by Boeing and if any airline wanted to sell these aircraft, then

the value could be much lower than the current market value since there was no market price established or benchmark price available in respect of sale of these aircraft.

- (ii) After much deliberation it was decided that it was “in order” to sell five B-777-200 LR aircraft so that the outstanding loans on these aircraft could be repaid out of the sale proceeds of the aircraft. By doing so, AIL was able to save not only on interest and repayment obligations but also avoided the cost of maintenance of these aircraft in the future.
- (iii) The future savings of the Company on the sale of these aircraft substantially outweighed the shortcomings of the sale process.

MoCA (30 August 2016) elucidated and reiterated the views of the management on the offers received on the sale of B-777-200 LR aircraft

The reply is not acceptable in view of the following;

- i. Reports of M/s AVITAS and M/s ACCENT Aviation had fixed a market value of USD 86-92 million per B-777-200LR aircraft. The report of M/s Aviation Specialist Group which estimated a lower realisable value and on the basis of which the aircraft were sold to Etihad Airways was obtained only after opening of the financial bids. Audit has commented on the aberration in the process of sale where the valuation on the basis of which the sale was finalised was obtained only after completing the tendering process.
- ii. While Audit appreciates the savings realised in maintenance cost and interest payments, such savings cannot justify the shortcomings of the sale process. It is pertinent to note that the TAP envisaged continued use of B-777-200 LR aircraft and Government had already committed to equity infusion for repayment of the loans taken for purchase of aircraft.

4.2.3 Impact of procurement of eight B-777-200 LR on AIL

Procurement of the B-777-200 LR aircraft added to the losses of AIL as summarised below:

- AIL incurred a book loss of ₹671.07 crore on the sale of five aircraft to Etihad, the valuation¹⁸ of these aircraft in the books of AIL being higher than the sales receipts by this amount.
- The utilisation of these aircraft during 2010-11 to 2015-16 remained very low compared to the target. Besides, in operating these aircraft, AIL incurred a deficit over variable cost of ₹1214.49 crore and deficit over total cost of ₹4746.25 crore over the five year period from 2010-11 to 2015-16.
- AIL had to pay interest amounting to ₹324.67 crore on loans availed for the purchase of the five B-777-200 LR aircraft which were sold subsequently.

¹⁸ WDV-VT-ALA- ₹50.92 crore, VT-ALV- ₹40.89 crore, VT-ALC- ₹47.08 crore, VT-ALD- ₹55.95 Crore, VT-ALE- ₹47.05 Crore , Total of five aircraft was ₹2741.90 crore

Management stated (02 February 2016) that these aircraft had now been deployed on the Delhi-San Francisco (SFO) route which had earned surplus over its variable cost of operations at PLF of 80-85 percent and that it had been proposed to re-configure these aircraft with 300 economy seats. Purchase of these aircraft was based on certain assumptions which did not materialise due to change in circumstances.

MoCA (30 August 2016) stated that the assumptions made in the project report could not be termed as flawed as they were based on the circumstances prevailing at that point of time. The aircraft was being used in the Delhi SFO route. Further while the management stated that the B-777-200 LR would be reconfigured, MoCA claimed that the decision to reconfigure may not go through due to cost factors.

The reply may be viewed against the following facts:

1. India-USA sector has been historically a loss making sector which was pointed out in our earlier Audit Report no. 18 of 2011-12 and still continued to be so as detailed in Para 7.4.1.1.
2. The subsequent operation compounded the losses of the Company on account of sale of five aircraft. Besides, AIL had deployed the remaining B-777-200 LR aircraft on the Delhi – San Francisco route in December 2015 after a lapse of six years from their last induction in August 2009.
3. While DEL-SFO route covered the variable cost (₹2785.14 lakh), its deficit over total cost was ₹4374.45 lakhs.

4.2.4 Over provisioning of B-777-300 ER aircraft

AIL had planned (9 December 2005) to acquire fifteen B-777-300 ER aircraft having a maximum range of 5300 nautical miles. These aircraft were intended to be used for operations to USA/Canada via an intermediate point and for services to London from Mumbai and Delhi.

M/s SH&E suggested deployment of these aircraft for the US sector.

Considering the prevailing global economic conditions, AIL estimated that only nine aircraft (against the 15 ordered) would be essential and decided to cancel the order for the balance six B-777-300 ER aircraft (August 2009).

However, cancellation of order was not possible in the absence of any cancellation clause in the purchase agreement with M/s Boeing. In fact, M/s Boeing demanded additional payment of USD 56 million (₹257 crore) as cancellation liability and informed that three aircraft were already in production and, hence, they could not be cancelled. By July 2010, AIL received 12 B-777-300 ER aircraft and deferred the receipt of the three balance aircraft. A supplemental agreement signed by AIL (22 January 2010) deferred the deliveries of the balance three B-777-300 ER aircraft to August 2012, January 2013 and 3rd quarter of 2013 respectively. M/s Boeing had further deferred the delivery of these aircraft to June 2014, October 2014 and July 2015. These three aircraft were yet to be received by AIL (March 2016).

With three aircraft already in excess, the airline requested GoI to take them over for VVIP operations. GoI has agreed to the proposal of AIL. It was accordingly decided to transfer two B-777-300 ER aircraft with effect from 1 October 2015 to Indian Air Force.

Audit observed changes in decision on acceptance of the three balance B-777-300 ER aircraft. A senior level inter-departmental committee of AIL had initially recommended (October 2010) swapping of ten B-737 aircraft for three B-777-300 ER aircraft, subject to the commitment that M/s Boeing would not levy charges for cancelling the order of these three B-777-300 ER aircraft. Subsequently (June 2011), the same committee recommended induction of these three units.

Management stated (02 February 2016) that with at least one or two aircraft in maintenance, 10 out of 12 aircraft have been utilised extensively with a standby aircraft. It was further stated that progressively two aircraft will be transferred to Defence Ministry in the year 2015-16 leaving only ten for operations. Management also informed that the Board had decided to continue with the order for delivery of the three balance aircraft in the last quarter of 2017-18.

MoCA stated (30 August 2016) that two of the B-777-300 ER aircraft in the fleet have been earmarked for VVIP and remaining for non-stop operations to USA and UK.

Reply of MoCA points to the fact that ten B-777-300 ER aircraft are adequate for present operations. It was also noticed that the utilisation of these aircraft were less than optimum as pointed out at Para 5.3 in Chapter 5. The utilisation of these aircraft reduced further during the period 2015-16, as compared to 2014-15.

4.2.5 Effect of deferment of three B-777-300 ER aircraft

AIL had placed an order (03 November 2006) on M/s. Thales (Thales) for purchase of In-flight entertainment (IFE) equipment for 23 aircraft (8 B-777-200 LR and 15 B-777-300 ER aircraft). As AIL deferred the delivery of three B-777-300 ER aircraft, these could not be supplied to M/s Thales for fitting of IFE systems. M/s Thales served a termination notice (21 March 2014) to AIL for breach of the contract for short fitting Thales IFE equipment on three deferred B-777-300 ER aircraft. During the negotiations (January 2015), it was agreed that AIL would make a one time lump sum payment of USD 4,089,852 (₹22.49 crore¹⁹) as full and final settlement and reimbursement of proportionate credits for non-delivery of these three aircraft. Thus, deferment of the three aircraft led to avoidable additional expenditure of ₹22.49 crore.

In reply Management stated (02 February 2016) that AIL had signed an agreement with M/s Thales according to which M/s Thales would reimburse the amount, in the event AIL takes delivery of the three balance B-777-300 ER aircraft.

MoCA (30 August 2016) concurred with the reply of AIL that M/s Thales would reimburse the amount in the event AIL take delivery of the three balance B-777-300 ER aircraft.

¹⁹ INR-USD Exchange rate of 1US\$= ₹55.

The reply would be verified in future audits as the agreement with M/s Thales for the three B-777-300 ER is yet to be signed.

4.2.6 Inordinate delay in delivery of B-787-800 aircraft

The B-787-800 aircraft were medium capacity long range aircraft, having a maximum range of 5100 nm. These aircraft were to be used in the hub and spoke configuration connecting domestic airports and long haul services to USA/Canada/UK. It was anticipated that B-787-800 aircraft would take over most of the B-777 routes (except non-stop India-USA routes) and deliver better efficiency and lower costs. As per the procurement agreement, the scheduled delivery period was September 2008 to December 2010. The actual delivery was delayed due to defects in design and problems encountered by M/s Boeing during the production and flight testing of these aircraft. The delay ranged between 1368 days to 1643 days. AIL had acquired 21 B-787 aircraft till March 2016.

Delay in induction of the B-787-800 aircraft led to AIL operating existing inefficient aircraft on the routes earmarked for B-787-800 aircraft. AIL estimated the financial impact of the delay at ₹6937 crore for the period from 2008-09 to 2011-12. AIL lodged an initial compensation claim of USD 710 million (₹3390.96 crore) ²⁰ on M/s Boeing, considering the actual days delayed and the average lease rate (@USD 30,000 per day). The claim was substantially lower than the estimated loss.

Audit noticed that the contract provided for liquidated damages (LD) subject to a cap of 180 days of delay which amounted to USD 148 million. M/s Boeing initially agreed to pay USD 148 million which was raised to USD 328.12 million following several rounds of negotiation. The matter was considered by a Group of Ministers (GoM) on 25 July 2012. GoM recommended that AIL be allowed to accept the compensation of USD 328.12 million and take delivery of aircraft under the revised schedule, since the need to induct new aircraft was undeniable. The recommendation of GoM was approved by the Cabinet Committee on Economic Affairs (CCEA) on 03 August 2012. Thus, AIL received a compensation nearly half of its claim which was much lower than the actual losses incurred by the airline due to delayed delivery.

Management stated (02 February 2016) that AIL was unaware of any delay in delivery of the B-787 aircraft at the time of signing the purchase agreement. Management also added that the Company had been successful in getting enhanced compensation of USD 322 Million.

MoCA (30 August 2016) explained that AIL negotiated extensively with M/s Boeing, and was able to raise the compensation amount. MoCA further stated that the delay in supply of B-787-800 was beneficial to AIL. In the exit meeting of the Performance Audit on 'Turnaround Plan and Financial Restructuring Plan of Air India' held on 26 October 2016, MoCA stated that AIL was able to negotiate higher compensation than what was indicated in the Agreement.

Ministry's reply should be viewed in the light of the fact that AIL received a compensation lower than the estimated actual losses incurred by the airline due to delayed delivery.

²⁰ Based on USD average rate of 2009-10

Delayed delivery also resulted in sub optimal utilisation of B-777-200LR on medium haul operations.

Further, as discussed by the Board of AIL, the delayed delivery of B-787 aircraft also led to loss of profitability due to usage of old aircraft vis-a-vis new aircraft by competitors, payload penalties resulting in boarding being denied to passengers and baggage being left behind and scaling down of the operations.

Narrow Body Aircraft Fleet

4.3 Shortage of Narrow Body Aircraft

The fleet plan in TAP included induction of narrow body aircraft primarily for expanding the domestic and short haul routes to medium haul routes. It envisaged increase in narrow body fleet from 62 in September 2011 to 74 in March 2016 as indicated in the table below:

Table 4.2: TAP target of fleet size vis-a-vis actual fleet of narrow body aircraft

Sr.No.	Type of Aircraft	September 2011	March 2015		March 2016	
		Fleet size envisaged in TAP	Fleet size envisaged in TAP	Actual Fleet size	Fleet size envisaged in TAP	Actual Fleet size
1	A 319	24	19	22	19	22
2	A 320	18	19	20	18	24
3	A 321	20	20	20	20	20
4	A 320(IS)	-	14	-	17	-
	Total	62	72	62	74	66

Source: SBI Cap Information Memorandum (Feb 2012) and information received from AI

The above table indicates that the fleet size remained unchanged at 62 (as on March 2015). The network consultant, M/s SH&E appointed by AIL (2009) had pointed out that the AIL fleet was undersized in terms of narrow body aircraft. The consultant had, inter alia, recommended sourcing ten new A-320 aircraft along with disposal of old A-320 fleet. However, as on 31 March 2016, the fleet size consisted of 66 aircraft, against target of 74 aircraft.

Management replied (02 February 2016) that as per TAP fleet plan, all inductions were under A-320 Indian Shuttle (IS) type. However, in the Board meeting held in March 2011, the then Commercial Director had stated that there was no intention to create a separate Indian Shuttle (IS) brand for the domestic market. Management also stated that as part of TAP implementation they had pursued the achievement of target profits rather than target capacity. As a first step towards this, replacement of old A-320 fleet was pursued and approvals were obtained from Board intending a higher daily utilisation of 12 hours with new aircraft.

MoCA stated that replacement of the old classic fleet could not be completed despite several attempts for leasing and it was only in 2015 that the first leased A-320 aircraft was delivered. Therefore, it was decided not to withdraw these old aircraft so as to maintain existing

capacity deployment, otherwise withdrawal would result in a further loss of market share. Further, AI has now signed lease agreement with three lessors for additional 20 new A-320 aircraft, delivery of which would commence from 2017.

The reply needed to be viewed against the fact that replacement could not be accomplished even by March 2016 although the Board had decided to replace the ten old classic A-320 aircraft in September 2010. Moreover, utilisation of old classic aircraft had adversely affected the daily utilisation and neither targeted acquisition nor daily utilisation could be achieved.

4.3.1 Delay in replacement of old classic fleet of A-320 aircraft

M/s. SH&E (network consultant) (May 2010), observed that the 1989-1994 vintage A-320 with V2500-A1 engines were uneconomical and needed to be phased out urgently as maintenance cost of these aircraft was USD 4 million per year per aircraft. M/s. SH&E, recommended immediate leasing of ten A-320/B-737 aircraft to replace these classic aircraft. During July 2010, the Board considered and approved (March 2011) the recommendation of M/s. SH&E, for dry leasing of 10 new A-320 aircraft. The Board was apprised (March 2012) that turnaround plan (TAP) envisaged aggressive fleet induction; however, the same would involve incremental lease charge which was risky keeping in view the financial position of Air India. Therefore, pending Government approval for FRP and financial constraints of AI, aircraft induction had not progressed. Board approved (May 2013) the fleet renewal plan envisaging leasing of 19 A320 units as replacement capacity to maintain network and authorised management to issue RFP for the same.

The Company took more than three years (May 2010 to August 2013) to float the global tender after recommendation of the consultant. M/s China Aircraft Leasing Company (CALC) was the sole qualified bidder. M/s CALC submitted its bids through e-mail which was in contravention of the general terms and conditions of tender. However, M/s CALC was given a chance to furnish bids as per tender requirements and tender closing dates were extended twice. Audit noticed that two of the other shortlisted bidders (viz., Bank of China and AWAS, Singapore) had withdrawn their bids.

AIL executed a lease agreement with M/s CALC for inducting five A-320 aircraft in June 2014. The Company has also signed a lease agreement for 14 A-320 aircraft in March 2016 delivery of which would commence from 2017. Though the consultant pointed out urgent need for the aircraft, AIL could induct only five aircraft till March 2016 i.e. even after five years.

The inordinate delay in the process of leasing 19 A-320 aircraft defeated the objective of reducing maintenance costs through replacement of A-320 aircraft.

Management stated (02 February 2016) the following in reply:

Though concerted efforts were made to replace the old classic fleet, no suitable aircraft was available in the market for which the deal could be concluded. Therefore, AIL concluded the deal in two parts with CALC and ALAFCO²¹.

The amount spent on maintenance cost of old aircraft would be more or less equal to the amount AIL would have contributed towards maintenance reserve of new aircraft. AIL did not incur any additional cost except on schedule interruptions. Besides, due to Company's financial situation, induction of these aircraft on lease was postponed.

Extension of tender was allowed to encourage and ensure sufficient participation. Bids received from CALC were not rejected due to logistic reason. Further, it has been AIL's experience that in view of lengthy tender process and time taken to comply with all tender conditions, bidders often withdrew their bids as was the case of two bidders withdrawing their bids after technical evaluation. Moreover, the tender was awarded with the approval of Board.

MoCA replied that the leasing activities could not be completed due to weak financial position of the Company, high cost of operations in view of the steep increase in fuel prices leading to a number of domestic routes also not meeting the operating costs, etc.

The reply was not tenable in view of the following:

Despite approval of the Board for leasing ten aircraft in September 2010, the tender was issued only in August 2013, after 34 months. Such a long delay points to inefficiency of the procurement process given the urgency of the requirement.

The contention that maintenance cost of old aircraft would be equal to contribution required for maintenance reserve for new aircraft was not tenable as the Management had informed the Board of the high maintenance costs of the old aircraft emphasising the need to replace these uneconomical old classic aircraft urgently. Besides, continued use of old fleet led to poor deployment and utilisation of narrow body fleet as detailed in Para 5.4 and 5.5.2.

Audit pointed out the flaws in the tendering process and highlighted the fact that there was no competitive discovery of price even after the prolonged tendering process carried out by the airline.

4.3.2 Non-fulfilment of commitments by manufacturer in respect of Maintenance Repair and Overhaul (MRO) and warehouse facilities by Airbus

As highlighted in Performance Audit Report on 'Civil Aviation in India' (AR 18 of 2011-12), the minutes of the meetings of Empowered Group of Ministers for the AIL aircraft acquisition from Airbus inter-alia reflected the commitment of Airbus to assist the creation of MRO facilities in India in association with the promoters. The estimated investment was of the order of USD 100 million. AIL entered into a JV agreement with EADS (the parent company of Airbus Industries) in October 2008, however there had been no progress till date (March 2016) in setting up the facility.

²¹ Air India Board in May 2013 approved the fleet renewal plan envisaging leasing of 19 A320 units as replacement capacity to maintain network and authorized management to issue RFP (Request for Proposal) for the same. In August 2015, ALAFCO was selected to lease 14 A320 aircraft with NEO engines for a lease term of 12 years. Remaining 5 aircrafts were leased from CALC.

In response Management stated (September 2015) that though efforts were made by the Company during the period from 2007 to 2013, it failed to reach any agreement with Airbus on the terms of MRO. The Company (November 2012) requested MoCA to take a final view on the matter and advise AI on further course of action.

MoCA replied that this matter was being investigated by another Government agency and hence no comments were offered.

All the aircraft have since been delivered (last aircraft delivered in May 2010) though the commitment of Airbus regarding setting up of a MRO facility had not been fulfilled. In the absence of any enabling clause in the purchase agreement, no specific action in this regard had been taken by AIL. Though Airbus did not fulfil its commitment regarding investment in MRO facility, AIL paid the agreed sale price for the A-320 aircraft to M/s Airbus.

4.3.3 Disposal of old aircraft

Audit noticed considerable delay in disposal of old aircraft as discussed below.

(A) Disposal of A-320 vintage aircraft

AIL Board (May 2009) approved disposal of five²² old A-320 aircraft of 1989 and 1990 vintage. MoCA conveyed its approval in February 2010 for sale of these A-320 aircraft. Subsequently Board approved (15 March 2011) disposal of another three A-320 aircraft.²³ There was a delay of 21 months (November 2011) in completion of cannibalisation process and delay of another eight months was noticed in finalisation of tender. The tender was floated only in August 2012. The bids were opened on 30 August 2012 but due to disagreement between Material Management department (Engineering) and Finance department (January 2013) regarding the highest bid, it was decided to retender. After seven rounds of tendering, six aircraft could be disposed off at a total value of ₹1.27 crore after delay of 31 months (from August 2012 to March 2015). Besides, two aircraft were still lying un-disposed as on July 2016 due to non-removal of mounted engines. AIL had to pay insurance premium of ₹3.56 crore for the period that the aircraft remained un-disposed against which it could realise only an amount of ₹1.27 crore from disposal of six aircraft.

Management replied (February 2016) that after receipt of initial bid, several attempts were made by MMD & Engineering Department to approve the sale, but the Finance Department had not agreed. Moreover, the matter was also referred to Headquarters of the Company but no firm decision was taken in spite of having legal opinion to clear the files as per tender terms. Resultantly the tender was cancelled and bids invited again with higher reserve price. However, due to receipt of a price lower than the reserve price and non compliance with the reserve price conditions, attempts to retender were made.

MoCA has substantiated the reply given by the management.

²² Five A-320 aircraft identified for disposal in May 2009 were VT-EPD, VT-EPL, VT-EPM, VT-EPO and VT-EPQ.

²³ Three A-320 aircraft identified for disposal in March 2011 were VT-ESA, VT-ESG and VT-ESK.

The reply of the Management points to lack of coordination between various departments involved in the disposal of scrapped aircraft. With delay in disposal, AIL continued to incur insurance cost while the aircraft occupied hangar space unnecessarily.

(B) B-737-200 freighter aircraft

Board of Directors of AIL approved (September 2010) the disposal of six B-737-200 freighter aircraft for which approval of MoCA was conveyed on 8 February 2011. As these aircraft were in a fly-worthy condition, the Board decided to dispose them preferably in serviceable condition.

By the time the tender for making them servicable was floated (December 2011), the certificate of airworthiness of five of the six aircraft had expired. The reserve price for the aircraft were however fixed at ₹3.26 crore (USD 725,000) per aircraft considering them to be airworthy.

The company received the highest bid from M/s Aerothrust (March 2012) for a total value of USD 516500 (₹2.64 crore @ ₹51.15 per USD) which was much lower than the reserve price and hence the same was not considered. It was therefore proposed (15 May 2012) to invite fresh bids. Subsequently after three more rounds of tendering, the aircraft were disposed at a total value of ₹1.15 crore (May 2015), three years later. The value obtained in the sale was lower than the bid received earlier by ₹1.49 crore.

The Company stated (February 2016) that efforts were made to request the highest bidder to meet the reserve price. Decision making at the vendor's end took considerable time on one hand and on the other hand, the vendor cited a closure date of 15 February 2013, which the Company was not able to meet as requisite approvals were not in place. Thereafter, the vendor claimed time bar and also stated that the preservation status of the aircraft was not in an acceptable form. Resultantly, the tender was cancelled and fresh bids invited.

MoCA stated that the minimum reserve price for the 6 freighter B-737 aircraft was based on the book value as on 1st April 2012, which was high as the Company had spent large sums in 2007-08 for converting the aircraft into freighter aircraft.

As the Company was unable to estimate realistic reserve price for old aircraft which were not airworthy; it fixed a higher reserve price for disposing B-737-200 freighter aircraft which resulted in loss of ₹1.49 crore and an additional expenditure of ₹55.95 lakh on payment of insurance premium (during the period 2010-2015).

AIL has a mismatch of wide and narrow body aircraft. While wide body aircraft have been over-provisioned, it does not have adequate number of narrow body aircraft.

Over-provisioning has cost the airline on procurement and sale of B-777-200 LRs, and indecision regarding delivery of three B-777-300 ER aircraft. Besides, late delivery of B-787 aircraft compounded the airline's losses. Owing to infirmity in the contract, AIL could recover from Boeing only a fraction of its actual loss due to delayed delivery.

Though the Company was aware of the acute shortage of narrow body aircraft as early as May 2010, AIL delayed leasing of A-320 aircraft. As against a requirement of 19 aircraft, the Company has managed to induct only five aircraft till March 2016.

Disposal of old aircraft was also delayed considerably. This resulted in realisation of lower value for these aircraft, and extra costs due to additional insurance premium.

Chapter 5: Aircraft deployment and utilisation

Fleet deployment and fleet utilisation are key performance indicators for airline operations. Fleet deployment is the number of aircraft put into operations while aircraft utilisation is the average number of hours (during each 24 hour period) that an aircraft is actually in flight. The TAP (2012) had laid down targets for utilisation of aircraft by AIL. Audit scrutinised the capacity deployment and utilisation of wide and narrow body aircraft and noticed significant deficiencies. The findings are discussed below:

Wide Body Aircraft

5.1 Fleet Deployment

The over-provisioning of wide body aircraft by AIL already discussed in Chapter 4, impacted their deployment pattern. While the deployment of the older B-747-400 and A-330 has been very poor, the deployment of newly acquired aircraft (B-777-200 LR, B-777-300 ER, B-787-800) was also been significantly low varying between 50 percent and 80.95 percent over the period from 2013 to 2016. The actual deployment of wide body aircraft over the period from 2010-11 to 2015-16 is indicated in the table below:

Table 5.1: Percentage of deployment of wide body aircraft

Type of aircraft	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
B-777-200 LR	93.75	87.50	93.75	62.50	50.00	50.00
B-777-300 ER	66.67	83.33	83.33	79.17	75.00	79.17
B-787-800	0*	0*	83.33	56.82	76.32	80.95
B-747-400	50	50	40	30	20	25.00
A-330	50	50	50	75	#	#

Source: Information furnished by AIL

*B787-800 delivery commenced from September 2012.

#A330 returned back on completion of lease

Deployment of all aircraft shows a declining trend. In fact, in 2015-16 only 73 percent of available aircraft capacity was deployed (29 deployed out of 40 aircraft). Deployment of aircraft remained low as they were grounded for considerable periods, due to cannibalisation of parts, non-availability of serviceable engines, non-maintenance of sufficient float of components/parts/spares, etc. as discussed in the paragraphs below.

Management stated (02 February 2016) that the deployment of wide body aircraft was low only in the case of B-747-400 aircraft and B-777-200 LR aircraft as their cost of operation was high. Three B-747-400 were being used for VIP operations. Plans were underway to reconfigure the B-777-200 LR aircraft to around 300 seats to bring down the per seat cost and with fall in fuel prices, the Company had started operations to San Fransisco (SFO).

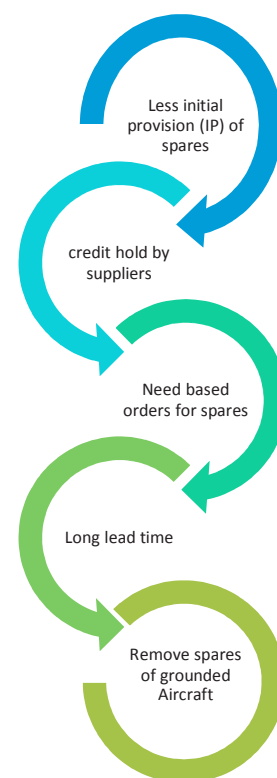
While concurring with the management reply on high operating cost of B-747-400 and B-777-200 LR, MoCA stated that now B-777-200 LR were being put into operations with fall in fuel prices.

The fact remained that B-777-200 LR had been put into full-fledged operations only almost after nine years after their procurement. The plan of AIL to reconfigure the aircraft to 300 seats needed to be reviewed in the light of the fact that the cost of operation of B-777-200 LR aircraft was high mainly due to the high price of fuel. Since, B-777-200 LR were being put into operations now with fall in fuel prices, as stated by MoCA, the cost benefit analysis of reconfiguration of the seats needs to be reworked. Further, reply of MoCA is not acceptable as the deployment of the newer aircraft; B-777-300 ER and B-787-800 was also not optimal as seen from the table although it improved marginally in 2015-16 as compared to 2014-15. MoCA also stated that B-747-400 should not be considered for fleet deployment, but B-747-400 was a part of the fleet and had been shown in the TAP projection too. Further, MoCA in their reply (30 August 2016) stated that the decision to reconfigure the B-777-200 LR may not be approved due to cost factors.

5.2 Grounding of Aircraft

One of the reasons for low deployment was that aircraft were grounded for extended periods. Aircraft are grounded for normal maintenance and checks, on specific instructions of DGCA for safety purpose, repairs including accident repairs, modifications, etc. While some reasons for grounding of aircraft were beyond the control of the airline, others were controllable and avoidable.

Audit noticed that the main cause of grounding of AIL aircraft was non-availability of spares leading to cannibalisation of spares from one aircraft to another, escalating the grounding period and loss of flying hours. In case of some aircraft, the initial provision of spares was lower compared to the recommended list and orders for spares were placed only as and when the need arose. Credit-hold²⁴ by major manufacturers/suppliers and long lead time of vendors for supply of spares, aggravated the situation. Besides, the requirement of spares for servicing the aircraft kept changing as parts of the aircraft were cannibalised and used for other line aircraft. The percentage of aircraft grounded during the period from FY 2010-11 to FY 2015-16 is given in the table below.



²⁴ If an account is put on credit-hold due to outstanding payments, all supplies/sales on credit to the account are also put on hold.

Table 5.2 Aircraft grounded (in percentage)

Type of aircraft	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
B-777-200 LR	6.25	12.50	6.25	37.50	50.00	50.00
B-777-300 ER	33.33	16.67	16.67	20.83	25.00	20.83
B-787-800	0.00*	0.00*	16.67	43.18	23.68	19.05
B-747-400	50.00	50.00	60.00	70.00	80.00	75.00
A-330	50.00	50.00	50.00	25.00	0.00#	0.00#

Source: Information received from AIL, Please refer table 4. 1 in chapter 4 for the number of each type of aircraft.

*B787-800 delivery commenced from September 2012.

#A330 returned on expiry of lease

MoCA confirmed the facts and concurred with the reply of the management that the reason for grounding was shortage of spares which led to cannibalisation of parts.

The reasons for grounding were scrutinised by Audit. The results of scrutiny are given below:

5.2.1 Grounding for regular scheduled checks/ tasks

As per the aircraft maintenance programme, regular checks were carried out to keep the aircraft airworthy and safe for operations. Each check category involved tasks that were pre-packaged and in line with a fixed schedule. Keeping in view the technical guidelines, the Company planned these regular scheduled checks for each type of aircraft in advance.

5.2.1.1 Delay in scheduled checks/ tasks leading to excess grounding of aircraft

Audit observed that the time taken for completion of regular scheduled checks (during 2010-2016) exceeded the norm/planned period. Besides, different grounding periods were noticed for the same check and same aircraft type. The fleet-wise delays for regular checks were as indicated in the table below:

Table 5.3: Fleet wise delay for regular checks

Type of aircraft/fleet	Period	Total Checks carried out during the period	Remarks
B-747-400	2010-16	39	Out of a total of 39 checks, delays ranging from 1 to 227 days were noticed in 25 cases. (16 cases were observed in the range of 1 to 50 days, 5 cases between 51 to 100 days, and 4 cases more than 100 days.)
B-777-200 LR	2010-16	78	Out of a total of 78 checks, delays ranging from 1 to 147 days were noticed in 42 cases. (34 cases were observed between 1 to 50 days, 2 cases between 51 to 100 days, 6 cases more than 100 days)
B-777-300 ER	2010-16	171	Out of a total 171 checks, delays ranging from 1 to 263 days were noticed in 70 cases

Type of aircraft/fleet	Period	Total Checks carried out during the period	Remarks
			(66 cases were observed between 1 to 50 days, 1 between 51 to 100 days and 3 more than 100 days).
B-787-800	2010-16	35	Out of total 35 checks, delays ranging from 1 to 131 days were noticed in 15 cases. (14 cases were observed between 1 to 50 days and one more than 100 days).

These delays needed to be viewed in the context of the recurring finance cost incurred by AIL for the purchase of the new aircraft (B-777-200LR and B-777-300ER) and the lease rentals borne by the Company for the other aircraft procured on sale and lease back mode (B-747-400 and B-787). While the airline paid lease rentals/finance costs, the aircraft remained grounded defeating the purpose of their procurement. The unfruitful expenditure incurred by the AIL on this account was ₹92.96 crore (2010- 2016).

Management accepted the fact that aircraft remained grounded for prolonged periods and stated that excess grounding was mainly due to non-availability of spares and occasionally due to deployment of manpower for VVIP aircraft.

MoCA (30 August 2016), while concurring the views of the management, further stated that the delay in carrying out checks are more in respect of B-747-400 and B-777-200 LR aircraft which were not being used mainly for scheduled operations and there were lower delays in checks in respect of B-777-300 ER and B-787-800. Further, no aircraft were on ground on account of cannibalisation and all aircraft were flying.

Reply of MoCA was not tenable as even during 2015-16 the delay in checks of B-787-800 aircraft ranged from 1 to 131 days and delay in respect of B-777-300 ER aircraft from 1 to 57 days. Delays in respect of B-747-400 aircraft ranged from 1 to 227 days. Moreover, during 2015-16 VT-AND, VT-ANJ, VT-ANH and VT-ALS aircraft were grounded for more than 2 months.

5.2.1.2 Grounding of aircraft for more than six months

Audit noticed instances of prolonged grounding, i.e. for periods exceeding over six months. During these prolonged periods when the aircraft were on the ground, they were cannibalised, thereby extending the grounding period further. For the period the aircraft remained grounded, the airline continued to pay finance charges (for owned aircraft) and lease rent (for leased aircraft). Instances of grounding for more than six months during the period 2010-11 to 2015-16 are tabulated below:

Table 5.4: Aircraft grounded more than six months

Type of aircraft /fleet	Aircraft	Reason for grounding	Duration of grounding and percent	Finance cost (₹ in Crore)	Lease rent (₹ in Crore)
B-747-400	VT-ESN	Check C and further cannibalisation	8 July 2013 to March 2016 (46%)	--	208.74
	VT-ESO	Check C and further cannibalisation	February 2012 to June 2012, June 2013 to August 2013 and April 2014 to July 2014 (18%)	--	44.73
B-777-200 LR	VT-ALH	P and C check*	17 January 2012 to 9 April 2012 and 10 August 2012 to 9 February 2015 (49%)	90.59	--
	VT-ALG	To facilitate redelivery of sale aircraft	14 April 2014 to 24 November 2015 (24%)	72.72	--
B-777-300ER	VT-ALR	C Check	17 September 2012 to 19 June 2013 (14%)	10.19	--
B-787-800	VT-ANI	Boeing Reliability Modification plan and further cannibalisation	23 April 2014 to 14 February 2015 (34%)	--	58.63
	VT-AND	Boeing Reliability Modification plan and further cannibalisation	01 January 2015 to 26 November 2015 (26%)	--	66.84
Total				173.50	378.94

Source: Data from AIL/ Engineering

*C check: 10000 flying hours or 24 months whichever comes earlier.

P"Check" More than 2000 flying hours or 240 days whichever comes earlier

(Percentage calculation of Grounding of aircraft in respect of VT-ALH, VT-ALG, VT-ALR, VT-ANI, and VT-AND is for the period from their induction in service. Percentage of Grounding of aircraft in respect of VT-ESN and VT-ESO is for the period from 2010 to 2016).

MoCA concurred with the views of the management and stated (30 August 2016) that the delay was mainly due to non-availability of spares arising from various reasons.

5.2.2 Sub-optimal deployment of B-787-800 aircraft due to aircraft related problems

Audit observed sub-optimal deployment of B-787-800 aircraft. The reasons for such sub-optimal deployment are discussed below.

5.2.2.1 Unplanned grounding of B-787-800 aircraft due to battery problems

AIL had ordered (December 2005) a fleet of 27 B-787-800 aircraft from M/s Boeing, the first of these aircraft was to be delivered in September 2008. Due to various technical reasons, the first six aircraft were delivered four years later (from September 2012 to December 2012). All these six aircraft had to be grounded soon after their induction for over four months (17 January 2013 to 4 June 2013) on account of reported malfunctioning of Lithium-ion Battery. The airline lost an estimated amount of ₹527 crore (USD 95.95 million as worked out by AIL) for the 19 weeks that these aircraft remained grounded.

Audit noticed that the purchase agreement did not contain any provision for levying penalty on the manufacturer in case of 'inherent technical fault'. In fact, the purchase contract specified that M/s Boeing would not be liable for any consequential or other damages due to loss of use, revenue or profit due to any fault in the aircraft. As such, M/s Boeing did not have any contractual obligation to pay compensation to AIL.

AIL claimed a compensation of USD 50 million. Following protracted negotiations, M/s Boeing agreed to pay USD 24 million in cash and USD 3.4 million towards waiver of late fee on AIL's spares account. In the absence of a specific provision in the agreement, AIL failed to recover its claim from M/s Boeing.

Management replied (02 February 2016) that M/s Boeing refused to enhance the compensation as it was not covered by the agreement and they had accommodated AIL by accepting delay in payment of balance amounts towards the aircraft delivered till date by waiver of interest charges on the delayed payment etc.

MoCA too (30 August 2016) stated that the purchase agreement did not contain any provision for levying penalty on the manufacturer and AIL was able to negotiate and obtain USD 24 million.

The reply confirmed the finding that in the absence of specific provision in the purchase agreement, a meagre concession could be obtained as a special business consideration. AIL, meanwhile, incurred substantial expenditure due to unplanned grounding on account of mechanical defect in the aircraft, which was a design deficiency attributable to M/s Boeing.

5.2.2.2 Frequent grounding due to technical snags faced during operation of B-787-800 aircraft

Dreamliner (B-787-800) aircraft had been identified as the workhorse of AIL (September 2011). However, the aircraft suffered continuous technical snags since its inception in AIL's fleet.

Due to technical snags, B-787-800 aircraft remained grounded for 274 hours in 2013 (January to December 2013). This increased to 1464 hours by March 2016 (January 2015 to March 2016). Audit also noticed that some of these problems were of a recurring nature. As the aircraft were under the warranty period of 48 months at that time, the repairs were carried out by M/s Boeing free of cost. However, the Company continued to suffer due to un-scheduled grounding of the aircraft. Considering the increasing incidence of technical snags, Audit is of the opinion that, there was a strong case for extending the warranty period for these aircraft to ensure adequate coverage in the future.

Management stated (02 February 2016) that in order to overcome the shortcomings noticed in the reliability of components of B-787-800, Air India had entered into the Rotable Exchange Program with M/s Boeing.

MoCA (30 August 2016) in its reply stated that AIL has entered into a Rotable Exchange Programme from July 2016 and M/s Boeing had extended warranty for parts which were failing frequently.

Audit observed that the extended warranty agreement in respect of B-787-800 aircraft were still under discussion and not yet finalised by AIL. The Rotable exchange²⁵ programme had been signed by AIL only in July 2016. The benefits of this program would be reviewed in future audits.

5.3 Utilisation of aircraft

The utilisation of aircraft, post deployment, was also found to be sub-optimal as detailed below.

A. Utilisation of aircraft in terms of hours

The TAP (2012) had set targets for utilisation of aircraft by AIL in terms of hours to be flown within a period of 24 hours. Audit compared the actual utilisation vis-a-vis the targeted utilisation during the period from 2011-12 to 2015-16. The results of the analysis are shown in the table below:

Table 5.5: Planned Vs. Actual hours of utilisation

Year	2011-12		2012-13		2013-14		2014-15		2015-16	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
B-747-400	7.33	8.90	7.33	8.90	0	5.41	0	2.49	0	2.97
B-777-200 LR	15.00	14.50	15.00	14.50	15.00	8.75	15.00	2.04	15	6.89
B-777-300 ER	14.00	14.20	14.00	14.20	14.00	12.31	14.00	12.52	14	11.78
B-787-800	9.00	0.00	12.00	7.30	13.00	12.45	13.00	12.94	13	12.07

Source: TAP and information furnished by AIL

Audit analysis of low utilisation further indicated the following

- **B-747-400:** These aircraft being old incurred an operational loss of ₹1566.64 crore due to lower efficiency during the period from 2010 to 2016. Further, these aircraft were grounded for approximately 32 months and incurred an expenditure of ₹253.47 crore (April 2010 to March 2016) on lease rental for the period the aircraft remained grounded.
- **B-777-200 LR:** The Company had started utilising these aircraft on Delhi-San Francisco route from December 2015 in addition to operating these aircraft on Delhi-Riyadh sector. Being unviable, their utilisation had decreased during 2011-12 to 2014-15 and five aircraft had been sold during 2013-14. The utilisation of these aircraft improved only in 2015-16, but yet was lower than the target set in the TAP. The Company took a long time from the date of procurement to December 2015 to improve the utilisation.
- **B-777-300 ER:** As AIL had higher number of aircraft than its requirement, the utilisation of these aircraft was lower than TAP target. Hence those were operated on short haul

²⁵ Rotable exchange means AI had signed an agreement for support of removed U/S LRUs of 787 aircraft wherein Boeing will provide access to their Rotable Exchange Inventory for smooth operation of B-787 aircraft.

routes resulting in higher operating costs. One of these aircraft, VT-ALR remained grounded for nine months as indicated in Para 5.2.2.2 of this report.

- **B-787-800:** 21 B-787-800 aircraft out of 27 aircraft ordered, had been received till March 2016. As a result the TAP utilisation target during the period from 2011-12 to 2012-13 could not be achieved. Of the 21 aircraft, AIL utilised only 19 aircraft on rotation basis (summer schedule 2016). As per the Project Report for acquisition of aircraft (May 2005), the target utilisation of B-787-800 aircraft was 14.2 hours. While the company could achieve utilisation of 12.94 hours against TAP target of 13.00 hours, it could not achieve the projected target of 14.2 hours prescribed in the Project Report. Two aircraft, VT-ANI and VT-AND remained grounded for a considerable period as referred to in Para no 5.2.1.2. Besides, the Company utilised some of these aircraft for short duration of two to four hours on domestic and regional routes even though they were designed and optimised for medium to long range flights.

The utilisation of B-777-300 ER and B-787-800 further reduced during 2015-16. Utilisation of B-787-800 reduced from 12.94 hours to 12.07 hours and that of B-777-300 from 12.52 hours to 11.78 hours in 2015-16 as seen in Table 5.5. The utilisation of these aircraft had not improved as per target of TAP.

MoCA stated (30 August 2016) that operation of B-747-400 aircraft was unviable due to high operating cost and is mainly used for VIP operations and has government support. B-777-200 LR aircraft had been put into operations in San Francisco route which increased the utilisation of the aircraft. B-777-300 ER aircraft had met with a number of incidents and B-787-800 aircraft was grounded mainly due to want of spares.

B. Utilisation of aircraft in terms of seat kilometres.

Available seat kilometre (ASKM) is a measure of the passenger carrying capacity of an airline. It is defined as the number of seats available on an aircraft multiplied by the number of kilometres flown by it. The TAP (2012) had fixed target ASKM for the Company. The actual achievement vis-à-vis the targets set in TAP are as given below:-

Table 5.6: Achievement of ASKM* vis-a-vis targets

(ASKM in million km)

Particular	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
TAP Target	25138	27919	35475	38374	41146	47175
ASKM Achieved	25065	25173	19960	25642	30625	32607
Shortfall	73	2746	15515	12732	10521	14568
Shortfall percent	0.29	9.84	43.74	33.18	25.57	30.88

Source: Data from AIL/ Finance

*ASKM figures include ASKM of B-747-400, B-777-200 LR, B-777-300 ER and B-787-800.

Analysis of the achievement vis-à-vis the target indicated as follows:

- The Company could not achieve the targeted ASKM. The shortfall in ASKM increased from 0.29 to 30.88 *percent* during the period 2010-11 to 2015-16. During 2015-16 the ASKM of B-777-300 ER aircraft and B-787-800 aircraft reduced further.
- Despite inducting 21 B-787-800 aircraft instead of 16 B-787-800 as envisaged, the ASKM target of TAP could not be achieved.

Management in its reply (02 February 2016) stated that AIL had been facing constraints like non-availability of spares, increased instances of snags in B-787-800 aircraft, cockpit and cabin crew shortages and high cost of operations on certain routes for certain types of aircraft like B-747-400. The management further stated that the ASKM would improve in future with various measures taken.

MoCA stated (30 August 2016) that it was not proper to compare increase in aircraft with ASKM even while they admitted that there has been increase in ASKM with the introduction of more aircraft in the fleet. MoCA further stated that the reduction in ASKM was mainly on account of lower utilisation of B-747-400 and B-777-200 LR aircraft on account of high operating cost.

It was however, observed that the ASKM of B-777-300 ER aircraft also reduced during the FY 2015-16. Further, MoCA accepted the fact that B-747-400 and B-777-200 LR aircraft had high operating costs and that B-787-800 aircraft did not have adequate number of trained pilots. The company was aware of the scheduled delivery of the aircraft and its operational requirements and was hence required to plan for the same. Management reply explains the reasons for low ASKM.

5.3.1 Higher weight of B-787-800 aircraft adversely impacting their profitability

Twenty One B-787-800 aircraft were inducted into the fleet of AIL till June 2015. On receipt of the aircraft, it was observed that the empty weight of the aircraft was higher by ten tons resulting in additional fuel consumption. AIL calculated the likely loss on additional fuel consumption (for 27 aircraft over an operating life of 20 years of each aircraft) at USD 400 million. However, compensation recoverable, as per the procurement contract, for additional fuel consumption as a result of slippage of performance guarantee levels, was capped at USD 80,000 per aircraft per year for five years. Thus, the maximum compensation for the 27 aircraft arising out of breach of the performance guarantee clause would be USD 10.8 million which would not cover the loss of the airline on this account.

Audit noticed that a clause regarding specific compensation to be paid to AIL for increase in the weight of the aircraft (MTOW²⁶) had been included in the purchase agreement for B-777-200 LR aircraft with the same company, M/s Boeing. This clause, however, was not included in the contract for B-787-800 aircraft and hence the claim for additional compensation could not be enforced by the Company.

²⁶ MTOW: Manufacturers design take-off weight -227.930 ton

Audit noticed that M/s Boeing had refused to negotiate the ceiling on compensation but had only offered negotiation in good faith. The matter had been submitted to the CCEA which had directed that the issue be referred to Ministry of Law and Justice and an Empowered Group of Officers be constituted to further negotiate on the subject. Audit noticed that the time limit of six months for the negotiation had already been extended twice to 18 months and subsequently to 30 months.

Management replied (02 February 2016) that while delinking the performance guarantee issue from delay settlement agreement, AIL extended the deadline of resolving the slippage in performance guarantee from initial six months to 18 months, considering the availability of adequate performance data of 14 B-787 aircraft to assess the extent of compliance and deviation from the purchase agreement and also from 14 to 30 months, to coincide with the delivery of 20th B-787 aircraft. It was also stated that Boeing admitted in a meeting (19 October 2015) that performance of B-787-800 aircraft had been below that had been promised and AIL would be compensated by providing suitable discount in future delivery of three B-777-300ER aircraft. It was also stated that a marked reduction in weight had been noticed in the later aircraft. However, no final figure of compensation had yet been arrived at with M/s. Boeing.

MoCA stated (30 August 2016) all the agreements were vetted by reputed international legal firms and aircraft manufacturers did not deviate from standard sale agreement. Meetings were held with Boeing and the company could extract compensation. On account of extensive negotiation with M/s Boeing, GoI was able to extract additional compensation and the total compensation worked out to USD 71 million inclusive of the fuel-burn guarantee under Purchase Agreement.

It is pertinent to note that the procurement contract did not have adequate safeguards for enforcing compensation and as such the Company had to resort to negotiation. The Board in its 46th meeting held on 28 May 2012 concluded that the performance guarantee with Boeing required to be taken up along with the need to incorporate a clause for settlement of compensation or suitable arbitration clause for resolution of disputes. Hence, the company too felt the need of arbitration clause only at a later stage and not at the time of signing the agreement.

Narrow Body Aircraft

Audit findings relating to deployment of narrow body aircraft are given below:

5.4 Deployment of existing capacity

5.4.1 Deployment and Grounding of Aircraft:

Though there was acute under-provisioning of narrow body (NB) aircraft, the deployment of available narrow body fleet during the period from 2010 to 2016 was less than satisfactory. The deployment of available A-320 family aircraft during the period from 2010-11 to 2015-16 was as under:

Table 5.7 Percentage of aircraft deployed and grounded

Type of Aircraft	2010-11		2011-12		2012-13		2013-14		2014-15		2015-16	
	Utilisation	Grounding	Utilisation	Grounding	Utilisation	Grounding	Utilisation	Grounding	Utilisation	Grounding	Utilisation	Grounding
A-319	88.33	11.67	89.67	10.33	87.13	12.87	84.21	15.79	88.64	11.36	89.36	10.64
A-320	78.57	21.43	85.71	14.29	80.55	19.45	80.55	19.45	72.50	27.50	78.33	21.67
A-321	93.15	6.85	89.40	10.60	92.10	7.90	91.85	8.15	88.55	11.45	88.35	11.65
Total A-320 family	85.88	14.12	88.31	11.69	86.82	13.18	85.61	14.39	83.40	16.60	85.37	14.63

Source: Data received from ALL/ Engineering

The Oversight Committee, in its meeting held in November 2012, directed that at no point of time more than 5 percent of the NB fleet should be grounded. However, 11.69 percent to 14.63 percent of aircraft remained grounded during the period 2010-11 to 2015-16 due to cannibalisation of parts, non-availability of serviceable engines, non-maintenance of sufficient float of components/parts/spares etc. In fact, the deployment of narrow body fleet during the period from 2012-13 to 2015-16 declined year on year.

Management replied (February 2016) that out of 62 aircraft, three aircraft had completed their Design Service Goal (DSG) of 60000 flying hours and had to be grounded for Airbus certification. Further, there were nearly 13 aircraft which were older than 20 years. Thus, the percentage of grounding was not adverse considering maintenance and period checks for which purpose nearly five percent of active fleet would always be grounded. Moreover, in view of the non-availability of aircraft through tender, it was decided to revive these vintage aircraft. This took considerable time due to non-availability of spares, limited production of V-2500 engines, financial crunch and credit hold by suppliers. This adversely affected the requirement of aircraft as per schedule. Further, in spite of allocating around USD 41 million for upgradation of CFM engine overhaul facility was delayed due to financial crunch.

The reply is not acceptable as the fact of ageing fleet was known to the Management. Even, though the Management was aware of the tedious process involved in tendering and also the fact that the classic A-320 aircraft were uneconomical as also the need to replace the aircraft in September 2010, it floated the tender belatedly only in August 2013. Even though, the purchase agreement for acquisition of 43 A-320 family aircraft was signed in February 2006, the management failed to prioritise its requirement for upgradation of in-house overhaul facility of CFM engines and took considerable time exceeding six years. Deployment of A-319 and A-321 fleet, which was newly inducted, was also below the targeted levels.

5.4.2 Grounding for regular scheduled checks/ tasks

The details of scheduled checks/tasks conducted during the period from 2010-11 to 2015-16 are as given below:

Table 5.8: Regular Scheduled checks/ tasks (2010-16)

Aircraft/ Fleet	Period	Total checks carried out during the period	Status of checks
A-319	January 2011 ²⁷ to March 2016	554	Out of total 554 checks, for delay of 1 to 50 days there were 140 cases, from 51 to 100 days there were 5 cases, for delay of more than 100 days there were 5 cases
A-320	April 2010 to March 2016	549	Out of total 549 checks, for delay of 1 to 50 days there were 186 cases, from 51 to 100 days there were 7 cases, for delay of more than 100 days there were 7 cases
A-321	April 2010 to March 2016	608	Out of total 608 checks, for delay of 1 to 50 days there were 64 cases, from 51 to 100 days there were 5 cases, for delay of more than 100 days there were 7 cases

Source: Data furnished by AIL/ Engineering

The main reasons for delays in carrying out the check were non-availability of critical spares, components and engines, cannibalisation of parts, etc. Thus, delay in completion of scheduled checks not only adversely affected the operations of the Company but also affected its revenue generation.

Management replied (February 2016) that a number of engines were dropped much before time due to harsh environment almost simultaneously resulting in delays and prolonged grounding and the company had to send these engines abroad. Moreover, shortage of spares on certain occasions was also a cause for the prolonged grounding.

MoCA stated that the target of TAP were based on assumption of inducting new A-320 fleet and phasing out of old A-320 classic fleet. However, the actual induction of aircraft started in 2015 and Air India was forced to continue operating with the old classic fleet.

The reply is factual. However, the Company was well aware of these facts even before implementation of TAP. Delay in checks had resulted in non-achievement of target fixed for deployment as envisaged.

5.4.3 Grounding of aircraft for more than six months

Audit observed that in 19 cases the period of grounding A-320 aircraft fleet exceeded six months due to cannibalisation/non-availability of engines/parts, delay in checks, etc. The aircraft remained grounded and could not be deployed on operations for excessive periods ranging from 156 days to 1400 days as given at Annexure 3.

²⁷ The data from April 2010 to December 2010 was not provided by Eastern Region.

Management replied (02 February 2016) that classic A-320 aircraft were approaching their major checks and DSG and were initially decided to be declared vintage. However, due to non-availability of replacement for A-320 aircraft, it was decided to revive these aircraft. In respect of enhanced A-320 family fleet, the aircraft remained grounded due to shortage of float components on account of shortage of funds during the period from 2010 to 2014.

MoCA stated that the target of TAP were based on assumption of inducting new A-320 fleet and phasing out of old A-320 classic fleet. However, the actual induction of aircraft started in 2015 and Air India was forced to continue operating with the old classic fleet.

The reply given by Management is general in nature. However, the fact remains that the Management was well aware of the available resources before implementation of TAP inspite of setting aggressive targets for deployment of aircraft, which the Company could not achieve in any of the years.

5.4.4 Non-procurement of component/parts recommended for initial provisioning

AIL received 43 new Airbus aircraft between October 2006 and May 2010. It had been recommended that the Company would procure total 5070 components/parts through six rounds of initial provisioning which would be synchronised with the delivery of aircraft to ensure smooth operation of the aircraft. However, it could procure only 1669 components/parts (August 2015) and failed to procure recommended components/spares necessary for operations, thereby leading to a shortage of 3401 recommended components/parts. Further, time lines for procurement of balance quantity and relevance of initial provisioning was not made available to Audit.

MoCA replied that due to financial constraints AIL could not procure a level of components/spares/inventory which were required for a regular and smooth production of engines from the engine workshop. The company was finally able to negotiate an External Commercial Borrowing (ECB) loan of USD 300 million in August 2015 and upgraded its Commercial Fan Motor (CFM) workshop. Funds were also utilised for procurement of essential spares and was able to produce nearly 2 to 3 engines per month instead of sending the engines to outside agencies for repair. In order to avoid prolonged grounding of aircraft, the company also leased engines from CFM and enhanced the levels of spare engines in order to support the fleet.

MoCA admitted the delay in procurement of components/spares provisioned initially. The fact remains that failure in procuring the parts resulted in prolonged grounding of aircraft during the period reviewed in audit.

5.4.5 Grounding of aircraft due to shortage of engines

Review of records relating to grounding of aircraft revealed that aircraft grounded for regular checks remained grounded for long time due to failure of Jet Engine Overhaul Complex (JEOC) to provide serviceable engines on time. During the period from 2010-11 to 2014-15, A-320 narrow body aircraft remained grounded for 2691 days; A-319 aircraft for 1710 days and A-321 aircraft for 872 days for want of serviceable engines. However in the year

2015-16, A-320 aircraft remained grounded for 224 days, A-319 aircraft for 59 days and A-321 aircraft for 377 days due to shortage of engines.

Management stated in reply (02 February 2016) that during the period from 2010 to 2015, a total of 101 engines were overhauled in Jet Shop, Delhi despite various constraints including financial crunch, credit hold, etc.

The reply highlights the constraints responsible for delays in engine production. The resultant prolonged grounding of aircraft meant that the Company could not achieve its targeted fleet deployment.

Audit studied the reasons for delay in servicing engines in the Jet Shop, Delhi and noticed the following:

5.4.5.1 Delay in operationalising CFM engine facility leading to engines being sent abroad for repairs

AIL had an in-house engine service facility, the Jet Engine Overhaul Complex (JEOC), with facilities to conduct mandatory and preventive maintenance of only V-2500 engines of narrow body aircraft. The 43 narrow body aircraft, purchased through agreement signed in February 2006, were fitted with CFM 56-5B engines. The Company took six years (from the date of agreement) to develop and commission (April 2013) facilities for servicing CFM engines. The Company procured only five spare engines against 43 Airbus aircraft by March 2015. There was also insufficient float of CFM engines. Thus, in the absence of in-house facility and adequate engine float, the engines were sent abroad for maintenance incurring additional expenditure.

Management in reply (02 February, 2016) stated that the delay in operationalising the in-house engine facility was not within its control as it resulted from financial crunch faced by the airline and delayed training on account of vigilance enquiry. Management further stated that the engines had to be rapidly removed due to harsh environment, sea and dust in Gulf and in view of the delayed shop upgradation to CFM, leading to the engines being sent to other MROs for refurbishment/overhauling. Management also informed that the primary reason for insufficient float of engines was non-availability of funds and credit hold situation faced within the Company and that three more engines had been received in 2015.

The financial crunch referred to in the Management reply needed to be viewed against the additional expenditure incurred by the Company in servicing the engines abroad due to delay in operationalisation of the in-house facility and the fact that aircraft often remained grounded due to non-availability of serviceable engines. Due to insufficient float of engines, engines from the newly acquired aircraft were cannibalised when they were grounded for checks and as a result, these aircraft remained grounded for prolonged periods affecting deployment of aircraft. Besides, the environmental factors of operation were known to the airline and its effect on engines and consequent service requirements ought to have been anticipated by the airline. It was also significant to note that though the engine facility became functional by April 2013, it could service only 17 of the 65 engines removed from

April 2013 to March 2015, with the balance being sent abroad for repairs which raised doubts about the actual capacity of the engine overhauling facility.

MoCA admitted the fact of under-utilisation of engine repair facility and also stated that this was mainly due to the limited procurement of spares and other infrastructure equipment which was required for continuous production at the Jet Engine Workshop.

5.4.5.2 Inefficiency of the engine facility at Jet Shop, Delhi

The engine facility has to remove the engine from the aircraft, induct it into the shop and rectify/refurbish/overhaul the engine as per requirement. Audit noticed that no standard time-frame had been fixed for removal of engines for induction into the shop and neither were there any norms for time to be taken for completion of engine jobs. It was seen that CFM engines took 2 days to 110 days to be removed. During the interim period, the aircraft remained grounded.

It was also noticed that there was a wide variation in the time taken ranging 4 to 755 days to complete similar engine jobs of V-2500²⁸ and in case of CFM-56-5B engines²⁹, variation ranged from 9 to 369 days.

Management in its reply stated (02 February 2016) that Board decided to phase out all A-320 aircraft equipped with V-2500 engines reaching 60,000 flying hours or grounded for 'C' check. Therefore induction of such engines was not required and hence not done. Financial crunch was also a reason for non-induction of engines. Despite this during the period from 2010 to 2015, 79 V-2500 engines were produced. CFM engine production has also now been enhanced from 1 to 2 engines per month to 3 to 4 engines per month. Management further stated that fixation of standard turnaround time for jobs did not come under the best practices followed by the shop. Norms existed for an engine inducted for overhauling or minimum performance level or module wise overhauling. Engine wise summary of man-hours spent on each engine was being maintained as per traditional practices. Variance report as per work scope was not maintained for either types of engines due to swapping and cannibalisation, non-availability of finances/LRUs³⁰/items, compliance of AD/SB³¹ etc.

The reply of the Management is not acceptable as even after the Board meeting of December 2012, there were 12 A-320 aircraft which had flown less than 55,000 hours (April 2013) and were therefore available for regular operations. Management stated that variance report as per work scope was not being prepared. In its absence, the large differences noticed for completing similar jobs could not be explained or controlled. The inordinate time taken for induction and servicing of engines contributed to increasing the grounding time of the aircraft leading to poor deployment, operation and inability to meet the turnaround targets in this regard.

²⁸ Total 50 cases of V-2500 engines reviewed –BSI failure took 6-755 days, High Exhaust Gas Temperature 72-331 days, Life Limited Parts 30-632 days & Oil Leak 4-549 days

²⁹ Total 15 cases of CFM engine reviewed –BSI failure C3 took 9-369 days and BSI Failure rectification took 13-237 days

³⁰ LRU-Line replacement unit

³¹ AD/SB –Advisory/Service bulletin

5.4.5.3 Financial impact of poor engine maintenance

AIL was to re-deliver leased aircraft (two A-319 aircraft and seven A-320 aircraft) to the lessor as per agreed maintenance condition. In case of poor maintenance status, AIL had to pay compensation. Besides, AIL would have to pay the lessor rent till the aircraft is returned and delivery accepted by the lessor.

The Company could not comply with the re-delivery conditions while returning two A-319 aircraft and agreed to pay USD 11.35 million (₹ 68.98 crore) for 'buy out package' (compensation paid to the lessor in exchange of waiving all liabilities associated with the aircraft re-delivery conditions). Subsequently, the lessor raised an objection on condition of engines (VT-SCE) and the Company incurred expenditure of USD 10.25 million (₹ 62.68 crore³²) on repair of the same. The Company also paid USD 0.25 million towards lease rent for the period the aircraft was grounded for engine repair. In a similar case, AIL had to pay a compensation of ₹177.99 crore to the lessor as a 'buy out package' while returning seven leased A-320 aircraft.

Management in reply stated (02 February, 2016) that stringent requirements were imposed on re-delivery of leased aircraft by the lessor. Re-delivery entailed high expenditure to ensure that the aircraft was made available to lessor in compliance with the redelivery conditions. It was also stated that in the airline's experience, the lessor kept delaying acceptance, pointing out fault in the maintenance of engine/airframe and accordingly it was felt that a buy-out package for the re-delivery condition was best so that the amount of re-delivery expenditure was certain.

MoCA stated that in a "Buyout package", the aircraft could be used till the date of delivery as otherwise it would not be necessary to ground the aircraft for the purposes of redelivery checks. Usually an aircraft is grounded two to three months before the re-delivery for the checks, thus, entailing an additional lease cost. A "buyout package" was, therefore, resorted to under such circumstances within an established maintenance provider or MRO after following a tender procedure. Before a buyout package was agreed to, AIL does a study of the advantages of buyout and the cost implications and only if it was found to be more economical to buyout AI entered into a buyout arrangement. Generally there was a risk involved in doing a complete redelivery check as redelivery conditions generally required overhaul at European Aviation Safety Agency (EASA) approved facilities and all the parts needed to have back to birth traceability.

The reply was not tenable because as stated in Para 5.5.3 the aircraft remained grounded for more than four to six months for redelivery check. Further, the Company could not maintain the aircraft in agreed condition and also cannibalised components from leased aircraft during grounding for checks from leased aircraft. Moreover, opting for buy-out package in all lease cases, as seen in past, would lead to substantial payment of compensation at the time of return of leased aircraft.

³² Based on average Dollar-rupee exchange rate of the year

5.5 Audit findings on utilisation of aircraft

Audit findings on utilisation of aircraft are given below:

5.5.1 Non-achievement of targeted ASKM

The available seat kilometer (ASKM) is an indicator of the capacity of an airline. The capacity utilisation in terms of ASKM targeted in TAP and its achievement during the period 2010-11 to 2015-16 is as under:

Table 5.9: Target vs actual ASKM

(In million kms)

Particular	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
TAP Target	18603	19697	21546	23526	27290	28991
ASKM Achieved	13385	14317	19843	19262	19339	18794
Shortfall	5218	5380	1703	4264	7951	10197
Shortfall <i>percent</i>	28	27	8	18	29	35

Source: Data furnished by AIL/ Finance

As can be seen from above, the Company could not achieve the targeted ASKM in any of the years and shortfall ranged from 8 *percent* to 35 *percent* during the period from 2010-11 to 2015-16 due to failure on the part of Management in deployment of available fleet effectively and also on account of non-induction of aircraft as envisaged in the TAP. Moreover in 2015-16, the Company achieved ASKMs of 18794 million KM, against target of 28991 million KM. The shortfall was 35 *percent*.

Management stated (02 February 2016) that due to delay in delivery of B-787-800 aircraft and non-availability of narrow body aircraft on lease, induction of aircraft as given in TAP did not take place and targeted ASKM could not be achieved. Moreover, AIL had also ordered 14 new A-320 aircraft and also floated tender for another 15 aircraft.

MoCA stated that AIL had extended the lease of A-319 aircraft and also converted some of the A-320 aircraft into all economy class aircraft and reduced the J Class configuration from 20 to 12 in the A-321 fleet to increase the capacity offered in the domestic market.

The reply was not tenable as the induction was to be done from FY 2011-12 for 'Indian Shuttle Service' (ISS) and replacement of old classic fleet but the first tender was issued only in August 2013. Moreover, the deployment of existing fleet was also not effective as explained in para below, which adversely affected the achievement of targeted ASKM.

5.5.2 Utilisation of narrow body fleet

The daily utilisation of A-320 family aircraft for the period from 2010-11 to 2015-16, on the basis of available total fleet against the target fixed in TAP is shown below:

Table 5.10: Utilisation of aircraft*(in hours per day)*

Particulars	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
<u>A-319 Aircraft</u>						
TAP Target	9.90	10.50	10.50	11.00	12.25	12.25
Actual utilisation of hours	6.94	7.65	8.53	7.74	8.19	7.63
Shortfall percent	29.89	27.14	18.76	29.64	33.14	37.71
<u>A-320 Aircraft</u>						
TAP Target	9.10	9.50	10.50	11.00	12.25	12.25
Actual utilisation of hours	6.65	7.70	7.78	7.93	7.49	6.41
Shortfall percent	26.92	18.95	25.90	27.91	38.86	47.67
<u>A-321 Aircraft</u>						
TAP Target	11.50	12.00	12.00	12.00	12.25	12.25
Actual utilisation of hours	8.90	9.03	9.37	9.43	8.90	9.03
Shortfall percent	22.61	24.72	21.89	21.39	27.36	26.29
<u>A-320 (IS) Aircraft</u>						
TAP Target	--	9.50	10.50	11.00	12.00	12.00
Actual utilisation of hours	--	--	--	--	--	--

Source: SBI CAP Information Memorandum and data furnished by AIL/Engineering

It can be seen from the table above, that the Company failed to achieve the daily utilisation targets for any of these aircraft fleet. Further, review of aircraft-wise utilisation during the period from 2010-11 to 2015-16 revealed that daily utilisation of A-319 aircraft was between 1.84 hours and 10.17 hours, that of A-320 aircraft was in the range of 1.04 hours to 11.70 hours, and of A-321 in the range of 2.44 hours to 11.20 hours. Moreover, out of the total narrow body fleet of A-320 family, one to four aircraft could only achieve the targeted utilisation during the period 2010-11 and 2012-13 and no other aircraft of the same family could achieve the targeted utilisation in any of the years reviewed in Audit.

The reason for under-utilisation of the A-320 family of aircraft was due to grounding of aircraft. The Company reported in meeting of Oversight Committee (OC)³³ that on a stand-alone basis, the Airbus Narrow Body (NB) aircraft have been flying for nearly 9.9 hours - 12 hours and also that utilisation of NB fleet was above the TAP target if operating fleet was considered.³⁴ This was factually incorrect.

³³ In 3rd Oversight Committee meeting held on 5 November 2012, 5th meeting held on 25 April 2013,

³⁴ In 4th Oversight Committee meeting held on 15 January 2013, 6th meeting held on 26 August 2013 & 10th meeting held on 12 March 2015.

Management stated (January 2016) that in OC meeting aircraft utilisation was reported on total fleet basis as well as on operating fleet basis. It was further stated that 14 classic A-320 aircraft were more than 20 years old and were not available for flying on number of days on account of grounding due to maintenance. Therefore, the utilisation for NB aircraft appears low.

MoCA replied that out of the fleet of around 65 narrow body aircraft, 14 belonged to the old classic bogie type of landing gear. These aircraft are around 20 years old and were reaching their Design Service Goal (DSG) level. At present, 4 of these aircraft have already been grounded. It was also stated that only 43 aircraft were new. Aircraft utilisation was considerably affected due to the poor schedule reliability of the old fleet. However, the classic A-320 aircraft could not be counted for the purpose of utilisation and only operating fleet was taken into consideration. The TAP had assumed that the requisite aircraft type would be available for replacement of the old fleet which assumption could not be fulfilled due to reasons stated in earlier replies.

The reply of AIL was not tenable as the fact of ageing fleet of old classic A-320 aircraft was known to AIL while fixing TAP target for deployment. Moreover, the Management failed to achieve targeted utilisation on effective fleet as brought out above.

5.5.3 Utilisation of leased A-319 aircraft

Erstwhile Indian Airlines Limited entered into an aircraft operating lease agreement with M/s ALS Irish Aircraft Leasing for leasing of two A-319 aircraft (VT-SCD and VT-SCE) for five years with effect from April 2006 to April 2011. These aircraft were grounded for redelivery checks as per lease agreements and remained grounded till 27 June 2011 and 27 March 2011 respectively. The delay was 196 days and 144 days for lease return and other major checks and the aircraft were subsequently cannibalised to service other aircraft. Resultantly, due to prolonged grounding the lease rent of ₹13.13³⁵ crore paid during the aforesaid period was unfruitful.

The operational efficiency of these leased aircraft was reviewed for the period 2010-11 to 2015-16 and daily utilisation of leased aircraft was as under:

Table No. 5.11: Utilisation of leased A-319 aircraft

Particular	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
A 319 Aircraft						
TAP Target	9.90	10.50	10.50	11.00	12.25	12.25
Actual utilisation of leased aircraft						
VT-SCA, SCB, SCC, SCD & SCE	3.48 to 6.58	5.25 to 7.85	8.06 to 9.35	6.27 to 9.45	7.92 to 8.55 ³⁶	6.68 to 6.93

Source: Data received from AIL/ Engineering and SBICAP information memorandum

Despite underutilisation, the lease period was extended by the Company on expiry of the original lease term.

³⁵ VT-SCD-₹7.09 crore and VT-SCE ₹6.04 crore

³⁶ Two aircraft VT-SCD and SCE were returned during 2014-15.

Management stated in its reply (February 2016) that aircraft were grounded due to preparation for redelivery and engines were sent to MRO for restoration. Further, pending decision on extension of lease, the aircraft remained grounded for a longer duration. Management further stated that lease term of three A-319 aircraft were extended so that fleet size did not fall which would have resulted in a fall in market share and AI becoming a marginal player.

MoCA replied that out of the fleet of around 65 narrow body aircraft, 14 belonged to the old classic bogie type of landing gear. These aircraft are around 20 years old and were reaching their Design Service Goal (DSG) level. At present, 4 of these aircraft have already been grounded. It was also stated that only 43 aircraft were new. Aircraft utilisation was considerably affected due to the poor schedule reliability of the old fleet. However, the classic A-320 aircraft could not be counted for the purpose of utilisation and only operating fleet was taken into consideration. The TAP had assumed that the requisite aircraft type would be available for replacement of the old fleet which assumption could not be fulfilled due to reasons stated in earlier replies.

The reply was not acceptable because the aircraft were to be grounded for 90 days prior to date of expiry of lease as per action plan. Contrary to this, the aircraft were grounded before 196 and 144 days. Moreover, inspite of prolonged grounding and under-utilisation of leased aircraft, the lease term was extended by the Company. However, the reply did not address the issue of utilisation of leased A-319 aircraft.

The Company could not achieve the TAP targets for daily utilisation of available fleet. Aircraft grounded for routine checks remained grounded for prolonged periods owing to non-availability of components, serviceable engines and other parts which led to cannibalisation of parts. Meanwhile, the company paid substantial amount as lease rent/finance cost of these grounded aircraft.

The grounding was more significant in respect of narrow body fleet which was already facing shortage of aircraft. Audit noticed that there were considerable delays in operationalising the CFM engine facility which led to these engines being sent abroad for repair and maintenance. Besides, inordinately long time was taken for removal and induction of engines in the shop in some cases due to malfunction in engine shop. Inefficiency in maintenance of aircraft also resulted in compensation that the airline had to pay to lessors for non-fulfilment of re-delivery conditions of the aircraft.

The Company also suffered significant losses on account of unplanned grounding of B-787-800 aircraft due to battery problems, technical snags as well as higher weight of these aircraft. The procurement contract of these aircraft with Boeing did not have the necessary safeguards to address such shortcomings.

Chapter 6: Management of bilateral agreements and slot management

6.1 Bilateral agreements

The sovereignty of a country over the airspace above its territories is recognized by the International Civil Aviation Organisation (ICAO). Bilateral agreements are air service agreements between two countries which provide different degrees of freedom of air, which are a set of commercial aviation rights granting a country's airlines the privilege to enter another country's airspace. Therefore, the availability of rights under bilateral agreements to AIL and other national and foreign carriers and the extent of their utilisation can impact AIL.

International commercial aviation rights are usually expressed as "freedom of the air".

Freedoms of the air

The first two freedoms concern the passage of commercial aircraft through foreign airspace and airports, the other freedoms are about carrying people, mail and cargo internationally. The first to fifth freedoms are officially enumerated by international treaties, especially the Chicago Convention. Several other freedoms have been added, and although most are not officially recognised, under broadly applicable international treaties they have been agreed to by a number of countries. The lower-numbered freedoms are relatively universal while the higher-numbered ones are less common.

Freedom	Description	
1 st	The right to fly over a foreign country without landing.	<p>Blue circles: operating airline's domestic market Red or yellow circles: foreign markets</p>
2 nd	The right to refuel or carry out maintenance in a foreign country without embarking or disembarking passengers or cargo.	
3 rd	The right to fly from one's own country to another.	
4 th	The right to fly from another country to one's own.	
5 th	The right to fly between two foreign countries on a flight originating or ending in one's own country.	

6 th	The right to fly from a foreign country to another while stopping in one's own country.	
7 th	The right to fly between two foreign countries while not offering flights to one's own country	
8 th	The right to fly inside a foreign country, continuing to one's own country.	
9 th	The right to fly inside a foreign country without continuing to one's own country.	

As on March 2016, MoCA had signed bilateral agreements with 109 countries. Indian carriers operated in 36 of these countries with AIL having operations in 33 countries. Airlines of 48 countries operated in India.

Report No. 18 of 2011 of CAG of India titled 'Performance Audit Report on Civil Aviation in India' had highlighted the impact on Indian carriers particularly AIL of the significant enhancement of bilateral entitlements agreed to by India, after liberalisation of air traffic rights in 2003 and the considerably higher utilisation of these entitlements by foreign carriers vis-à-vis Indian carriers. The Report had pointed out the significant extent of 6th freedom carriage from/to India by foreign carriers as compared to "point to point" passengers. It was suggested that till India had its own effective and efficient hubs and Air India/other Indian carriers were able to exploit them effectively, entitlements for airlines/countries predominantly dependent on 6th freedom traffic (notably Dubai, Bahrain and other Gulf countries in the first instance) should be strictly frozen by MoCA if possible, subject to diplomatic and other considerations. The Public Accounts Committee 2013-14 of the Parliament in their 93rd Report also recommended that immediate corrective measures be taken to protect the commercial interests of AIL.

The extent of utilisation of 31 bilateral entitlements granted during the period 2010-11 to 2015-16 as listed in the table below was reviewed in the current audit.

Table 6.1: List of bilateral agreements reviewed in audit

Region	Name of countries whose bilateral agreements have been reviewed
Gulf/ Middle East	Dubai (UAE), Oman, Kuwait*, Bahrain*, Saudi Arabia*, Iran, Iraq, Abu Dhabi
Europe	UK*, Germany*, France, Switzerland*, Italy, Austria*, Slovenia, Kazakhstan
North America	Canada
South East Asia and Oceania	Singapore, Thailand*, Malaysia*, Hong Kong, Myanmar*, Australia*, New Zealand
Africa	South Africa*, Seychelles*, Mauritius*, Egypt
South Asia	Afghanistan*, Bhutan and Sri Lanka

*Entitlements were not revised during the period from 2010-11 to 2015-16.

Of the agreements listed in the table, 16 agreements had been reviewed earlier. Audit noticed that out of the 31 bilateral arrangements reviewed, there were no changes in arrangements with 15 countries. The details of remaining 16 cases, where the terms of the bilateral agreements had been altered during 2010-11 to 2015-16 are at Annexure 4.

The results of the audit review are given in succeeding paragraphs.

6.1.1 Sixth freedom carriage

Enhancements in bilateral entitlements between India and foreign countries had resulted in seat capacity allowed in the bilateral agreements significantly exceeding the “point-to-point” passenger traffic requirements between the two destinations. The details of passenger traffic to/from India carried by leading International airlines during April 2014 to March 2016 segregated between “point-to-point” traffic and 6th freedom traffic, as per information furnished by AIL, is at Annexure 5. Audit observed that sixth freedom traffic exceeded more than half of their actual passenger carriage for these two years in respect of the airlines indicated in the table below:

Table 6.2: 6th freedom traffic to/from India carried by leading International airlines

(in percentage)

Sl. No.	Name of Airline	2009-10 <i>(as at Para 5.1.8 of Report No.18 of 2011-12 of CAG of India)</i>	2014-15	2015-16
1	Qatar Airways	78.00	82.60	79.37
2	Gulf Air	79.00	80.45	81.03
3	Etihad	74.00	69.25	71.03
4	Emirates	59.00	61.96	66.60
5	British Airways	61.00	61.95	55.70
6	Air Arabia	NA	57.59	60.96
7	Singapore Airlines	49.00	53.37	58.31
8	Fly Dubai	NA	68.75	70.86
9	Turkish Airlines	NA	73.91	73.24
10	Cathay pacific	76.00	59.88	61.26
11	Malaysian Airlines	42.00	62.98	58.69
12	Air France	73.00	60.00	61.21
13	Austrian Airlines	86.00	75.00	66.97
14	Finnair	NA	75.34	61.70
15	KLM	76.00	78.16	73.48
16	Lufthansa	87.00	77.95	76.89
17	Swiss International Air Lines	63.00	65.53	65.22

Further analysis of the data indicated the following:

The sixth freedom traffic carried by the above airlines continued to significantly exceed the point-to-point traffic between the countries during the years 2014-15 and 2015-16. During

2014-15, 6th freedom traffic constituted 59.15 *percent* of the total carriage. This increased to 61.14 *percent* during 2015-16 as shown in Annexure 5.

There was marginal increase in percentage of utilisation for sixth freedom traffic during 2014-15 and 2015-16, compared to 2009-10 in respect of six airlines. However, the percentage of utilisation had reduced marginally in respect of six other airlines.

Although the proportion of sixth freedom traffic carried by Etihad Airways reduced marginally in 2015-16 compared to 2009-10 and that of Emirates increased marginally during the corresponding period, the number of sixth freedom passengers carried by Etihad Airways and Emirates in 2015-16 was high at 19.79 lakh and 36.03 lakh respectively. In view of this, Audit reviewed the extent of utilisation of bilateral entitlements in India-Dubai sector and India-Abu Dhabi sector. The results of the review are indicated below;

A. India-Dubai Sector

C&AG of India in Report No.18 of 2011, highlighted the increase in bilateral capacity entitlements for Dubai (UAE) from 10,400 seats per week each direction (PWED) in 2003-04 to 54,200 seats PWED (+2 *percent*) in 2008-09 and the high level of utilisation of the entitlement for 6th freedom traffic from India by foreign carriers. Thus, the total available entitlement for both India and Dubai put together was 110568 seats PWED. Air India had estimated the market potential between India and Dubai as 46,313 seats PWED for both sides combined (as on November 2013) and estimated a total requirement of 57,891 seats PWED (at 80 *percent* seat factor) for the sector. As a result, the entitlement available was already in excess by 91 *percent* of the total requirement by both sides. Audit noted that the Ministry, however increased the bilateral entitlements in February 2014 from 54,200 seats (PWED) to 66,504 seats PWED (an increase of 22.7 *percent*), i.e. raising the total available entitlement to 133008 seats PWED for both sides combined from the existing total available entitlement of 110568 seats PWED. This enhancement was based on the high load factor of Dubai carriers. Audit noticed that the enhancement led to an increase in the 6th freedom carriage of Dubai carriers during the period from 2010-11 to 2015-16 as shown in the table below.

Table 6.3: 6th freedom carriage from UAE based carriers

Airline	Carriage to/from India – April 2010/March 2011		Carriage to/from India – April 2014/March 2015		Carriage to/from India – April 2015/March 2016	
	Total carriage	6 th freedom carriage	Total carriage	6 th freedom carriage	Total carriage	6 th freedom carriage
Emirates	45,81,536	27,83,781	47,29,299	29,29,969	54,09,610	36,03,008
Fly Dubai	37,827	20,080	2,88,014	1,98,258	4,77,182	3,38,326
Total	46,19,363	28,03,861 (60.69 <i>percent</i>)	50,17,313	31,38,227 (62.34 <i>percent</i>)	58,86,792	39,41,334 (66.95 <i>percent</i>)

Source: Reply of AIL Management

As can be seen from the above table, the share of 6th freedom carriage of the airline has increased from 60.69 *percent* in 2010-11 to 62.34 *percent* in 2014-15 and further to 66.95

percent in 2015-16. The actual number of passengers carried on 6th freedom carriage also increased considerably during this period. There was 11.92 percent increase in the number of 6th freedom passengers in 2014-15 in comparison with the corresponding number in 2010-11- at the corresponding increase was 40.57 percent in the year 2015-16. The increase in 6th freedom carriage might adversely affect the market share and growth potential of Indian carriers in other markets (Europe, North America) as well.

In the absence of relevant information, the actual effect of high level of utilisation of sixth freedom traffic by foreign carriers on AIL, could not be quantified in audit. AIL however stated that the likely loss to AIL by it would be about USD 4.5 million per annum for every tranche of 1000 PWED granted to Emirates. The correctness of this estimate of loss could not be verified in audit.

MoCA stated (02 February 2016) that within a short time span of two years from February 2014, the entitlement was being fully utilised by Indian carriers and that the traffic patterns between India and Dubai seemed to have undergone a sea change during the last two years.

B. India-Abu Dhabi Sector

Audit noticed that MoCA enhanced the bilateral entitlements to Abu Dhabi from 13330 seats to 50000 seats PWED in April 2013 at the request of Etihad Airways. AIL estimated that the market potential (based on data from February 2012 to January 2013) for traffic between India and Abu Dhabi was 8110 PWED which would translate to a capacity requirement of 10,813 PWED for the sector at 75 percent seat factor. Against this requirement, available entitlements were 27,193 PWED, well over double the requirement and both sides had not exhausted the existing capacity.

The table below indicates the sixth freedom carriage by Etihad Airways for the period from 2010-11 to 2015-16:

Table 6.4: Sixth freedom carriage of Etihad Airways

Airline	Carriage to/from India in FY 2010-2011		Carriage to/from India in FY 2014-15		Carriage to/from India in FY 2015-16	
	Total carriage	Sixth freedom carriage	Total carriage	Sixth freedom carriage	Total carriage	Sixth freedom carriage
Etihad	5,43,350	4,43,221	16,49,407	11,41,917	27,86,377	19,78,563

Source: Reply of AIL Management

As can be seen from the above table, the sixth freedom carriage of the airline had increased 2.5 times during the period from 2010-11 to 2014-15 and 4.5 times during the period from 2010-11 to 2015-16. As there was considerable un-utilised capacity (the entitlement being 50,000 seats which could be increased by two percent), the quantum of sixth freedom passengers might increase further in the future to the detriment of Indian carriers and airports.

In the absence of relevant information, the actual effect of high level of utilisation of sixth freedom traffic by foreign carriers on AIL, could not be quantified in audit. AIL had estimated that by winter 2015, the diversionary loss to AIL due to the 375 percent increase in seat entitlement in the India-Abu Dhabi sector would be USD 636 million (₹ 3464 crore) per annum. The correctness of the estimates of diversionary loss could not be verified in audit.

MoCA replied (02 February 2016) that the current winter schedule 2015-16 showed that there was a big gap in utilisation of the entitlement by the designated carriers of the two sides. While Etihad was using about 46000 seats per week, the Indian carriers were using only about 19000 seats per week. MoCA also stated that this fact would certainly be kept in view while considering any proposal for further increase in entitlements in future.

MoCA replied (02 September 2016) further that the observation of the Audit, highlighting the issue of increase in the sixth freedom carriage by Dubai Carriers/Etihad airways with recent enhancement or bilateral entitlements, was noted. MoCA clarified that such utilisation of allocated traffic rights by the designated carrier of country was not in the control of India. It was largely dependent on the presence of certain factors, such as a strong Airline, transfer of passenger facility at Airports and geographical location of a country to be in a position to convert the traffic rights granted through bilateral negotiations in the form of sixth freedom.

During exit meeting of the Performance Audit on 'Turnaround Plan and Financial Restructuring Plan of Air India' held on 26 October 2016, MoCA stated that convenience and demand of passengers were of equal importance. There had also been a strong demand from the people and State Governments and Industry organisations to start international operations. Indian carriers found it difficult to compete with strong foreign carriers and hence, there was difference in utilisation. AIL had suffered due to their cash crunch and inability to use their capacity/ entitlements due to lesser number of aircrafts. Thus there was a need to fill the gap in demand and capacity deployment.

MoCA also stated that sixth freedom carriage could not be regulated because there were no ICAO guidelines in this regard. MoCA also mentioned that open sky offer had been made to about 70 countries and that India was receiving a positive response from a number of countries.

Audit observed that the Ministry of Civil Aviation had released the National Civil Aviation Policy 2016 (NCAP 2016) in June 2016, effective from the second quarter of 2016-17. The salient features of NCAP 2016 with regard to bilateral agreements included the following;

- a) The requirement for Indian carriers of 5 years of experience and 20 aircraft (5/20 requirement) to commence international operations was modified to deployment of 20 aircraft or 20 percent of total capacity (in term of average number of seats on all domestic departures put together), whichever was higher for domestic operations.
- b) Adoption of 'Open sky' Air Services Agreement (ASA) on a reciprocal basis with SAARC countries and countries with territory located entirely beyond a radius of 5000 km from New Delhi with unlimited flights above the existing bilateral rights being allowed directly to and from major international airports within the country as notified by

MoCA from time to time. However, the points of call at other airports under the existing ASA would continue to be honoured till the same were renegotiated.

- c) In respect of countries partly or fully within a radius of 5000 km, where the designated carriers of India had not fully utilised 80 *percent* of their capacity entitlements, but foreign carriers /countries had utilised their bilateral rights and were pressing for increase in capacity, a method would be recommended by a Committee headed by the Cabinet Secretary for the allotment of the additional capacity entitlements.
- d) Whenever designated carriers of India utilised 80 *percent* of their capacity entitlements and sought additional capacity entitlements, capacity entitlements (bilaterals) would be renegotiated in the usual manner.

6.1.2 Enhancement in seat capacity entitlements

The Group of Ministers (GoM) in June 2011 decided to constitute a committee of Group of Officers (GoO) under Ministry of Finance to examine the Turnaround Plan (TAP) and Financial Restructuring Plan (FRP) submitted by AIL. The report of the GoO (October 2011) stated that one of the assumptions of TAP was that the existing bilateral entitlements for foreign carriers should not be relaxed until Air India utilised a significant portion of its target bilateral and derived certain advantages vis-a-vis its competitors. The other condition was that Air India should have the first right of refusal of bilateral entitlement.

Audit analysed cases of enhancements in entitlements made by MoCA during the period from 2012-13 to 2015-16 to verify whether AIL had in fact utilised a significant portion of its target bilateral before such enhancements were made by MoCA. The analysis was constrained by the fact that AIL could provide data with effect from Summer season 2014 only and MoCA stated (November 2016) that information pertaining to Summer Schedule 2016 alone was available with the Ministry.

Review of the utilisation of bilateral rights by AIL in 16 cases where the terms of the bilateral agreements had been altered during the period from 2010-11 to 2015-16 and details of which are summarized at Annexure 4 indicated that in eight³⁷ of these cases, the utilisation of bilateral traffic rights by Indian carriers including AIL, prior to their enhancement was insignificant (below or equal to 60 *percent* utilisation). In the remaining eight cases, the utilisation of traffic rights by Indian carriers was reasonable.

6.1.3 Utilisation of bilateral entitlements by AIL

6.1.3.1 Under-utilisation of fifth freedom rights by AIL

The right to fly between two foreign countries on a flight originating or ending in one's own country is referred to as fifth freedom traffic rights. Fifth freedom was intended to enhance the economic viability by picking up and dropping off passengers along the way. There are three distinct types of 5th freedom traffic rights as given below:

³⁷ Iran, Iraq, Kazakhstan, Singapore, Hong Kong, Bhutan, Sri Lanka and Egypt.

- 'intermediate point', where the right is granted from a third country to a second one between the third and the grantee;
- 'beyond-point', where the country giving the right allows traffic to continue to third countries;
- 'behind-point' or 'anterior-point' where the grantor allows service between other destinations outside of the grantee's country of origin.

Designated carriers of India, including AIL, had been granted fifth freedom rights in a majority of the bilateral agreements. Out of 50 MoUs reviewed, Audit noticed that designated carriers of India had clear intermediate/beyond fifth freedom rights in 28 agreements. In another 15 agreements, fifth freedom rights had been allowed with the requirement that points of call be either mutually agreed or be specified by India. Thus, in 41 out of 50 countries reviewed, AIL had the option of utilising fifth freedom traffic rights.

Audit observed utilisation of fifth freedom rights by AIL was low. Fifth freedom traffic was being carried by AIL only on a single sector in the approved winter schedule of 2011-12, viz. the India-Hong Kong-Osaka sector. In the summer schedule of 2015, AIL carried fifth freedom traffic on three sectors (India-Hong Kong-Korea, India-Hong Kong-Japan, India-Bahrain -Abu Dhabi). Further, as per utilisation details in respect of Summer schedule of 2016 provided by MoCA, AIL (along with Air India Express) had utilised fifth freedom rights in six sectors (comprising 10 countries)- India-Hong Kong-South Korea, India-Hong Kong-Japan, India-Bahrain-Qatar, India-Bahrain-Kuwait, India-Uzbekistan-Kazakhstan, India-Abu Dhabi-Ras-Al-Khaimah. Thus out of 33 countries where Air India/ Air India Express was operating, Air India had been able to utilise fifth freedom rights only on six sectors/ 10 countries. In case of Dubai, although fifth freedom rights were available to Indian carriers (AIL) and 'Change of gauge facility'³⁸ at Dubai airport had also been agreed upon in the bilateral agreement signed in February 2014, AIL failed to utilise these entitlements.

MoCA replied (02 September 2016) that the fifth freedom rights were acquired at inter-Governmental bilateral negotiations between Governments of the two countries as part of quid-pro-quo to balance out the exchange of traffic rights between the countries. The availability of fifth freedom rights did not preclude its utilisation as the same depended on traffic potential, viability of operations, aircraft availability etc. At present, Air India and Air India Express were utilising some of the fifth freedom rights as per the schedule requirement. AIL was using 'beyond-rights' from Hong Kong to Osaka and Hong Kong to Seoul. Effective 15 August 2016, AIL has started a new connective Ahmedabad-London-Newark (AMD-LHR-EWR) which will enable it to use the fifth freedom right from London to Newark. Air India Express was utilising fifth freedom rights between Bahrain-Kuwait (BAH/KWI).

It was evident from reply of MoCA that utilisation of fifth freedom rights by AIL was still not significant.

³⁸ In air transport, a change of gauge for a passenger or cargo flight is a change of aircraft while retaining the same flight number. The term is borrowed from the rail transport practice of gauge change.

6.1.3.2 Utilisation of seat capacity by AIL

Air India operates flights to 33 countries as per summer 2016 schedule. Audit noticed under-utilisation of allocated traffic rights by Air India/Air India Express (AIE) (in summer of 2016) in 20 countries, (details are at Annexure -6). Audit noticed the following issues:

- Air India/Air India Express had utilised 100 *percent* of the allocated capacity vis-à-vis 13 countries (Oman³⁹, Kuwait, France, Germany, Italy/spain, South Korea, Hong kong, Australia, Sri Lanka, Austria, Kazakhstan/Uzbeskistan, Ras-Al-Khaimah, Dubai) Yet, the Company made no efforts at enhancements of these allocations to provide for future enhancements in capacity despite the significant increase in fleet size following procurement of aircraft.
- The utilisation of allocations by Air India/Air India Express was ‘nil’ for seven destinations i.e. Canada, Bangladesh, Iraq, Kenya, Malaysia, Thailand, Sri Lanka. The utilisation was less than 50 *percent* of bilateral entitlements in respect of Abu Dhabi, Bahrain, Kuwait, Russia and Singapore.
- In the India-Oman⁴⁰ Sector and in India –Qatar sector, MoCA withdrew 540 seats (March 2015) and 2615 seats (September 2015) respectively from AIL’s allocation and transferred it to Indigo airlines due to non-utilisation of allocated seats by AIL.

Management replied (02 February 2016) that the observations are factual and at a future date if AIL or its subsidiaries require any further increase in entitlements due to induction of capacity, the Government would be willing to give AIL/its subsidiaries entitlements from the balance available or by increasing the quota for both sides.

MoCA (02 September 2016) too has concurred with the views of management.

Audit observed that bilateral entitlements could not be fully utilised by AIL. This resulted in AIL forgoing its allocated capacity in favour of other private airlines in the India-Oman and India-Qatar sector.

6.2 Slot Management

Airport slot at a level 3⁴¹ airport is a key asset of an airline. A slot was a permission to use the full range of airport infrastructure necessary to arrive or depart on a specific date and time. An airline was entitled to retain slots on the basis of historic precedence if the slots had been operated at least 80 *percent* of the time during the period allocated in the previous equivalent season. Slots may be transferred or exchanged between airlines or used as part of shared operation subject to the provision of the guidelines and applicable regulations.

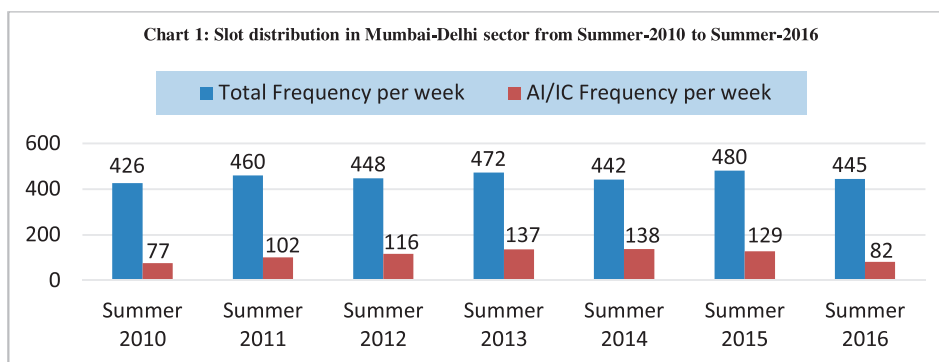
³⁹ On Oman route AIL could utilize 100 percent of its allocation whereas AIE could not utilize the allocated capacity.

⁴⁰ On Oman and Qatar sectors withdrawal of seats were in respect of AIE.

⁴¹ Level 3 means Airports where capacity provider have not developed sufficient infrastructure or where governments have imposed condition that make it impossible to meet demand.

6.2.1 Slot holding at Domestic Airports

Airports Authority of India managed the slots for domestic airports. For airports managed by Joint Venture Companies (JVC) in case of Delhi, Mumbai, Hyderabad, Bangalore etc. and defence airports, the respective JVC/defence body allocated the slots. IATA guidelines were followed in international airports. MoCA guidelines, which took into account the IATA rules, were followed in domestic airports. The passenger traffic in India was the highest in the Delhi-Mumbai sector. The slot-holding of AIL in these two airports vis-a-vis its domestic competitors is indicated in the chart below:



The slots held by AIL increased from 77 in summer 2010 to 129 in summer 2015 and then decreased to 82 in summer 2016. The share of AIL also increased from 19.01 *percent* in summer 2010 to 26.87 *percent* in summer 2015 and decreased to 18.43 *percent* in Summer 2016 . The slots of Indigo increased from 112 to 119 and that of Jet airlines increased from 104 to 111 respectively during the same period.

Audit noticed from monthly reports on slot performance of Delhi International Airport Ltd. (DIAL) that performance of AIL on slot utilisation was poor. DIAL had requested AIL to take appropriate steps for improvement. No significant improvement was however noticed with performance on some slots in summer 2014 being as low as 5 *percent*. Audit did not find any communication from AIL to DIAL assuring better performance on slots.

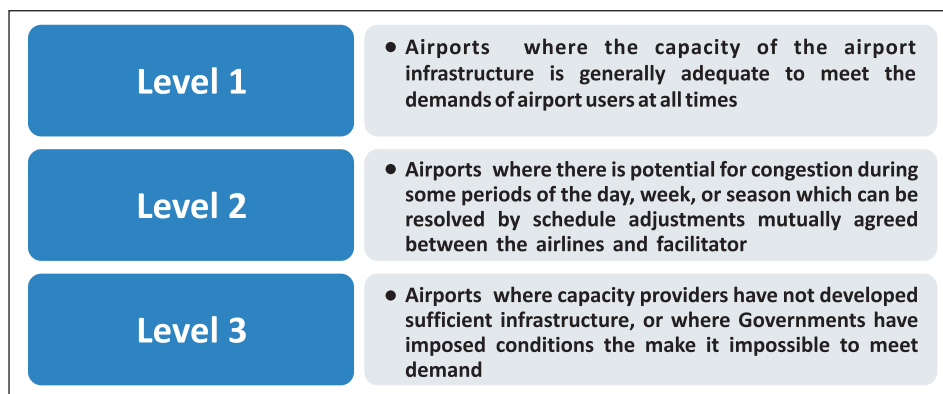
Management in its reply (02 February 2016) while accepting the poor slot performance of AIL stated that no action was being taken by DIAL against AIL on its poor performance. MoCA (September 2016), while concurring with the views of AIL stated that there was increase in the number of slots at Delhi Airport.

The number of slots of AIL decreased at Mumbai-Delhi from 129 (summer schedule 2015) to 82 (summer schedule 2016) and as per guidelines of IATA there was a possibility of slots being withdrawn in future on account of poor performance.

6.2.2 Slot holding of AIL at International Airports

Airports are categorized by responsible authorities according to three levels of congestion for the purpose of airport coordination. Slots at Level 3 airports were most sought after as the demand for slots there exceeded the availability.

Chart 2: Levels of Airport



Source: Guidelines for slot allocation (MoCA)

Air India operated at 18 Level 3 international airports (refer Annexure 7 for details). Management of slots by AIL in these airports was examined in Audit, of these, audit observations relating to Dubai airport are given below.

Dubai airport:

AIL could not retain its slot at Dubai with effect from February 2013 for Mumbai–Dubai sector. The Company reduced its frequencies on this sector from 18 in summer of 2012 to seven in winter of 2014. At the same time, Jet Airways increased its frequencies from 21 to 35, thus capturing a larger share of the market. With the increased number of aircraft with AIL (on account of new induction), there could be a future requirement of slots at Dubai airport. Dubai, however, was a slot constrained airport and the possibilities of additional slots in future would be remote as brought out in the course of the India-Dubai bilateral discussions.

Management (02 February 2016) and MoCA (September 2016) stated that though there was reduction in frequency, the seats offered to Dubai increased from 10244 per week in 2010 to 10382 per week in October 2015.

The increase in seats highlighted in the reply was only marginal. Besides, Dubai was a slot constrained airport and future availability of slots was remote.

6.3 Monitoring of Bilaterals and Slot management

6.3.1 Monitoring of bilateral rights

The Ministry of Civil Aviation was required to constantly monitor the utilisation of traffic rights allocated to various airlines. Audit noticed lack of adequate monitoring on the part of MoCA/DGCA as detailed below:

- MoCA called for details of only unutilised rights at the time of allocation of additional traffic rights to airlines for subsequent schedules. In fact, the proforma prescribed by MoCA did not capture the details of utilisation of rights allocated to an airline. DGCA also did not call for details of utilisation once a flight schedule had been approved and thus DGCA assumed the approved schedule of an airline as its utilisation.
- The Air Services Agreement stipulated that the aeronautical authorities of each Party should provide or cause its designated airline(s) to provide, to the aeronautical authorities of the other Party, statistics relating to the traffic carried during each month on the agreed services to and from the territory of that other Party showing the points of embarkation and disembarkation of such traffic. Such statistical information from foreign airlines was not found on record except in the case of Dubai.
- In case the available traffic rights were not sufficient to cover the requirements reflected in the applications, the allocation of traffic rights to various eligible applicants as per order of DGCA (July 2009) should be in the ratio of Available Seat Kilometres (ASKMs) deployed by the applicants on domestic scheduled air transport services during the last five years. Audit observed that in the case of Oman, where utilisation by Indian carriers was high, the traffic rights allocated to Indigo were curtailed without working out ASKMs deployed by Indigo on domestic scheduled services for the last five years.
- It was stipulated (in the DGCA order of July 2009) that after allocation of traffic rights on the international routes, the air transport undertaking should not reduce its ASKMs deployed on the domestic routes. In case of any reduction in the ASKMs on the domestic routes, the allocation of traffic rights on international routes should be reviewed and a decision, as deemed fit, should be taken. Audit observed that ASKMs deployed by Jet Lite depicted a decreasing trend during the period from 2012-13 to 2013-14. However, no evidence of any review of international traffic rights of Jet Lite was found on record.

The Ministry stated as follows in its reply (02 February 2016):

- A chart showing the capacity allocated and utilised by Indian carriers was readily available and was updated after each schedule period.
- ASKMs were taken into consideration and allocation was made in the proportion of ASKMs in case of Dubai.

The reply of the Ministry needed to be considered in the following context:

- The capacity utilisation for a scheduled period was indeed called for during consideration for additional entitlements. However, this was not done on a regular basis during the period of operation of these rights. Thus, timely reallocation of unutilised rights was not possible.
- While the Ministry stated that ASKMs were taken into consideration, Audit had pointed out the case of Oman where Indigo's traffic rights had been curtailed without any analysis by the Ministry on the basis of ASKMs.

6.3.2 Monitoring of slot management

Airlines should only hold slots that they intend to operate or use. Airlines were expected to return immediately any slots they would not use in order to ensure that scarce capacity was not wasted. It might be possible to reallocate returned slots to other operators even at short notice. Slot guidelines contained the following provisions to monitor the slot utilisation:

- Clause 5 (vii) guidelines on slot allocation, issued by Ministry of Civil Aviation (May 2013) stated that, in case airline did not utilise the allocated slot for one month, the allocated slot might be cancelled. DGCA informed that this was a part of CAR wherein airlines had to inform all concerned agencies the utilisation of slot and/or flights not operated for a considerable period for purpose of cancellation. However, Audit scrutiny did not reveal any steps taken by DGCA for cancellation of such slots.
- Rule 5 (vi) of Slot guidelines stipulated that amendments in schedule during mid-season might be discussed and finalised by a committee headed by Joint Secretary, MoCA, officials from DGCA, AAI and JVC of airports. The Committee should meet at least once in a month to discuss and finalise these amendments. Audit did not find any record in the Ministry/DGCA to assure that mid season amendments had been approved by the Committee in terms of above stated provision. Besides, it was noticed from records of Delhi International Airport Limited (DIAL) that mid season amendments were carried out by the operators of airports themselves.

Large scale enhancement of seat capacity entitlement, particularly in the Gulf region (Dubai and Abu Dhabi) beyond the point-to-point passenger traffic requirements between India and these destinations led to sharp increase in sixth freedom carriage to and from India.

AIL failed to utilise its allocated share of traffic rights which made it vulnerable to transfer of such rights to other Indian carriers. AIL also had significant fifth freedom rights which could have been effectively utilised to address the diversionary effect of sixth freedom carriage by foreign airlines. However, fifth freedom rights had not been significantly utilised by AIL so far.



Chapter 7: Network and Route Strategy

A. NETWORK STRATEGY

Network planning is integral to revenue generation capabilities of every airline. The right network strategy would prompt efficient utilisation of aircraft fleet. Consequent to the merger of Air India and Indian Airlines in August 2007, the network was re-structured to remove overlapping operations in common markets (mainly Gulf & South East Asia). In February 2009, M/s. SH&E (Network Consultants) were tasked with a “Clean Sheet Exercise” to develop a combined network for the combined fleet. The objective was to maximise profitability/ minimize loss.

7.1 Failure to operationalise hubs at Mumbai and Chennai

M/s. SH&E suggested a network strategy to be followed up to the year 2014. The strategy involved non-stop flights to major markets around the world from Indian hubs using state-of-the-art aircraft. M/s.SH&E also suggested development of major domestic hubs in Delhi, Mumbai and a mini hub in Chennai. The consultant strongly recommended domestic hubs in home markets and suggested withdrawal from non-strategic and loss making markets.

The TAP (2012) also envisaged primary hubs in Delhi and Mumbai with smaller hubs situated within and outside India. A mix of low cost and full service offerings was envisaged. TAP intended that AIL establish low cost carrier (LCC) operations, Indian Shuttle Services. Medium haul international routes were to be targeted through hubs by mainline and point-to-point route by low cost operations.

Audit noticed that AIL operated (March 2016) a single hub at Delhi. Though the integrated terminal in Mumbai had been operationalised in January 2014, no steps had been taken yet to operationalise the hub at Mumbai. No efforts at setting up the Chennai hub were also noticed.

Management confirmed (February 2016) that only the Delhi hub had been operationalised till date and stated that hub and spoke⁴² operationalisation required extensive network and involved high investment in manpower and equipment as it was expected to serve the transit passengers with great speed and efficiency to ensure that the on-time-performance (OTP) did not get affected. Management also informed that Mumbai was also being developed as a hub and that recently AIL had shifted its operations to the new terminal at Mumbai and would take time to establish a hub and spoke network from Mumbai.

MoCA in its reply (02 September 2016) stated that in-spite of the constraints at Mumbai Airport it was an effective hub for domestic services as passengers from nearby cities had the

⁴² Hub and spoke - all traffic moves along spokes connected to the hub at the center with very few direct flights between other destinations.

option of travelling to other major cities in India via Mumbai with minimum connecting time. On the International network, flights to Middle East, South East Asia, Europe, USA and Far East also offered at least oneway convenient connectivity to passengers from interior airports. Chennai Airport also provided convenient domestic connectivity to passengers from interior areas. However, it might also be noted that most of the interior airports in South India, such as Kochi, Trivandrum, Calicut, Coimbatore, and Madurai were connected by direct services to Delhi and/or Mumbai. As such, the scope for making Chennai a hub was limited.

The reply of MoCA was not tenable as one of the recommendations in SH&E report was to target non-stop flights to major markets around the world from Indian hubs using the state-of-the-art aircraft. It was because of this that SH&E suggested development of major domestic hubs in Delhi, Mumbai and a mini hub in Chennai. The hubs at Mumbai as envisaged in TAP and Chennai as envisaged by M/S SH&E, had not been operationalised yet and hence the benefits expected from the network strategy by creating hubs had not been achieved.

7.2 Failure to operationalise Low Cost Carrier

The Company proposed (July 2009) launching low cost operations in the Indian domestic market in line with the growing market share of domestic low cost carriers (LCC) from a mere five *percent* in 2004-05 to about 50 *percent* in 2008-09 as compared to the stagnant market share of full service carriers during the same period. Air India intended to re-orient its strategy and enter the growing LCC segment in Indian domestic markets considering low investment required, implementation in short time frame and coverage of both metro and non-metro routes so as to minimise cannibalisation of traffic from full service operations of AIL. The LCC segment was to be launched from mid-September 2009.

TAP (2012) envisaged launch of 'Indian Shuttle Service' (ISS) by AIL. The strategy was to utilise all economy (180 seaters) narrow body aircraft to target a new passenger segment. The Company had proposed to induct 32 A-320 aircraft for ISS operations over a period of 8 years, starting from financial year 2012. Audit noticed that there was no progress in the launch of low cost operations by AIL. The suggested strategy and intent of TAP was thus not realised.

Management replied (02 February 2016) that in order to combine the LCC model with Full Service Carrier Model (FCC), AIL had converted 14 A-320 aircraft into all economy and all recent induction was also of all economy configuration. It was further stated that AIL was looking at a hybrid model of FSC and LCC. Further, there were no norms defining the LCC by the regulator, the only difference being in the seats and the serving of meals on flight. The Ministry opined that the audit conclusion that LCC model was not attempted by the Company needed to be corrected.

MoCA replied that AI took a conscious decision to adopt the hybrid model and not to go in for ISS/LCC model on commercial considerations mainly due to upsurge in business class traffic and its entry in the Star Alliance which required distribution through GDS, Code Share arrangements, Frequent Flyer Program (FFP) etc. with foreign airlines, which were distinctive features of a full service carrier.

The Management reply indicated that AIL had moved away from the TAP strategy of creating a separate low cost segment 'India Shuttle Service'. The rationale for this was unclear given the fact that the market conditions had not radically changed since formulation of the TAP and low cost carriers remained the most profitable segment in domestic sector at present. Moreover, LCC/ISS could not be launched, as proposed in September 2009.

7.3 Scheduling of aircraft

Flight scheduling, aimed at optimising the deployment of the airline's resources in order to meet demand and maximise profits was the central element of an airline's planning process. The business strategy of the Company was to focus on introduction of an appropriate network model and also to improve customer service and operational efficiency. The process of schedule preparation was linked to inputs obtained from Engineering and Operations Departments on the availability of aircraft and crew. A review of aircraft utilisation in the following cases revealed that improper planning led to sub-optimal utilisation of aircraft. Better utilisation of the available aircraft (even after considering grounding), particularly in the domestic segment where there was requirement of additional aircraft, would have led to reduction⁴³ in fixed cost by ₹119.01 crore⁴⁴ and a potential revenue loss of ₹1024.80 crore (approx.)⁴⁵ as indicated in Para 7.3.1 below.

7.3.1 Sub-optimal utilisation of leased and owned aircraft

Operational performance of five A-319 leased aircraft for the period 2010-11 to 2015-16 (or till lease return) is shown below:

Table 7.1 Operational Performance of five leased A-319 aircraft

Aircraft Regn.	Particular	2010-11	2011-12	2012-13	2013-14	2014-15*	2015-16	Total
VT-SCA, SCB, SCC, SCD & SCE	Total No. of days aircraft grounded (in days)	453	226	111	157	65	77	-
	Aircraft available for utilisation (in days) (A)	1372	1604	1714	1578	1030	1018	8316
	Actual utilisation of aircraft on effective days (in hours) (B)	9100	12101	15353	14220	8913	7436	67123
	Actual daily utilisation on effective days (in hrs) (C)=(B)/(A)	6.63	7.54	8.96	9.01	8.65	7.30	-
	Target in TAP for daily utilisation (in hrs) (D)	9.9	10.5	10.5	11	12.25	12.25	-
	Shortage in daily utilisation vis-a-vis TAP on effective days (in hrs.) (D-C)	3.27	2.96	1.54	1.99	3.6	4.95	-
	Aircraft flying hours unutilised against TAP target on effective days (in hours)	4483	4741	2653	3138	3704	5034	23753
Average per hour revenue on operations (₹ in lakh)		2.75	3.11	3.53	3.63	2.4	3.13	
Average variable cost on operations (₹ in lakh)		2.69	3.25	3.08	3.1	2.21	2.59	

⁴³ Reduction in fixed cost = Potential Revenue – Expected Variable Cost

⁴⁴ Reduction of fixed cost by ₹119.01 crore is arrived at by expected saving in fixed cost ₹58.85 (A-319 aircraft) non recovery of fixed cost of ₹60.16 (A-321 aircraft)

⁴⁵ Potential revenue loss of ₹1024.80 crore has arrived by adding Loss of Potential revenue of ₹724.766 and of ₹300.04

Aircraft Regn.	Particular	2010-11	2011-12	2012-13	2013-14	2014-15*	2015-16	Total
	Loss of Potential revenue (₹ in Crore)	123.28	147.45	93.65	113.91	88.9	157.57	724.76
	Expected Variable Cost (₹ in Crore)	120.59	154.08	81.71	97.28	81.86	130.38	665.9
	Expected savings in Fixed Cost (₹ in Crore)	2.69	-6.64	11.94	16.63	7.04	27.19	58.85

Source: Data received from AIL/ Finance and Engineering

Note: Potential revenue and expected variable cost for the period 2010-11 to 2015-16 is average of total narrow body operations.

The Company failed to meet the targeted daily utilisation of its five leased A-319 aircraft even on available days (excluding the days when aircraft were grounded). The short utilisation ranged between 7.48 percent and 41.60 percent during the period 2010-11 to 2015-16. Had the Company planned optimal utilisation of its resources as envisaged in TAP, even on available days, it could have earned an extra revenue⁴⁶ to the tune of ₹724.76 crore and consequently recovered its fixed cost by ₹58.85 crore.

Similarly, review of operational performance of seven⁴⁷ A-321 owned aircraft on effective days was carried out for the period 22 April 2014 to 31 March 2016. This revealed that the Company could not optimally utilise its new A-321 aircraft, which were inducted during the period July 2007 to May 2010, and failed to meet the targeted daily utilisation even on available days (excluding the days of grounding for any reason). The shortages ranged between 7.43 percent and 26.29 percent during the aforesaid period. This deprived the Company of extra revenue⁴⁸ to the tune of ₹300.04 crore and non-recovery of its fixed cost by ₹60.16 crore⁴⁹.

A review of utilisation of available narrow body pilots for flying these aircraft during the period 2012-13 to 2015-16 (upto December 2015) revealed that 61 percent to 78 percent of the pilots flew less than 72 hours in a month and 60847 to 94386 hours of pilots remained unutilised.

Management stated (February 2016) that there was a discrepancy in the block hours quoted by Audit. Management further stated that the utilisation of seven A-321 aircraft were found to be more than TAP target whereas utilisation of A-319 aircraft was slightly lower than the TAP target. Management also assured that there was a continuous effort to improve the utilisation of aircraft which depended on variety of factors like availability of aircraft, spares and crew apart from FDTL, schedule, employee morale and infrastructural constraints.

MoCA stated that the schedule of operations was prepared taking into account the availability of aircraft, crew and that the objective of the scheduling exercise was always maximisation of ASKMs, by utilising the aircraft capacity to the maximum. During the period under consideration, there had been severe limitations on availability of cockpit and cabin crew for utilisation of aircraft.

⁴⁶ Calculated on the basis of domestic revenue earned and variable cost incurred per day on the basis of concerned year's route economics

⁴⁷ 7 A-321 Aircraft - VT-PPA, VT-PPD, VT-PPJ, VT-PPK, VT-PPN, VT-PPT & VT-PPX

⁴⁸ Calculated on the basis of domestic revenue earned and variable cost incurred per day on the basis of concerned year's route economics

⁴⁹ Reduction in fixed cost = Potential Revenue – Expected Variable Cost

Reply was not tenable in view of the fact that TAP targets were for fleet utilisation in terms of ‘flying hours’ and not on the basis of ‘block hours’. Block hours were higher than flying hours⁵⁰. Audit had adopted the quantum of ‘flying hours’ for working, as per the TAP target, to indicate the potential revenues and contribution to fixed costs that would have been generated, had the TAP targets regarding flying hours been adhered to. Moreover, potential revenue loss and expected savings in fixed costs pointed out above was indicative and not conclusive, and aimed at highlighting the failure to utilise the available resources optimally.

7.4 Route Strategy

AIL carried out route rationalisation which included periodical monitoring of carriage, load factors, financial performance of routes on its network and made efforts to improve their performance. Whenever recurrent losses occurred on a route, the reasons were analysed and a decision on continuation, termination or rationalisation of the route was taken. For this purpose, the airline prepared a route-economics statement.

AIL provided provisional data regarding route-economics for all years under review and this data formed the basis for audit review. AIL informed that the airline would start maintaining actual data with effect from 2015-16.

There were three drivers which affected profitability of routes namely revenue earned, variable cost and fixed cost. All revenues received and costs incurred by the airline were allocated to the routes that were operated.

Revenue: Revenue earned from operations included passenger revenue and revenue earned from cargo and excess baggage. Passenger revenue accounted for nearly 70 percent of the total revenue.

Variable cost: Variable cost reflected the cost of operations. It included cost of aircraft fuel and oil, material consumption, repairs, airport charges, operating crew expenses, insurance, food and cabin service amenities, customer relation services, etc.

Fixed Cost: Fixed cost comprised of three elements, direct costs, indirect costs and non-operating costs. Fixed costs were apportioned to individual flights based on a set of pre-determined criteria (available seat km, revenue passenger km, hours of flight, number of passengers, etc).

Direct costs: Direct costs included salaries and allowances of crew (not covered in variable costs), salaries of employees in stores, aircraft insurance, depreciation, obsolescence of spares, material consumed including outside repairs, sales & lease back, dry lease rental, booking agency costs.

Indirect costs: Indirect costs included salaries of staff other than crew and engineering, other depreciation and sales promotion.

Non-operating costs: Non operating costs included interest charges on aircraft loans, other borrowings and finance charges.

⁵⁰ Block hours – Total time from the moment aircraft first moves from loading point until it stops at unloading point;
Flight hours – Time between take off and touchdown.

Variable cost was higher than the fixed cost, the ratio of variable cost to fixed cost varying between 62:38 and 68:32. The most significant component of variable cost was Aviation Turbine Fuel (ATF) which accounted for 53 to 65 percent of the variable cost. Non-operating costs formed a significant component of fixed costs and interest payment was the most critical component. Route profitability would depend on the interplay of the three parameters namely, revenue, variable costs and fixed costs.

7.4.1 Route profitability

A. Overall profitability

The overall profitability of AIL (including both international and domestic operations) based on revenue, variable cost and fixed cost for the period 2010-11 to 2015-16 is summarized in the table below:

Table 7.2: Overall profitability of routes of AIL

Year	Total Revenue (₹ in crore)	Variable cost (₹ in crore)	Fixed Cost (₹ in crore)	Surplus/ (Deficit) over variable cost (₹ in crore)	Surplus/(Deficit) over Total Cost (₹ in crore)	Available seat kilometer (Million)
2010-11	11079	11943	6669	(864)	(7533)	45882
2011-12	12431	14165	7016	(1734)	(8750)	45445
2012-13	13327	12642	5857	686	(5172)	40197
2013-14	15345	14238	6909	1107	(5802)	45078
2014-15	16768	14166	8488	2602	(5887)	48290
2015-16	16689	12587	9617	4103	(5514)	50847

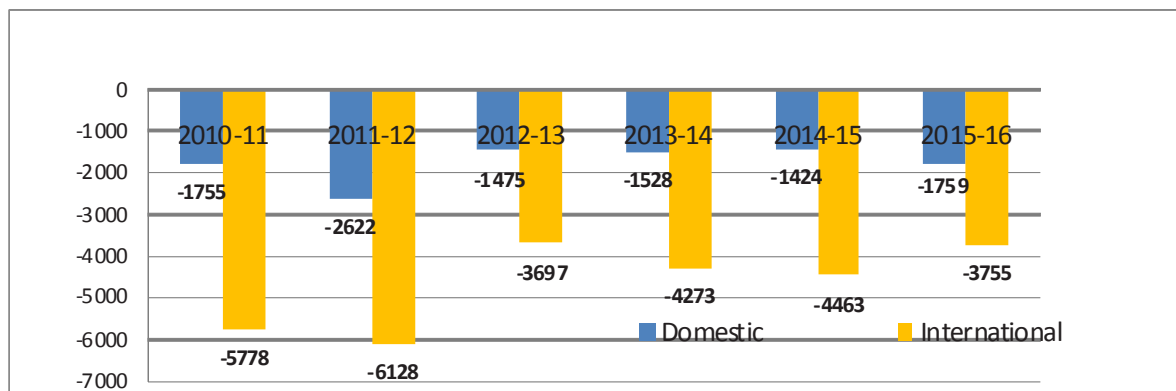
Source: AIL route economy statement

The following facts emerged from the information in the above table:

The ASKM of AIL decreased during the period from 2010-11 to 2012-13, following which there had been a steady increase till 2015-16. Revenue had steadily increased, the percentage increase of revenue in 2014-15 over 2010-11 being 51.4 percent. The revenue however decreased marginally in 2015-16. Both variable costs and fixed costs had increased though at a lower rate of 18.6 percent and 27.3 percent respectively from 2010-11 to 2014-15. This had resulted in AIL achieving a surplus over variable cost by 2012-13. This surplus had steadily increased from ₹686 crore in 2012-13 to ₹4103 crore in 2015-16.

AIL, however, had failed to generate adequate surplus to meet the total cost (fixed and variable costs), the deficit over total costs being ₹5514 crore in 2015-16. It was however noticed that the quantum of overall deficit has reduced by 27 percent only over the six-year period from 2010-11 to 2015-16.

Chart 3: Shortfall in recovery of Total Costs (Rs in crore)



As can be seen from the above chart, both domestic and international operations had an overall deficit but the most significant contributor to the deficit was international operations. The deficit on international operations had decreased considerably to ₹3697 crore in 2012-13 but increased to ₹4463 crore in 2014-15. In 2015-16 the overall deficit in recovery of total cost in international operations decreased further to ₹3755 crore.

Management replied (02 February 2016) that route rationalisation was a continuous process and changes were effected in line with AIL's network strategy and strategic importance and long term viability of a route. Higher PLF and Yield per RPK had resulted in growth in surplus over variable costs. In respect of international routes, a surplus of ₹1253 crore over variable cost had been achieved during 2014-15 as against deficit of ₹992 crore during 2010-11; a gain of about ₹2245 crore in spite of variable costs being higher by 13 percent at the same level of capacity in 2014-15 as in 2010-11. In domestic routes, the increase in surplus over variable costs of ₹1348 crore during 2014-15 as against surplus of ₹128 crore during 2010-11, a gain of ₹1220 crore had been achieved in spite of variable costs being higher by 32 percent as against 26 percent increase in capacity in 2014-15 over 2010-11.

MoCA stated that it was not possible for any airline to meet its total cost on all the routes. Whenever a route was launched, it was only the surplus over marginal cost which was considered for establishing the route. This surplus contributed to absorption of the fixed cost. If an airline had to launch route to cover the total cost, it would become very difficult to expand its network or carry out its operation in a holistic manner. MoCA also stated that AIL was able to achieve 91 percent capacity covering variable cost of operations in 2015-16 as compared to 18.6 percent in 2010-11 on account of drop in fuel price, better yields and improved load factor.

While the improvement is appreciated, it needs to be kept in view that the airline needed to meet its total costs and generate surplus for effective turnaround. It was also important to note

that though the capacity of international routes increased only by 5 percent (in terms of ASKM deployed), there had been a large increase in number of aircraft over 2010-11 to 2015-16 which had not been appropriately utilised. Further the position improved during the year 2014-15 and 2015-16 mainly due to a downward trend in the ATF fuel prices which comprised 53 percent of variable cost which declined substantially in these two years.

B. Profitability of services/routes

A summary of recovery of costs in services/routes operated by the airline (both international and domestic) for the period 2010-11 to 2015-16 is given in table below:

Table 7.3: Summary of services

Particulars	2010-11		2011-12		2012-13		2013-14		2014-15		2015-16	
	Intr	Dom	Intr	Dom	Intr	Dom	Intr	Dom	Intr	Dom	Intr	Dom
Services not recovering fuel cost	4	19	3	8	0	9	0	1	0	0	0	0
Services recovering fuel cost but not Variable Cost	75	80	58	68	36	33	32	22	10	13	5	31
Services recovering Variable Cost but not Total Cost	23	58	11	46	27	82	25	91	45	98	56	113
Services recovering Total Cost	8	2	1	0	3	11	2	7	5	10	7	10
Total	110	159	73	122	66	135	59	121	60	121	68	154

Source: AIL route economy statement

The table above indicated the following:

- A number of services/routes had been rationalised. International services had been reduced significantly from 110 in 2010-11 to 60 in 2014-15 before it increased to 68 in 2015-16. Domestic services had also been reduced from 159 in 2010-11 to 121 in 2014-15 before it increased to 154 in 2015-16. Even then, the number of international services recovering the total cost had reduced from eight in 2010-11 to seven in 2015-16.
- 36 services (5 international and 31 domestic) did not recover the variable costs in 2015-16, though they met ATF costs. Another 169 services (56 international and 113 domestic) did not recover total costs, though they recovered variable costs. Only 17 services (7 international and 10 domestic) recovered the total costs in 2015-16.
- There had been significant improvement in 2015-16 in recovery of variable costs, with the number of international services recovering variable costs increasing to 56 against 45 in previous year. This improved profitability could be attributed largely to the sharp fall in ATF prices.
- All international services since 2012-13 and all domestic services since 2014-15 had recovered the fuel costs.

Management replied (02 February 2016) that performance should be analysed based on capacity in terms of ASKM and not on the basis of hours or the number of routes due to the

fact that there were aircraft with different seating capacity in AIL's fleet with wide variation in the cost of their operations. It was also stated that revenue in 2014-15 was higher by 61.8 percent compared to 2010-11 whereas capacity in terms of ASKM was higher by 26 percent on domestic network.

While highlighting the performance during the period 2010-11 to 2014-15, MoCA stated that in International routes the capacity recovering only fuel costs decreased from 81.2 percent to 20.5 percent, capacity recovering variable costs increased from 18.6 percent to 75.5 percent and capacity recovering total cost increased from 0.1 percent to 3.9 percent.

In domestic routes capacity recovering only fuel costs decreased from 38.2 percent to 7.5 percent capacity recovering variable costs increased from 59.5 percent to 85.1 percent and capacity recovering total cost increased from 1.3 percent to 7.4 percent.

While audit appreciates the performance in terms of ASKM, it was also pertinent to note that the Company could not achieve its targeted ASKM as pointed out in Para 5.3B. Moreover, the number of flights recovering total cost had not increased significantly during the period from 2012-13 to 2015-16.

7.4.2 Profitability of services on international routes

The proportion of international services that did not meet total costs was far higher compared to domestic services. The shortfall in recovery in respect of international services increased to ₹4273 crore in 2013-14 from ₹3697 crore in 2012-13 to ₹4463 crore in 2014-15 and further reduced to ₹3755 crore in 2015-16. Regionwise comparison of profitability of services across all international routes in 2010-11, 2014-15 and in 2015-16 is as indicated below:

Table 7.4: Regionwise comparison of profitability of international routes

(₹ in crore)

Regions	2010-11				2014-15				2015-16			
	No. of Services	Deficit over variable cost	Deficit over Total Cost	PLF percent	No. of Services	Deficit over variable cost	Deficit over Total Cost	PLF percent	No. of Services	Deficit over variable cost	Deficit over Total Cost	PLF percent
North America	5	(37.6)	(1,322.18)	69.1	3	96.92	(1,291.51)	70.7	4	621.48	(1017.69)	78.1
Canada	1	(78.22)	(412.83)	66.3		0			0	0.00	0.00	0
Europe	5	(306.03)	(1,093.72)	59.2	7	207.8	(1,251.14)	71.2	9	443.36	(1306.07)	71.6
South Asia	21	(11.57)	(120.46)	61.2	13	80.72	(109.68)	68.9	15	86.99	(123.10)	69.2
Russia		0			1	(4.28)	(70.42)	49.9	1	22.89	(67.46)	64.7
Australia		0			1	(40.53)	(352.34)	69.5	2	96.66	(225.86)	77.5
Asia Pacific	15	(100.31)	(836.28)	60.6	9	253.39	(682.45)	73.3	9	582.34	(520.05)	73.0
Gulf & Middle East	62	(412.92)	(1,838.89)	67.1	26	659.16	(705.49)	78.0	28	1064.96	(494.91)	74.6
Domestic Extensions	1	(45.25)	(153.54)	47.3		0			0	0	0	0
Total	110	(991.9)	(5,777.90)		60	1253.18	(4,463.03)		68	2918.68	(3755.14)	

Source: AIL route economics statement. Figures in bracket indicate deficit.

The above table indicated the following:

- Services to North America Canada and Europe were the major contributors to losses. Together they had accounted for 49 *percent* of shortfall in recovery of total cost in 2010-11. This increased to 62 *percent* in 2015-16.
- Shortfall in recovery of total costs on services to North America alone reduced only by ₹30.66 crore till 2014-15 even after reducing the number of services from five to three. Losses on existing services to Europe increased with increase in passenger load, the two new routes (Rome-Milan and Birmingham) operated also increased the shortfall in recovery of total costs by ₹390 crore by 2015-16.
- The Gulf and Middle East routes, Asia-Pacific routes and South Asia routes improved in profitability as all these routes recovered their variable costs and the shortfall in recovery of total costs also reduced significantly in 2015-16. AIL also achieved surplus over variable cost in all the regions during 2015-16.

While confirming the facts, Management replied (02 February 2016) that all regions except Russia and Australia earned surplus over variable cost in 2014-15. Management requested that services be analysed on variable costs as variable costs were incurred on route basis whereas the fixed costs that were added to the variable costs to arrive at total cost were incurred on company basis.

Profitability had been calculated with respect to recovery of both variable cost and total cost. As the objective of turnaround of the Company was to generate overall profits, the position vis-à-vis recovery of total costs had also been reviewed. It was pertinent to note that the shortfall in recovery of variable cost had been addressed by 2014-15. This trend had improved further in 2015-16.

7.4.2.1 Loss making services to United States of America (USA)

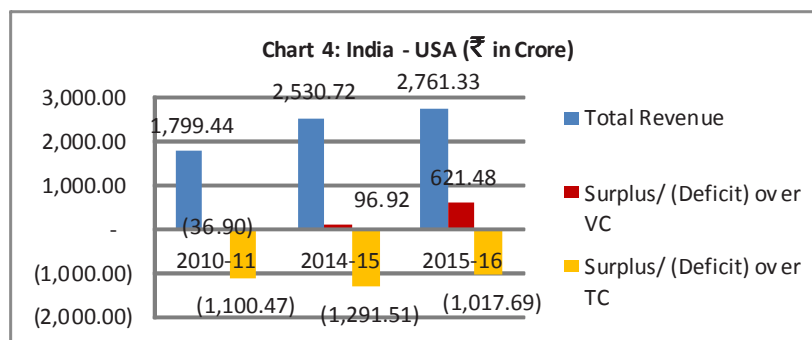
There were four services being operated by AIL to USA in 2015-16. Since the contribution of services to USA was the highest, these services were selected for specific scrutiny in audit.

AIL pointed out (02 February 2016) that one third of AIL's passenger revenue was earned on account of transfer traffic at Delhi hub (from domestic flights to international and vice versa) achieved as a network carrier. In view of this, Management stated that it was not prudent to analyse the performance of an individual flight on stand alone basis.

While Audit appreciates the argument put forward by the Management, the analysis of individual routes done by Audit was based on the route-wise data maintained by the Management. This data was also used by the Management for reporting to the Board on performance of routes. Besides, wherever Management had provided data on contribution to be added to a particular route, arising from its nature of being a network carrier, it had been taken note of by Audit.

In 2010-11, AIL operated four services on the India-USA route. The services had been reduced to three by 2014-15. The frequency of operations for the continuing flights was also reduced from 2598 in 2010-11 to 2185 in 2014-15 with a resultant reduction in ASKM by 718.31 kms. Over this period, the India-USA market increased by 7.6 *percent*, however the market share of AIL decreased by 1.8 *percent*. However in 2015-16, AIL market share increased by 1.15 *percent*.

A comparison of the route performance vis-à-vis revenue, recovery of variable and total cost over the years 2010-11, 2014-15 and 2015-16 is placed alongside. As can be seen from the chart, the revenues increased



resulting in a surplus over variable costs being generated (2014-15 and 2015-16). Overall costs also increased sharply resulting in the overall deficit at ₹1291.51 crore in 2014-15. This was higher than the deficit of ₹1100.47 crore in 2010-11. However during the period 2015-16, the overall deficit reduced to ₹1017.69 crore. The cumulative revenue, cost and deficit generated during the period from 2010-11 to 2015-16 on this route is summarised below:

Table 7.5 Details of operations in India-USA sector

(₹ in crore)

Flight particulars	Revenue	Variable cost	Total cost	Surplus/(Deficit) over variable cost	Surplus/(Deficit) over total cost
140/141: Hyderabad -Delhi- Newyork & VV*	302.10	302.61	523.19	(0.51)	(221.09)
126/127-Hyderabad-Delhi Chicago & VV	5284.65	4712.23	7156.87	572.42	(1872.22)
144/191-Ahmedabad-Mumbai-Newark & VV	3867.24	4097.90	6278.70	(230.66)	(2411.46)
101/102-Mumbai-Delhi-Newyork & VV	4764.74	4559.26	6901.97	205.48	(2137.24)
173/174-Bangalore-Delhi-Sanfrancisco & VV	112.47	84.62	156.22	27.85	(43.74)
Grand Total	14331.20	13756.62	21016.95	574.58	(6685.75)

*Flight no.140/141 was operated only in 2010-11.

Source: Route Economics statement of AIL

As can be seen from the table above, the contribution to overall shortfall in recovery of total cost from this sector was ₹6685.75 crore during the period under review. Since 2012-13, flights to Chicago and from 2013-14 flights to New York had started recovering variable cost and in 2015-16 the newly introduced Bangalore-Delhi-San Francisco route earned surplus over variable cost. The worst performing service in terms of deficit over total cost was Flight 144/191–Ahmedabad-Mumbai-Newark and back followed by Flight 101/102–Mumbai-Delhi-NewYork & back. These two services were selected to further analyse in Audit and the following issues were noticed:

A. 101/102- Delhi-New York & vv

AIL restructured this route in winter 2010 by combining the service operated from Kolkata via Delhi and the service operated from Hyderabad via Mumbai. The combined service was to be operated ex-Delhi with connecting flights from Mumbai using B-777-300 ER aircraft. While combining the flights, it had been projected that the route would achieve higher load factor of nearly 80 percent. Audit noticed that the passenger load factor did not reach the targeted 80 percent. While it increased to 73.5 percent by 2012-13, the load factor decreased to 69.8 percent in 2014-15 before it increased to 77 percent in 2015-16.

Management replied (02 February 2016) that in spite of stiff capacity induction by competitors, the achievement of significant increase in revenue and surplus over variable costs could be attributed to restructuring of the routes, establishing excellent both ways connections to other cities in India through Delhi and Mumbai and increased hub and spoke operations that offered seamless travel facility to passengers from interior points. Further Management also stated that these services had been generating surplus over variable costs since 2013-14 on account of increased revenue and higher PLF and yields. Management however conceded that the route was not able to achieve the projected PLF of 80 percent due to capacity increase, stiff competition on this route and highly seasonal nature of traffic.

In fact, the decreasing PLF (decreased from 73.5 percent in 2012-13 to 69.8 percent in 2014-15), depressed the revenue earnings from the route. The route managed to meet the variable costs in 2014-15 only on account of the sharp fall in ATF prices in that year. MoCA had no further comments to offer.

B. 191/144- Ahmedabad-Mumbai-Newark & vv

The Ahmedabad-Mumbai-Newark route was operated with B-777-200 LR aircraft with effect from winter 2010. The aircraft was replaced with B-777-300 ER aircraft in November 2013 to offer higher number of seats per flight and thereby reduce the cost per seat.

Audit analysis of operating results during the period from 2010-11 to 2014-15 revealed that the passenger load factor decreased from 77 percent in 2011-12 to 68.7 percent in 2014-15. The route did not recover variable costs in all the five years, adding to the losses of the airline. The lower passenger load factor was on account of payload restrictions as detailed below:

During the period, October 2010 to June 2011, runway of restricted length only was available at Mumbai due to ongoing runway work. This led to payload restrictions. The allowable capacity of B-777-200 LR aircraft was limited to approx. 27000 kgs which reduced the passenger carrying capacity of the aircraft from 256 (B-777-200 LR) to 219 without cargo or to 154 passengers with 8000 kg of cargo.

During the period, November 2013 to February 2015, this service was affected due to obstacles such as trees, poles, hoardings etc. in the runway of Mumbai airport. The maximum permissible take-off load was restricted to 3.42 lakh kg against the possible weight of 3.51 lakh kg, with a consequential restriction of number of passengers to 270 instead of 336

(capacity of B-777-300 ER aircraft). With the removal of some of the obstacles, the Company was finally able to carry 336 passengers from February 2015.

Audit noted that the Company was aware of the obstacles from the aerodrome obstacle chart published in April 2012. However, only after deploying B777-300 ER aircraft, AIL approached (November 2013) AAI for appropriate action to remove the hurdles to enable it to operate the flight with full capacity. Despite lack of response from AAI/MIAL, the matter was not taken up with MoCA. It was observed that MoCA on its own called (June 2014) for a report from the Company based on information from the media.

While accepting that certain obstacles on the take-off path at Mumbai airport resulted in payload penalties of 10-11 tons per flight which was about 25 percent of total capacity, Management stated (February 2016) that airport authorities had cleared the obstacles during 2015-16 after intervention by the High Court of Mumbai. Management also stated that deployment of higher capacity aircraft was necessary in view of higher demand and lower unit costs of B-777-300 ER aircraft compared to B-777-200 LR aircraft. This would enhance ability of AIL to compete in the highly price sensitive market. In spite of the payload restrictions at Mumbai, the PLF of the Newark flights was comparable to that of New York flights for FY 2015-16 when comparable equipment was deployed on both routes. The deployment of B-777-300 ER aircraft had actually reduced the shortfall in recovery of full cost in FY 2014-15 and was already recovering the variable costs and generated a surplus of ₹66 crore during April-October 2015.

MoCA in reply (02 September 2016) stated that with regular persuasion by AIL and MoCA the issue of restricted runway due to obstacles was resolved.

Audit has highlighted the payload restrictions leading to lower revenue and losses of the airline on account of AIL not pursuing possible solutions. The fact remains that AIL suffered a loss of ₹10 crore per month, as per its own estimates.

7.5 Introduction of new routes

AIL introduced four new routes during the period from 2010-11 to 2014-15. Before commencing a new route, detailed study was carried out with the help of Passenger Intelligence Services (PaxIS), a product developed by IATA Business Intelligence Service and the Profit Manager module of Sabre Air Flite (SAF). AIL also took into consideration inputs from the field, Operations and Finance Department and historical data available with them to arrive at the estimated profitability of the route. While estimating profitability, the emphasis of the Management was on recovery of variable cost. Fixed costs were not considered in the analysis.

Of the four new international routes introduced by AIL, during the period from 2010 to 2015 one route (Delhi-Birmingham) alone recovered its variable costs while the other three had shortfall in recovery. One of the routes namely Delhi-Sydney-Melbourne route, that did not recover the variable costs vis-à-vis projected plan was reviewed in audit. The following issues were noticed:

7.5.1 Delhi-Sydney-Melbourne route

AIL planned to commence non-stop services between Delhi-Melbourne in winter 2010. However MoCA did not agree (August 2010). Subsequently MoCA conveyed its approval (February 2011) granting traffic right to AIL for operating seven services per week on the Delhi-Melbourne route. As the airline did not have adequate wide body aircraft with the phasing out of A-310 aircraft and delay in induction of B-787-800 aircraft, this route could not be operated in 2011. AIL proposed to commence round robin⁵¹ operations to Melbourne and Sydney with B-787-800 aircraft in summer 2012 which also could not commence owing to the grounding of B-787-800 aircraft. The operations actually commenced in August 2013.

During the period from 2013-14 to 2014-15, the shortfall in recovery of variable cost in Delhi-Sydney-Melbourne route was ₹117.18 crore. The shortfall in recovery of total cost was ₹535.47 crore. The plan for introduction of the service had projected an annualised cash surplus of ₹8.7 crore which could not be achieved. Besides, the estimated variable costs of ₹1.19 crore per trip was also lower than the actual incurred variable cost amounting to ₹1.27 crore. The services remained unviable during the period from 2013-14 and 2014-15.

Audit noticed that the initial plan was to introduce Delhi-Melbourne route which was subsequently converted to a round robin operation. Besides, SAF had been of the view that AIL should plan for three or four flights per week initially and increase it to daily flight over a few seasons. AIL, however, commenced operations with daily flights and curtailed its frequency only in September/October 2014. Operation of lesser flights from the start, as advised by SAF, would have minimised the losses on the route. It was also noticed that promotional offers were not implemented at the commencement of operations but after considerable delay which also affected passenger load. All this led to losses from the route during the period from 2013-14 to 2014-15.

Management stated (02 February 2016) that in the interim period from 2010 to 2013, the market situation changed as both major competitors on the route viz. Malaysian Airlines and Singapore Airlines had increased their capacity significantly. Triangulated route was planned considering daily operations and lower market potential from Melbourne in view of the increased operations by Malaysian Airlines and Singapore airlines. Management also stressed that operation of daily flights offered significant product advantage over flights which were not daily. The main reason for non recovery of variable cost was very poor on-time-performance (OTP) since inception on account of engineering issues relating to B-787 aircraft and predatory pricing adopted by Singapore Airlines and Malaysian airlines. Management informed that triangular DEL-SYD/MEL-DEL flights had been separated into DEL-MEL and DEL-SYD flights from May 2015 and both services were generating surplus over variable costs since then.

While reiterating management reply, MoCA in addition (02 September 2016) stated that new routes take one and half years to settle down. Restructuring of route was one of the factors for generating surplus over variable cost and there was a reduction in deployment of capacity on Australia-India routes by Malaysian Airlines. MoCA also stated that with the current load

⁵¹ Triangulated operation, like Delhi-Sydney-Melbourne-Delhi

factor of 85 *percent*, AIL provided a premium service between India and Australia as well as 5th freedom revenue on the Australia-UK sector.

While the recent restructuring of the route resulting in generation of surplus over variable costs is noted, it needs to be highlighted that the action had been taken after incurring losses for two years on the route.

7.6 Other services which needed restructuring

AIL operated international services which had not recovered variable costs even with high passenger load. Besides, AIL continued to operate some international services with low passenger load which did not even recover the variable costs. At the same time, there were other services which generated overall profit even with low passenger load. Audit noticed that these services were not appropriately restructured to ensure maximum benefit to AIL. The specific instances noticed by Audit are summarised below.

7.6.1 Services not recovering variable cost even at high passenger load

AIL operated the Delhi-Abu Dhabi (DEL-AUH) route with daily services in 2010-11. Considering the poor route-economics, AIL decided to extend the daily services to Bahrain (BAH) on a round robin basis, effective from summer of 2012. It was estimated that the extension would reduce the extent of shortfall in recovery of variable costs from ₹37.6 crore to ₹22.6 crore.

Audit noticed that instead of extending the DEL-AUH route, the route was restructured to DEL-BAH-AUH-DEL on 24 March 2012. Though the passenger load factor increased considerably from 69.5 *percent* to 83.4 *percent* and revenue per passenger also increased from ₹4489 to ₹9245, the services did not recover the variable cost.

Audit noticed that AIL had received a proposal from the station manager of Bahrain (October 2013 and April 2014) for operating the flights separately as it would save on operating costs and crew layover accommodation. However, no restructuring was done and the route continued with very high PLF while not recovering the variable costs. During the period from 2012-13 to 2014-15, the route could not recover variable costs to the tune of ₹51.17 crore and total costs to the tune of ₹190.96 crore.

Management stated (02 February 2016) that DEL-AUH route which was not recovering variable costs was under competitive pressure due to increased presence of Etihad Airlines on Delhi-AUH route. The decision to extend the flight to Bahrain was to bolster the occupancy of the flight. Management also stated that the operation of triangular route was preferred to save operating costs but the cost per ASKM was higher on account of the cost of operation of the AUH-BAH leg. Management also informed that these services had been split into DEL-BAH-DEL and DEL-AUH-DEL and were expected to recover the variable cost. Audit noted that action to improve profitability of the route had been initiated by the Management. With the split in services from 26 October 2015, both the services recovered variable cost. MoCA had no further comments to offer.

7.6.2 Services with low passenger load and incurring losses

Audit noticed that two routes, Kochi-Sharjah & vv (933/934) and Delhi-Dhaka (231/ 232) continued to be operated without any restructuring during the period from 2010-11 to 2014-15 despite these routes having low passenger load and incurring cash deficit.

A. Kochi- Sharjah & VV (933/934)

AIL operated daily services on this route during the entire period from FY 2010-11 to FY 2014-15. The services did not recover variable costs to the tune of ₹36.21 crore and total costs to the tune of ₹210.78 crore during this period.

Audit observed that the performance of route was affected in 2013-14 due to technical delays at Sharjah on account of deployment of old A-320 aircraft. The on-time-performance of this aircraft was very poor which added to a poor image of the route. During the year 2014-15, the on-time-performance of the services on the Sharjah-Kochi segment was only 38 percent. The average yield decreased from ₹10,222 in 2012-13 to ₹9,197 in 2014-15. The reduction in yield and low PLF resulted in loss of ₹210.78 crore. However, no effort to restructure the route was taken by AIL.

While accepting the fact that performance of this flight was affected due to deployment of A-320 vintage aircraft in the absence of better alternatives, Management stated (02 February 2016) that yields were under pressure due to large presence of Low Cost Carriers (LCC). Management also informed that these services had been restructured to operate from Dubai instead of Sharjah w.e.f. January 2016.

Audit noted the action taken on restructuring the route w.e.f. January 2016.

B. Delhi – Dhaka & vv (231/232) & Kolkata – Dhaka (229/230)

AIL had discontinued the operations to Dhaka resulting in loss of market. A proposal (17 August 2012) for introduction of operation on the Kolkata-Dhaka-Delhi-Dhaka-Kolkata route was made based on the feasibility study of the market. The feasibility study indicated that Dhaka market had commercial potential in view of movement of labourers to Middle East and South East Asia as well as considerable movement from Dhaka to UK/European countries. For these services, the connection was available from Dhaka via Delhi to London, Riyadh, Jeddah, Dubai, Abu Dhabi, Bahrain and Muscat. It was estimated that the revenue per operation would be ₹0.48 crore with 100 passengers for Kolkata–Dhaka and 100 passengers for Dhaka–Delhi. While the initial plan was for combined operation, AIL commenced separate operations on the Delhi-Dhaka route from 3 December 2012 and on Kolkata-Dhaka route from 7 February 2013.

Delhi-Dhaka route achieved a passenger load of 51 percent in 2012-13 which reduced to 44 percent in 2013-14 and marginally increased to 52 percent in 2014-15. In view of the poor load factor, it was proposed to re-route the services via Kolkata to maximise revenue of the flight. However no change was carried out. The services were curtailed during the year 2014-15 because of shortage of cabin crew. During the period from 2012-13 to 2014-15,

these services failed to recover variable costs to the tune of ₹25.24 crore and total costs to the extent of ₹80.12 crore. The loss should be viewed against the fact that the operations were commenced based on estimates which envisaged the service Kolkata-Dhaka-Delhi-Dhaka-Kolkata would avail 6th freedom traffic. These services had been withdrawn during the year 2015-16.

While accepting the fact that route was not implemented as per plan, Management stated (02 February 2016) that the planned route was not feasible considering the availability of aircraft resources and hence a decision was taken to introduce the services separately. Management also stated that it had been decided to withdraw the Delhi-Dhaka service till resources improve.

Kolkata – Dhaka route was unable to meet the variable costs even at 84 *percent* passenger load factor. Audit noticed that the variable cost as well as fixed cost per operation increased since commencement which contributed to losses and also rendered the service unviable. Even during the year 2015-16, with the passenger load factor at 86 *percent*, AIL failed to recover total cost.

Management replied (02 February 2016) that contribution made to other services had been significant compared to shortfall in recovery of variable costs. Besides, Air India offered a consistent product on Kolkata-Dhaka route over the last two years and all efforts were made to increase yields thereby increasing revenue and improving economics of these operations. AIL was not able to increase the yields due to reduction of fares by the established carriers on these routes.

The reply of the Management needed to be viewed against the fact that the original intent was to operate a combined Kolkata-Dhaka-Delhi-Dhaka-Kolkata service.

MoCA while stating (02 September 2016) that AIL always made efforts to maintain market share and enhance profit, submitted that these parameters also depended on the functions of the competitive forces.

Although audit recognises the fact that the market share was depended on competitive forces, there was considerable lag in restructuring of the routes by AIL as seen in the above cases.

7.7 Services with low Passenger Load Factor- Earning Profit

Audit observed that although two services operated with low passenger load factor, they earned overall profits.

Kolkata-Yangon & vv (227/228): These services recovered total costs even while operating at a low passenger load factor of 53 *percent* in 2014-15. Operating results during the period from 2011-12 to 2014-15 revealed that the revenue had increased by 49 *percent* even though the percentage of variable cost and total cost also increased by 68 *percent* and 53 *percent* respectively, even as passenger load factor reduced from 75 *percent* in 2011-12 to 53 *percent* in 2014-15. Audit observed that the market share of AIL, in this sector, had also reduced from 48 *percent* in 2013-14 to 46 *percent* in 2014-15 while the market share of Thai Airways (23 *percent* to 27 *percent*) and Singapore Airlines (4 *percent* to 6 *percent*) increased simultaneously. AIL failed to maintain its market share and to control costs. This resulted in

reduction of profits. AIL failed to recover total costs in 2015-16 mainly on account of reduction in revenue as well as reduction of passenger load factor to 40 percent.

Varanasi-Kathmandu & vv (251/252): These services recovered variable costs in almost all the years even at low passenger load factor. The PLF which was at 49 percent in 2011-12 decreased to 32 percent 2014-15. Market share of AIL in Varanasi to Kathmandu sector reduced from 76 percent in 2013-14 to 70 percent in 2014-15, while that of its competitor, Buddha Air increased from 9 percent to 28 percent during the same period. AIL failed to improve as well as maintain its market share and with lower PLF and revenue, the cash surplus decreased by ₹2.75 crore in 2014-15. Further, the shortfall in recovery of total cost was ₹0.43 crore in 2015-16.

While accepting the fact that the market share on both routes had dropped marginally, Management stated (02 February 2016) that the reason was reduction in capacity share of AIL. Management also stated that AIL was not able to add capacity due to aircraft and crew resource constraints.

MoCA in reply (02 September 2016) stated that due to less competition these two routes were recovering cost significantly despite overall losses, however, after 2014-15 increase in competition had affected the route profitability adversely.

The reply highlighted the limited efforts made for maintaining market share and enhancing profit on the routes which made consistent profit for the airline.

7.8 AIL services on Domestic routes

AIL operated 154 services on domestic sector in 2015-16. Audit noticed that some of these services did not recover the variable costs but were continued without any restructuring during the period under Audit (2010 to 2016). In addition, some new flights were introduced which could not recover the variable costs of their operation as detailed below:

7.8.1 Flights not recovering variable cost

Review of operations for the period from 2010-11 to 2015-16 indicated that AIL continued the following operations even though they did not recover variable cost.

Table 7.8: Domestic flights not recovering variable costs

Flight No. and route	No of years loss/total years of operations reviewed	Total surplus over variable cost (₹ in crore)	Surplus over total cost (₹ in crore)	PLF Range (in percent)
675-676 = Mumbai-Kolkata	5/6 (15-16)	(18.78)	(190.00)	64 to 79
614 = Ahmedabad – Mumbai	6/6	(15.48)	(66.67)	55 to 79
607-608 = Mumbai – Bangalore	6/6	(12.03)	(105.00)	45.2 to 76
545 – 546 = Chennai – Hyderabad	5/6 (15-16)	(3.07)	(70.11)	58.5 to 84
773 – 774 = Kolkata – Mumbai	4/6 (12-13 & 15-16)	(5.62)	(154.05)	48.7 to 82.8

Source: AIL route economics statements

The continued operation of these routes resulted in non-recovery of variable cost to the tune of ₹54.98 crore and that of total cost by ₹585.83 crore during the period from 2010-11 to 2015-16. However, improvements were noticed in the year 2015-16 and out of five routes pointed out above, three⁵² routes recovered variable cost but none of the above could recover total cost.

7.8.2 Newly introduced flights not recovering variable cost

Details of flights introduced during the period from 2011-12 to 2015-16 which were not recovering the variable costs are summarised below:

Table 7.9 Domestic flight introduced from 2011-12 to 2015-16

Flight No., Route and Month of introduction	No of years making Total reviewed	years loss/ years	Shortfall in recovery of variable costs (₹ in crore)	Shortfall in recovery of total costs (₹ in crore)	PLF Range (in percent)
775-776 - Kolkata-Mumbai (December 2011)	4/5		(27.96)	(109.86)	48.7 to 83
635-636 - Mumbai-Indore-Delhi (November 2012)	4/4		(33.21)	(143.52)	61 to 72
643 - Mumbai - Ahmedabad (February 2011)	4/5		(7.26)	(29.35)	44 to 61.3
819 - 820 - Delhi - Vadodara (January 2014)	3/3		(13.03)	(50.56)	64 to 69.9
459 - 460 - Delhi - Vijayawada (January 2015)	2/2		(2.63)	(34.66)	69 to 70.5

Source: AIL Route economics statements

Audit noticed that introduction of these services led to non-recovery of variable cost of ₹ 84.09 crore and total cost of ₹ 367.95 crore. Review of above routes for the year 2015-16⁵³ revealed that only two routes recovered variable cost, of which one was due to rationalisation.

Management replied (02 February 2016) that airlines operated on routes based on their strategy, i.e., assessment of the route in terms of profitability/contribution to their network. Management also stated that they had withdrawn links/services which had not recovered the ATF/cash cost of operations and which were not of strategic importance in domestic and international sectors. AI analysed the reasons for the losses and based on strategic importance decisions were taken to continue or withdraw such services. Thus, non-profitability of any one flight was not taken in isolation as the sole barometer of its financial performance.

Though the TAP had intended establishment of primary hubs at Delhi and Mumbai, AIL had established a hub at Delhi alone till March 2016.

Low cost carrier strategy envisaged in the TAP for domestic sector had also not been implemented. While the Company envisioned re-emergence of Air India as the market leader in Indian aviation sector by providing seamless travel within India and the world with the

⁵² Routes meeting VC – 675-676 Mumbai – Kolkata, 545-546 Chennai-Hyderabad & 773-774 Kolkata - Mumbai

⁵³ Route meeting variable cost - route 643-644 Mumbai – Vadodara rationalized and 775-776 Kolkata-Mumbai.

introduction of appropriate network model, the Company failed to utilise its available resources optimally, particularly for the narrow body fleet of A-319 and A-321 aircraft.

Although AIL managed to recover variable costs, the airline needed to recover its total costs and generate surplus for effective turnaround. The India-USA sector, which accounts for majority of revenue and costs, did not recover total costs in all the six years under review. Besides, projections made by AIL while introducing new routes had not been achieved adding to the deficit incurred. Audit noticed that some action had been initiated by AIL to improve route profitability e.g. splitting the round robin services, restructuring the route and altering aircraft designated to routes, with positive results. However, in operations to Yangon as well as Kathmandu market, where AIL was the market leader and earned profit even at lower PLF, market share decreased in 2014-15 and in 2015-16. They also failed to recover the total cost.

Chapter-8 Human Resource Management Initiatives

Air India (AI) and Indian Airlines (IA) had different human resource management practices prior to their merger (2007) as they were operating in different markets.

An independent committee under the chairmanship of Justice D.N. Dharmadhikari, was set up by the Ministry of Civil Aviation (May 2011) for harmonisation of wage costs between the two erstwhile entities. Justice Dharmadhikari Committee (JDC) submitted its recommendations to MoCA (January 2012) which was accepted in June 2012. MoCA directed (June 2012) that an Implementation-cum-Anomaly Committee (IARC) be constituted to implement the recommendations of the Dharmadhikari Committee.

The report of the Group of Officers (constituted to examine TAP and FRP of the Company), subsequently accepted by CCEA, had also highlighted the need for rationalising costs, trimming management and employee groups to drive productivity of the airline. The report stated “the Turnaround Plan without any rationalisation of staff expenses, is likely to render the exercise meaningless. Without this, the assumption, that the cost structure would become lower than that of other airlines in India, is highly unrealistic”. The milestones that AIL had to achieve for release of GoI equity, as approved by the CCEA (April 2012) also included specific initiatives in human resource management like freezing payment of Productivity Linked Incentive (PLI) till the achievement of ‘Profit before Taxes’ by AIL and working out the VRS package by December 2011.

Audit observed deficiencies in the implementation of the recommendations of JDC as well as failure to achieve the envisaged milestones, as discussed in the following paragraphs.

8.1 Deficiencies in implementation of recommendations of Justice Dharmadhikari Committee

A. Productivity linked incentive (PLI) paid to employees as adhoc pay

Erstwhile Air India and Indian Airlines had been paying PLI to its employees as a percentage of pay, based on the agreement reached between the Management and the employees. The PLI scheme had been initially introduced for pilots/technical cadre employees and gradually extended to all categories of employees. The PLI scheme was contrary to guidelines of Department of Public Enterprises (DPE) applicable to all public sector enterprises. Report No. 18 of 2011 (Union Government)⁵⁴ of CAG of India had highlighted the deficiencies in the PLI scheme of the Company which allowed incentive payment for their performance of its employees even below average. An internal committee of AIL had recommended reduction in PLI ranging from 25 percent to 50 percent but this was not implemented. Ministry had also instructed AIL to initiate action for wage rationalisation.

⁵⁴ Issue also highlighted in earlier CAG Reports -Union Government (Commercial) of 2004 & Union Govt (Commercial) of 2008

As per Turnaround plan (April 2012) approved by CCEA, AIL was to cease payment of productivity linked incentive to its employees till the Company could generate profits before taxes. This was one of the milestones to be achieved by AIL for equity infusion as approved by Group of Ministers (October 2011). AIL informed the Oversight Committee that PLI payments have been stopped for employees other than the licensed category of pilots and engineers with effect from 1 July 2012. Audit however noticed that 75 percent of the last PLI drawn by employees continued to be paid to them in the form of 'ad hoc pay'.

Management informed (02 February 2016) that the 'ad hoc pay' was to provide for the interim period till the new pay structure that had been recommended by the JDC was implemented. The new pay structure for general category officers was implemented w.e.f. 01 October 2014 and for staff w.e.f. 01 March 2015, following which the ad hoc payments had been stopped.

MoCA in its reply (02 September 2016) stated that Air India adopted the methodology prescribed in the JDC report for calculating the revised basic pay (RBP). Further, while calculating the RBP as per JDC recommendation, the lowest PLI which was earned during 2011-12 was subsumed in the salary in order to arrive at the revised Basic Pay. As a result, the financial impact was contained substantially. As soon as the new pay structure was introduced, the ad hoc pay was discontinued.

The Management/MoCA concurred with the opinion of Audit that PLI payments had been subsumed in the revised basic pay of the employees. Thus, the outgo of AIL on salaries and emoluments paid to employees had not reduced. The PLI in the form of ad-hoc for the period July 2012 to March 2016 was ₹734 crore.

B. Non-implementation of Voluntary Retirement Scheme

The Company was to formulate a Voluntary Retirement Scheme (VRS) as per the approved turnaround plan for all categories of employees of AIL.

AIL formulated VRS in July 2012 and requested funding from GoI for its implementation. Later, the Company suggested (August 2013) to the Oversight Committee that VRS be dropped considering transfer of employees to subsidiary companies, projected retirement over next five years and financial crunch in AIL. Subsequently in July 2014, MoCA agreed to the proposal.

Management in reply (02 February 2016) stated that in the last three years 576 employees had been granted voluntary retirement without making any extra payment which otherwise AIL was to pay under VRS and that the implementation of VRS would not have served any purpose in view of the fact that every year around 1500 employees were retiring.

MoCA in its reply (02 September 2016) stated that the Bank/Financial Institutions were not ready to finance the requirement of ₹ 1100 crore for implementing VRS as they doubted the ability of the company to repay this debt. In view of the fact that the company had, in its TAP, envisaged hiving off manpower resources to the subsidiary companies, it was decided that no VRS would be offered to the employees as this could impose additional financial burden on the company. It was also submitted that the manpower position of the company had decreased and the aircraft-manpower ratio in Air India now compared favourably with

the aircraft manpower ratio in other airlines. There had been a steady decline in manpower due to natural attrition on account of retirement and VRS without any package. The savings of VRS payments of ₹ 1100 crore would have in any case taken three years to be recouped and with around 1500 people retiring every year the same more or less balances.

The implementation of VRS was a part of TAP and also the management had itself envisaged a benefit of ₹ 375 crore per annum from its implementation which could not be achieved. Further, as on 01 April 2016, the actual manpower of the company was 11433 against the revised sanctioned force of 7245 (including security department, functional directors, engineering, etc.) which was much higher and the implementation of VRS could have benefited the company and the variance in actual and sanctioned manpower could have been avoided.

8.2 Contravention of JDC recommendations and violation of DPE guidelines

The following contraventions of recommendations of JDC and violations of DPE Guidelines were observed in Audit:

8.2.1 Benefit of one step-up given to Aircraft Maintenance Engineers and Technical Officers

The Implementation and Anomaly Rectification Committee (IARC) had recommended harmonisation of designations of pilots, aircraft maintenance engineers, technical officers and technicians in erstwhile IA and AI (November 2013). IARC had also suggested that these changes be submitted to MoCA for approval. It was noticed that the Company carried out these changes in December 2013. Audit, however, did not find any record for approval of MoCA to these changes.

Audit noticed that upgradation of certain posts of Aircraft Maintenance Engineers (Deputy Aircraft Engineer, Aircraft Engineer, Sr. Aircraft Engineer, Deputy Chief Aircraft Engineer, Chief Manager) and Technical Officers (Dy. Engineer, Engineer, Sr. Engineer) by one grade each had been made. Thus, instead of operating grades E₁ to E₅, the Company operated grades E₂ to E₆ for these posts. These changes, in contravention of recommendation of JDC (as approved by MoCA), resulted in additional annual expenditure of approximately ₹13.92 crore (₹12.01 crore relating to Aircraft Maintenance Engineers and ₹1.91 crore to Technical officers). The impact of the increased pay and other allowances on account of up-gradation could not be worked out in the absence of individual records.

Management in its reply (02 February 2016) stated that DPE had laid down guidelines in their OM dated 24 December 2012 for PSUs to adopt standard pay scales for grades from E0 to E9 and had also directed that there could not be more than one designation against a pay scale. The Committee was, therefore, required to bring all the pay scales and designations to correspond to the revised DPE pay scales from E1 to E9, there being no E0 pay scale in Air India, while carrying out horizontal integration. Keeping in view all these constraints, revised level mapping of employees had been worked out after removing inconsistencies and accommodating the views expressed before the Committee to the extent possible and also aligning it with the other categories.

The reply of the Management is not acceptable as the IARC recommendations, which had the effect of increasing the recurring salary expenditure of AIL, were not considered/approved by the Ministry before their implementation.

MoCA in its reply (02 September 2016) stated that IARC was set up to implement the recommendations of JDC approved by the MoCA, following the DPE guidelines and rectify the anomalies arising therefrom as a one time exercise. Since, the two merged airlines did not have common pay-scales the IARC had considered the pay scales of both the erstwhile companies and after proper deliberations reached a conclusion which had been implemented. Specific approval from MoCA for each of the categories was not required again.

The reply of the MoCA is not acceptable as IARC was constituted to implement only the approved recommendations of JDC. Hence in the opinion of Audit any deviation from the same required the approval of MoCA/DPE.

8.2.2 Stagnation Promotion of 2482 employees

JDC recommended that all future promotions would be vacancy based, on the basis of seniority with due regard to merit and through a selection procedure in which there would be a well-defined selection panel.

Audit observed that despite recommendations of JDC in this regard and the suggestions of Director (Personnel) on obtaining approval of the HR Committee/Board, the then CMD took a decision to implement a stagnation promotion program for grades between Officers and Managers (Officer to Assistant Manager, Assistant Manager to Dy. Manager, Dy. Manager to Manager, Manager to Sr. Manager) without obtaining the approval of HR Committee/Board/MoCA and without having vacancies in the respective grades.

The period of seven years' service was also relaxed to six years for the stagnation promotion which resulted in promotion of 2482 employees in 2015. This promotion exercise resulted in additional annual financial burden on the company.

Management in its reply stated (January 2016) that after the JDC report was accepted, it was found that a number of employees had not got promotions for a very long time causing dissatisfaction among them and representations from different categories of employees, union /associations had been received in this regard. In order to boost the morale of employees and to motivate them, it was decided to carry out this exercise subject to their meeting the eligibility criteria. It was relevant to mention that the CMD, AIL was also the Chairman of the Board of Directors, which had representatives from MoCA also and as such it was not correct that the approval to carry out this exercise was not obtained.

MoCA in its reply (02 September 2016) stated that no promotion exercise was held after merger. Even before merger in most of the categories there was stagnation for many years. It was an administrative decision taken by the then CMD, AIL, keeping in view that a large number of employees had not been promoted since many years due to the merger process and it was essential to keep up the morale of the employees during a difficult period of the airlines. As per Instrument of Delegation of Administrative Powers of Air India, the CMD was competent to approve promotions up to DGM level.

JDC had recommended that all promotions would be vacancy based, on the basis of seniority with due regard to merit and through a selection procedure in which there would be a well-defined selection panel. Hence in the opinion of Audit the deviation from the same required the approval of MoCA /DPE.

8.2.3 Accommodation in five star hotels leading to excess costs

As part of economy measures, JDC had suggested that heavy cost towards accommodation for pilots and crew members in five star hotels could be avoided if AIL in cooperation with Airport Authority of India arranged for their stay and food at the airports or in the vicinity where decent arrangements could be made at lower cost.

Audit, however, noticed that the Company continued to accommodate its crew in five star hotels. For Delhi station alone, the Company incurred an expenditure of ₹119 crore for hotel accommodation of its crew in five star hotels for the period from 2012-13 to 2015-16. Expenditure incurred by the Company for accommodation of crew in other stations was not made available to Audit.

Management in its reply (02 February 2016) stated that JDC recommendations were being followed in respect of hotel accommodation as far as possible and concerted efforts had been made to move to cheaper hotels in the last few years. Detailed guidelines in this regard had been issued vide letter no HQ/CMD/14/688 dated 03 February 2014. In some cases, airport hotels could not be selected as they may not be fulfilling all the conditions. Any compromise might affect the safety of the operations.

MoCA in its reply (02 September 2016) stated that Air India had followed the tender process in selection of hotels for crew. It was submitted that the crew of Air India generally stayed in hotels which also accommodated other airlines crew. It was an industry requirement and practice to ensure that the hotels must have certain basic facilities which the crew required in order to get adequate rest and relaxation to minimise the fatigue element for safe operations.

The circular dated 03 February 2014 did not specify the category or maximum tariff rate for the hotel. AIL was required to follow the JDC recommendation in order to curb this substantial expenditure.

8.2.4 Free passage extended to family members

The JDC had recommended that the definition of 'family' as contained in the Civil Service Regulation and Central Civil Services (LTC) Rules⁵⁵ should be adopted for the scheme offering free passage to family members of the employees. MoCA had also directed that free passage facility needed rationalisation and the definition of 'family' needed to be in consonance with the government rules.

The Company (vide circular dated 30 September 2013), however, defined 'family' eligible for free passage to include self, spouse, parents, children, step-children and legally adopted children and stated that in exceptional circumstances, an employee might be permitted to utilise passages not exceeding four out of his annual entitlement, for travel of

⁵⁵ Central Civil Services (Leave Travel Concession) Rules, 1988

brothers/sisters/son-in-law/daughter-in-law. Dependency on employee was a fundamental criteria for inclusion in 'family' as per CCS (LTC) Rules which had not been considered in the definition provided by the Company.

Management in its reply (02 February 2016) stated that Free Passage Scheme in airline industry was a normal perk to its employees all over the world. Their travelling was subject to the availability of seats and as such there was no cost to the Company. The definition of 'family' as defined in IATA resolution 788 states "immediate family- a spouse, children, parents, brother, sister, dependent relatives or dependents in the house hold". Moreover, these passages were not free. An employee was required to bear all applicable taxes on the ticket besides ₹250, ₹500 and ₹1000 per coupon which depended on the sector.

MoCA (02 September 2016) replied further that the Passage Regulation Policy was formed keeping in view the industry practice and was approved by the HR Committee and Board of Directors of Air India. Moreover, a committee had been formed to review the free passage entitlements of the employees.

Audit reiterates that both as per Ministry's direction and JDC's recommendations the free passage facility needed rationalisation and the definition of 'family' needed to be in consonance with the government rules. However, no action in this regard has been taken by AIL.

8.2.5 Failure to formulate service regulations

Audit observed that the Company had not formulated the service regulations for 'workmen' category of employees till 31 March 2016. Besides, the Recruitment and Promotion Rules for all categories of employees were yet to be formulated. The seniority list of pilots, technical officers and aircraft maintenance engineers after merger and fixation of revised basic pay of pilots, cabin crew and service engineers had not been done yet (September 2015).

Management stated (02 February 2016) that employee service regulation in respect of 'workmen' category could not be implemented as the matter was sub-judice before the Supreme Court of India. Career progression and promotions had been defined in JDC and were being implemented accordingly. Recruitment and Promotion Rules had been formulated and was awaiting approval of the HR committee for implementation. The proposal for revised basic pay of pilots had been cleared by Ministry and would be placed before the Supreme Court in the context of SLP for its implementation. The revised basic pay of service engineers and cabin crew were in the process of finalisation.

MoCA in its reply (02 September 2016) stated that they have no comments to offer.

8.3 Excess manpower against approved standard force

The standard force (SF) of the Company was revised in October 2013. As per the revised standard force, total manpower required in the merged Company was around 4502 in the various departments of AIL (excluding functional directors, engineers, pilots, cabin crew etc.) against which actual men in position was 8678 as on 1 July 2015. However, as on 1 April 2016, the actual manpower of the company was 11433 against the revised sanctioned force of 7245 (including security department, functional directors, engineering, etc).

Apart from the regular manpower, the Company had hired 152 consultants, 2463 casual workers, 811 temporary employees and 468 outsourced manpower as on 01 August 2015. However, as on 31 March 2016, the company had 89 consultants, 2450 casual workers and 429 outsourced manpower. As the Company already had excess man power, engagement of such additional personnel resulted in extra expenditure to the Company. Audit noticed that the Company had paid ₹30.50 crore to casual labourers alone for Financial Year 2012-13, ₹42.83 crore for Financial Year 2013-14, ₹44.18 crore for Financial Year 2014-15 and ₹15.13 crore (provisional) for Financial Year 2015-16. Details of expenditure incurred for contractual, temporary and outsourced employees were not made available to Audit.

Management in its reply stated (02 February, 2016) that as per retirement pattern and transfer of employees to the subsidiaries in near future, and in the absence of regular appointment in AIL, the man power would be at par with the approved manpower. Management also stated that the standard force for pilots and cabin crew could not be determined as it depended upon various factors like number of aircraft, type of aircraft, regulatory requirement of the authorities (like DGCA) and norms given by the manufacturers. It was pointed out that in 2007 the total staff strength was about 32000 (wide body + narrow body) while the present staff strength was approximately 20000 (including AIESL & AIATSL). It was also pointed out that as on 01 November 2015, aircraft to employee ratio of Air India was 1:196 whereas that of Jet airways was 1:150 that of Indigo 1:102 and that of Spice jet 1:118.

MoCA in its reply (02 September 2016) stated that the revised SF was 7316 as on 1 August 2016 for all Departments excluding Pilots and Cabin Crew and the actual number was 9004. This excess had to be viewed in the light of the large scale retirements which would be taking place in the next three years and also the commitment given to the employees at the time of merger that no retrenchment would take place.

8.4 Lack of coordination between departments of AIL on staff availability

During the period from January 2012 to March 2016, 9808 flights of AIL were delayed, 10037 flights were rescheduled and 554 flights were cancelled due to non-availability of pilots and cabin crew as detailed below:

Table 8.1 Delays/ Rescheduling/ Cancellations due to crew

Years	No. of flight delays due to		No. of flights rescheduled due to		No. of flights cancelled due to	
	Cockpit crew constraints	Cabin crew constraints	Cockpit crew constraints	Cabin crew constraints	Cockpit crew constraints	Cabin crew constraints
2012	669	484	893	1189	34	6
2013	769	575	1757	77	62	4
2014	1649	2133	1704	94	151	39
2015	1654	1337	3195	130	216	21
2016 (Upto March 2016)	379	159	981	17	21	0
Sub total	5120	4688	8530	1507	484	70
Grand Total	9808		10037		554	

Source: Data furnished by AIL/CMS

These delays/ cancellations/ rescheduling of flights on account of non-availability of crew led to excess expenditure by AIL on provision of transport, hotel accommodation, meals/snacks to passengers, as well as revalidation/refund/re-routing of tickets. The expenditure incurred from April 2012 to March 2016 for flights delayed by more than two hours and cancelled flights was ₹ 29.92 crore.

Audit noticed that as per the Personnel department, there was excess in the cadre of pilots in the Company (November 2014). Inflight Services Department (IFS) and Operations department, however, maintained that there was a shortage of pilots. Similarly, the records of Human Resource Department and the number in Inflight Services Department, show difference in number of cabin crew staff position. Thus, there were conflicting reports from two departments within the Company regarding availability of pilots and cabin crew. Without resolving these differences, the Company took up an exercise for recruitment of large number of pilots and cabin crew.

The Management in its reply stated (02 February 2016) that the shortage of crew was being addressed and an exercise was on to augment the strength of crew. It was also stated that due to the training requirements, it was not possible to immediately induct the crew for flying duties. Besides, Air India being a network carrier, operated from various bases and, hence, it was not possible always to utilise the crew for another base for a shortfall in another base. Air India also has a mixed fleet of Airbus and Boeing family aircraft and cross-utilisation was not possible in such cases. Management also pointed out that the current exercise of recruitment would not result in excess expenditure as AIL planned to expand its fleet in the narrow body and was to receive six more B-787 and three more B-777-300 ER in the next two to three years and recruitment would ensure that sufficient crew was available to take care of normal attrition. Management also stated that the utilisation of crew was steadily improving as may be seen from the table below for cabin crew.

Table: 8.2 – Available crew and average crew per annum

Year	Eff. Available Crew	Total hrs	Avg crew hours per annum	Average monthly hours
2013	1235	1017337:56	823:45:00	68:38:00
2014	1136	964377:44	848:55:00	70:44:00
2015	1145	887465:14	775:04:00	64:35:00

Reply of the Management is not tenable considering that there was a lack of consensus within the Company itself regarding the present staffing position of pilots and cabin crew. Future recruitment would necessarily depend on the available staff coupled with requirements. Besides, Management's reply also indicated that the average monthly utilisation of the crew had reduced from 70 hours in 2014 to 64 hours in 2015 which raised concerns on recruitment of cabin crew by the Company.

MoCA in its reply (02 September 2016) stated that all the departments in Air India were now in consensus on manpower requirements in the categories of Pilots and Cabin Crew. Earlier divergence in views was on account of the fact that all the required information was not available to the Departments to have a considered view on the requirements of crew and their utilisation. Further, Air India worked out the standard requirement of Pilots and Cabin Crew for each aircraft type taking into account all the factors.

Crew management needed to be strengthened as there were significant instances of delay/cancellation/rescheduling of flights.

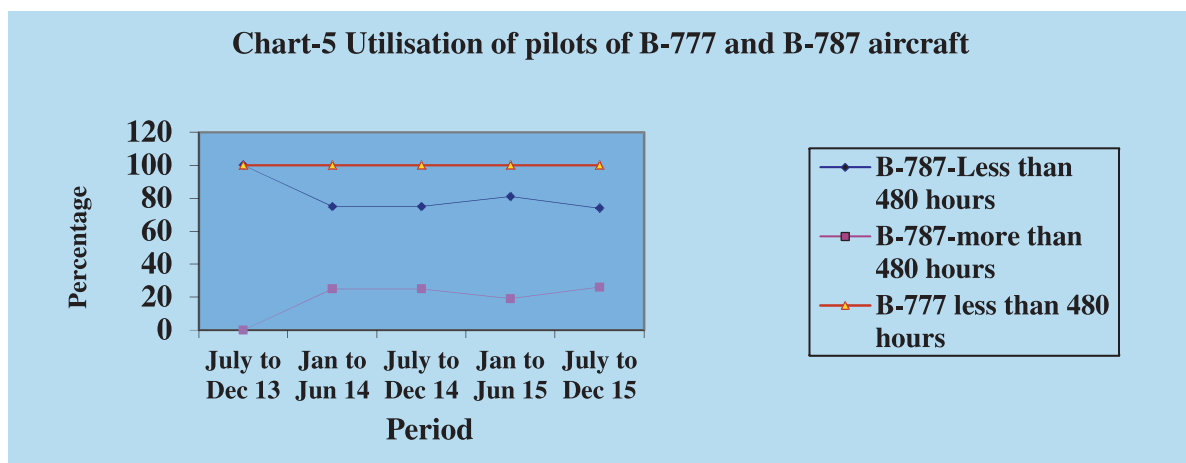
8.5 Crew Management

Prior to merger of the erstwhile entities (AI and IA) flying allowance for minimum 80 hours was being paid to the AI pilots while allowance for actual flying hours were paid for IA pilots. Audit observed that even after merger, same practice was being followed upto November 2011.

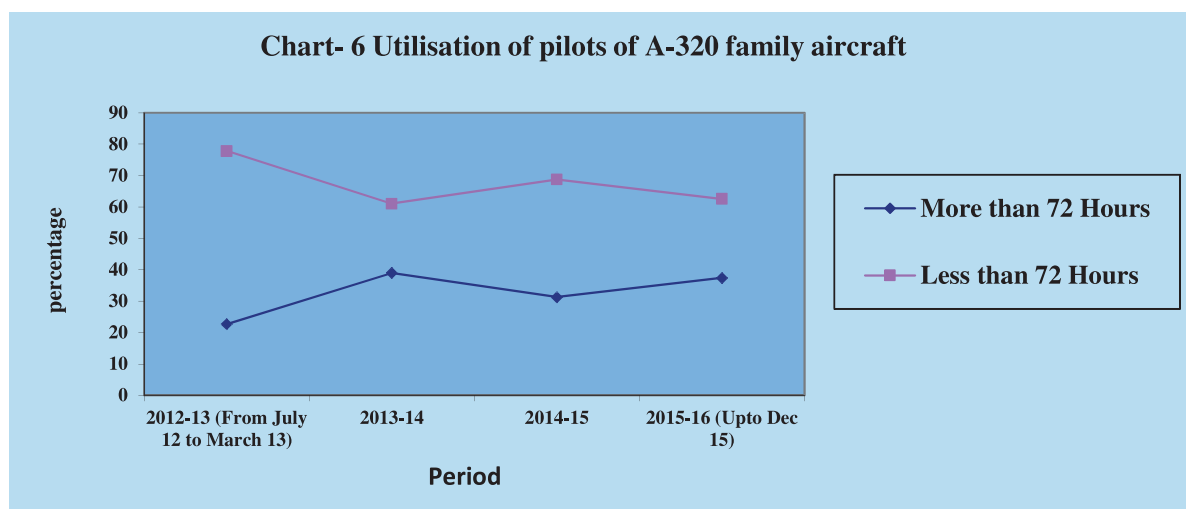
8.5.1 Lack of optimum utilisation of available pilots

As per wage agreement signed with Management (22 December 2006), pilots of wide body aircraft were eligible for fixed monthly flying allowance upto 80 hours per month i.e. 480 hours in the six months subject to the pilot being available for 150 days in a six-monthly period. Beyond 80 hours per month, the allowance would be paid at prorata rate of 1.25 times (480-540 hrs), 1.50 times (540-600 hrs) and 2 times (beyond 600 hrs).

Similarly, as per agreement of the Indian Commercial Pilot Association (ICPA) with the Management, pilots of narrow body aircraft were to be paid flying allowance for 72 hours in a month. Between 72 to 85 hours, allowance would be paid @ 1.5 times the hourly rate and beyond 85 hours, at double the hourly rate. Audit scrutinised the flying hour data of pilots of wide body and narrow body aircraft and observed the following:



As observed in the above chart, during the period from July 2012 to December 2015, 74 to 100 percent of B-787 fleet pilots and 100 percent pilots (except two pilots) of B-777 fleet pilots flew less than 80 hours a month (Refer Annexure 8 for details). Hours flown by the majority of pilots of B-787 wide body fleet were less than the six monthly norm of 480 hours.



It could be seen from the above that 61 percent to 78 percent of A-320 fleet Pilots flew less than 72 hours a month. During the same period, the remaining pilots flew more than the mandated 72 hours. The un-utilised hours of the majority of pilots (considering the norm of 72 hours) was more than 2 to 8 times that of the excess hours flown by a few pilots (refer Annexure 9).

The Company paid additional flying allowances of ₹ 48.89 crore (₹ 3.28 crore to pilots of wide body aircraft and ₹ 45.61 crore to pilots of narrow body aircraft) during 2012-16 (upto December 2015) to those few pilots who had completed more than targeted flying hours during this period. The revised pay structure had been introduced w.e.f January 2016 (refer Annexure 8 and 9).

Management stated in reply (02 February 2016) that productivity of 80/72 hours included flying, training and office duty, and mandays utilised towards upgradation as PIC or conversion to other fleet. Further as per DGCA Civil Aviation Requirements, Crew Rest requirements for days lost on account of mandatory pre-flight and post-flight rest hours, duty

on standby and imparting simulator training are also to be factored towards productivity. Towards calculation of unutilised hours, only one factor of actual flown hours had been considered while ignoring other productivity areas.

Management's response is to be reviewed in the light of the provisions of the agreement signed between pilots and management, which stipulated that only actual flying hours including 'type conversion training' and 'simulator training duty hours (as trainers alone)' should be considered for working out flying allowance. Details of hours utilised on actual flying and other permissible factors, were not made available to Audit despite repeated requests. Considering the very large quantum of un-utilised hours, vis-à-vis the hours for which payments have been made at a higher rate to pilots, there is a case for more appropriate allocation of work among the pilots to ensure their optimal utilisation which would have enabled the Company to avoid excess payment of ₹48.89 crore (paid over 2012-16) on flying allowance.

MoCA in its reply (02 September 2016) stated that the payment of flying allowance to Pilots had been reworked in the rationalised pay structure which had been introduced for both Boeing & Airbus Pilots effective 1 January 2016 (except for Pilots from IPG where there was a stay from the Supreme Court).

The reply of MoCA is not tenable as the payment of flying allowance to Pilots had been reworked in the rationalised pay structure which stated that a Pilot would be paid fixed 70 hours as per rate applicable to individual pilot subject to a minimum of 40 hours actual flying. However, Audit has pointed out the mismanagement in respect of utilisation of Pilots for flying which resulted in under utilisation of some of the Pilots and payment of additional flying allowance to the others who were utilised over and above 72 hours per month.

8.5.2 Under-utilisation of cabin crew

The results of a review of cabin crew utilisation in domestic and international operations for the period 2013⁵⁶ to 2015 (upto August 2015) are tabulated as under:

Table 8.3: utilisation of cabin crew in flying hours

Flying Hours utilisation (in hours)	2013		2014		(Upto August 2015)	
	No. of cabin crew	Percentage	No. of cabin crew	Percentage	No. of cabin crew	Percentage
More than 70	1326	40.33	1913	64.63	1992	69.75
60 to 70	1084	32.97	612	20.68	518	18.14
50 to 60	505	15.36	235	7.94	197	6.90
40 to 50	197	5.99	114	3.85	84	2.94
30 to 40	73	2.22	39	1.32	35	1.23
20 to 30	32	0.97	20	0.68	16	0.56
less than or equal to 20 hours	71	2.16	27	0.90	14	0.48
Total	3288	100.00	2960	100.00	2856	100.00

Source: AIL/Operations

⁵⁶ Calendar year

AIL had constituted a committee to assess the requirement of cabin crew in the airline. This committee (November 2014) considered an average utilisation of cabin crew for 840 hours per annum (i.e. 70 hours a month). As could be seen from the table above, 40 percent to 70 percent of the cabin crew were utilised for over 70 hours a month. It was seen that 12 percent to 27 percent of available crew were being utilised for upto 50 hours only. At the same time, flights were being delayed/re-scheduled/cancelled due to non-availability of cabin crew. Optimal utilisation of available cabin crew would have ensured smooth operations.

Management replied (February 2016) that pre-flight and post flight rest of ultra-long range, international and domestic varied a lot. Further, the productivity of cabin crew included flying and training duties, duty on account of standby, duty of trainers for imparting training, etc. which needed to be factored towards crew productivity.

Further, MoCA in its reply (02 September 2016) stated that due to consistent efforts of AIL the productivity of Cabin Crew have substantially increased and further efforts to utilisation are continuing. Further, 840 hours in a year is a benchmark which had not been achieved by International Air Carriers. The crew who were flying less than 30 hours, could not be avoided as generally crew were on various types of leave like sick, maternity and privilege leave. Further, there was a requirement for continuous training wherein the crew were on ground undergoing training. Some of the cabin crew were also carrying out administration duty due to which the flying was very low.

The responses are to be viewed in the light of the decision of the CMD of AIL to fix the average utilisation of crew at 840 hours per year in May 2014. This was to take into account all types of leave, training requirements, standby crew and non-utilisation for various reasons.

8.5.3 Avoidable expenditure on deadhead cost ⁵⁷

The Company maintained different categories of cockpit and cabin crew to operate major international flights (Wide Body-WB) from Delhi and Mumbai bases. In case the crew is to be positioned or trans-shipped for flight operations, Staff on Duty (SOD) allowance @ 65 percent of the scheduled block hours was paid to them. Such expenditure incurred for positioning the crew was considered as 'deadhead' cost.

The Company declared Delhi as a hub with effect from 'Winter 2010'. Consequently, the number of scheduled wide body aircraft flights that were operated from Delhi increased vis-à-vis Mumbai. The share of wide body flights operating from Delhi increased from 33 percent in October 2010 to 52 percent in November 2010. Thereafter it increased progressively to 67 percent in 2014-15 and further to 68 percent in 2015-16. However, the cockpit and cabin crew maintained at Delhi did not increase commensurately. The Mumbai based Wide Body Aircraft cockpit and cabin crew was 64.93 percent and 59.40 percent of the total strength as in March, 2016, while 68 percent of the flights originated from Delhi. The increased deadhead cost that the Company had to bear in positioning the crew (during 2011-13) had been commented upon at para 3.1 in the Audit Report No. 13 for the year 2014.

⁵⁷ The Company maintains different categories of cockpit and cabin crew to operate major international flights (Wide Body-WB) from Delhi and Mumbai bases. In case the crew is to be positioned or trans-shipped for flight operations, Staff on Duty (SOD) allowance @ 65 percent of the scheduled block hours is paid to them. Such expenditure incurred for positioning the crew is considered as 'deadhead' cost.

Audit noticed that with increased operations from Delhi, deadhead costs continued to be incurred by AIL in positioning the staff from Mumbai to Delhi. The Mumbai based cockpit and cabin crew travelled as Staff on Duty (SOD) to Delhi one day before flight duty, stayed in a hotel to provide one clear night of rest before they operated the flight. On completion of duty, the crew either returned to Mumbai on the same day or stayed at Delhi for one or two days which added to deadhead cost.

During the period from 2012-13 to 2015-16, the company paid SOD allowance of ₹96.30 lakh to cabin crew. The payment of SOD allowance to cockpit crew could not be quantified as the Wide Body pilots are paid guaranteed 80 hours per month all inclusive and as per the reply of management during the said period AIL has not made any payment beyond 80 hours. Besides, an expenditure of ₹89.24 crore was incurred on hotel accommodation of cockpit and cabin crew during the same period (2012-13 to 2015-16). Appropriate positioning of staff as per deployment requirements could have saved the expenditure of ₹90.20 crore incurred on SOD allowance and hotel expenditure. Besides, with SOD travels, passenger seats were blocked, particularly for the busy route of Delhi-Mumbai.

Management stated (02 February 2016) that post-merger, Mumbai was the main base of erstwhile Air India. Pursuant to Delhi hub taking shape and induction of B787, more flights were introduced ex Delhi. Prior to Delhi hub, the ratio of crew vs the flight ex-Delhi and ex-Mumbai was optimal. It was also stated that though with introduction of IT system of rostering, crew utilisation was optimised but to cover all flights some deadhead/SOD travel was required on B-777 and B-787 flights between Mumbai and Delhi.

MoCA in its reply (02 September 2016) stated that the audit comment that efforts should be taken to align crew availability to station of operations to reduce expenditure was noted. However, Air India management felt that uprooting of crew from Mumbai to Delhi would have encouraged further poaching by market forces. With the development of Mumbai Airport which was now being considered as second hub of Air India, crew resources were required to be maintained for increased operations ex Mumbai.

It could be seen from above that from the year 2010, most international flights were being operated from Delhi hub, and accordingly, the management should have deployed its crew according to the percentage of operations so that deadhead cost could have been minimised. Further, even after four years Mumbai airport is yet to become a second hub of Air India.

8.5.4 Extra expenditure on hub and spoke operation

The Company started ‘hub & spoke operations’ in the year 1999, under which erstwhile Indian Airlines (IA) aircraft along with crew, operated to international terminals with Air India (AI) flight numbers. The operation was primarily meant for connecting traffic from/to the major hubs at Mumbai and Delhi initially, which was subsequently extended to Ahmedabad, Bangalore, Kochi, Trivandrum, Chennai, etc. IA used to bill AI for hub and spoke operations. As these operations were mostly at odd hours, Dy. MD of erstwhile IA had stated (January 2003) that “pilots on jet aircraft would be paid an hourly flying allowance @ 150 percent of the existing flying allowance for all hub and spoke operations. Furthermore all associated allowances such as SOD travel, FDTL⁵⁸ extension would also be paid at the

⁵⁸ Flight Duty and Time Limitations

applicable revised hub and spoke rate. Payment for any additional sector undertaken prior to or subsequent to the hub and spoke flight within the same duty cycle would be made at the revised hub and spoke rate (i.e. 150 percent of existing hourly rate)".

Both the airlines merged in March 2007 and had a common code since February 2011, obviating hub and spoke operations. Audit, however, noticed that hub and spoke allowance was being continuously paid to the pilots of erstwhile IA for selected sectors, which were identified as 'hub and spoke' flight by Operations department. This resulted in extra expenditure of ₹27.75 crore during the period from July 2013 to March 2016.

Management replied (02 February 2016) that post-merger of Air India and Indian Airlines, wage agreements were not synergised. To maintain industrial harmony, payments of allowances were being made as per the original agreement which were under review. Decisions on flights being operated as hub and spoke were as per the company policy and made prior to merger and were not decided by Operation department.

MoCA in its reply (02 September 2016) stated that Hub & Spoke allowances had been abolished in the rationalised pay structure which had been introduced for Airbus Pilots from January 2016.

8.5.5 Lack of planning in utilisation of effective crew

Audit reviewed the utilisation of fleet and available crew during the period from 2012-13 to 2015-16. While doing the analysis, Audit considered average utilisation of pilots and cabin crew as 840 hours, as considered by the committee constituted by AIL in November 2014 having representatives from Operations and Personnel departments, to assess the future requirement of cockpit and cabin crew. The results of audit analysis are tabulated below:

A. Assessment of requirement of pilots (Wide Body Aircraft)

The assessment of requirement of pilots for wide body aircraft is shown below.

Table 8.4: Assessment of strength of pilots of wide body aircraft

Year	Fleet**	Block hours	Annual hours considered for utilisation (in hours)	No. of Pilots required	No. of available pilots	No. of pilots under utilised
1	2	4	5	6***		
2012-13**	B-777	75681.26	840	284	357	73
2013-14	B-777	72022.72	840	276	340	64
	B-787	30087.67	840	102	261	159
2014-15	B-777	54052.98	840	232	309	77
	B-787	71148.52	840	209	258	49
2015-16	B-777	56324.19	840	242	308	66
	B-787	91479.01	840	256	291	35

Source: Block hours as appearing in Aircraft wise Profitability statement from AIL; Information furnished by AIL – Finance, Personnel & Operations

** B-787 fleet had not been considered in 2012-13 as this fleet was utilised only for 2275 hours

*** For USA and Australia sector, 4 pilots requirement had been considered and for other sectors two pilots had been considered

As seen from the table 8.4 above, against an effective⁵⁹ pilot strength of 258 to 357, number of pilots required for actual operations varied from 102 to 284 during the period from 2012-13 to 2015-16. There was a decline in level of under-utilisation of pilots operating both B-777 and B-787 aircraft in 2015-16 as compared to 2014-15.

B. Assessment of requirement of pilots (Narrow Body Aircraft)

The assessment of requirement of pilots for narrow body aircraft is shown below.

Table 8.5: Assessment of strength of pilots of Narrow Body aircraft

Year	Block hours (A)	Annual hours Pilot available (B)	No. of Pilots required (A)/(B)	No. of available pilots with the Company	No. of pilots under utilised
2012-13	227553	840	542	625	83
2013-14	225569	840	537	587	50
2014-15	227832	840	542	581	39
2015-16	232882	840	554	605	51

Source: Information furnished by AIL – Finance, Personnel & Operations
Block hours as appearing in Aircraft wise Profitability statement.

As could be seen from above, during the period 2012-13 to 2015-16 against the effective⁶⁰ pilot strength of 581 to 625, the pilots required for actual operations were 537 to 554. Thus, during the aforesaid period 39 to 83 pilots were under-utilised. Despite having sufficient effective pilot strength, there were 1381 to 5065 cases of flight delay/cancellations/rescheduling during the period from 2012⁶¹ to 2016 (upto March 2016). Besides, the Company incurred additional expenditure due to over-utilisation of services of some pilots (as stated in para 8.5.1).

Management stated (February 2016) that for calculation of flight crew (cockpit crew and cabin crew) requirement, besides flying hours, other factors, viz., daily trip deployment, rest periods, training, standby crew, weekly rest requirement, crew buffer, etc. were considered. These factors restricted crew availability for a period of 9 months out of 12 months. Thus, 720 hours could be considered as ‘Very Good Benchmark’ and accordingly a crew performing average 80 hours per month (considering a period of nine months) was marked as very good achievement. Further, the industry standard for domestic carriers was less than 750 hours p.a. and there was no fixed utilisation of 840 hours annually and as per Government recommendation it was marked as an excellent achievement of Key Performance Indicator (KPI). They also stated that AIL could utilise the pilots for higher period as per company schedule.

MoCA in its reply (02 September 2016) stated that on account of various requirements of the company concerning training, conversion from one aircraft to the other, simulator training, the utilisation of pilots was not as per the target utilisation. Besides this, there were cases of Temporarily Medically unfit (TMU) and Permanently Medically unfit (PMU) pilots which involve prolonged grounding of the pilots. Further the Narrow Body pilots had also to be

⁵⁹ Available/eligible for flying.

⁶⁰ Available/eligible for flying.

⁶¹ Calendar year

trained on the 787 aircraft which involved grounding of the pilots for conversion training. An exercise was conducted to assess the requirements of Cabin crew and Pilots and based on the study, fresh recruitments were being done. Company had expansion plans and, therefore it was necessary for Air India to induct crew to ensure that all aircraft could be operated as per schedule and no aircraft remained grounded.

The reply of the Management/MoCA is not acceptable as the internal committee of AIL had, while considering an average annual utilisation of 840 hours for the crew, stated that ‘this shall take into account all types of leave, training requirements, standby crew and non-utilisation of crew due to various reasons’. Besides, average utilisation of 840 hours a year is feasible considering that the Civil Aviation Requirements (CAR) of Director General of Civil Aviation, prescribe the maximum cumulative flying hours as 1000 hours per annum for a pilot. Besides, a number of pilots in the Company had clocked more than the prescribed 840 hours in a year, which further suggested that an average of 840 hours worked by AIL Management was not unrealistic.

C. Assessment of requirement of cabin crew (Wide body aircraft)

The assessment of requirement of cabin crew for wide body aircraft is given below.

Table 8.6: Assessment of cabin crew strength of Wide Body aircraft

Year	Fleet	Block hours	Annual hours considered for utilisation	No. of Cabin crew* required	No. of available cabin crew	Shortages (-) / Excess
1	2	4	5	6*	7	8
2012-13**	B-747/B-777	82192.52	840	1444	2139	695
2013-14	B-747/B-777/B-787	107164.86	840	1685	1893	208
2014-15	B-747/B-777/B-787	129566.02	840	1799	1637	(-)162
2015-16	B-747/B-777/B-787	152049.4	840	2060	1547	(-)513

Source: Block hours as appearing in Aircraft wise Profitability statement from AIL; Information furnished by AIL – Finance, Personnel & Operations

* For arriving at required cabin crew for B-747/B-777/B-787 crew compliment of 12/15/9.11 has been considered.

** B-787 fleet has not been considered in 2012-13 as this fleet was utilised only for 2275 hours

The information given in the table indicated shortage of cabin crew. The short availability of crew affected the On Time Performance (OTP) of AIL as commented in Para- 8.4.

D. Assessment of requirement of cabin crew (Narrow Body aircraft)

The assessment of requirement of cabin crew for narrow body aircraft is given below.

Table 8.7: Assessment of strength of Cabin crew of Narrow Body aircraft

Year	Block hours	Annual hours considered for utilisation	No. of Cabin crew required	No. of available* cabin crew
2012-13	227553	840	1179	1269
2013-14	225569	840	1172	1178
2014-15	227832	840	1182	1146
2015-16	232882	840	1203	1358

Source: Data furnished by AIL

* including for AASL operations

As stated above, during the period from 2012-13 to 2014-15 against the effective cabin crew strength of 1146 to 1269, the requirement of cabin crew for actual operations varied from 1172 to 1182. Further, as per statement provided by AIL effective strength included the cabin crew for Airline Allied Services Limited (AASL) operations also. Thus, the quantum of optimum utilisation of cabin crew could not be worked out in audit. However, the company recruited cabin crew during the year 2015-16 and as on 31 March 2016, there were 1358 crew available for operation.

MoCA in its reply (02 September 2016) stated that an exercise was conducted to assess the requirements of Cabin crew and Pilots and based on the study, fresh recruitments were being made. There were training requirements and the company had expansion plans and, therefore it was necessary for Air India to induct crew to ensure that all aircraft could be operated as per schedule and no aircraft remained grounded

The reply of MoCA is noted and improvement will be watched in future audits.

The JDC recommendations for harmonising the HR policies of erstwhile IA and AI and for rationalising staff costs were not fully implemented, resulting in additional expenditure and continuing anomalies like hub and spoke allowance.

The Company had excess men-in-position vis-a-vis the standard force required for its operation as per its own estimates. Even then, the Company hired a large contingent of consultants, casual workers and temporary outsourced employees which added to staff expenses.

The crew (Pilots and cabin crew) was not optimally utilised. While some pilots drew higher flying allowance on account of higher flying hours, others remained under-utilised.

The Company also failed to align crew availability to station of operation. While the hub was in Delhi, crew of wide body aircraft were primarily stationed in Mumbai and the Company incurred considerable expenditure on staff on duty travel, related allowances and hotel expenses.



Chapter 9: Hiving off Maintenance, Repair & Overhaul and Ground Handling Business to subsidiaries

The Turnaround Plan intended that AIL would focus on core air transport operations and hive off other activities like Maintenance Repair & Overhaul (MRO) and Ground Handling (GH) activities to subsidiaries. These subsidiaries would be established as self-sufficient and profitable entities, in line with international standard practices. As per the milestones approved by Government for turnaround of the Company, AIL was to hive off the MRO and GH activities to its subsidiaries by January 2012. The Master Restructuring Agreement signed (30th March 2012) subsequently with State Bank of India and other bankers for implementing the turnaround plan envisaged hiving off to be completed by 31st March 2012. The process of hiving off MRO and GH activities was scrutinised in Audit and the following issues were noticed.

9.1 Delay in hiving off MRO and GH activities to AIL subsidiaries

As against the target date of 31st March 2012, the MRO services could actually be hived off to Air India Engineering Services Limited (AIESL) only on 1 January, 2015. AIESL could take over MRO functions only with approval of Director General of Civil Aviation (DGCA) under Rule 145 of Civil Aviation Rule for which approval was obtained only in January 2015. Air India Air Transport Services Limited (AIATSL) could likewise be operationalised only on 01 April 2014. Operationalisation of both the subsidiaries, AIESL and AIATSL were thus delayed by two to three years.

Management (02 February 2016) /MoCA (02 September 2016) accepted the delay in hiving off and replied that hiving off was delayed due to various court cases filed by the unions in High Courts and Supreme Court of India resisting the transfer and that unless this issue was resolved the transfers could not be effected. The decisions of Supreme Court of India and Madras High Court permitted hiving off in July 2013. However AIESL could be operationalised w.e.f. January 2015 when DGCA certification was received after following a lengthy process and delay from July 2013 to January 2015 was on account of the process which involved setting up of the manpower structure in AIESL, preparation of manuals, completion of external and internal audit etc. MoCA has not replied to delay in operationalisation of AIATSL after vacation of stay in July 2013 by Supreme Court of India.

The reply needs to be considered in the light of the fact that the actual stay order of the Madras High Court had been for the period less than two months (15 May 2013 to 08 July 2013). The Supreme Court of India decided (09 May 2013) that hiving off was a policy decision of GOI. In view of the order of Supreme Court of India, the Madras High Court vacated the stay on July 8, 2013. Following vacation of the stay order, action for transfer of staff and operationalisation of the subsidiaries was with the Company. Hiving off was an approved milestone which was to be achieved by January 2012 (as per TAP) /March 2012 (as per MRA). Procedural formalities were known to the Company and action on the same could have been taken up simultaneously.

9.2 Inaccurate information reported to Oversight Committee regarding milestone achievement

Management reported to the Oversight Committee (August 2013) that employees of AIL performing ground handling activities had been transferred to AIATSL, however, all staff continued to be on the rolls of AIL with actual transfer of payrolls for AIATSL taking place w.e.f. April 2014 and that for AIESL being effected from October 2014. Similarly Management informed the committee (August 2014), that both AIESL and AIATSL had been operationalised by February 2013. In reality, however, AIATSL could be operationalised only by April 2014 and AIESL by January 2015.

Management in its reply (02 February 2016) stated that around 4500 technical employees were transferred to AIESL w.e.f. 01 February 2013 and that administrative staff/officers attached to engineering department were also deputed to AIESL though the payroll transfer was effected from October 2014.

MoCA replied (02 September 2016) that the information provided to the Oversight Committee (August 2013) was as per situation prevalent then. Air India issued transfer letters to Engineering employees to AIESL in February 2013. Thereafter, several court cases were filed and the last court case was resolved in July 2013. However, at this stage, AIESL had not obtained CAR 145 approval from DGCA to function independently. The Engineering functions, therefore, had to be necessarily performed under the umbrella of Air India. To comply with the regulation requiring adequate staff in the MRO in order to obtain the licence, a policy decision was taken in October 2014 to transfer the employees to AIESL. As regards AIATSL the transfer was delayed as the assets and liabilities were to be identified and transferred. The transfer was made effective from the start of financial year 2014-15.

The reply is not tenable as the GH and MRO staff continued to remain on the rolls of AIL till March and September 2014 respectively. The financial statements of the two subsidiaries (AIESL and AIATSL) for the year 2013-14 also did not indicate transfer of staff from AIL or revenue/expenditure pertaining to MRO and GH activities. The response is contradictory to information reported to Oversight Committee (August 2013) that employees performing ground handling activities were transferred to AIATSL. MoCA did not reply on inaccurate reporting (August 2014) of operationalisation of AIESL and AIATSL in February 2013 to Oversight Committee.

9.3 Deviations noticed in actual operationalisation of AIESL and AIATSL

Audit noticed certain deviations from the envisaged plan in actual operationalisation of the two subsidiaries which are listed below:

Non Infusion of equity for capital expenditure: AIL was to provide a total equity of ₹375 crore to AIESL during the first three years beginning from the date of operationalisation of AIESL. Likewise, AIATSL was to be provided an equity of ₹393 crore, of which ₹150 crore was to be infused in the first year. However, AIL is yet to infuse this equity towards capital expenditure in AIESL and AIATSL (March 2016).

Management stated (02 February 2016) that funds could not be infused on account of its financial problems. MoCA (02 September 2016) accepted that the equity as envisaged in TAP has not been infused in the two subsidiaries. It is also stated that whenever they are required for capital projects, AIL has been infusing the necessary resources to fund the capital expenditure.

The reply is not acceptable as lack of equity support might adversely affect the operation and profitability of the newly formed subsidiaries. AIATSL had brought to the notice of its Board (July 2015) that the Company required Ground Support Equipment of approx. ₹250 crore. Besides, AIL had to infuse equity in both the subsidiaries for operationalisation of subsidiaries as approved by Cabinet.

Deputation of AIL employees to subsidiaries instead of transfer: It had been envisaged (August 2012) that all employees of AIL engaged in MRO and GH activities would be transferred to AIESL and AIATSL. However, 1656 employees were on deputation from AIL to AIATSL. Likewise 803 employees of AIL were on deputation to AIESL instead of being transferred.

Management replied (02 February 2016) that the administrative control of deputed staff/officers is with the subsidiary companies. MoCA replied (02 September 2016) that all the operational staff were transferred and support staff were deputed.

The reply of AIL management needs to be viewed in the light of the fact that a number of personnel on deputation have been subsequently reverted to AIL which may create operational problems for the subsidiaries. The reply of MoCA is also not tenable as all employees of AIL engaged in MRO and GH activities were to be transferred to subsidiaries as per Cabinet approval for operationalisation of subsidiaries. Moreover, AIL staff on deputation to AIATSL included commercial staff performing core GH activities.

9.4 Delay in commissioning new AIESL facilities at Nagpur

AIL had decided to establish two new facilities, an MRO facility and an engine overhaul facility;

- M/s Boeing had committed to invest upto USD 100 million for establishing and operating a facility in India dedicated to provide maintenance and logistics services as a part of the purchase agreement signed in December 2005. This MRO facility was decided (May 2009) to be established at Special Economic Zone (SEZ) area of Maharashtra Airport Development Company Limited (MADC) near Nagpur Airport. As per the original agreement between M/s Boeing and AIL (August 2006), the MRO facility was to be operational by August 2009. The facility was however, completed in January 2014 and operationalised in August 2015. The delay in operationalisation was on account of delay in creation of infrastructure facilities like power supply, taxiway completion, sewage treatment plant by MADC. Even after completion of the facility, the MRO services for the new Boeing fleet (B-777 and B-787 aircraft) continue to be carried out at Mumbai.
- Consequent to the purchase of new Boeing aircraft fitted with GE engines, AIL decided (March 2009) to set up GE branded GEnx and GE 90 Engine overhaul facility. It was

decided during September 2010 to set up the facility in Nagpur. The project costing USD 89 million was to be funded through GE credits (USD 64.5 million) and internal resources of AIL (USD 24.5 million). The facility was to be operational by 2013. The facility is still under construction and is expected to be fully operational only by December 2017. Due to delay in completion of overhaul facility, AIL had to pay higher amounts to GE for engine overhaul services. The avoidable amount incurred by AIL over January 2013 to March 2016 on this account was ₹64.75 crore. Besides, the intended third party revenue from the new MRO unit and engine overhaul facility could not be realised during the interim period.

It is pertinent to note that Expression of Interest (EoI) was invited (January 2016) from units engaged in MROs and Airlines across the world to 'Operate and Manage' the Air Frame MRO at Nagpur on revenue sharing model, with the objective of enhancing revenues of AIL. The Board accorded its approval (74 Meeting, 12 July 2016) to float global tenders, inviting applications from interested parties to take on lease the MRO Airframe facility on a long term basis for thirty years.

Management in reply (02 February 2016) stated:

- i) The MRO facility was delayed due to issues relating to acquisition of land, levelling of the taxiway and other issues with MADC. These issues were not within the control of AIL or Boeing. As regards third party revenue from MRO facility, it was informed that discussion with Indian Airforce and other Indian operators were going on.
- ii) The delay in commissioning of engine facility was on account of delay in civil construction and the liquidity problems faced by AIL. The extra expenditure of ₹17 crore per annum mentioned by Audit would also have been incurred at Mumbai, had the whole facility been made available at Mumbai.

MoCA replied (02 September 2016) that

- (i) The setting up of MRO in Nagpur and GE facilities in Nagpur was accepted by the Board of Air India in 2009. As such considering the complicated nature of project, the MRO facility has been set up at the earliest possible time as a green field project building of an MRO facility would normally take at least four years.
- (ii) The delay in GE Test Cell facility is due to delayed civil work. The engines of Air India also are presently under ON Point agreement with GE. The ON Point programme is a power by hour programme and as such delay of the GE facility in Nagpur has not resulted in any additional cost to Air India.

The reply needs to be viewed in light of the following:

- i) MRO facility, which should have been ready by August 2009, had been operationalised after six years only in August 2015. The reply of Management only explained the delay post January 2014 and did not address the larger segment of the delay prior to this date i.e. August 2009 – January 2014. Reply of MoCA was also not tenable as the approval of Board was internal to AIL.

ii) Considering the steep additional expenses being borne by the Company on engine overhaul due to delay in completion of the overhaul facilities, efforts ought to have been made by AIL to avoid such delays. Besides, the avoidable expenditure worked out by Audit is based on the difference in rates offered to AIL by GE in the absence of the GE overhaul facilities and not on expenses being incurred in transport between Nagpur and Mumbai.

Operationalisation of AIESL/AIATSL was delayed by two to three years vis a vis the TAP milestones. Inaccurate information regarding operationalisation of these subsidiaries was reported to the Oversight Committee.

Some shortfalls have been noticed in operation of subsidiaries – eg. No infusion of committed equity by AIL, deputation instead of transfer of employees from AIL to subsidiaries. Besides, the MRO and engine facilities for the new Boeing wide body aircraft and engines were delayed leading to excess expenditure on the part of the airline in repair/maintenance of GE engines.



Chapter 10- Integration of Information Technology (IT) Systems

10.1 Information Technology (IT) initiatives by AIL

The TAP also included implementation and integration of IT solutions as an essential activity for turnaround of the Company. In all, four airline specific IT systems were to be implemented in AIL besides the SAP-ERP. These are:

- Passenger Service System (PSS) implemented in February 2011 for managing booking of tickets, passenger handling and revenue management.
- RAMCO system for Maintenance Repair and Overhaul (MRO) implemented in November 2012 covering procurement process, inventory management and repair and maintenance based on MRO activities.
- Flight Planning System (FPS) for optimal flight planning solutions and flight operation support systems was still under implementation.
- Central Planning and Control System (CPCS) for network planning, scheduling, flight operations control and crew management had been partially implemented.

Audit had already reviewed PSS and RAMCO systems and the findings had been reported in the para no. 2.7 of Report No.21 of 2015 (Volume I) of CAG of India. Though both the systems have been implemented by AIL, several shortcomings were noticed in audit. These included delay in their implementation as well as non-achievement of expected efficiencies apart from non-integration with SAP-ERP system. Audit noticed that FPS is partially operational and has resulted in efficiencies to that extent. A number of modules of the CPCS system, however, are yet to be implemented and hence this system was selected for a detailed study in audit to appreciate the concerns involved.

10.2 Central Planning and Control System- an overview

CPCS comprises of three sub systems:

- Network Planning and Scheduling (NP&S) system which provides solutions for long term, medium term and short term scheduling including daily departures. CPCS had three component systems, namely network planning and scheduling (NP&S), hub control centre/ operations control centre (HCC - OCC) systems and Crew Management System (CMS).
- System for Operations Control Centre and Hub Control Centre (OCC-HCC) intended to support decisions to react to disruptions and for restoring normal operations.
- Crew Management System (CMS) intended to maximise crew utilisation ensuring crew availability and minimising creeping delays by proactive planning.

10.3 Procurement of CPCS

A tender was issued on selective basis (October 2009) to identify a single solution provider for all critical IT enablers constituting CPCS. M/s Lufthansa Systems (LH) and M/s Sabre Solutions (Sabre), were identified by AIL as market leaders and M/s Sabre emerged as the best fit for AIL requirements. Audit observed that,

- (i) AIL had a pending dispute at the time of entering into the new agreement with M/s Sabre (December 2009) on a receivable worth USD 5.335 million since 2004. M/s Sabre had offered (May 2008) an out-of-court settlement of USD 2 million for this past dispute and another USD 1.5 million, if considered for development of Passenger Service System (PSS). This offer of M/s Sabre, was however, not accepted by AIL. However, during price negotiation for CPCS, an amount of USD 0.95 million was only offered by M/s Sabre towards settlement of past dues. This was accepted by AIL. This led to short receipt of USD 1.05 million (₹5.64 crore) by AIL.

Management in its reply (02 February 2016) stated that the offer of M/s Sabre for an out-of-court settlement of USD 3.5 million in 2008 was against the cost of USD 120 million for implementation of PSS and since the value of CPCS project was only USD 24 million, the Committee accepted the offer of USD 950000.

MoCA, reiterating the Management's contention, linked (2 September 2016) the offer of USD 3.5 million made by M/s Sabre in 2008 to the award of PSS while stating at the same time that the offer of USD 3.5 million was a combined offer broken up into USD 2 million upfront and USD 1.5 million if PSS was awarded.

MoCA's reply linking the offer of USD 3.5 million made by M/s Sabre in 2008 to the award of contract for PSS is contradictory to their own statement in the reply that the offer of USD 3.5 million was a combined offer broken up into USD 2 million upfront and USD 1.5 million if PSS was awarded. Further, the documents made available to Audit clearly indicated that the out-of-court settlement for USD 2 million offered by M/s Sabre was unconditional without any link to the implementation of PSS. The additional amount of USD 1.5 million, alone, had been offered against PSS contract. AIL, while concluding the Selective Tendering process by placement of Work Order (WO) on M/s Sabre, should have made sincere efforts to bring M/s Sabre to settle past dues to at least USD 2 million, which was offered in 2008.

- (ii) The CPCS system was required to be operationalised before the Commonwealth Games in October 2010. The contract signed by AIL with M/s Sabre for procurement of CPCS did not have any specific timeline for delivery, nor was any penalty specified in the contract for delay in implementation. Audit noticed that M/s Sabre had implemented only seven out of the 13 modules till date (February 2016). Though CMS has not yet been implemented AIL paid M/s. Sabre ₹1.34 crore towards System Implementation and Professional Service Fee and Travel Incidentals even as alternate interim arrangements had to be made for its implementation. No penalty could be levied by AIL. By not

incorporating timeline and penalty clause in the contract, AIL compromised its commercial and financial interests.

Management in reply (02 February 2016) admitted its failure to incorporate a penalty clause in the master agreement.

MoCA did not offer any specific remarks.

- (iii) The contract signed with M/s Sabre for CPCS had a provision for Performance Bank Guarantee (PBG). Audit noticed that the PBG for CPCS contract had expired on 7 July 2011 and no steps had been taken by AIL for its re-validation, though the vendor was yet to fulfill its obligations.

Management, in its reply (02 February 2016) did not comment on its failure to get the validity of the PBG extended to cover the currency of the Contract.

MoCA in their reply (September 2016) stated that AIL was taking appropriate steps to validate the Bank Guarantee and to ensure that this Bank Guarantee remained valid till the end of the Project. MoCA has also stated in their reply that AIL has been directed to avoid recurrence of such lapses in future.

10.4 Implementation of CPCS

As stated at para 10.2 above, CPCS had three component systems of which only two namely network planning and scheduling (NP&S) and hub control centre/ operations control centre (HCC-OCC) systems have been implemented. The third system, namely Crew Management System (CMS) was yet to be completed by M/s Sabre.

Audit noticed that a number of available modules in NP&S were not utilised, as detailed below:

A. Three unused modules of NP&S system

The NP&S system had five modules (schedule manager, fleet manager, slot manager, code-share manager and profit manager) all of which had been completed. Out of these, three modules viz. fleet manager, slot manager and code-share manager, have not been utilised at all by the Company. In fact, Market Planning Department, the user department for these modules had proposed (December 2014) that these modules be discontinued in view of their non-utilisation and to arrest the recurring expenditure incurred on them. The recurring fees of ₹15.23 crore paid by AIL (till June 2016) have thus been rendered infructuous.

Management in its reply (02 February 2016) stated that the functionality of the three modules were desired by AIL for the purpose of enhancing efficiency gains. It was also stressed that the utilisation of these three modules have deteriorated only in the last one year due to shortage of manpower and that a committee has been formed in October 2015 to revive utilisation of these modules.

MoCA in their reply (September 2016) stated *inter alia* that 5 modules of NP&S are used by Air India, Air India Express and Alliance Air for efficiency gains at various stages of schedule/flight forecasting, planning, construction and schedule implementation.

Audit noted that a Steering Committee has been constituted in December 2015 to re-operationalise the Planning and Scheduling Tool, after the internal communication of the Company in December 2014 regarding non-utilisation of three modules namely Fleet manager, Slot manager and Code-share manager.

B. Lack of vital input data and skilled resources led to non-utilisation of profit manager module

The profit manager module of NP&S system needed to be calibrated with origin and destination data for assigning the correct market shares and passenger traffic to the host airline. AIL evaluated the offers from both IATA (for Pax IS-level 5 data) and M/s Sabre (for Global Demand Data - GDD) and concluded that M/s Sabre was the lowest bidder.

The GDD database required supplemental data for calibration of profit manager module of NP&S. AIL obtained the supplemental data at a cost of ₹9.16 crore. Subsequently, however, M/s Sabre could not deliver the data analyser. AIL cancelled (April 2011) the contract with M/s Sabre. As there was no performance guarantee clause in the contract, no penalty for non-performance was levied on M/s Sabre. As such, the entire expenditure incurred by AIL during the period from April 2010 to September 2014 on the supplemental data was rendered infructuous.

Subsequently, AIL entered into agreement with IATA for the Pax IS data (October 2011). The IATA data could not be used after April 2012 to calibrate profit manager in the absence of skilled manpower. Thus the expenditure of ₹4.53 crore incurred by the Company on procurement of the data from IATA remained infructuous during the period from November 2012 to April 2014⁶².

Thus, the Profit Manager Tool remained idle even after the Company incurred expenditure of ₹5.28 crore (monthly recurring U&S fee) and ₹13.69 crore (₹9.16 crore plus ₹4.53 crore) on input data procurement for the module which was not utilised.

Management in reply (02 February 2016) did not offer any comment on Performance Bank Guarantee (PBG) not being taken from M/s Sabre for the GDD data but highlighted that it has not paid any amount to M/s Sabre for data services. The Company also did not comment on the non-operation of profit manager module since April 2012 despite availability of IATA data.

MoCA in their reply (September 2016) stated that a separate PBG was not sought for Work Order 2 (WO2) as the same was provided by Sabre for the Master Agreement, which covered IOCC, CMS and NP&S, since the Global Demand Data was covered under the Master Agreement as WO2.

However, Audit observed that the Master Agreement specifically indicated only Work Order value of USD 3,150,000 relating to WO1. As a result, the WO2 comprising Data Services, Sales and Network Analyzer Module were not covered by the PBG.

⁶² Only 6 invoices raised by IATA have been made available to Audit. Management did not confirm their finality and completeness.

MoCA, however, has not offered any remarks on the infructuous expenditure on data procurement pointed out by Audit due to idling of Profit Manager Module.

C. Lack of trained manpower for optimum utilisation of the network planning and scheduling tools

After the initial training by M/s Sabre in May 2010-August 2010, no further training had been organised (March 2016). Meanwhile, Audit observed that, out of 21 officials trained in NP&S system in 2010, only seven remain and the rest have either retired, resigned or have been redeployed elsewhere within AIL. This concern regarding skilled manpower had also been voiced in the internal communications of the Company (November 2014).

Management stated in reply (02 February 2016) that AIL had conducted redeployment exercise to get manpower from within the organisation and to make good the shortfall, AIL had recruited experienced manpower from the IAF placement cell, conducted walk-in exercise to recruit experienced staff and fresh candidates. The Management was of the view that attrition was an inevitable risk due to market forces.

MoCA in their reply (September 2016) stated that the Internal Committee constituted to streamline the Project had already sanctioned the additional manpower requirement and had started allotting contractual employees for the Project. Additionally, the data calibration task was also being mobilised which would enable full utilisation of all the modules in the Tool.

The fact remains that the additional manpower as well as data calibration was yet to be put in place.

10.5 Delay in implementation of Crew Management System

The Contract for Crew Management System (CMS) was awarded to M/s Sabre on 31 December 2009 and was to be implemented by 31 May 2011. In order to implement the CMS, AIL was required to make available appropriate resources, finalise the organisational structure of future CMS department, infrastructure and facility set-up and define the processes of crew planning and data maintenance. The progress in this respect however was slow as also pointed out (September 2010) by Sabre who had continued to flag the same issues as late as in May 2012.

In the meanwhile (August 2011), DGCA issued a new set of Civil Aviation Rules and made it mandatory to implement them by 15 February 2012. When approached, M/s Sabre responded (February 2012) that the CMS system could be implemented by them only by March 2013. AIL adopted an interim solution offered by M/s Sheorey Digital Systems Limited, Mumbai (SDS) and advised M/s Sabre to reschedule the project plan timelines for cockpit and cabin crew combined cut-over by 31 March 2013. The Sabre system was yet to be implemented (February 2016) after a delay of two years. AIL entered into an agreement with SDS on 10 October 2012 for Flight Operations Sub System (FOSS) and Crew Management Sub System. The SDS system was not fully automated and manual interventions were required which persisted even till date.

Management (02 February 2016) did not comment on the delay in implementation of CMS.

The significant delay in implementation of the intended CMS of M/s Sabre resulted in non-adherence to time targets set by DGCA and implementation of an inferior interim system without a clear road map for completion of the Sabre-CMS.

MoCA in their reply (September 2016) stated that the ARMS CMS had to be adopted as a stop gap arrangement due to inability of the Sabre CMS system to meet CAR implementation timelines of DGCA. Sabre, when approached for CMS Implementation, informed about the withdrawal of CMS offered by them earlier and about the development of a new CMS System, which was under evaluation by AIL.

Absence of timely follow-up by AIL and penalty clause for delays in the Contract resulted in non-implementation of Sabre CMS package till date.

10.6 Implementation of Flight Planning System (FPS)

IATA in its Fuel Efficiency Gap Analysis (FEGA) (August 2008) had inter alia recommended a modern Flight Planning System (FPS) for AIL which would enable savings of around USD 55 million per year on account of reduced fuel cost. AIL signed an agreement with M/s. FWZ in March 2009 for implementing FPS and the user acceptance test (UAT) was scheduled to be conducted on 1 April 2010. The FPS is, however, yet to be fully implemented (February 2016). The delay in implementation of FPS was mainly attributable to the technical glitches faced by M/s. FWZ in the course of implementation.

The report (March 2013) of the Dholakia Committee on 'Cost Saving and Resource Optimization in Air India' had brought out that during 2011-12, a savings of ₹110 crore was achieved due to the "Flight Planning and Dispatch" component. The significant delay in implementation of FPS needs to be viewed in the context of partial achievement of anticipated savings.

MoCA, while stating in their reply (September 2016) that all Air India Flights are planned with the new FPS, had also detailed the plans for integration of FPS with the existing IT systems in the future. MoCA further stated that the exchange of data with the existing IT systems was pending due to technical issues.

The reply of MoCA has, however, not addressed the significant delay in implementation of FPS.

AIL, while entering into a contract with the solution provider for Central Planning and Control System (CPCS) did not make adequate efforts to negotiate an appropriate settlement of past dues (receivables) from the latter resulting in an opportunity for cost reduction being lost. Besides, the contract neither had a schedule for completion nor did it penalise delays.

Three out of five modules of Network Planning and Scheduling (NP&S) system were not being utilised despite their implementation as early as May 2010-July 2010. AIL failed to derive the full benefit of the profit manager module on account of problems in data procurement and non-availability of skilled manpower for its operation when the data became available. AIL did not make adequate efforts in development and retention of trained manpower for complete utilisation of the sophisticated NP&S Tools.

Though the urgent procurement of CPCS was meant to streamline the operations of AIL with a view to tap the opportunities presented by the Commonwealth Games (October 2010), there have been delays in the implementation of Crew Management System (CMS), a key component of CPCS, forcing AIL to adopt an alternate inferior solution as an interim measure.



Chapter 11 – Operational Performance

Cabinet Committee on Economic Affairs (CCEA) as well as the Master Restructuring Agreement (MRA) executed between Air India Limited and lender banks fixed the milestones for operational efficiencies to be achieved by the AIL by March 2015. The achievement of targets fixed for Passenger Load Factor, Yield and On Time Performance are discussed below:

11.1 Passenger Load Factor

Passenger Load Factor is revenue passenger kilometers flown as a percentage of seat kilometers available. As per the milestone approved by the CCEA as well as the MRA executed between Air India Limited and lender banks, the Company should achieve the network PLF of 73 percent by FY 2015 and 75 percent in FY 2020.

Comparison of Passengers Load Factors (PLF) actually achieved vis-à-vis approved TAP/FRP is as follows:

Table 11.1: TAP Target vs Achievement of PLF

(In percentage)

Aircraft Type	2011-12		2012-13		2013-14		2014-15		2015-16	
	T	A	T	A	T	A	T	A	T	A
B-747-400	64.9	70	65.9	71.4	-	75	-	75.7	-	65.0
B-777-200LR	67.9	67.8	69.9	69.2	71.9	69.8	73.9	79.2	74.4	74.0
B-777-300ER	65.1	66.3	67.1	72.9	69.1	73.4	71.1	72	71.6	76.4
B-787-800	69.4	-	71.4	76.3	73.4	71.5	75	71.9	75.0	74.0
A-310-300	-	58.4	-	-	-	-	-	-	0.0	-
A-330-200/300	67.9	61.5	71.9	67.7	75	69.2	-	79.8	-	-
A-340	-	-	66.8	-	70.8	-	74.8	-	75.0	-
Avg. PLF – WB	66		68.7		71.4		73.3	72.3	73.5	74.5
A-319	72.5	74.5	73.2	75.5	74.0	77.1	74.7	79.4	75.2	79.1
A-320	67.5	68.5	68.2	68.7	69.0	74.8	69.7	75.1	70.5	76.6
A-321	70.9	72.4	71.7	75.5	72.4	76.3	73.2	78.7	73.7	78.4
A-320-IS	71.0	-	71.8	-	72.5	-	73.3	-	74.0	-
Avg. PLF-NB	70.0	71.8	70.8	74.0	71.6	76.2	72.5	77.8	73.2	78.0
AVG (WB & NB)	67.6		69.5		71.5		73	74.4	73.4	75.8

T = Target as per TAP A = Actual as per TAP team - Indicates fleet not available
Blank indicates data not provided by AIL

It can be seen from the above table that overall target of 73 percent by 2015 and 73.4 percent by 2016 had been achieved by AIL. However, the target in respect of wide body aircraft had not been achieved as there was shortfall in achievement of individual targets in case of B-777-200 LR and A -330 in the years 2011-12, 2012-13, 2013-14 and 2015-16 and B-787-800 in the year 2013-14, 2014-15 and in 2015-16.

Detailed analysis of PLF on various services on test check basis (both international and domestic services) for the period 2012-13 to 2015-16 revealed the following:

- The PLF for First class was below 23 *percent* on the international routes such as Delhi-New York & vv, Amritsar-Delhi-London & vv, Hyderabad-Delhi-Chicago & vv, Riyadh-Mumbai, Riyadh-Calicut, Riyadh-Delhi and Jeddah-Mumbai. In 2015-16, Mumbai-Riyadh & vv, Kochi-Riyadh & vv, Delhi-Riyadh & vv, Trivandrum-Riyadh & vv, Mumbai-Jeddah & vv, Kochi-Jeddah & vv, Mumbai-Hyderabad-Jeddah & vv routes belonged to this category.
- The PLF in Business class was below 15 *percent* on the International routes such as Kolkata-Yangon & vv, Delhi-Dhaka, Delhi-Kabul, Varanasi-Kathmandu, Chennai - Bangalore-Trivandrum-Mali & vv, Damam-Delhi, Ahmedabad-Mumbai-Muscat, Muscat-Mumbai and in 2015-16 Chennai-Muscat & vv and Mumbai-Muscat & vv.
- PLF in Business class in respect of domestic services was very low on routes such as Mumbai -Indore-Delhi & vv, Mumbai-Ahmedabad, Mumbai -Kolkata, Delhi-Vadodara, Delhi -Jammu- Srinagar, Delhi -Pune, Chennai-Kochi, Chennai -Hyderabad and Chennai -Mumbai. In 2015-16 Mumbai- Kochi & vv, Mumbai-Rajkot & vv and Calcutta – Durgapur –Delhi & vv belonged to this category.

Management stated (10 February 2016) that even though the schedule of operations were finalised and announced, the short term changes in the scheduled operations were necessitated due to engineering and operational requirements. These changes in turn necessitate a change in aircraft and day to day changes to ensure scheduled operations. Because of this, planned aircraft would be substituted with aircraft having business class or higher capacity in business class with insufficient time to maximise the passenger carriage which results in lower PLF. Further deployment of Wide Body aircraft on domestic legs of International flight to offer a seamless product to long haul international passengers results in lower PLF due to lack of demand during certain period to utilise the full wide body capacity.

MoCA in its reply (06 September 2016) stated that

1. AIL achieved the network yield vis-a-vis the target set as per TAP/FRP.
2. There was improvement in performance of PLF in 2015-16 as compared to 2014-15 on overall combined basis and for combined Business class in services on India-USA sector.
3. Proposal to convert the first class to Business class was not considered in view of the cost implications, time involved in grounding of aircraft and time required for obtaining certification.

The reply of MoCA is silent on PLF and on the improvement in PLF of first class on the India-USA sector. Further, the change in deployment of planned aircraft on domestic as well as international sector were necessitated due to failure of the company to adequately address the issues related to Engineering and Operational requirements which resulted in grounding of aircraft, as discussed in Chapter 5. Thus, the fact remains that the lesser occupancy in first class with inability to convert these seats to Business class and the non-availability of narrow body aircraft which compelled AIL to divert wide body aircraft on the routes planned for narrow body aircraft resulted in lower PLF apart from increased cost of operations.

11.2 Network Yield

Network Yield is revenue earned per passenger kilometer. TAP targets relating to yield indicated that the Company would achieve average network yield of ₹3.76 (WB-3.36 and NB-4.39) in FY 2015. In addition, the milestones approved by CCEA and the MRA executed between Air India Limited and lender banks stated that AIL should achieve network yield higher of that envisaged in the Financial Restructuring Plan or five *percent* points less than the Network Yield of market leader in the domestic and international market by the Fiscal Year ending on 31 March 2013. AIL was also expected to achieve target of three *percent* points less than the Network Yield of market leader in the domestic & international market during and from the Fiscal Year ending on 31 March 2013.

Comparison of network yield actually achieved vis-à-vis envisaged TAP-FRP is indicated below:

Table 11.2: Achievement of Yield vis-à-vis Targets in TAP

(In ₹- Revenue per KM)

Aircraft Type	2011-12		2012-13		2013-14		2014-15		2015-16	
	T	A	T	A	T	A	T	A	T	A
B-747-400	2.91	2.91	3.06	3.55	3.21	3.61	3.37	4.37	3.38	4.17
B-777-200 LR	3.21	3.1	3.37	3.49	3.54	3.52	3.55	4.66	3.55	3.87
B-777-300 ER	2.7	2.87	2.84	3.1	2.98	3.32	3.13	3.5	3.14	3.46
B-787-800	3		3.15	4.1	3.31	3.35	3.48	3.38	3.49	3.38
A-310-300	3.28	2.75	3.45	-	3.55		3.55	-	3.55	-
A-330-200/300	2.92	2.85	3.06	3.58	3.22	3.34	3.38	3.21	3.39	-
A-340	3	-	3.15	-	3.31	-	3.48	-	3.49	-
Wide Body Yield	2.89		3.06		3.23		3.36	3.49	3.36	3.46
A-319	5.04	5.48	5.14	6.05	5.24	6.33	5.35	6.1	5.37	5.72
A-320	4.07	4.76	4.15	5.77	4.23	5.52	4.32	5.04	4.34	4.53
A-321	3.88	4.66	3.96	5.99	4.04	6.21	4.12	5.31	4.14	4.64
A-320-IS	3.81	-	3.92	-	4.04	-	4.16	-	4.18	-
Narrow Body Yield	4.24	4.95	4.3		4.36	6.09	4.39	5.46	4.40	4.87
Wt. Avg AI	3.46		3.53		3.64		3.76	4.27	3.75	4.00

T= Target as per the approved TAP/FRP, A= Actuals
Blank indicates data not made available by AIL

- Indicates fleet not available

AIL achieved the overall target for Network Yield prescribed in TAP in 2014-15 and 2015-16. However individual targets were not achieved in case of B-777-200LR in 2011-12 and 2013-14, A-330 in 2011-12 and 2014-15 and in case of B-787-800 in 2014-15 and 2015-16.

As stated in the MRA, network yield should be higher of FRP or five *percent* less than that of the market leader. The AIL Management did not compare the network yield with market leader in its report to the Oversight Committee.

Management confirmed (10 February 2016) achievement of network yield vis-a-vis the target set as per TAP/FRP and stated that yields depend on market conditions (i.e. market size and capacity deployed) and capacity deployment was again based on optimising of resources

available with the airline. Certain routes reflected lower yields due to deployment of higher capacity aircraft and the need to fill up this increased capacity especially during lean seasons through lower fares, in order to optimise revenue.

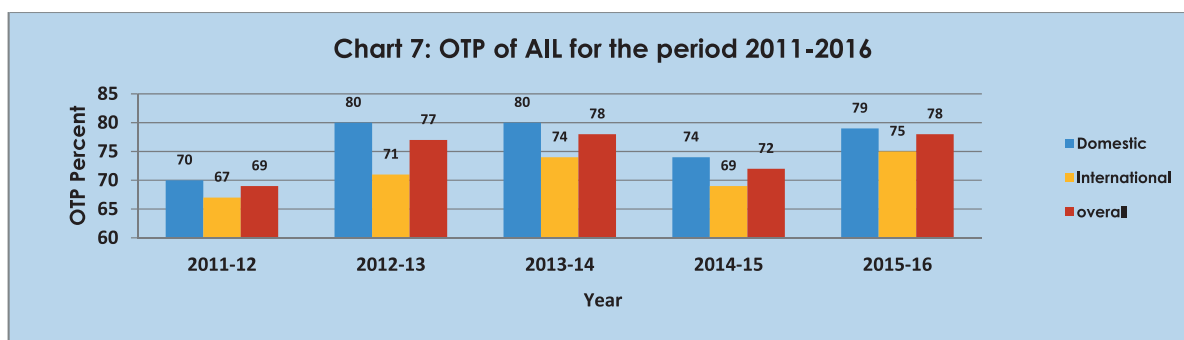
MoCA in its reply (06 September 2016) while confirming that airline had achieved the target as per TAP/FRP but did not reply on the failure to compare the network yield with market leader.

The reply has to be viewed against the fact that it was the non-availability of narrow body aircraft which constrained AIL to divert wide body aircraft on routes planned for narrow body aircraft, resulting in lower yields apart from increasing the cost of operations.

11.3 On Time Performance

On Time Performance (OTP) is a measure of reliability and is a key performance indicator for an airline. A flight is normally considered to be ‘on time’ if it departs within 15 minutes of its scheduled departure time.

The corporate OTP target of AIL is to ensure that 90 percent of flights depart within 15 minutes of schedule. As per the milestone approved by the CCEA as well as the MRA executed between Air India Limited and Lender’s Bank, the Company should achieve an overall OTP of 85 percent in 2012-13 and 90 percent by 2013-14. The actual on time performance of AIL during the period 2011-12 to 2015-16 was as indicated below:



Note: 2011-12 data is from October 2011-March 2012

Source: Data received from Integrated Operations Control Centre (IOCC)

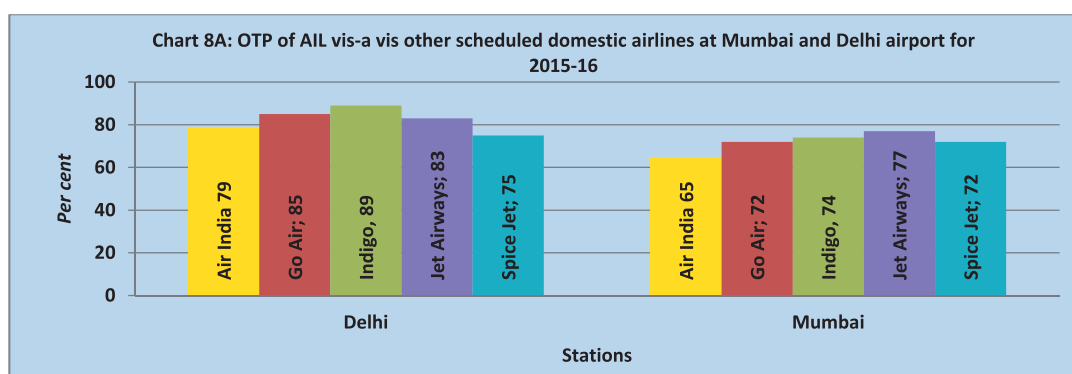
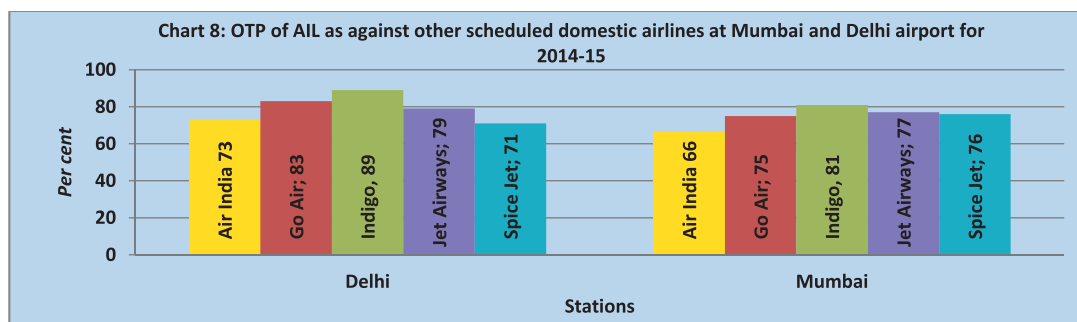
As can be seen from the table above, the targets of 85-90 percent in OTP had not been achieved. While OTP had improved over 2012-13 and 2013-14, it declined sharply in 2014-15 to an overall 72 percent, with international OTP at a low of 69 percent. The overall OTP rose to 78 percent in 2015-16 with domestic OTP at 79 percent and international at 75 percent.

In order to analyse the poor performance of AIL on OTP, Audit reviewed the OTP of AIL at Mumbai and Delhi airports for the year 2014-15. The OTP at these airports were selected for review on account of the following:

- Delhi is the busiest airport for AIL flights besides being its hub. Mumbai is the second busiest airport and together they cater to 39 percent of the flights AIL operates. OTP in these airports therefore had the most significant impact on overall OTP of the airline.

11.3.1 OTP of AIL vis-a-vis other scheduled domestic Airlines at Delhi and Mumbai airport during FY 2014-15 and FY 2015-16

OTP of scheduled domestic airlines are recorded by the operators of Delhi and Mumbai airports. The performance of AIL vis-à-vis other airlines is indicated in the graph below:



Source: Delhi and Mumbai Airport Operator's website

As can be seen, the performance of AIL had been lower than that of other domestic carriers. While AIL recorded the lowest OTP in Mumbai, it ranked just below the worst performer in Delhi in both FY 2014-15 and FY 2015-16.

MoCA informed (06 September 2016) that Air India had taken several steps to improve the OTP like recruitment of operating crew both for cockpit and cabin, grounding of classic aircraft in phased manner, leasing of new A-320 aircraft and review of the block timing.

While efforts taken by management to improve the OTP are appreciated, OTP of AIL for 2015-16, was still lower as compared to other domestic carriers at Delhi and Mumbai airports as shown in the above graphs.

11.3.2 Delay codes assigned by AIL to analyse OTP

AIL assigns codes to categorise delays in order to identify the reasons for such delay. The delay codes are recorded in the ‘On Time Performance Delay Code Handbook’ and cover codes 1 to 99, as summarised below:

Table 11.3 Delay codes of OTP in AIL

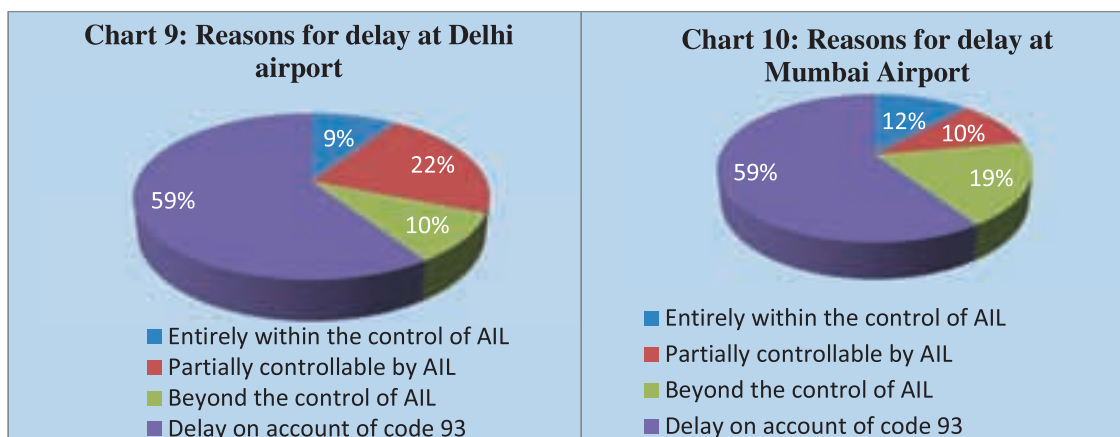
Code	Description	Controllable /NonControllable
01 to 10	Specific delays	<u>Entirely within the control of AIL</u> (excluding 51 to 54 which are Beyond the control of AIL)
11 to 20	Passenger and baggage	
21 to 30	Cargo and mail	
31 to 40	Aircraft and ramp handling	
41 to 50	Technical and aircraft equipment	
51 to 54	Damage to aircraft	
55 to 60	EDP/ automated equipment failure	
61 to 70	Flight operations and crewing	
71 to 80	Weather	
81 to 84	Air-Traffic flow management restrictions	
85 to 90	Airport and government authorities	Beyond the control of AIL
91 to 94 and 95 to 96	Reactionary	<u>Partially controllable by AIL:</u> Improvement can be done through better management.
93	Reactionary:- Delays attributed to delayed arrival of the aircraft from previous sector(s)	<u>Partially controllable by AIL:</u> Improvement can be done through better management of departure of aircraft from previous locations due to controllable delays at previous sector to avoid late arrival of aircraft at next location.
97 to 99	Miscellaneous	Beyond the control of AIL like industrial action political agitation etc.

Within control of AIL	Beyond control of AIL	Partially controllable
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11.3.3 Analysis of OTP of AIL flights in Delhi-Mumbai-Delhi Sector

Audit carried out an OTP analysis (Annexure-10 and 11) on the basis of the delay codes, for 50 percent of the domestic flights of AIL in the Delhi-Mumbai-Delhi (domestic) sector for a period of one year (2014-15). Eight out of 15 Delhi-Mumbai flights and seven out of 13 Mumbai-Delhi flights were studied. These flights showed a low OTP for periods ranging between five to twelve months.

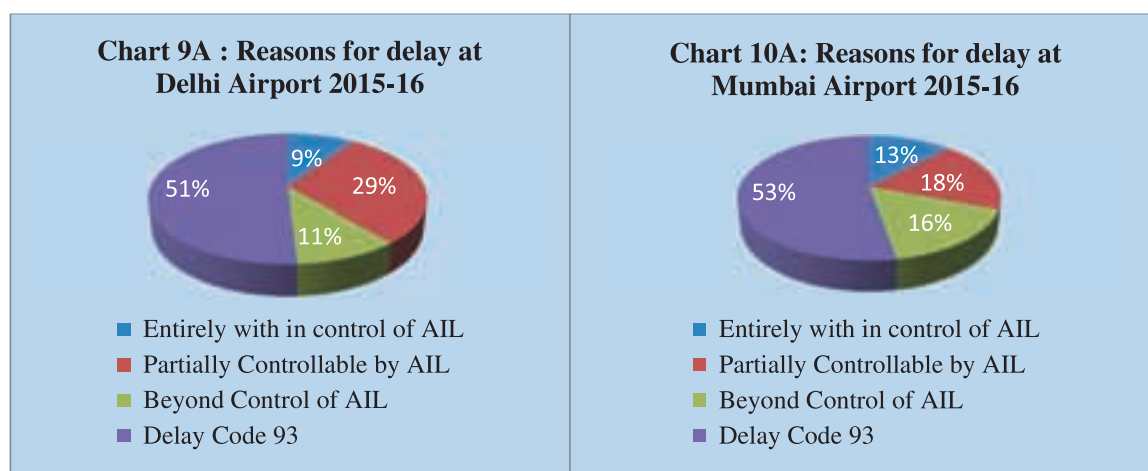
(A) The results of the analysis for 2014-15 are indicated in the charts (9 and 10) below:



The following facts emerge from the charts for 2014-15 above:

- Nine percent of the delay at Delhi airport and 12 percent of the delays at Mumbai airport was entirely within the control of AIL. Another 22 percent of delays in Delhi and 10 percent of delays in Mumbai were partially attributable to AIL.
- Significant reason for delays (representing more than half the delays i.e. 59 percent) were delayed arrival of the aircraft from previous sector(s).

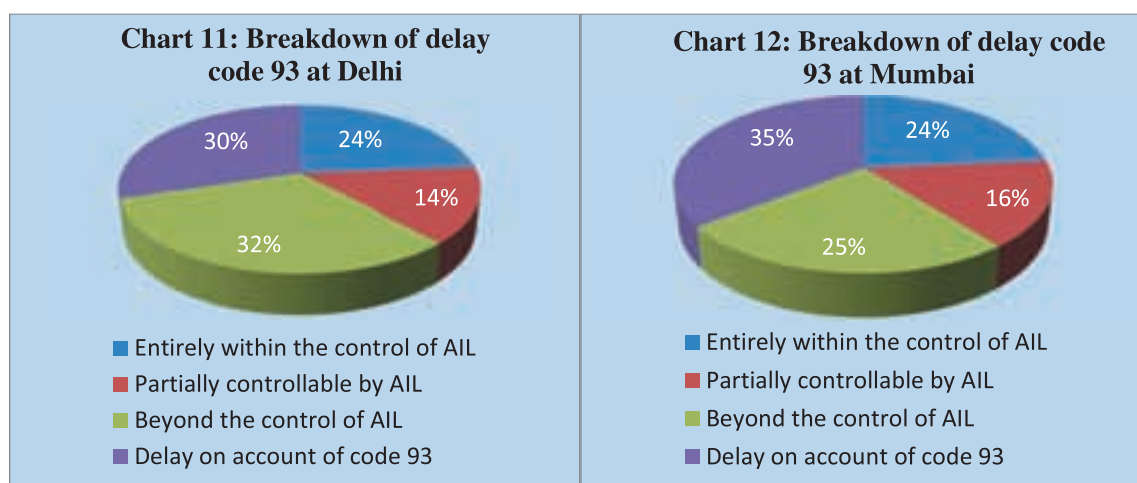
Similar OTP analysis (Annexure-10A and 11A) for the year 2015-16 was carried out in audit. The results of the analysis for 2015-16 are indicated in the charts (9A and 10A) below:



The above charts and information in Annexures (10A and 11A) indicate that delay percentage within control of AIL remained almost same in 2015-16 as compared to 2014-15. However, there was significant increase in delays which were partially attributable to AIL as 29 percent of delays in Delhi and 18 percent of delays in Mumbai were partially attributed to AIL. A case in point was Delhi- Mumbai AI-317 (having an OTP of 40 percent in 2015-16) where half of the delays (62 out of 125 delays) were due to waiting for crew from other AIL flights. Similarly Mumbai – Delhi flight AI-310 (having an OTP of 62 percent in 2015-16) was delayed 35 times (out of 79 delays) waiting for crew.

A significant reason for delay, (representing more than half of the delays in 2015-16) was delayed arrival of the aircraft from previous sector(s).

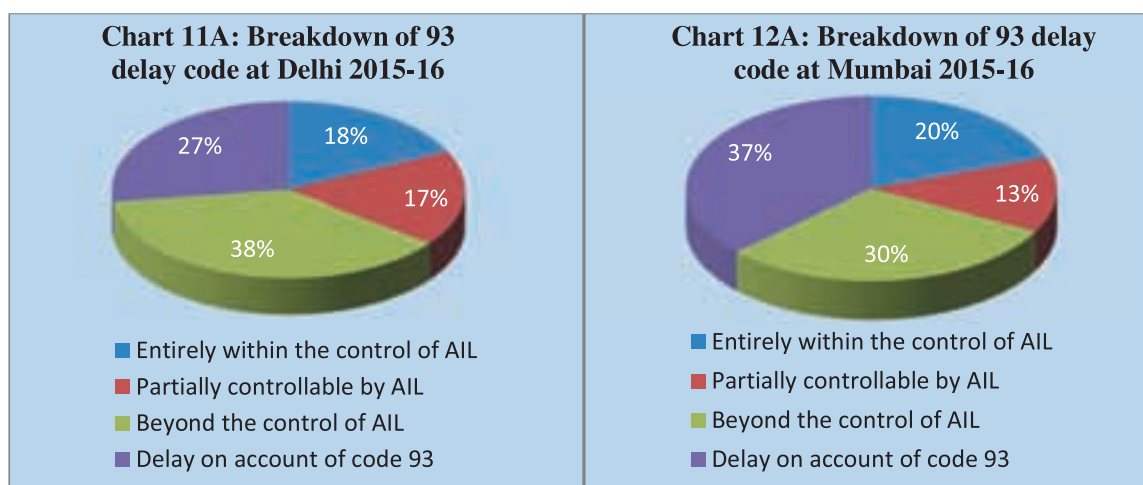
(B) Considering the large effect of Code 93 - Delayed arrival of aircraft, Audit analysed these delays by studying the reasons for delayed arrival of the aircraft. For this purpose, Audit tracked the aircraft registration throughout their rotations on a daily basis to arrive at the reasons for delay in the previous sector(s). The analysis was done for the year 2014-15. The delays were traced to their origin and reasons for the same recorded as per the delay codes explained at Para 11.3.2 above. The results of this analysis are summarised in the chart below:



The following issues emerge from the analysis:

- 24 percent of the delays (in both ex-Mumbai and ex-Delhi sectors) indicated under code 93 were within the control of AIL in a previous sector.
- Another 14 percent of delays in Delhi and 16 percent of delays in Mumbai were partially controllable by AIL in a previous sector.

Results of similar analysis⁶³ for the year 2015-16 are summarized in charts given below:

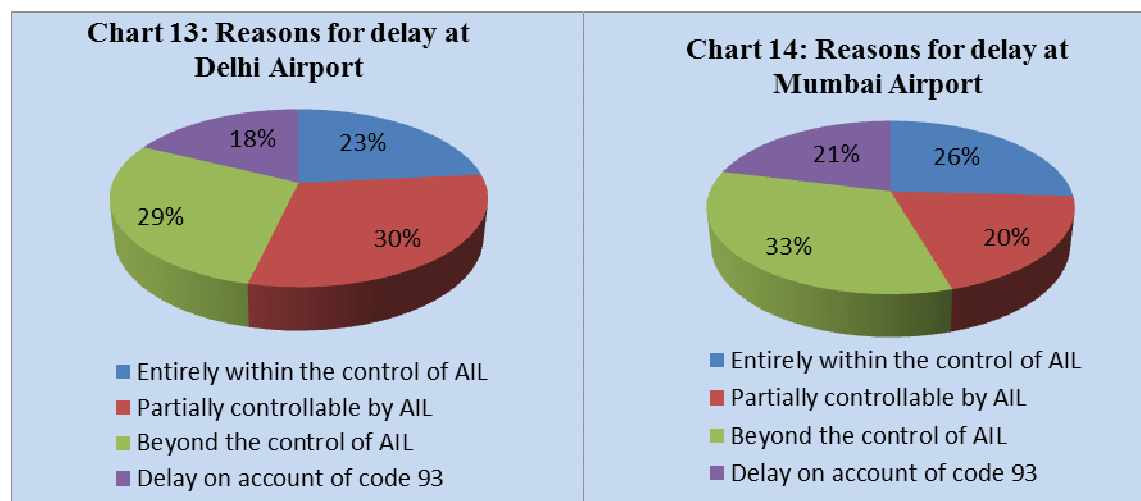


- As can be seen from the charts, 18 percent of the delays in ex-Delhi sectors and 20 percent in Ex-Mumbai sectors indicated under code 93 were within the control of AIL in a previous sector.

⁶³ Reasons for delays in relating to cases of Code 93 -Delayed arrival of aircraft were analysed to verify actual reason of delay in departure from previous airport.

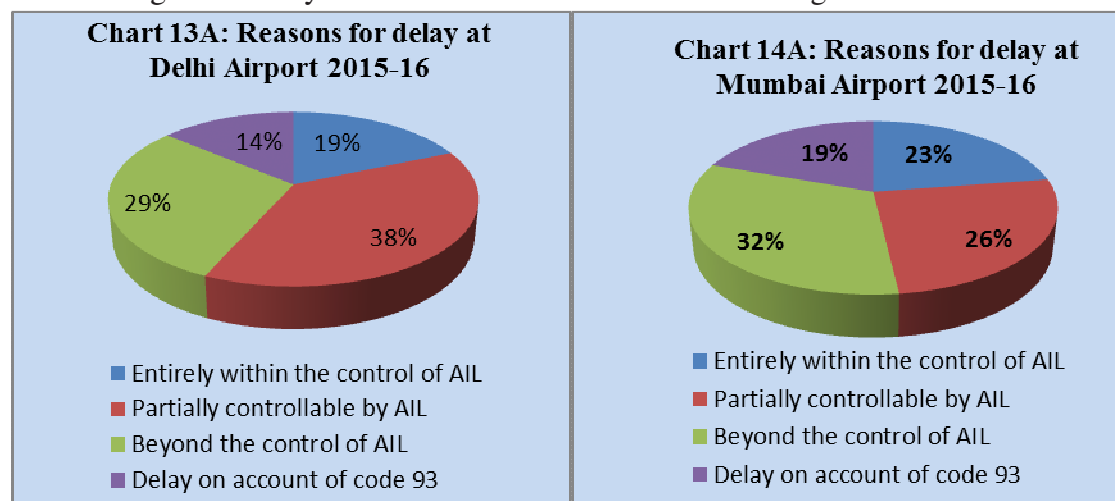
- Another 17 percent for Delhi and 13 percent for Mumbai were partially controllable by AIL in a previous sector.

(C) The consolidated percent after incorporating the analysis of delay in earlier station, the overall delays during 2014-15 in the selected flights, categorised into those within the control of AIL and those partially within the control of AIL and those beyond the control of AIL as indicated in the chart below:



The chart indicates the following:

- 23 percent of the delays in Delhi and 26 percent of the delays in Mumbai airport were entirely attributable to AIL. Another 20 percent to 30 percent of the delays were partially controllable by AIL.
- The significant balance of reactionary delays due to late arrival of aircraft (code 93) was on account of non-operation of scheduled aircraft and insufficient ground time availability. Similarly the consolidated position of delay after including delays in earlier sector for selected flights for the year 2015-16 are summarized in charts given below:



The Charts for 2015-16 indicate that:

- 19 percent of the delays in Delhi and 23 percent of the delays in Mumbai airport were attributable entirely to AIL. However delays which could be partially controllable by AIL increased significantly to 38 percent at Delhi and 26 percent at Mumbai.

- This analysis indicate that considerable improvement in OTP, could be achieved by AIL through better operational management.

Management stated (February 2016) that:

- If there was a primary delay in departure of the aircraft it would affect the subsequent flights which are termed as reactionary delays and that breaking down these delays and re-apportioning them as controllable might not be justified.
- Airline operation was a network operation and at times incoming crew of a flight were required to operate another aircraft for another flight on arrival. Similarly passengers arriving on a particular flight were sometimes required to be connected to another outbound flight. Delay to incoming flight could have a reactionary effect on another outbound flight on account of aircraft, crew, passengers etc.
- Sometimes reactionary delays could occur even without a primary delay. This occurred when a flight departed on time but reached its destination late because of delay en-route due to ATC, airport congestion, weather clearance etc.
- Management pointed out that scheduled aircraft or crew might not be available on the day of operation which led to disturbance in scheduled rotation of aircraft as well as departure times.

The reply of the Management needs to be viewed in the following context:

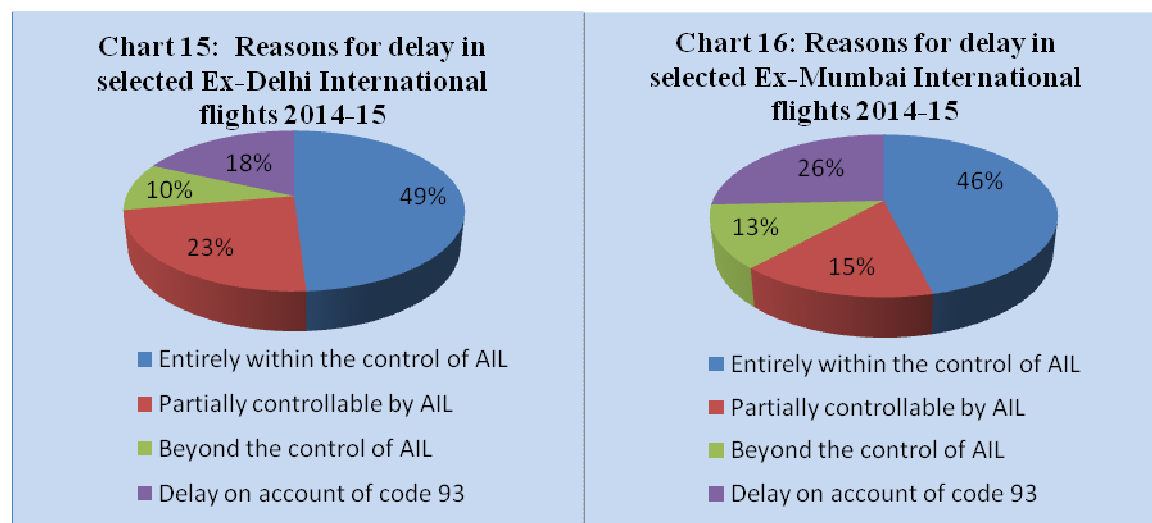
- i) AIL had suggested to the Oversight Committee (monitoring TAP) that its OTP target needs to be reduced, citing its status as a network carrier. This, however, had not been agreed to by the Oversight Committee (August 2013, January 2014 and March 2015). It was therefore important that the factors affecting OTP within the control of AIL were addressed for a better OTP achievement of the airline.
- ii) The audit analysis of reactionary delays (delay code 93) had considered only cases of delay which were either entirely or partially controllable by AIL. The proportion of primary delays at 24 *percent* indicates that considerable improvement in OTP could have been effected by better operational management of AIL.
- iii) As stated by the Management, primary delays had a cascading effect on subsequent flights. If primary delays were controlled by the airline across the network, reactionary delays could be significantly reduced leading to better OTP.

MoCA did not offer any reply (06 September 2016).

11.3.4 OTP analysis (2014-15) of AIL flights in Delhi and Mumbai Airports: International Sector

AIL operated an average of 40 international flights from Delhi and 13 from Mumbai. Audit analysed the OTP of 50 *percent* (19 ex-Delhi and seven ex-Mumbai flights) of these flights. The flights with lower OTP operating to major international destinations were selected for the audit analysis. It was seen that selected flights showed low OTP for period ranging from 5 to 12 months. Thus the delays were persistent and not cyclic.

The delays in ex-Delhi and ex-Mumbai international flights were allocated to the delay codes (as explained at para 11.3.2) and classified as those entirely within the control of AIL, those partially within the control of AIL, those beyond the control of AIL and reactionary delays due to late arrival of aircraft. The results (Annexure-12 and 13) are shown in the chart below:



As seen from the chart, delays within the control of AIL were more significant (nearly half) in case of international flights. The reactionary delays were large for two ex-Mumbai flights (Flight no AI-983 Mumbai–Dubai and AI 985 Mumbai –Muscat). These delays were again analysed after considering the aircraft rotation and analysis of delay in arrival of the aircraft for the earmarked international flight. It was noticed that a part of these reactionary delays were also attributable to AIL.

Audit observed that, crew related problems were a major reason for delay at Delhi. A case in point was the Delhi-Sydney-Melbourne flight, AI-302 (having an OTP of 48 percent in 2014-15) had been delayed 93 times (out of 182 delays) due to crew. In some cases, flights were delayed waiting for passenger and crew from other connecting AIL flights which were delayed. An example was the Delhi-Hong Kong flight, AI-310 (having an OTP of 49 percent in 2014-15) which was delayed 47 times (out of 108 delays) awaiting passenger and crew from other AIL flights.

Management did not specifically respond to the observation.

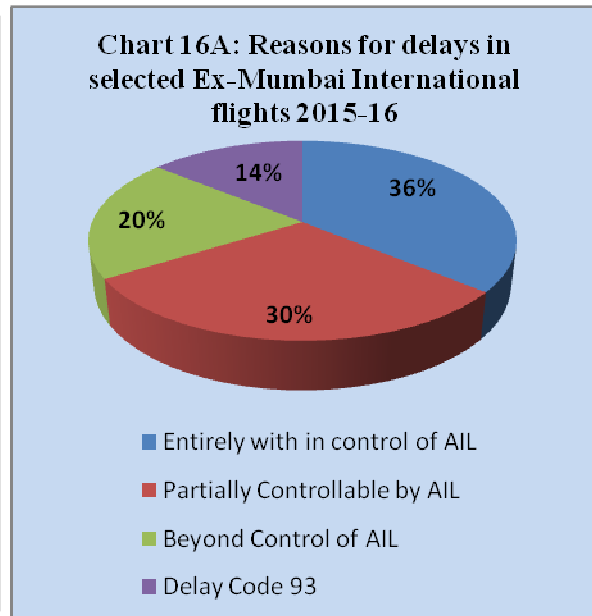
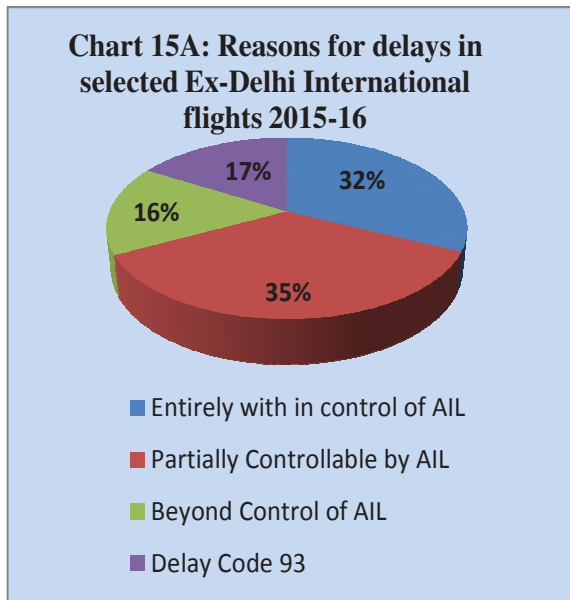
MoCA replied (06 September, 2016) that:

- Air India flight AI-983 Mumbai-Dubai and AI-985 Mumbai-Muscat operate at the end of the day and have to absorb all accumulating/cascading delays of the day.
- Pattern of operation of Delhi-Sydney-Melbourne flight had been amended to take care of crew related delays. There were two different types of aircraft deployed on this route resulting in high delays and Air India was attempting to address this issue.

The reply of MoCA regarding flights AI 983 Mumbai –Dubai and AI 985 Mumbai –Muscat needed to be viewed in the light of the fact that a part of the reactionary delays of these flights were also attributable to AIL. While efforts being taken by management to improve

the operations of Delhi-Sydney-Melbourne flight are appreciated, persistent delays point to need for continuous corrective action by the airline for improving On-time Performance.

11.3.5 OTP analysis (2015-16) of AIL flights in Delhi and Mumbai Airports: International Sector



As seen from the charts above and information in Annexure-12A and 13A, delays within the control of AIL were again significant (nearly one third) in case of international flights in 2015-16. The reactionary delays were again high for two ex-Mumbai flights (Flight no AI 983 Mumbai –Dubai and AI 985 Mumbai -Muscat) in 2015-16 as well. These delays were analysed after considering the aircraft rotation in previous sectors. The analysis indicates that part of these reactionary delays were fully or partially attributable to AIL.

Delays partially within the control of AIL increased significantly in 2015-16 (constituting nearly one third of delays) both in Delhi and Mumbai. A case in point is Delhi-Hong Kong AI-310 flight (having an OTP of 52 percent in 2015-16) which was delayed 81 times (out of 101 delays) due to waiting for passengers and crew. Similarly Mumbai-Abu Dhabi AI-945 flight (having an OTP of 58 percent in 2015-16) was delayed 89 times (out of 153 delays) due to waiting for crew from other incoming AIL flights.

11.4 Cancellation of flights

Cancellation of flights cause inconvenience to passengers and inversely impact the brand image of the airline. Summary of reasons for cancellation of flights at Delhi and Mumbai stations for the year 2014-15 is as follows:

Table 11.4 Reasons for cancellation in Mumbai and Delhi

Reason for Cancellation	Station	
	Delhi	Mumbai
Aircraft maintenance	142	107
Crew	30	20
Scheduling Constraint	27	27
Weather	31	6
Commercial	7	4
Miscellaneous	27	17
Other	21	8
Total	285	189

Source: Data received from AIL/IOCC

From the information in the table above it was observed that almost 50 percent of flights were cancelled due to aircraft problems followed by crew related problems at Delhi airport. At Mumbai airport, major reason for flight cancellation was aircraft related problems.

In 2015-16 also aircraft maintenance and crew related problems were the main reasons for cancellation of flights as shown in table given below:

Table 11.4A Cancellation reasons in Mumbai and Delhi 2015-16

Reason for Cancellation	Station	
	Delhi	Mumbai
Aircraft Maintenance	81	62
Crew	45	38
Scheduling Constraint	4	6
Weather	22	6
Commercial	3	1
Miscellaneous	16	8
Other	43	16
Total	214	137

Source: Data received from AIL/IOCC

It was also observed in audit that although these flights were not operated, they were not categorised as cancelled by the Integrated Operation Control Centre (IOCC).

Management in its reply (February 2016) stated that flights were not treated as cancelled in the IOCC data because they were treated as combined operations. MoCA replied (06 September 2016) that flights are combined as part of rescheduling when a combinable load existed in order to save costs and resources. Because the passengers of two combined flights were taken into one, treating the other flight as cancelled would result in cancellation of booking. In view of the above, Air India did not treat such as cancelled.

The reply is not acceptable as audit observation was on the reporting of number of cancelled flights and not on how the passenger booking was handled. If two scheduled flights were combined, then in place of two scheduled flights only one was operated and the other flight would invariably be treated as cancelled.

11.5 Rescheduling of flights

Schedules for flights, both domestic and international, were prepared on half-yearly basis which are approved by Director General of Civil Aviation (DGCA). These schedules could be altered during actual operation by the airlines. A flight could be rescheduled more than three days in advance by the Market Planning Department of AIL. The responsibility of re-scheduling flights within three days to one day of its original flight schedule, was with the Integrated Operation Control Centre (IOCC). Such re-scheduling needed to be approved by DGCA/airport operator.

Audit noticed that a high percentage of AIL flights were rescheduled within the short three day window as seen from the table below:

Table 11.5: Details of rescheduling of flights

Year	Total no. of flights	No. of flights rescheduled	Percentage of flights rescheduled
2012-13	134851	18376	13.62
2013-14	132275	14385	10.87
2014-15	132559	18199	13.73
2015-16	124285	21555	17.34

Source: AIL/IOCC

Figures for 2012-13 to 2014-15 include services of AIL + 9I i.e. Alliance Air figures for 2015-16 indicate for AIL only.

As seen from the above table, the percentage of re-scheduling has increased since 2014-15. Audit analysed the reasons assigned by IOCC for re-scheduling. It was noticed that some of the reasons for rescheduling were within the control of AIL while others were beyond their control as given below:

Table 11.6: Reasons for re-scheduling of flights

Reasons within control of AIL	Reasons beyond control of AIL	Reasons which may or may not be within AIL's control
<ul style="list-style-type: none"> Planned aircraft maintenance Cabin/cockpit crew constraints Aircraft defects Scheduling constraints Operational reasons Marketing/commercial issues Ground crew/others Aircraft and ramp handling Passenger and baggage handling 	<ul style="list-style-type: none"> Weather Air traffic flow management restrictions Airport related problems Government requirements Un-scheduled requirement 	<ul style="list-style-type: none"> Reactionary reasons Reactionary to technical * change Miscellaneous

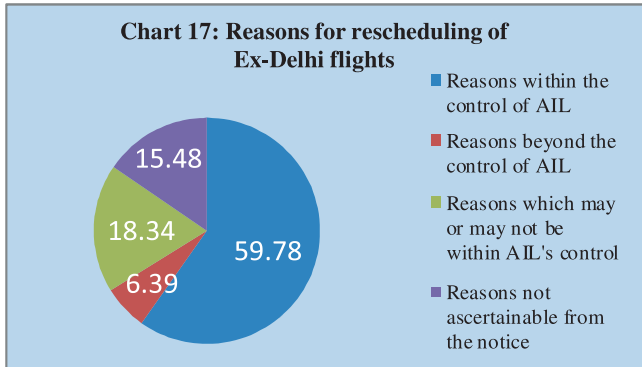
*Aircraft is grounded due to technical reasons and aircraft equipment defects resulting in consequent delays subsequent flight operations

Audit analysed the reasons for re-scheduling of ex-Delhi and ex-Mumbai flights during 2014-15 and 2015-16 the results for which are given in the succeeding paragraphs.

11.5.1 Analysis of rescheduling of Ex-Delhi Flights

Audit noticed that the reason for re-scheduling had been recorded as ‘miscellaneous’ in 61 percent of the cases in the report generated by IOCC. In order to appreciate the actual reasons for rescheduling, Audit studied the re-scheduling notices issued by IOCC which recorded the actual reasons. These analysis indicate that, for the year 2014-15 nearly 59.78 percent of the

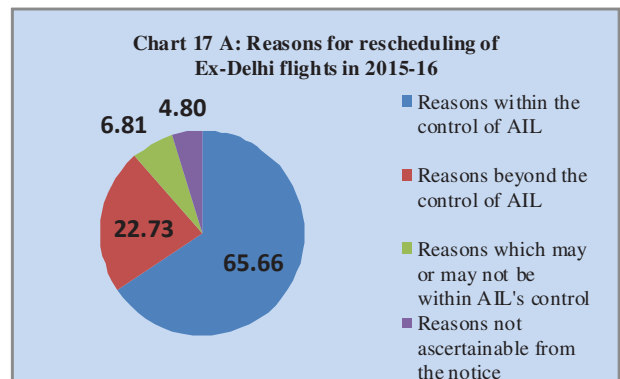
re-scheduling was on account of reasons within the control of AIL as shown in the chart alongside.



An analysis of these 59.78 percent of cases of rescheduling indicated that planned aircraft maintenance accounted for the bulk of the rescheduling with its share of 15.81 percent. The other reasons for re-scheduling were cabin

crew constraints (9.79 percent), cockpit crew constraints (8.21 percent), aircraft defects (7.17 percent), scheduling constraints (6.13 percent), and passenger/baggage handling (2.86 percent).

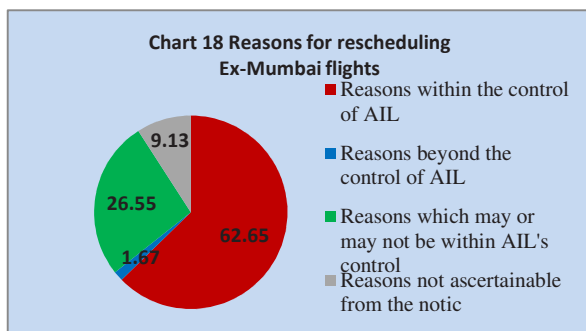
In 2015-16, the reason for re-scheduling had been recorded as ‘miscellaneous’ in 53.54 percent of the cases in the report generated by IOCC. Analysis of these reasons revealed that 65.66 percent of the re-scheduling had been due to reasons within the control of AIL (Chart 17 A). A further review of these reasons indicated that planned aircraft maintenance, cockpit crew constraints and scheduling constraints were the most significant reasons accounting for 19.70, 15.37 and 16.84 percent respectively.



11.5.2 Analysis of rescheduling of Ex-Mumbai flights

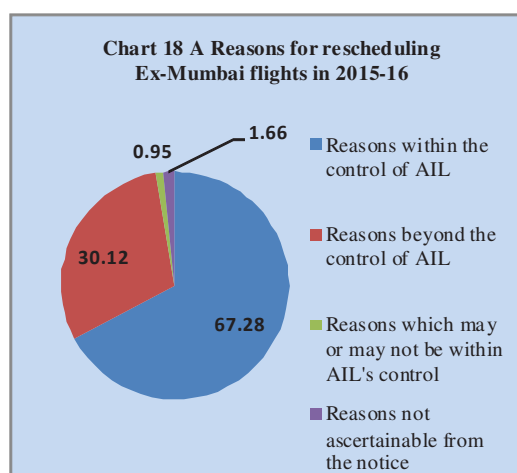
During 2014-15 a significant percentage (40 percent) of ex-Mumbai flights had recorded ‘miscellaneous’ as the reason for re-scheduling. Audit analyzed the reasons of re-scheduling of ex-Mumbai flights for the year. As seen from the chart, 62.65 percent of the re-scheduling

had been due to reasons within the control of AIL. A further break-up of these reasons indicated that cockpit crew constraints at 23.6 percent was the most significant reason. The other reasons included planned aircraft maintenance (10.69 percent), scheduling constraints (10.4 percent), aircraft defects primary (6.47percent), cabin crew constraints (4.29 percent),



passenger and baggage handling (1.35 percent).

During 2015-16, the reason for re-scheduling had been recorded as 'miscellaneous' in 33.31 percent of the cases in the report generated by IOCC. Analysis of reasons revealed that 67.28 percent of the re-scheduling has been on account of reasons within the control of AIL (Chart 18 A). A further review indicated that cockpit crew constraints at 39.51 percent was the most significant reason. The other reasons included scheduling constraints (10.01 percent) & planned aircraft maintenance (6.76 percent).



Audit also noted that out of a total of 6989 flights rescheduled in 2014-15, consisting of 4239 ex-Delhi and 2750 ex-Mumbai flights, 6148 flights, representing 87.97 percent pertained to flights of A-320 family aircraft (A 320-1212, A-321-2690 and A-319-2246). 7.28 percent of the balance rescheduling, pertained to 787 Dreamliner fleet. Re-scheduling, was thus, more frequent in the narrow body fleet and Dreamliner fleet of AIL. In 2015-16, out of a total of 9857 flights rescheduled consisting of 5640 ex-Delhi and 4217 ex-Mumbai flights, 8752 flights, representing 88.79 percent pertained to flight of A-320 family aircraft, 7.5 percent of the balance rescheduling, pertained to 787 Dreamliner fleet.

Thus, rescheduling of services were largely within the control of AIL, as seen from the analysis of ex-Delhi and ex-Mumbai flights. It was also noticed that the airline did not have a mechanism to monitor/control rescheduling of its services.

Management in reply (02 February 2016) stated the following:

- Flights were re-scheduled when constraints in resources were foreseen for future dates. The passengers were informed regarding the re-scheduling through sms/telephone calls to enable them plan their journey. Hence, rescheduling actually helped the passenger by giving them an update about their flight.
- Re-scheduling may not only re-time⁶⁴ departure and arrival but also change the aircraft or fleet. Changes in actual operating pattern of aircraft may happen on the day of flight operation due to operational reasons. The 'movement manager' software in IOCC records the new reason over-writing the old one. As such, the accuracy of the assigned reason appearing in the database is limited by the feature of the software application. Besides, human error is not ruled out.

The reply needed to be viewed in the following context:

- The flights analysed by Audit had been rescheduled within a window of three days before actual scheduled departure. Re-scheduling with such a short notice to passengers was likely to cause problems for planning their trips and adversely affects the image of the Company.

⁶⁴ Rescheduling due to change in time as well as change in aircraft or fleet.

- AIL had accepted in reply that the accuracy of the reasons assigned for re-scheduling of flights might not be adequate. Considering the significant number of rescheduling in AIL and the lack of monitoring by the Company, there was an urgent need to ensure correctness of recorded data and suitable action thereon.

MoCA in reply (06 September 2016) informed that steps had been taken to record correct rescheduling code to reduce 'Miscellaneous' (MISC) code and the delays would be reduced with the increased availability of aircraft and crew. The reply of MoCA confirmed the audit contention about significant cases of recording of 'Miscellaneous' code as reason for rescheduling. However reply of MoCA was silent on the non-existence of mechanism to monitor/control rescheduling of its services.

11.6 Market share of AIL vis-à-vis competitors

The slots for domestic operations at domestic airports are distributed to major domestic Airlines. The prominent players in the Indian Domestic sector are Air India, Jet Airways, Indigo. The market share (passenger market share) of the major domestic airlines for the period from 2010-11 to 2015-16 are as given below:-

Table 11.7 Market share of passengers of AIL vis-a-vis competitors (in percent)

Airlines	2010-2011	2011-12	2012-13	2013-14	2014-15	2015-16
AIL	17.1	16.5	19.0	19.4	17.9	15.9
Jet Airways	18.4	19.2	19.4	18.6	17.7	18.8
Indigo	17.4	20.0	26.7	29.4	33.6	36.8

It is seen from the above that the market share of both AIL and Jet airlines had gone down in the year 2014-15 while that of Indigo had improved. The passenger market share of AIL decreased from 19.4 percent in 2013-14 to 17.9 percent in 2014-15 in the domestic sector. It further decreased to 15.9 percent in 2015-16.

11.7 International passenger carriage of AIL vis-à-vis competitors

Two Indian carriers, AIL and Jet Airways operate international flights on a network mode. A comparison of passenger carriage data of Air India and Jet Airways during the period from 2009-10 to 2014-15 indicated steady growth of Jet Airways.

Table 11.8 Passenger carriage data of AIL vis-a-vis Jet Airways

Airlines	Number of Passengers						Increase in six years	Percent Increase
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15		
Air India	4901547	4891564	4902524	4499656	5050570	5536428	634881	12.95
Jet Airways	3731947	4616790	5452828	5466421	5772868	6962388	3230441	86.56

Source: AIL

The growth in passenger traffic for AIL was 3.04 *percent* as against 54.69 *percent* of Jet Airways during the period from 2009-10 to 2013-14. The Gulf sector traditionally had been the most profitable sector for AIL. However, it is noticed that Jet Airways had emerged as a major player in this market too with a higher share than Air India. In Oman, where Indigo had commenced operations, it was observed that Indigo had overtaken Air India with its market share increasing significantly from 7.68 *percent* (2011-12) to 19.78 *percent* (2013-14) and to 20.94 *percent* (2015-16).

AIL has stated (02 February 2016) that it has not been able to match the capacity induction rate of Indian and foreign carriers due to which capacity share of AIL had reduced, resulting in declining market share. Now with B-787 aircraft the market share of AIL had increased with combined market share (of AIL and Air India Express ex-India) being 16.85 *percent*.

MoCA (06 September 2016) concurred with the views of management that AIL had not been able to match the capacity induction rate of other private airlines and hence their capacity share had declined. As such AILs capacity declined resulting in declining market share. Further for the international sector MoCA stated that most of the foreign carriers operating to/from India earned major share of their traffic to onward points from their hub airports. As such market share and capacity share on total market basis cannot be a realistic indicator for AILs competitive performance.

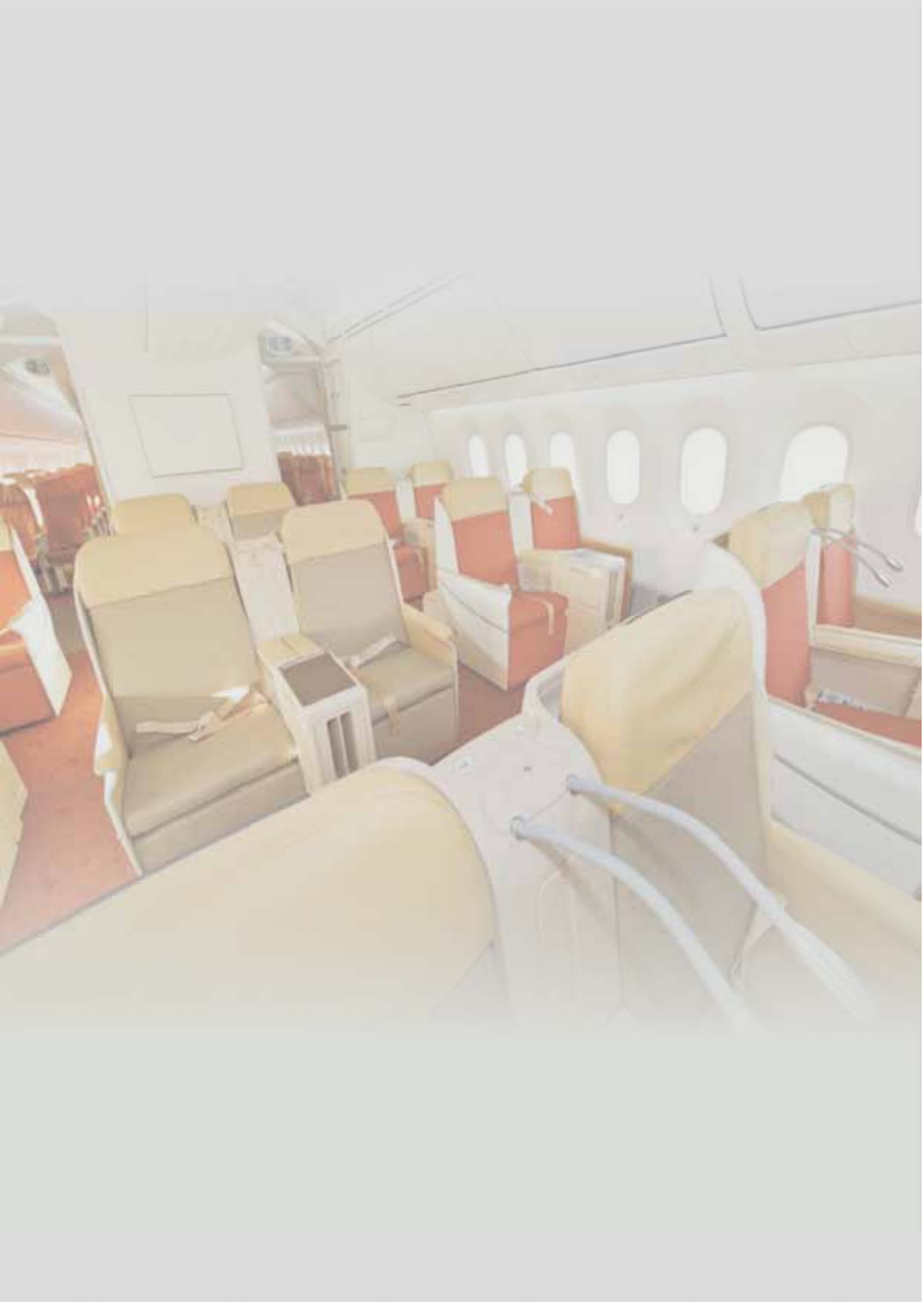
The reply corroborated the fact that during 2013-14 to 2014-15 the market share of AIL had reduced from 19.4 to 17.9 and further to 15.9 *percent* in 2015-16 and the passenger share had increased by only 3.04 *percent* compared to Jet airways passenger increase of 54.69 *percent* in 2013-14. Moreover even during 2014-15 though there was an improvement in AIL passenger carriage to 12.95 *percent*, the increase in Jet airways was higher i.e. 86.56 *percent*.

AIL was able to achieve its overall operational milestones of PLF and yield as envisaged in approved TAP. However, AIL was not able to achieve the targeted on time performance (OTP). OTP of AIL improved in 2012-14 over 2011-12 and then declined sharply in 2014-15. In 2015-16, OTP improved to the level of 2013-14.

Audit analysis indicated that nearly 25 *percent* of delays in Delhi-Mumbai-Delhi sector and nearly half the delays in international sector (ex-Delhi and ex-Mumbai) in 2014-15 were within the control of the airline. Similarly in 2015-16, delays within the control of AIL were 19 *percent* to 23 *percent* in Delhi-Mumbai-Delhi sector and nearly one third of total delays in International sector (ex-Delhi and ex-Mumbai). Audit noticed increase in partially

controllable delays both in domestic and International sector. These delays could have been avoided by better planning and co-ordination. Besides poor OTP performance, flights often had to be rescheduled within a short window of three days owing to aircraft and crew related problems, which were within the control of AIL.

The passenger market share of AIL in domestic market decreased from 19.4 *percent* in 2013-14 to 15.9 *percent* in 2015-16, while in international market the percentage of increase in AIL market share was marginal at 12.95 *percent* as compared to increase in carriage of Jet Airways (86.56 *percent*) during 2014-15.



Chapter 12: Conclusion and recommendations

Conclusion

The Turnaround Plan (TAP) and Financial Restructuring Plan (FRP) for AIL had been approved by the Government in April 2012 to improve the deteriorating financial position of the Company. The plan laid down operational milestones for its revival. During the period from 2012 to 2016, the operational revenues earned by the Company increased though not to the levels envisaged in the TAP-FRP. The costs have reduced particularly in 2014-15 and 2015-16 with the sharp fall in crude prices and transfer of staff to the two subsidiaries (MRO and GH). It was noticed that the airline had rationalised a number of international and domestic services and with reduction in variable costs, the variable costs had been recovered in 2015-16 in most routes (93 *percent* international and 80 *percent* domestic). Even as the efforts made by the Company are acknowledged, there were significant concerns on its future financial status, aircraft availability and deployment, HR policies, IT integration efforts which in turn had an impact on the overall operational performance of the airline.

The FRP intended, inter alia, restructuring the accumulated working capital loans of ₹22157 crore (as on 31 March 2011). It was assumed that with the implementation of TAP, additional revenue would be generated which coupled with rationalisation of costs, would limit the cash credit requirements of AIL at ₹3645.87 crore in future. Audit however noticed that short term loans of the Company at ₹14550.88 crore as on 31 March 2016, recorded an increase of 0.93 *percent* in 2015-16, over the loan as on 31 March 2015, primarily on account of lower revenue generation by the Company. The high volume of short term loans had largely eroded the benefits of the financial restructuring carried out under FRP.

AIL failed to earn the targeted annual revenue of ₹500 crore per annum from monetisation of assets, with assets valued at ₹64.06 crore only being monetised. This resulted in a resource gap of ₹1935.94 crore during the period from 2011-12 to 2015-16. Failure in monetisation was on account of selection of assets, monetisation of which was not feasible owing to non-availability of title deeds or conditions imposed by the terms of lease. Efforts for monetisation during the period of audit were inadequate and met with little or no success.

While reviewing the operations of AIL during the period from 2010-11 to 2015-16, Audit noticed that the airline had over-provisioned wide body aircraft while it had an acute shortage of narrow body aircraft. Even though the Company was aware of the shortage and had initiated the process of leasing A-320 aircraft as early as July 2010, only five aircraft could be inducted by 31 March 2015 against the requirement of nineteen. Even the available fleet could not be efficiently deployed. Audit noticed that aircraft remained grounded for prolonged periods due to non-availability of components, spares, serviceable engines which led to cannibalisation and more protracted grounding periods. While the aircraft remained grounded, the airline paid substantial amounts for their lease rent (for leased aircraft) or finance cost (for owned aircraft). Not only was the deployment of aircraft low, their

utilisation was also poor. The shortfall in achievement of ASKM targets given in TAP by narrow body aircraft ranged between 8 percent to 29 percent and that by wide body aircraft ranged between 0.29 percent to 43.74 percent during the period 2010-11 to 2014-15, which further increased to 35 percent in respect of narrow body and 30.88 percent in wide body during 2015-16. Poor utilisation of the limited fleet as compared to optimal utilisation envisaged in the TAP, resulted in the Company losing an opportunity to earn more revenue and contribution to fixed cost.

At the strategic level, the Company did not implement the low cost carrier strategy envisioned in the TAP and failed to operationalise intended hubs at Mumbai and Chennai. Route restructuring was carried out with the objective of recovery of variable cost primarily as against the total cost. It was noticed that though the airline managed to recover its variable cost, there was considerable shortfall *vis-a-vis* total cost. This affected the profitability of operation. Besides, Audit noticed that projections made during the introduction of new routes often did not materialise further adding to the shortfall. Some corrective actions to improve route economics had been made recently, although delayed. In the meanwhile AIL lost significant market share. This was likely to adversely impact its turnaround efforts.

In its day to day operations, the Company failed to rationalise staff costs and harmonise the HR policies of erstwhile IA and AI as recommended by the Justice Dharmadhikari Committee. The Company had excess standard force required for its operation as per its own estimation. Even then, the Company hired a large contingent of consultants, casual workers, temporary and outsourced employees which added to staff costs. The crew (cockpit and cabin crew) were also not optimally utilised leading to inefficiencies. The intended IT integration could not be achieved fully with two IT systems, the Central Planning and Control System (CPCS) and the Flight Management System (FMS) remaining partially complete even after five years. Hence the envisaged benefits could not be fully derived. Delays were also noticed in operationalising the MRO and GH subsidiaries.

Though the Company was able to achieve its operational targets set in TAP with respect to PLF and yield, it failed to meet the on-time performance (OTP) targets. The OTP improved in 2013-14 to 78 percent from 2012-13, but declined sharply in 2014-15 to 72 percent, before improving to 78 percent in 2015-16. Audit analysis indicated that the percentage of delays caused due to factors partially controllable by AIL in case of domestic sector (Delhi and Mumbai airports) and international sector increased in 2015-16 as compared to 2014-15. Crew related and aircraft related problems emerged as the major contributing factors for low OTP. This resulted in significant re-scheduling and cancellation of flights which inconvenienced passengers and affected image of the airline. The cancellation of flights at Mumbai and Delhi airports, however, decreased in 2015-16 as compared to 2014-15. The rescheduling of flights increased to 17.34 percent in 2015-16 as compared to 13.73 percent in previous year. The passenger market share of Air India also decreased from 17.9 percent in 2014-15 to 15.9 percent in 2015-16.

While the Government had committed ₹42182 crore of equity to the airline and ₹22280 crore has been released by March 2016, it had also enhanced the bilateral entitlements of foreign carriers which restricted the competitive ability of AIL, particularly in the face of large scale

sixth degree traffic carried by the foreign carriers to and from India. AIL, on the other hand, failed to utilise its fifth freedom rights and compete effectively.

Audit also noticed that the quantum of equity committed by GoI needs to be adjusted in view of the reduced requirement of AIL, considering the premature repayment of Government guaranteed aircraft loan for five B-777-200 LR aircraft by AIL out of the sales proceeds of these aircraft. As the actual interest rates on non-convertible debentures were lower than anticipated, the equity committed in this regard also needed to be adjusted.

Recommendations

- (i) As a result of the considerable erosion of the benefits of financial restructuring due to high volume of short term loans of AIL, the value of which was nearly four times the cash credit limits laid down in the Turnaround Plan–Financial Restructuring Plan (TAP-FRP), the Company and the Ministry may need to reassess the requirement of fund envisaged in the Plan.**
- (ii) Monetisation of assets which failed to take off in the four years ended 31 March 2016 should be fast tracked. Efforts should be taken to ensure that assets identified for monetisation had proper title deeds and the lease agreements did not contain any limiting provision/conditions impacting their monetisation.**
- (iii) Considering the acute shortage of narrow body aircraft faced by the Company, the process of leasing additional A-320 aircraft should be expedited. All efforts should be made to eliminate abnormal grounding of aircraft. Considering the significant expenditure of the airline on lease rent (for leased aircraft) and finance cost (for owned aircraft) for the period the aircraft were grounded, effective action should be taken for optimising the stock of spares, parts, components and serviceable engines required for repair and maintenance of the acquired fleet. Utilisation of aircraft, particularly the narrow body aircraft should also be improved to meet targets prescribed in TAP and contribute to higher revenues for the airline.**
- (iv) The Company should focus on recovery of total cost of operation rather than variable cost alone for an effective turnaround for the airline. Rationalisation of routes should be continued. Concerted efforts should be made for maintaining and improving the market share of the airline, particularly on routes where the presence of AIL has been traditionally strong.**
- (v) The recommendations of Justice Dharmadhikari Committee on harmonisation and rationalisation of staff costs should be implemented by AIL in letter and spirit. The excess manpower compared to the standard force fixed by the Company needed to be rationalised and the practice of hiring of temporary manpower should be reviewed. The crew should be optimally utilised and their availability should be aligned to the station of their operation to address crew shortages leading to poor On Time Performance (OTP), re-scheduling, cancellation of flights. AIL should also rationalise costs on Staff on Duty (SOD) travel, related allowances and hotel expenses in positioning the staff.**

- (vi) The IT application Central Planning and Control System (CPCS), should be fully implemented expeditiously. Efforts should be made for development and retention of trained manpower for operating these sophisticated IT systems.
- (vii) Systems should be put in place for better coordination of crew and more efficient maintenance of aircraft so that delays, re-scheduling and cancellation of flights were minimised.
- (viii) Since equity commitment of GoI is specific to identified purposes, equity releases of Government of India (GoI) should be adjusted to match the reduction of loans of AIL guaranteed by GoI and the lower interest liability on non-convertible debentures issued by AIL.
- (ix) Considering the significant equity funds committed by GoI to AIL, a decision regarding grant of additional bilateral rights to foreign carriers should take into consideration its impact on AIL, as recommended by the Public Accounts Committee of Parliament in its 93rd report (2013-14).

New Delhi

Dated: 16 January 2017



(H. PRADEEP RAO)

Deputy Comptroller and Auditor General
and Chairman, Audit Board

Countersigned

New Delhi

Dated: 16 January 2017



(SHASHI KANT SHARMA)

Comptroller and Auditor General of India

Annexures

Annexures

Annexure 1

(Referred to in Para 3.5)

City	Location	Area	Leased/ Owned
Chennai	Freehold land and Residential flats at Palavanthangal Village and IA Staff Housing Colony	19.13 acres	Owned
Chennai	Freehold vacant no. 504, Annasalai/Teynampet, Chennai	63897 sqft	Owned
Delhi	Airlines House, 113, Gurudwara Rakabganj Road	0.77 Acres	Owned
Delhi	Baba Kharak Singh Marg, Connaught Place, New Delhi	16,188 sqmtr	Owned
Delhi	Staff Quarters, Vasant Vihar, Delhi	30 Acres	Owned
Delhi	Unit no. 264, 297, 310, 489, 631, 678, 684, 714, Asiad Village Complex, New Delhi	1900 sqft each	Owned
Hyderabad	Freehold Land (CTE Complex) and Buildings in Central Training Establishment	20 Acres	Owned
Mumbai	Air India building, Nariman Point	449000 sqft	Land leased/ Building Owned
Mumbai	Building at old airport, Kalina, Santacruz	23989 sqmtr	Owned
Mumbai	Office building, NITC, Santacruz, Mumbai	NA	Owned
Mumbai	Land at CIDCO plot, Nerul	NA	Leased
NCR, Gurgaon	DLF, Qutab enclave, Phase-III, Gurgaon, Haryana	420 sqmtr	Owned

Annexure 2

(Referred to in Para 3.7)

Achievement against TAP milestones as reported to Oversight Committee with audit remarks

TAP milestones to be achieved by March 2015	Status of Achievement of milestones by March 2015 (position upto 2015-16 in related chapters)
HUMAN RESOURCES	
Entitlement to productivity linked incentive (PLI) to cease until profit before taxes (PBT) is generated	Though AIL reported to OC that PLI has been discontinued wef 1 st July 2012, Audit noted that a significant component of PLI continued to be paid as 'ad hoc pay'. Details are reported at para 8.1A
VRS package to be worked out by the end of December 2011	AIL reported to the OC that VRS was dropped considering transfer of employees to subsidiary companies, projected retirement over next five years and owing to Ministry of Finance not acceding to the Company's request for additional financial outlay on this account. Implementation of VRS was an assumption of the TAP and its non-implementation may render the achievement of TAP targets difficult. (para 8.1 B)
HIVING OFF SUBSIDIARIES	
MRO and Ground Handling (GH) to be hived off and operationalised by January 2012	Though AIL reported to OC that MRO and GH subsidiaries have been operationalised wef 01 February 2013, the MRO subsidiary was operationalised only wef January 2015 and GH subsidiary wef April 2014. Details are reported at para 9.1.
IT INTEGRATION	
Implementation of all relevant IT systems for ticket pricing and sales, network planning, crew scheduling and operational efficiency by December 2011	AIL has reported to OC that IT systems have been implemented. During the course of the present audit, it was noticed that Central Planning and Control System as well as Flight Planning System have only been partially implemented is reported at chapter 10 of this report.
FINANCIAL RESTRUCTURING	
Asset monetisation plan to be prepared and the timelines and action for monetisation should be initiated by December 2011. ₹500 crore was estimated to be earned annually through monetisation over 2012-13 to 2021-22.	Till March 2016, revenue of Rs. 64.06 crore was earned through monetisation. There was thus a shortfall of ₹1935.94 crore over the three year period (2012-13 to 2015-16). AIL has informed the OC that it has entered into a JV with NBCC to develop properties and monetize them. A detailed analysis of delay in monetisation is at para 3.5 of this report.

<p>To bring down cash losses on a day to day basis. The FRP had envisaged that AIL would achieve positive EBIDTA by 2012-13</p>	<p>AIL has informed OC that its cash losses have been reduced by ₹8 crore from ₹3014 crore in April-December 2013 to ₹3006 in April-December 2014. The Company has also reported that its EBIDTA has turned to a positive ₹166 crore (April-December 2014) from a negative ₹191 crore (April-December 2013). The assertions of the Company, may, however be seen in light of the fact that audit (both statutory auditors and CAG audit) have expressed qualified opinion on the accounts of AIL for all the three years (2012-13 to 2014-15) pointing out significant understatement of losses in the financial statements presented by the Company. The understatement of losses were ₹1455.8 crore (2012-13), ₹2966.66 crore (2013-14) and ₹1992.77 crore (2014-15). If these qualifications (as expressed in the comments of the statutory auditors and CAG audit) are considered, the Company is yet to achieve a positive EBITDA as on March 2015.</p>														
OPERATIONAL PERFORMANCE															
<p>On time performance (OTP) to be improved from 71.7 percent (Oct 2011) to 90 percent within two years</p>	<p>AIL has reported to OC that it has achieved an OTP of 71.9 percent. The reasons for shortfall in OTP has been analysed and reported in para 11.3. In 2015-16, OTP achieved was 78 percent.</p>														
<p>Passenger load factor (PLF) of 73 percent to be achieved by 2015 and 75 percent PLF to be achieved by 2020</p>	<p>While AIL has achieved its overall PLF target overall, the target for international operations is yet to be achieved. As against the target of 73.3 percent, AIL could achieve 72.6 percent by March 2015. In 2015-16, AIL achieved PLF of 74.5 percent.</p>														
<p>A network yield to be achieved which is higher of the following: As envisaged in the FRP 5 percent less than the network yield of market leader in the domestic and international market in FY 13 3 percent less than the network yield of market leader in the domestic and international market starting FY 14</p>	<p>The actual achievement of yield as per target has been: Against a network target of 3.76, the actual achievement is 4.32(2015-16-4.04 against 3.77) Against a domestic operations target of 4.39, the actual achievement is 5.92(2015-16 - 5.34 against 4.40) Against an international operations target of 3.36, the actual achievement is 3.68(2015-16-3.52 against 3.38) As can be seen the yield has been achieved as per the FRP targets. In absence of data pertaining to market leader (domestic and international), Audit is unable to comment on the achievement of the other criteria laid down in the TAP.</p>														
AIRCRAFT UTILISATION															
<p>To achieve a fleet utilisation (no. of flying hours) which is higher of the following: As envisaged in the FRP 3 percent less than the fleet</p>	<p>The achievement has been lower than the targets:</p> <table border="1" data-bbox="639 1890 1390 2033"> <thead> <tr> <th rowspan="2">Aircraft type</th> <th colspan="2">Target (Hours)</th> <th colspan="2">Achievement (Hours)</th> </tr> <tr> <th>2014-15</th> <th>2015-16</th> <th>2014-15</th> <th>2015-16</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Aircraft type	Target (Hours)		Achievement (Hours)		2014-15	2015-16	2014-15	2015-16					
Aircraft type	Target (Hours)		Achievement (Hours)												
	2014-15	2015-16	2014-15	2015-16											

utilisation of market leader in the domestic and international market in FY 13 3 percent less than the fleet utilisation of market leader in the domestic and international market starting FY 14	A-319	12.25	12.25	10.34	9.75
	A-320	12.25	12.25	9.57	9.22
	A-321	12.25	12.25	10.97	11.16
	B-787	13.0	13.0	12.97	12.07
	B-777-300ER	14.0	14.0	12.6	11.78
	B-777-200LR	15.0	15.0	2.04	6.89
Thus against the TAP target of 12.25 hours for narrow body aircraft, AIL could achieve 9.57-10.97 hours in 2014-15 and 9.22 to 11.16 in 2015-16. Similarly, against a target of 13-15 hours for wide body aircraft, the Company could achieve 2.04-12.97 hours in 2014-15 and 6.89-12.07 hours. In absence of data pertaining to market leader (domestic and international), Audit is unable to comment on the achievement of the other criteria laid down in the TAP.					

Source: Presentation to tenth OC meeting.

Annexure 3

(Referred to in Para 5.4.3)

Details of grounding of aircraft for more than six months

Type of Fleet	Aircraft	Reason for grounding	Duration of grounding	Total Days Grounding	Excess days grounding*
A319	VT-SCV	Due to removal of engines and other critical spares	12 March 2012 to 09 May 2014	789	586
	VT-SCX	Check 4A+P1+P2+P6+P7 and engine removal	14 November 2012 to 28 January 2014	441	438
	VT-SCO	Check-C and engine and spare parts removed from this aircraft	08 February 2011 to 29 August 2012	569	544
	VT-SCQ	Checks-A+2A+P checks And engine and other spares removed for other aircraft	17 August 2012 to 15 August 2013	364	361
	VT-SCM	Check-A+2A+4A+P2+P12 and engine and other spares removed from this aircraft.	24 August 2014 to 16 Oct 2015	419	416
	VT-SCD	A+P Checks and lease return and engines and other components were cannibalised	14 Dec 2010 to 27 June 2011	196	156
A-320	VT-EPB	Check-4C+1B+6Y+12Y and engine removed and installed in other aircraft	25 February 2009 to 01 Oct 2011	949	909
		Due to non-availability of serviceable engine and cannibalisation of parts.	26 July 2013 to 18 April 2014	267	243

	VT-EPF	Check-5C+2B+6Y and removal of engine and other components and Board of Director approved in February 2014 operational.	03 January 2011 to 13 Nov 2014	1411	1371
	VT-EPJ	Check-5C+2B+6Y and removal of engine and other components and Board of Director approved in February 2014 for operational.	04 April 2011 to 13 March 2015	1440	1400
	VT-ESE	Check-3C+1B and engine removal alongwith other components.	25 February 2013 to 19 November 2013	268	247
	VT-ESD	4C+2B and awaiting corrosion repair and components were cannibalised	05 Jul 2014 to 27 May 2015	327	306
	VT-EPG	5C and engine and other components were removed for other aircraft	12 Nov 2012 to 23 July 2013	254	233
	VT-ESL	3C+1B+6Y+12Y+20Y and awaiting corrosion repair and engine and other components were cannibalised	17 Sep 2014 to 01 May 2015	227	206
	VT-EPC	DSG Extension + 4A	10 Apr 2015 to 22 Oct 2015	196	193
	VT-EPF	4A	07 Aug 2015 to 11 March 2016	218	215
A-321	VT-PPF	2A+6000+12000+18M and engine, APU and other critical spares were transferred to other aircraft	06 Feb 2012 to 10 Sept 2012	218	214
	VT-PPG	Check-4A and cannibalization of various components/parts and non-availability of engine.	14 February 2014 to 31 December 2014	321	296
	VT-PPX	Check-4A and engine remove this aircraft.	21 August 2012 to 08	261	257

			May 2013		
	VT-PPK	Check-2A and due to removal of engine and other components in this aircraft.	22 August 2014 to 23 February 2015	186	161
	VT-PPB	Check-A and cannibalisation of various components/parts/engines.	13 September 2011 to 15 April 2012	216	212
	VT-PPD	Structural repairs+4A+20mts+24mts Insp	15 February 2015 to 26 October 2015	254	247,

Source: Data received from AIL/Engineering

* Excess grounding days deduced from Performance report/ Turnaround time fixed by Engineering department

Annexure 4

(Referred to in Para 6.1 and 6.1.2)

Bilateral entitlements where terms altered during 2010-11 to 2015-16

Sl No	Country	Entitlements up to 2010-11			Revised entitlements				Utilization		
		Year of signing MOU/ ASA	Capacity entitlements (per week in each direction)	Points of call	Year of signing MOU /ASA	Capacity entitlements (per week in each direction)	Additional Points of call	Total Points of call	By AIL	By Indian carriers	By Indian carriers (%)
1	Oman	2007-08	11550 seats	India: Muscat, Salalah (2) Oman: Thiruvananthapuram, Mumbai, Chennai, Delhi, Kochi, Hyderabad,	2010-11	11550 seats	India:- (0) Oman: Goa and Kolkata (2)	India: (2) Oman: (12)	NA	NA	NA

				Lucknow, Jaipur, Bangalore and Calicut. (10)							
					2012- 13	Seats: 16016 Limited for Oman: 104 frequencies (16016- pWed-W- 14-15)	India: (0) Oman: Kolkata dropped as point of call	India: (2) Oman :	6258 seats /week	10212 seats /week	88.42 %
					2015- 16	Seats: 21,147			2678 seats/ week	NA	NA
2	Dubai (UAE)	2008-09	54200 seats +2%	India: Dubai (1) Dubai: Mumbai, Delhi, Chennai, Kolkata,	2011- 12		India:- (0) Dubai: Ahmeda bad and Hyderab ad for	India: (1) Dubai : (12)	--	--	--

				Kochi, Hyderabad, Thiruvanantha puram, Bangalore, Ahmedabad, Kozhikode. (10)			'Fly Dubai' operatio ns				
					2013- 14	59700 seats w.e.f. Summer 2014 63000 seats + 2% (64260) w.e.f. Winter 2014-15 and 65200 + 2% (66504) seats w.e.f. Summer 2015	India: (0) Dubai: Luckno w (1)	India: (1) Dubai: (13)	5615	42683	78.75 %
3	Abu	Up to	13330 seats	India:- Abu Dhabi, Al Ain	2009-		India:-	India (02)	--	--	--

	Dhabi	2010-11		(2) Abu Dhabi:- Mumbai, Delhi, Kochi, Thiruvanantha puram, Chennai, Calicut, Jaipur and Kolkata (8)	10		Nil Abu Dhabi: Hyderab ad, Bangalo re and Ahmeda bad through NV by transferr ing balance unutilize d entitlem ents (3)	Abu Dhabi: (11)			
					2013- 14	50000 seats + 2% (=51000)			1096 seats/w eek	9208 seats/wee k	69.08 %
4	Iran	10.06.80 (ASA) Revised ASA	23 frequency per week with any type of aircraft	India: Tehran, Bandar-abbas (2)	2010- 11	31 frequency (12400) with any	India: 2 more points (2) +	India : (4)	Nil	Nil	0.00

		initialled and MOU signed on 29-30 April 2008 Agreed minutes dt. May 2008	with capacity not exceeding B747 aircraft	Iran: Mumbai, Delhi, Cochin and Amritsar (4)		type of aircraft with capacity not exceeding B747 aircraft	2 more points + Approval was granted to designated airlines of Iran to operate on Mashhad-Hyderabad sector. (3)	Iran : (6)			
5	Egypt	2006-07	7 frequency with any type of aircraft with capacity not exceeding that of a B-	India: Cairo, one additional point of choice and a 3rd point to be agreed.(3)	2014-15	14 frequency with any type of aircraft with capacity not		India (3)	Nil	Nil	0.00

			747/400.	Egypt: Mumbai, Delhi and a 3rd point to be agreed.(3)		exceeding that of a B-747/400		Egypt: (3)			
6	France		35 frequency	India: Paris, Nice, Lyon and Epinal (4) France: Delhi, Mumbai, Chennai, Kolkata, Bangalore and Hyderabad (6)				India: (4) France: (6)	--	--	--
					2014-15		India: Nil France: Amritsar, Ahmedabad, Kochi and Goa for the	India: (4) France: (10)	1342 Seats/w eek	NA	NA

							purpose of domestic code share				
7	Italy	2005-06	24 Frequency	<p>India: Rome, Milan (2)</p> <p>Italy: Mumbai, Delhi, Kolkata (3)</p>				<p>India: (2)</p> <p>Italy: (3)</p>	NA	NA	NA
					2011-12	24 Frequency	<p>India: Rome, Milan and 2 other points to be specified later. (2)</p> <p>Italy : Mumbai , Delhi and 2 other</p>	<p>India: (4)</p> <p>Italy: (4)</p>	NA	NA	NA

							points to be specified later. (2)				
8	Canada	2005-06	35 Frequency with an aircraft with capacity up to B-747 subject to maximum 14 services to/from any single designated point limited to 14000 seats	India: Toronto, Montreal, Edmonton, Vancouver, Calgary, Ottawa (6) Canada: Delhi, Mumbai, Bangalore, Kolkata, Chennai, Hyderabad (6)	2011-12	In addition to the existing entitlements, six additional points to be selected shall be available to the designated airlines + both sides agreed for a separation of capacity for own aircraft services and code		India: (6) Canada: (6)	NA	NA	NA

						share services as well as expansion of rights for all cargo services allowing unrestricted third, fourth and fifth freedom rights with no limitation on points in accordance with the discussion in the IMG as per Ministry's note. Approval of code					
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						share services of Air Canada with Lufthansa German Airlines to/from Mumbai/Delhi via Munich. Code share between Air Canada and British Midland International on route London-Amritsar.					
9	Singapore	2006-07	51.8 units + 1650 seats to Chennai + 5 frequencies to Kolkata + unlimited to 18 Tourist	India: Singapore (1) Singapore:	2011-12	India: Additional entitlements - increase in services to the extent of		India: (1)	5215	13356	48.25 %

			destinations	Mumbai, Chennai, Kolkata, Delhi, Bangalore, Hyderabad and Coimbatore and 18 tourist destinations (7+18=25)		4.3 units between points in India and Singapore. Singapore: Additional entitlements - 1.5 weekly B747 units and 2.8 weekly B747 units to Mumbai and Hyderabad respectively		Singapore: (25)			
					2013-14	Singapore: 28700 seats			2936 Seats/ week	NA	NA

						India : 29400seats					
					2013-14	No change in entitlements. MoU was amended by omitting the phrase "except the A380"					
10	Hong Kong	2007-08	India: 4 services with any type of subsonic aircraft + 1250 seats + 27 frequencies with any type of aircraft of a capacity not exceeding	India: Hongkong (1)	2011-12	Hong Kong: 7 additional frequency to Kolkata, Chennai and Hyderabad taken together w.e.f. Summer 2012 and	India: (0)	India: (1) Hong Kong: (6)	2394	8771	60.65 %

			that of a B747-400 (430 seats) on separate routes			another 7 additional frequency taken together w.e.f. Winter 2012. India:7 additional frequency w.e.f. Summer 2012 and another 7 additional frequency w.e.f. Winter 2012; w.e.f. Summer 2012 HK:17470 India: 17910; w.e.f. Winter					
--	--	--	---	--	--	--	--	--	--	--	--

						2012: HK: 20480, India: 20920					
			Hong Kong: 4 frequency with any type of aircraft + 1250 seats + 27 frequencies with any type of aircraft of a capacity not exceeding that of a B747-400 (430 seats) on separate routes.	Hong Kong: Delhi, Mumbai, Kolkata, Chennai and Bangalore (5)			Hong Kong: Hyderabad (1)		--	--	--
11	Iraq	1983	2 frequency	India: Baghdad, Basrah (2)	2010-11	12 frequency	India: Al Najaf + One more	India: (4)	NA	Nil	0.00

				Iraq: Mumbai, Delhi (2)			point (2) Iraq: Hyderab ad + One more point (2)	Iraq: (4)			
12	Bhutan	2008-09	Bhutan: 49 services to /from the points specified in Routes 1 to 4 of section I of Route schedule with any type of aircraft not exceeding capacity of 200 seats. Within	India: points in Bhutan (1) Bhutan: Delhi Mumbai Chennai, Kolkata, Hyderabad, Bangalore, Bagdogra+ 18 Tourist destinations	2012-13	Any number of services with any type of aircraft of capacity not exceeding that of B 747-400 on 3rd /4th freedom sectors specified in their respective		India: (1) Bhutan: (25)	NA	Nil	0.00

			these entitlements maximum 7 frequency to/ from each point in India. India: 9800 seats on Route 1 + unlimited frequency on Route 2.	(7+18=25)		route schedules. The designated airlines of Bhutan shall not exercise 5th freedom traffic rights on more than 14 frequency per week each to/from Bangkok.					
13	Slovenia	2003-04	ASA Confidential record of discussion and the Horizontal Agreement between GoI	Nil	2011-12	Pending finalisation of the revised ASA, the two delegations agreed on	India: Ljubljana	India: (1)	NA	NA	NA

			and European Commission and the aeronautical authorities of EU member states on 8.4.2008			the four clauses relating to liberalisation of all-cargo services, co-operative marketing arrangements, routing flexibility and inter-modal services which did not exist earlier	Slovenia: New Delhi (2014-15)	Slovenia: (1)			
14	Kazakhstan	2007-08	3 services subject to maximum 600 seats	India : Almaty (1)	2012-13	14 services subject to capacity of B-747 (400 seats) not more than 7 frequency	India: Astana, Karaganda, Shymkent (3)	India: (4)	NA	Nil	0.00

				Kazakhstan: Delhi, Kolkata (2)		from one point- 23747 seats maximum	Kazakh stan: Mumbai , Goa (2)	Kazakhsta n: (4)			
15	New Zealand	2005-06	7 services per week (2800 seats)	India - Auckland; Code share points: Auckland, Wellington, Christchurch, Queenstown and Dunedin (5) New Zealand : Mumbai Code share points: Mumbai, Kolkata, New Delhi, Hyderabad and	2015- 16			India : (1)	NA	NA	NA
								New Zealand : (1)			

				Chennai.(5)							
16	Sri Lanka	-	-	-	2011-12	112 frequency and unlimited entitlements to/from 18 tourist destinations			1032	4504	10.05
					2013-14	ASA revised regarding inclusion of provision of code sharing with carriers of third countries.					

Source:-Data received from MoCA

Annexure 5

(Referred to in Para 6.1.1)

Details of passenger traffic to/from India carried by leading International airlines during April 2014 to March 2015 and April 2015 to March 2016

<i>Breakup of passenger traffic to/ from India during April 2014 to March 2015</i>								<i>Breakup of passenger traffic to/ from India during April 2015 to March 2016</i>				
<i>Region</i>	<i>Name of foreign airline</i>		<i>Total passengers (in lakh) carried from/to India</i>	<i>'Point to point' passengers (in lakh) carried from/to India</i>	<i>5th freedom passengers (in lakh) carried from/ to India</i>	<i>6th freedom passengers (in lakh) carried from/ to India</i>	<i>Percentage of 6th freedom carriage</i>	<i>Total passengers (in lakh) carried from/to India</i>	<i>'Point to point' passengers (in lakh) carried from/to India</i>	<i>5th freedom passengers (in lakh) carried from/ to India</i>	<i>6th freedom passengers (in lakh) carried from/ to India</i>	<i>Percentage of 6th freedom carriage</i>
<i>A. Gulf Region</i>	<i>Air Arabia</i>	<i>G9</i>	<i>14.17</i>	<i>6.01</i>	<i>0.00</i>	<i>8.16</i>	<i>57.59</i>	<i>15.65</i>	<i>6.11</i>	<i>0.00</i>	<i>9.54</i>	<i>60.96</i>
	<i>El Al Israel Airlines</i>	<i>LY</i>	<i>0.55</i>	<i>0.29</i>	<i>0.00</i>	<i>0.26</i>	<i>47.27</i>	<i>0.67</i>	<i>0.33</i>	<i>0.00</i>	<i>0.33</i>	<i>49.25</i>
	<i>Emirates</i>	<i>EK</i>	<i>47.29</i>	<i>17.99</i>	<i>0.00</i>	<i>29.3</i>	<i>61.96</i>	<i>54.10</i>	<i>18.07</i>	<i>0.00</i>	<i>36.03</i>	<i>66.60</i>
	<i>Etihad Airways</i>	<i>EY</i>	<i>16.49</i>	<i>5.07</i>	<i>0.00</i>	<i>11.42</i>	<i>69.25</i>	<i>27.86</i>	<i>8.08</i>	<i>0.00</i>	<i>19.79</i>	<i>71.03</i>
	<i>FlyDubai</i>	<i>FZ</i>	<i>2.88</i>	<i>0.9</i>	<i>0.00</i>	<i>1.98</i>	<i>68.75</i>	<i>4.77</i>	<i>1.39</i>	<i>0.00</i>	<i>3.38</i>	<i>70.86</i>
	<i>Gulf Air</i>	<i>GF</i>	<i>7.11</i>	<i>1.39</i>	<i>0.00</i>	<i>5.72</i>	<i>80.45</i>	<i>8.70</i>	<i>1.66</i>	<i>0.00</i>	<i>7.05</i>	<i>81.03</i>
	<i>Kuwait Airways</i>	<i>KU</i>	<i>4.28</i>	<i>1.14</i>	<i>0.00</i>	<i>3.14</i>	<i>73.36</i>	<i>5.94</i>	<i>3.48</i>	<i>0.00</i>	<i>2.47</i>	<i>41.58</i>
	<i>Oman Air</i>	<i>WY</i>	<i>10.99</i>	<i>5.85</i>	<i>0.00</i>	<i>5.14</i>	<i>46.77</i>	<i>15.08</i>	<i>6.24</i>	<i>0.00</i>	<i>8.84</i>	<i>58.62</i>
	<i>Qatar Airways</i>	<i>QR</i>	<i>15.23</i>	<i>2.65</i>	<i>0.00</i>	<i>12.58</i>	<i>82.60</i>	<i>18.27</i>	<i>3.77</i>	<i>0.00</i>	<i>14.50</i>	<i>79.37</i>
	<i>Royal Jordanian Airlines</i>	<i>RJ</i>	<i>0.32</i>	<i>0.06</i>	<i>0.00</i>	<i>0.26</i>	<i>81.25</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>

	<i>Turkish Airlines</i>	<i>TK</i>	3.22	0.84	0.00	2.38	73.91	4.26	1.14	0.00	3.12	73.24
	<i>Yemen Airways</i>	<i>IY</i>	0.38	0.19	0.00	0.19	50.00	0.02	0.02	0.00	0.00	0.00
	Total		122.91	42.38	0.00	80.53	65.52	155.33	50.28	0.00	105.04	67.62
<i>B. Asia</i>	<i>Air China</i>	<i>CA</i>	0.97	0.59	0.00	0.38	39.18	1.28	0.73	0.00	0.55	42.97
	<i>Asiana Airlines</i>	<i>OZ</i>	0.61	0.37	0.00	0.24	39.34	0.59	0.39	0.00	0.20	33.90
	<i>Cathay Pacific</i>	<i>CX</i>	6.93	2.78	0.00	4.15	59.88	7.95	3.08	0.00	4.87	61.26
	<i>China Airlines</i>	<i>CI</i>	0.47	0.09	0.21	0.17	36.17	0.40	0.07	0.15	0.18	45.00
	<i>Hong Kong Dragon</i>	<i>KA</i>	1.45	0.79	0.00	0.66	45.52	1.74	0.94	0.00	0.80	45.98
	<i>Korean Air</i>	<i>KE</i>	0.54	0.31	0.00	0.23	42.59	0.57	0.37	0.00	0.20	35.09
	<i>Malaysia Airlines</i>	<i>MH</i>	9.4	3.48	0.00	5.92	62.98	8.86	3.66	0.00	5.20	58.69
	<i>Mihin Lanka</i>	<i>MJ</i>	1.07	0.49	0.00	0.58	54.21	1.85	1.20	0.00	0.65	35.14
	<i>Singapore Airlines</i>	<i>SQ</i>	13.21	6.16	0.00	7.05	53.37	14.99	6.25	0.00	8.74	58.31
	<i>SriLankan Airlines</i>	<i>UL</i>	11.16	6.82	0.00	4.34	38.89	13.04	7.79	0.00	5.25	40.26
	<i>Thai Airways</i>	<i>TG</i>	10.34	7.23	0.00	3.11	30.08	13.30	8.53	0.00	4.77	35.86
	Total		56.15	29.11	0.21	26.83	47.78	64.56	33.02	0.15	31.40	48.64
<i>C. Europe</i>	<i>Air France</i>	<i>AF</i>	3.05	1.22		1.83	60.00	3.79	1.47	0.00	2.32	61.21
	<i>Austrian Airlines</i>	<i>OS</i>	0.96	0.24	0.00	0.72	75.00	1.09	0.36	0.00	0.73	66.97
	<i>British Airways</i>	<i>BA</i>	9.25	3.52	0.00	5.73	61.95	10.00	4.43	0.00	5.57	55.70

	<i>Finnair</i>	<i>AY</i>	<i>0.73</i>	<i>0.18</i>	<i>0.00</i>	<i>0.55</i>	<i>75.34</i>	<i>0.94</i>	<i>0.36</i>	<i>0.00</i>	<i>0.58</i>	<i>61.70</i>
	<i>KLM</i>	<i>KL</i>	<i>1.74</i>	<i>0.38</i>	<i>0.00</i>	<i>1.36</i>	<i>78.16</i>	<i>1.81</i>	<i>0.47</i>	<i>0.00</i>	<i>1.33</i>	<i>73.48</i>
	<i>Lufthansa</i>	<i>LH</i>	<i>9.16</i>	<i>2.02</i>	<i>0.00</i>	<i>7.14</i>	<i>77.95</i>	<i>10.47</i>	<i>2.41</i>	<i>0.00</i>	<i>8.05</i>	<i>76.89</i>
	<i>Swiss</i>	<i>LX</i>	<i>2.35</i>	<i>0.81</i>	<i>0.00</i>	<i>1.54</i>	<i>65.53</i>	<i>2.53</i>	<i>0.88</i>	<i>0.00</i>	<i>1.65</i>	<i>65.22</i>
	<i>Virgin Atlantic</i>	<i>VS</i>	<i>2.59</i>	<i>1.64</i>	<i>0.00</i>	<i>0.95</i>	<i>36.68</i>	<i>1.66</i>	<i>1.32</i>	<i>0.00</i>	<i>0.35</i>	<i>21.08</i>
	Total		29.83	10.01	0.00	19.82	66.44	32.29	11.71	0.00	20.58	63.73
<i>D. North America</i>	<i>United Airlines</i>	<i>UA</i>	<i>4.27</i>	<i>4.07</i>	<i>0.00</i>	<i>0.2</i>	<i>4.68</i>	<i>4.61</i>	<i>4.41</i>	<i>0.00</i>	<i>0.20</i>	<i>4.34</i>
	Total		5.98	5.6	0.00	0.27	4.52	4.61	4.41	0.00	0.20	4.34
<i>E. CIS</i>	<i>Aeroflot</i>	<i>SU</i>	<i>1.25</i>	<i>0.66</i>	<i>0.00</i>	<i>0.59</i>	<i>47.20</i>	<i>1.44</i>	<i>0.56</i>	<i>0.00</i>	<i>0.88</i>	<i>61.11</i>
	<i>Air Astana</i>	<i>KC</i>	<i>0.53</i>	<i>0.33</i>	<i>0.00</i>	<i>0.2</i>	<i>37.74</i>	<i>0.51</i>	<i>0.30</i>	<i>0.00</i>	<i>0.22</i>	<i>43.14</i>
	<i>Uzbekistan Airways</i>	<i>HY</i>	<i>1.3</i>	<i>0.63</i>	<i>0.00</i>	<i>0.67</i>	<i>51.54</i>	<i>1.12</i>	<i>0.57</i>	<i>0.00</i>	<i>0.55</i>	<i>49.11</i>
	Total		3.08	1.62	0.00	1.46	47.40	3.07	1.43	0.00	1.64	53.42
	Grand Total		217.95	88.72	0.21	128.91	59.15	259.86	100.84	0.15	158.87	61.14

Source:- Data received from AIL from management.

Annexure 6

Utilisation of seats capacity by AIL (Summer 2016)

(Referred to in Para 6.1.3.2)

Sl. No.	Country	Summer – 2016					
		Allocation of Traffic Rights		Utilization of Traffic Rights (Actual)		Air India (AI)	Air India Express (IX)
		Air India (AI)	Air India Express (IX)	Air India (AI)	Air India Express (IX)	% Utilization	% Utilization
		Seats	Seats	Seats	Seats	Seats	Seats
1	UAE-Abu Dhabi	1869	7030	854	6048	45.69	86.03
2	UAE-Dubai	12612	11532	8622	15687	68.36	136.03
3	UAE-Sharjah	3780	6426	2310	5103	61.11	79.41
4	Saudi Arabia	11663	3330	10793	1890	92.54	56.76
5	Oman	2928	7045	3768	3969	128.69	56.34
6	Qatar	0	4422	0	3402	Allocation not available	76.93
7	Kuwait	2968	1116	1260	1512	42.45	135.48
8	Bahrain	1015	5735	488	2646	48.08	46.14
9	Iran	0	1302	0	567	Allocation not available	43.55
10	Iraq	725	0	0	0	Non utilised	Allocation not available
11	USA	8848	0	7896	0	89.24	Allocation not available
12	Canada	2394	0	0	0	Non utilised	Allocation not available
13	UK	10038	0	8834	0	88.01	Allocation not available
14	France	1792	0	1792	0	100.00	Allocation not available
15	Germany	1792	0	1792	0	100.00	Allocation not available
16	Italy/Spain	1792	0	1792	0	100.00	Allocation not available
17	Russia	1792	0	540	0	30.13	Allocation not available
18	China	1792	0	1280	0	71.43	Allocation not available
19	Japan	2434	0	1792	0	73.62	Allocation not available
20	South Korea	1024	0	1024	0	100.00	Allocation not available

21	Hongkong	1792	0	1792	0	100.00	Allocation not available
22	Singapore	6153	3885	5376	1323	87.37	34.05
23	Thailand	4011	707	3584	0	89.35	Non utilised
24	Australia	1792	0	1792	0	100.00	Allocation not available
25	Malaysia	3584	1295	0	756	Non utilised	58.38
26	Kenya	1792	0	0	0	Non utilised	Allocation not available
27	Afghanistan	900	0	750	0	83.33	Allocation not available
28	Bangladesh	1015	2590	854	0	84.14	Non utilised
29	Maldives	2037	0	1708	0	83.85	Allocation not available
30	Myanmar	816	0	600	0	73.53	Allocation not available
31	Nepal	3430	0	2250	0	65.60	Allocation not available
32	Sri Lanka	2548	2590	2548	0	100.00	Non utilised
33	Austria	1792	0	1792	0	100.00	Allocation not available
34	Kazakistan/Uzbekistan	0	744	0	756	Allocation not available	101.61
35	UAE-AL Ain/Ras AL Khaimah	0	744	0	756	Allocation not available	101.61

Source:- Data obtained from allocation and utilization traffic rights received from management.

Annexure 7

List of Level 3 International Airports where Air India operates

(Referred to in Para 6.2.2)

Sl.No.	Air India International Destinations
1	Bangkok
2	Colombo
3	Dubai
4	Frankfurt
5	Hong Kong
6	Jeddah
7	London
8	Melbourne
9	Milan
10	Newark
11	New York
12	Paris
13	Rome
14	Seoul
15	Shanghai
16	Singapore
17	Sydney
18	Tokyo

Annexure 8

Utilisation of pilots of wide body aircraft

(Referred to in Para 8.5.1)

B-787 fleet

Year	% of pilots flying less than 480 hours	Pilots flying more than 480 hours in Six Month period	Pilots flying less than 480 hours in Six Month period	Excess hours paid @ 1.5 times and 2 times of normal flying allowance	Unutilized hours of available pilots who have flown less than 480 hour in a 6 month	Flying allowance paid at a higher rate (In ₹)
Jul-Dec-13	100%	0	150	0	30102:37	0
Jan-Jun-14	75%	46	139	1216:10	22399:14	6040901
Jul-Dec-14	75%	58	170	1891:58	22839:32	9050534
Jan-Jun-15	81%	47	195	1980:24	23689:45	7728223
Jul-Dec-15	74%	68	190	2498:58	24913.48	10007175
Total						32826833

Source: Crew utilisation data received from AIL

B-777 fleet

Year	Number of pilots flying more than 480 hours per 6 month period (No. of pilots)	Number of pilots flying less than 480 hours per 6 month period (No. of pilots)	Unutilized hours	Average utilized flying hour per pilot (in hours)	Average unutilized flying hour per pilot (in hours)
Jul-Dec12	0	360	85734:03	241:51	238:09
Jan-Jun13	2	391	76056:06	286:31	193:31
Jul-Dec-13	0	367	73681:24	279:14	200:46
Jan-Jun-14	0	360	85714:26	241:54	238:05
Jul-Dec-14	0	335	74030:01	259:00	220:59
Jan-Jun-15	0	312	63545:53	276:19	203:40
Jul-Dec-15	2	281	36733:30	368:23	129:48

Source: Crew utilisation data received from AIL

Annexure 9

Utilisation of pilots of narrow body aircraft

(Referred to in Para 8.5.1)

Year	Average number of pilots flying more than 72 hours per month (No. of pilots)	Average number of pilots flying less than 72 hours per month (No. of pilots)	Total Excess hours paid @ 1.5 times and 2 times of normal flying allowance (in hours)	Total un-utilized hour of available pilots who have flown less than 72 hours in a month(in hours)	Total flying allowance paid at a higher rate (in ₹)
2012-13 (July '12 - Mar'13)	103	361	7356	60846	4.69 crore
2013-14	229	359	31363	81639	16.49 crore
2014-15	193	386	27679	94385	15.30 crore
2015-16 (Upto December 2015)	211	353	16559	35212	9.13 crore
Total			82597	272084	45.61crore

Annexure 10

Analysis of Delhi-Mumbai Flights (domestic)

(Referred to in Para 11.3.3)

Flight no.	Total Departure	Cancelled	Operated	Flight on Time (STD +15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipment (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code-61 to 70)	Weather (Delay Code-71 to 80)	Air Traffic Flow Management Restrictions (Delay Code-81 to 84)	Airport and Government Authorities (Delay Code-85 to 90)	Reactionary (Delay Code 91 to 96 exclude 93K)	Reactionary 93A to 93M	Miscellaneous (Delay Code- 97 to 99)	Total	
Ai0317	206	0	206	111	95	54	0	3	0	0	2	0	0	4	2	1	1	60	22	0		
				Delay Reason backwar analysis (93)				1	0	0	0	1	0	3	1	0	2	4	9	1		
				Total after adding 93				1	3	0	0	3	0	7	3	1	3	64	9	1		
Ai0602	365	9	356	259	97	73	0	2	0	0	4	0	0	2	0	4	2	37	45	1		
				Delay Reason backwar analysis (93)				0	0	0	2	2	0	1	8	7	6	3	4	12	0	
				Total after adding 93				0	2	0	2	6	0	1	10	7	10	5	41	12	1	
Ai0624	365	15	350	198	153	57	0	0	0	1	6	2	0	0	1	8	1	23	111	0		
				Delay Reason backwar analysis (93)				0	1	0	2	15	0	2	7	8	17	3	12	43	1	
				Total after adding 93				0	1	0	3	21	2	2	7	9	25	4	35	43	1	
Ai0659	365	5	360	226	134	63	0	1	0	0	4	0	0	6	1	3	0	25	94	0		
				Delay Reason backwar analysis (93)				0	5	0	8	8	0	1	4	6	6	11	17	28	0	
				Total after adding 93				0	6	0	8	12	0	1	10	7	9	11	42	28	0	
Ai0805	365	35	330	247	83	75	1	1	0	0	2	0	0	2	2	2	0	24	49	0		
				Delay Reason backwar analysis (93)				0	2	0	1	0	0	0	6	9	7	3	11	10	0	
				Total after adding 93				1	3	0	1	2	0	0	8	11	9	3	35	10	0	
Ai0810	366	105	261	159	102	61	0	3	0	1	3	0	1	4	1	2	1	10	76	0		
				Delay Reason backwar analysis (93)				0	5	0	1	7	0	1	7	6	10	3	17	19	0	
				Total after adding 93				0	8	0	2	10	0	2	11	7	12	4	27	19	0	
Ai0863	365	2	363	201	162	55	1	1	0	2	2	1	0	2	0	27	0	6	120	0		
				Delay Reason backwar analysis (93)				0	2	0	3	6	0	1	5	9	31	17	11	35	0	
				Total after adding 93				1	3	0	5	8	1	1	7	9	58	17	17	35	0	
Ai0865	365	0	365	291	74	80	0	2	0	0	4	1	1	16	6	16	1	11	16	0		
				Delay Reason backwar analysis (93)				0	4	0	0	3	0	1	1	1	2	0	3	0		
				Total after adding 93				0	6	0	0	7	1	2	17	7	17	3	11	3	0	
Total before reactionary	2762	171	2591	1692	900		2	13	0	4	27	4	2	36	13	63	6	196	533	1	900	
				Entirely Controllable					84	9%	Beyond Control			87	10%	Partially Controllable			22%	59%		
				Delay reason backward ananalysis				1	19	0	17	42	0	7	41	47	78	44	76	159	2	533
				Entirely Controllable						24%	Beyond Control			171	32%	Partially Controllable			14%	30%		
				Total After Adding 93K				3	32	0	21	69	4	9	77	60	141	50	272	159	3	
				Entirely Controllable					211	23%	Beyond Control			258	29%	Partially Controllable			30%	18%		900

Annexure-10A

Analysis of Delhi-Mumbai Flights (domestic) 2015-16

(Referred to in Para 11.3.3)

Flight no.	Total Departure	Cancelled	Operated	Flight on Time (STD +15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipment (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code-61 to 70)	Weather (Delay Code-71 to 80)	Air Traffic Flow Management Restrictions (Delay Code-81 to 84)	Airport and Government Authorities (Delay Code-85 to 90)	Reactionary (Delay Code 91 to 96 exclude 93K)	Reactionary 93A to 93M	Miscellaneous (Delay Code- 97 to 99)	Total			
AI0315	156	0	156	65	91	42	0	4	0	2	2	0	0	2	0	3	1	46	31	0				
			Delay Reason backward analysis (93)				0	1	0	0	3	0	0	0	0	3	3	11	10					
			Total after adding 93				0	5	0	2	5	0	0	2	0	6	4	57	10	0				
AI0317	209	0	209	84	125	40	0	8	0	0	2	0	0	0	0	4	0	72	39					
			Delay Reason backward analysis (93)				0	1	0	1	1	0	0	3	0	1	2	19	11	0				
			Total after adding 93				0	9	0	1	3	0	0	3	0	5	2	91	11	0				
AI0602	334	0	334	245	89	73	0	1	0	1	3	1	0	2	0	6	0	41	34	0				
			Delay Reason backward analysis (93)				0	1	0	1	3	1	0	2	3	8	2	6	7	0				
			Total after adding 93				0	2	0	2	6	2	0	4	3	14	2	47	7	0				
AI0624	334	14	320	218	102	68	0	0	0	0	3	0	0	4	0	10	1	21	63	0				
			Delay Reason backward analysis (93)				0	1	0	4	9	1	0	3	1	8	5	12	18	1				
			Total after adding 93				0	1	0	4	12	1	0	7	1	18	6	33	18	1				
AI0659	320	7	313	198	115	63	2	1	0	0	1	0	0	6	1	8	5	19	72	0				
			Delay Reason backward analysis (93)				0	1	1	0	4	0	0	3	0	26	13	7	17	0				
			Total after adding 93				2	2	1	0	5	0	0	9	1	34	18	26	17	0				
AI0805	355	8	347	251	96	72	0	1	0	1	7	0	0	4	0	3	1	43	36	0				
			Delay Reason backward analysis (93)				0	0	0	1	5	0	0	4	4	6	4	5	7	0				
			Total after adding 93				0	1	0	2	12	0	0	8	4	9	5	48	7	0				
AI0810	208	31	177	94	83	53	0	3	0	0	3	1	0	2	0	9	0	3	62	0				
			Delay Reason backward analysis (93)				0	3	0	3	3	0	0	3	3	16	4	8	19	0				
			Total after adding 93				0	6	0	3	6	1	0	5	3	25	4	11	19	0				
AI0863	366	1	365	202	163	55	0	4	0	0	2	0	1	8	0	34	2	9	102	1				
			Delay Reason backward analysis (93)				0	0	0	6	4	1	0	4	11	28	10	8	30	0				
			Total after adding 93				0	4	0	6	6	1	1	12	11	62	12	17	30	1				
Total before reactionary	2282	61	2221	1357	864		2	22	0	4	23	2	1	28	1	77	10	254	439	1	864			
							Entirely Controllable			80	9% Beyond Control		91	11% Partially Contralable		29%	51%							
							Delay Reason backward analysis (93)			0	8	1	16	32	3	0	22	22	96	43	76	119	1	439
							Entirely Controllable			79	18% Beyond Control		165	38% Partially Contralable		17%	27%							
							Total After Adding 93K			2	30	1	20	55	5	1	50	23	173	53	330	119	2	864
							Entirely Controllable			159	18% Beyond Control		256	29% Partially Contralable		38%	14%							

Annexure 11

Analysis of Mumbai- Delhi Flights 2014-15

(Referred to in Para 11.3.3)

Flight no.	Operated	Flight on Time (STD +15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipment (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code-61 to 70)	Weather (Delay Code-71 to 80)	Air Traffic Flow Management Restrictions (Delay Code-81 to 84)	Airport and Government Authorities (Delay Code-85 to 90)	Reactionary (Delay Code 91 to 96)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code- 97 to 99)	Total	
A10310 (20:00)	209	119	90	57	0	1			2	1	1	14			1	27	43			
	Delay Reason backward analysis (93)					0	0	0	0	3	0	0	4	2	3	5	8	18	0	
	Total after adding 93					0	1	0	0	5	1	1	18	2	3	6	35	18	0	
A10314 (20:00)	155	89	66	58	0	3		4	1		1	14			2	14	27			
	Delay Reason backward analysis (93)					0	1	0	2	2	0	0	0	1	3	0	6	12	0	
	Total after adding 93					0	4	0	6	3	0	1	14	1	3	2	20	12	0	
A10605 (21:00)	225	127	98	56	0	1	0	1	1	1	0	6	0	14	0	13	61	0		
	Delay Reason backward analysis (93)					0	2	0	2	4	0	3	3	7	8	3	10	19	0	
	Total after adding 93					0	3	0	3	5	1	3	9	7	22	3	23	19	0	
A10660 (17:00)	363	208	155	57	0	4	0	2	5	0	2	1	0	26	3	0	112			
	Delay Reason backward analysis (93)					1	4	0	2	4	4	0	7	6	17	7	14	46	0	
	Total after adding 93					1	8	0	4	9	4	2	8	6	43	10	14	46	0	
A10677 (13:00)	361	280	81	78	0	1	0	0	8	0	0	11	0	2	0	13	46			
	Delay Reason backward analysis (93)					0	0	0	2	1	0	0	5	8	0	0	1	29	0	
	Total after adding 93					0	1	0	2	9	0	0	16	8	2	0	14	29	0	
A10866 (09:00)	362	160	202	44	0	2	0	2	3		1	2	3	55	2	6	126			
	Delay Reason backward analysis (93)					1	6	0	16	8	0	0	5	6	3	30	16	35	0	
	Total after adding 93					1	8	0	18	11	0	1	7	9	58	32	22	35	0	
A10888 (19:00)	322	174	148	52	0	4	0	1	0	0	0	0	1	40	4	14	84	0		
	Delay Reason backward analysis (93)					0	2	0	3	11	0	2	12	7	3	2	23	18	1	
	Total after adding 93					0	6	0	4	11	0	2	12	8	43	6	37	18	1	
Total before reactionary	1997	1157	840		0	16	0	10	20	2	5	48	4	137	12	87	499	0	840	
					Entirely Controllable			99	12%	Beyond Control			155	18% Partially Controllable			10%	59%		
	Delay Reason backward analysis (93)					2	15	0	27	33	4	5	36	37	37	47	78	177	1	499
					Entirely Controllable			118	24%	Beyond Control			126	25% Partially Controllable			16%	35%		
	Total after adding 93					2	31	0	37	53	6	10	84	41	174	59	165	177	1	840
					Entirely Controllable			217	26%	Beyond Control			281	33% Partially Controllable			20%	21%		

Annexure 11A

Analysis of Mumbai-Delhi Flights 2015-16

(Referred to in Para 11.3.3)

Flight no.	Operated	Flight on Time (STD +15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipment (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code-61 to 70)	Weather (Delay Code-71 to 80)	Air Traffic Flow Management Restrictions (Delay Code-81 to 84)	Airport and Government Authorities (Delay Code-85 to 90)	Reactionary (Delay Code 91 to 96)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code- 97 to 99)		
AI0310 (20:00)	207	128	79	62	0	0	0	0	5	0	1	4	0	5	1	37	26	0		
	Delay Reason backward analysis (93)				0	0	0	0	1	0	0	1		3	2	3	16			
	Total after adding 93				0	0	0	0	6	0	1	5	0	8	3	40	16	0		
AI0314 (20:00)	155	89	66	57	0	0	0	2	4	0	0	7	0	3	2	26	22	0		
	Delay Reason backward analysis (93)				0	0	0	0	1	0	0	2	0	2	0	1	16			
	Total after adding 93				0	0	0	2	5	0	0	9	0	5	2	27	16	0		
AI0605 (21:00)	230	76	154	33	0	0	0	2	5	0	0	1	0	11	0	15	120	0		
	Delay Reason backward analysis (93)				0	1	0	1	10	0	1	6	3	30	4	24	40	0		
	Total after adding 93				0	1	0	3	15	0	1	7	3	41	4	39	40	0		
AI0660 (17:00)	361	228	133	63	0	0	0	3	5	0	0	5	0	17	6	7	90	0		
	Delay Reason backward analysis (93)				0	0	1	4	3	1	1	6	7	27	1	9	30			
	Total after adding 93				0	0	1	7	8	1	1	11	7	44	7	16	30	0		
AI0677 (13:00)	343	240	103	70	0	1	0	5	11	0	0	5	0	11	3	17	50	0		
	Delay Reason backward analysis (93)				0	2	0	1	11	0	1	4	3	5	1	8	14			
	Total after adding 93				0	3	0	6	22	0	1	9	3	16	4	25	14	0		
AI0866 (09:00)	359	250	109	70	0	0	0	1	6	2	1	5	2	26	5	5	56	0		
	Delay Reason backward analysis (93)				0	1	0	1	5	0	0	4	3	1	22	5	14	0		
	Total after adding 93				0	1	0	2	11	2	1	9	5	27	27	10	14	0		
AI0888 (19:00)	354	251	103	71	0	0	0	3	3	0	0	9	0	20	7	31	30	0		
	Delay Reason backward analysis (93)				0	0	0	0	8	1	0	0	1	2	0	3	15			
	Total after adding 93				0	0	0	3	11	1	0	9	1	22	7	34	15	0		
Total Before reactionary	2009	1262	747		0	1	0	16	39	2	2	36	2	93	24	138	394	0	747	
	Entirely Controllable						94	13%	Beyond Control			121	16%	Partially Controllable			18%	53%		
	Delay Reason backward analysis (93)				0	4	1	7	39	2	3	23	17	70	30	53	145	0	394	
	Entirely Controllable						77	20%	Beyond Control			119	30%	Partially Controllable			13%	37%		
	Total after adding 93K					5	1	23	78	4	5	59	19	163	54	191	145	0		
	Entirely Controllable						171	23%	Beyond Control			240	32%	Partially Controllable			26%	19%	747	

Annexure 12

Analysis of Ex-Delhi International Flights 2014-15

(Referred to in Para 11.3.4)

Flight No.	Total Departure	Cancelled	Operated	Flight in Time (STD+15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipme nt (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code 61 to 70)	Weather (Delay Code 71 to 80)	Air Traffic Flow Management Restrictions (Delay Code 81 to 84)	Airport and Govt. Authorities (Delay Code 85 to 90)	Reactionary (Delay code 91 to 96)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code 97 to 99)	Total
AI0010	338	13	325	158	167	49	0	7	0	0	0	0	1	31	1	3	4	31	89	0	167
AI0016	364	6	358	246	112	69	0	9	1	3	7	0	1	13	3	4	1	26	44	0	112
AI0020	365	0	365	242	123	66	0	4	0	2	23	1	0	44	0	0	2	22	25	0	123
AI0101	363	2	361	262	99	73	1	7	0	1	5	2	2	30	3	1	8	23	15	1	99
AI0111	365	0	365	266	99	73	0	11	0	2	12	1	0	27	0	4	8	29	4	1	99
AI0113	252	3	249	133	116	53	0	8	0	4	4	0	2	45	0	1	6	18	27	1	116
AI0114	251	2	249	115	134	46	0	11	0	5	7	0	0	34	2	3	3	34	35	2	136
AI0121	365	0	365	240	125	66	1	10	0	6	16	0	1	44	0	3	6	24	13	1	125
AI0123	295	1	294	170	124	58	0	5	0	1	11	1	0	68	0	3	4	25	5	1	124
AI0127	365	2	363	284	79	78	0	6	0	1	9	4	1	24	0	0	11	15	7	1	79
AI0143	365	0	365	234	131	64	0	5	0	4	14	0	0	52	2	1	10	37	6	0	131
AI0215	365	4	361	230	131	64	0	12	0	5	2	1	1	38	0	5	17	26	22	2	131
AI0302	356	0	356	174	182	48	0	9	0	4	19	0	2	93	0	2	9	36	5	3	182
AI0306	157	1	156	109	47	70	0	0	0	3	9	0	0	19	0	0	2	7	7	0	47
AI0310	208	0	208	100	108	48	0	4	0	2	6	1	1	15	1	2	1	47	27	1	108
AI0314	156	0	156	87	69	56	0	0	0	1	5	0	0	12	0	0	1	35	15	0	69
AI0332	365	0	365	272	93	75	0	6	0	10	6	0	1	26	0	1	14	15	13	1	93
AI0991	157	0	157	104	53	66	0	5	0	1	2	0	1	15	0	1	4	15	8	1	53
AI0995	365	1	364	212	152	58	0	10	0	2	14	0	1	48	2	0	22	31	22	0	152
Total	5817	35	5782	3638	2144		2	129	1	57	171	11	15	678	14	34	133	496	389	16	2146
							Entirely Controllable			1053	49%	Beyond Control		208	10%	Partially Controllable		23%	18%		

Annexure 12A

Analysis of Ex-Delhi International Flights 2015-16

(Referred to in Para 11.3.5)

Flight No.	Destination	Time	Total Departure	Cancelled	Operated	Flight on Time (STD +15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipment (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code-61 to 70)	Weather (Delay Code-71 to 80)	Air Traffic Flow Management Restrictions (Delay Code-81 to 84)	Airport and Government Authorities (Delay Code-85 to 90)	Reactionary (Delay Code 91 to 96 except 93)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code- 97 to 99)	
A10010	AMD	18:10	361	0	361	257	104	71	0	1	0	3	7	0	2	6	0	6	2	35	42	0	
A10048	COK	18:05	366	0	366	251	115	69	1	9	0	2	3	0	0	8	0	8	0	28	56	0	
A10101	JFK	1:45	366	0	366	270	96	74	0	21	0	3	7	0	1	11	1	2	13	18	19	0	
A10111	LHR	14:05	366	0	366	290	76	79	0	8	0	7	7	0	4	12	1	1	4	28	3	1	
A10113	BHX	13:35	366	0	366	262	104	72	0	13	0	3	9	0	1	14	0	2	5	18	39	0	
A10114	ATQ	12:05	365	0	365	235	130	64	0	8	0	4	4	0	2	14	2	2	8	71	15	0	
A10121	FRA	13:45	366	0	366	278	88	76	0	11	0	5	10	0	1	10	2	1	14	33	1	0	
A10123	FCO	14:25	283	1	282	210	72	74	0	7	0	2	7	1	1	32	1	0	5	14	2	0	
A10127	ORD	2:20	366	0	366	291	75	80	1	14	0	3	6	1	2	10	1	0	16	13	7	1	
A10142	MAA	12:35	363	6	357	232	125	65	0	7	1	7	7	0	0	11	0	19	4	31	38	0	
A10143	CDG	13:15	366	0	366	249	117	68	0	8	0	1	8	0	2	10	1	1	8	73	5	0	
A10155	DME	19:55	153	1	152	90	62	59	0	4	0	0	2	0	0	29	1	4	6	14	2	0	
A10156	GOI	4:30	304	0	304	235	69	77	0	3	0	3	16	1	0	3	0	4	5	11	23	0	
A10213	KTM	7:20	349	0	349	258	91	74	0	2	0	2	4	1	0	4	70	1	3	3	0	1	
A10215	KTM	12:55	344	1	343	243	100	71	0	6	0	8	1	0	1	12	2	7	17	19	26	1	
A10302	SYD	13:25	222	0	222	141	81	64	0	10	0	1	9	0	1	25	2	3	6	22	2	0	
A10310	HKG	23:15	209	0	209	109	100	52	0	1	0	2	4	0	0	7	0	0	1	82	3	0	
A10314	HKG	23:15	157	0	157	69	88	44	0	3	0	0	5	0	0	2	0	0	2	70	6	0	
A10991	JED	16:50	157	1	156	104	52	67	0	4	0	1	2	0	0	4	0	0	5	36	0	0	
Total			5829	10	5819	4074	1745			2	140	1	57	118	4	18	224	84	61	124	619	289	4
											Entirely Controllable		560	32%	Beyond Control		277	16%	Partially Controllable		35%	17%	

Annexure 13

Analysis of International Ex-Mumbai Flight 2014-15

(Referred to in Para 11.3.4)

Before Reactionary																							
Flight No.	Total Departure	Cancelled	Operated	Flight in Time (STD+15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipme nt (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automat ed Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code 61 to 70)	Weather (Delay Code 71 to 80)	Air Traffic Flow Management Restrictions (Delay Code 81 to 84)	Airport and Govt. Authorities (Delay Code 85 to 90)	Reactionary (Delay code 91 to 96)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code 97 to 99)	Total		
AI131	365	3	362	281	81	78	0	1	0	4	13	0	1	28	0	0	8	21	5	0	81		
AI191	363	5	358	241	117	67	0	13	0	13	15	1	1	13	2	0	19	27	13	0	117		
AI330	365	0	365	277	88	76	0	1	0	11	20	1	1	26	0	2	8	7	11	0	88		
AI342	364	2	362	263	99	73	1	7	0	12	16	0	0	21	0	0	10	11	21	0	99		
AI931	208	1	207	130	77	63	0	4	0	3	7	1	1	9	0	3	8	36	5	0	77		
AI983	365	0	365	254	111	70	0	8	0	11	14	1	1	10	0	2	15	7	42	0	111		
AI985	364	0	364	158	206	43	3	9	0	5	48	0	0	7	0	2	17	11	103	1	206		
Total	2394	11	2383	1604	779			43	0	59	133	4	5	114	2	9	85	120	200	1	779		
						Entirely Controllable			358	46%	Beyond Control			97	12%	Partially Controllable			15%	26%			
		AI983		Before Reactionary						8	11	14	1	1	10	2	15	7	42				
				Delay Reason backward analysis (93)						0	0	7	2	0	5	5	4	2	10	7	0		
				Total after adding 93						0	8	0	11	21	3	1	15	5	6	17	7	0	
		AI985		Before Reactionary						3	9	5	48	0	7	0	2	17	11	103	1		
				Delay Reason backward analysis (93)						0	2	0	3	11	0	1	6	14	2	10	54	0	
				Total after adding 93						3	11	0	8	59	0	0	8	6	16	19	21	54	1
After Reactionary Final																							
Flight No.	Total Departure	Cancelled	Operated	Flight in Time (STD+15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code-01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipme nt (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automat ed Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code 61 to 70)	Weather (Delay Code 71 to 80)	Air Traffic Flow Management Restrictions (Delay Code 81 to 84)	Airport and Govt. Authorities (Delay Code 85 to 90)	Reactionary (Delay code 91 to 96)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code 97 to 99)	Total		
AI131	365	3	362	281	81	78	0	1	0	4	13	0	1	28	0	0	8	21	5	0	81		
AI191	363	5	358	241	117	67	0	13	0	13	15	1	1	13	2	0	19	27	13	0	117		
AI330	365	0	365	277	88	76	0	1	0	11	20	1	1	26	0	2	8	7	11	0	88		
AI342	364	2	362	263	99	73	1	7	0	12	16	0	0	21	0	0	10	11	21	0	99		
AI931	208	1	207	130	77	63	0	4	0	3	7	1	1	9	0	3	8	36	5	0	77		
AI983	365	0	365	254	111	70	0	8	0	11	21	3	1	15	5	6	17	7	0	0	111		
AI985	364	0	364	158	206	43	3	11	0	8	59	0	0	8	6	16	19	21	54	1	206		
Total	2394	11	2383	1604	779		67	45	0	62	151	6	5	120	13	27	89	140	116	1	779		
						Entirely Controllable			387	50%	Beyond Control			136	17%	Partially Controllable			18%	15%			

Annexure 13A Analysis of International Ex-Mumbai Flight 2015-16

(Referred to in Para 11.3.5)

Before Reactionary																				(Referred to in Para 11.3.5)												
Flight No.	Sector	Time	Total Departure	Cancelled	Operated	Flight on Time (STD +15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code- 01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipment (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code-61 to 70)	Weather (Delay Code-71 to 80)	Air Traffic Flow Management Restrictions (Delay Code-81 to 84)	Airport and Government Authorities (Delay Code-85 to 90)	Reactionary (Delay Code 91 to 96 except 93)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code- 97 to 99)										
AI0921	BOM-RUH	12:30	366	0	366	275	91	75	0	4	0	4	18	0	0	13	0	6	7	22	15	2										
AI0191	BOM-EWR	1:30	366	1	365	249	116	68	0	11	0	2	20	0	2	10	0	15	19	32	5	0										
AI0945	BOM-AUH	23:30	366	1	365	212	153	58	0	4	0	5	13	0	2	6	0	0	16	100	6	1										
AI0342	BOM-SIN	0:01	367	1	366	279	87	76	0	1	0	4	22	0	0	9	0	1	13	28	9	0										
AI0931	BOM-JED	17:00	208	0	208	125	83	60	0	3	0	1	15	0	0	8	0	1	12	37	5	1										
AI0983	BOM-DXB	20:10	366	0	366	210	156	57	0	4	0	5	19	1	0	12	0	8	24	12	71	0										
AI0985	BOM-MCT	21:50	366	0	366	202	164	55	0	4	0	5	38	0	0	8	0	3	9	13	84	0										
Total			2405	3	2402	1552	850		0	31	0	26	145	1	4	66	0	34	100	244	195	4										
									Entirely Controllable			272			32% Beyond Control			139			16%			Partially Controllable			29%			23%		
					AI983	Before Reactionary			0	4	0	5	19	1	0	12	0	8	24	12	71	0										
						Delay Reason backward analysis			1	1	0	3	5	0	0	3	2	12	7	8	29	0										
						Total after adding 93			1	5	0	8	24	1	0	15	2	20	31	20	29	0										
					AI985	Before Reactionary			0	4	0	5	38	0	0	8	0	3	9	13	84	0										
						Delay Reason backward analysis			0	2	0	2	9	1	0	8	0	7	1	3	51	0										
						Total after adding 93			0	6	0	7	47	1	0	16	0	10	10	16	51	0										
After Reactionary Final																																
Flight No.	Sector	Time	Total Departure	Cancelled	Operated	Flight on Time (STD +15 min)	Flights delayed (STD + More than 15 min)	% OTP	Air India Specific (Delay Code- 01 to 10)	Passenger & Baggage (Delay Code 11 to 20)	Cargo and Mail (Delay Code 21 to 30)	Aircraft & Ramp Handling (Delay Code 31 to 40)	Technical and Aircraft Equipment (Delay Code 41 to 50)	Damage to Aircraft (Delay Code 51 to 54)	EDP/Automated Equipment Failure (IT System Failure) (Delay Code 55 to 60)	Flight Operations and Crewing (Delay Code-61 to 70)	Weather (Delay Code-71 to 80)	Air Traffic Flow Management Restrictions (Delay Code-81 to 84)	Airport and Government Authorities (Delay Code-85 to 90)	Reactionary (Delay Code 91 to 96 except 93)	Reactionary (Delay Code 93)	Miscellaneous (Delay Code- 97 to 99)										
AI0921	BOM-RUH	12:30	366	0	366	275	91	75	0	4	0	4	18	0	0	13	0	6	7	22	15	2										
AI0191	BOM-EWR	1:30	366	1	365	249	116	68	0	11	0	2	20	0	2	10	0	15	19	32	5	0										
AI0945	BOM-AUH	23:30	366	1	365	212	153	58	0	4	0	5	13	0	2	6	0	0	16	100	6	1										
AI0342	BOM-SIN	0:01	367	1	366	279	87	76	0	1	0	4	22	0	0	9	0	1	13	28	9	0										
AI0931	BOM-JED	17:00	208	0	208	125	83	60	0	3	0	1	15	0	0	8	0	1	12	37	5	1										
AI0983	BOM-DXB	20:10	366	0	366	210	156	57	1	5	0	8	24	1	0	15	2	20	31	20	29	0										
AI0985	BOM-MCT	21:50	366	0	366	202	164	55	0	6	0	7	47	1	0	16	0	10	10	16	51	0										
Total			2405	3	2402	1552	850		1	34	0	31	159	2	4	77	2	53	108	255	120	4										
									Entirely Controllable			306			36% Beyond Control			169			20%			Partially Controllable			30%			14%		

Glossary of Technical Terms

Sr.No.	Technical Term	Meaning
1	Available Seat Kilometre	Available seat kilometre (ASKM) is a measure of the passenger carrying capacity of an airline. It is defined as the number of seats available on an aircraft multiplied by the number of kilometres flown by it.
2	Bilateral agreements	The sovereignty of a country over the airspace above its territories is recognized by the International Civil Aviation Organisation (ICAO). Bilateral agreements are air service agreements signed between two countries which provide the legal framework for operation of air services between them.
3	Block hours	Total time from the moment aircraft first moves from loading point until it stops at unloading point; Flight hours – Time between take off and touchdown.
4	Change of gauge	In <u>air transport</u> , a change of gauge for a passenger or cargo flight is a change of aircraft while retaining the same <u>flight number</u> . The term is borrowed from the rail transport practice of <u>gauge change</u> .
5	Credit hold	If an account is put on credit hold, all subscriptions that belong to the account are also put on hold. Placing new Orders is blocked. If the account is released, all its Subscriptions are released.
6	Dead Head Cost	In case the crew is to be positioned or transshipped for flight operations, Staff on Duty (SOD) allowance @ 65 percent of the scheduled block hours is paid to them. Such Expenditure incurred for positioning the crew is considered as Dead Head Cost.
7	Freedoms	
	1st Freedom	The right to fly over a foreign country without landing.

	2nd Freedom	The right to refuel or carry out maintenance in a foreign country without embarking or disembarking passengers or cargo.
	3rd Freedom	The right to fly from one's own country to another.
	4th Freedom	The right to fly from another country to one's own.
	5th Freedom	The right to fly between two foreign countries on a flight originating or ending in one's own country.
	6th Freedom	The right to fly from a foreign country to another while stopping in one's own country.
	7th Freedom	The right to fly between two foreign countries while not offering flights to one's own country
	8th Freedom	The right to fly inside a foreign country, continuing to one's own country.
	9th Freedom	The right to fly inside a foreign country without continuing to one's own country.
8	Hub and Spoke	All traffic moves along spokes connected to the hub at the centre with very few direct flights between other destinations.
9	Level of Airport	
	Level 1	Airports where the capacity of the airport infrastructure is generally adequate to meet the demands of airport users at all times.
	Level 2	Airports where there is potential for congestion during some period of the days, week or season which can be resolved by schedule adjustments mutually agreed between the airlines and facilitator
	Level 3	Airports where capacity providers have not developed sufficient infrastructure or where governments have imposed conditions that make it impossible to meet demand.
10	Rotable Exchange	AIL had signed an agreement for support of removed unserviceable line replaceable units of 787 aircraft wherein Boeing will exchange inventory for smooth operation of 787 aircraft.

11	Re-despatch	The contingency fuel from the origin to the initial destination is essentially used to fly to the destination from the Re-despatch point (RP). Hence determination of the initial destination and RP decides the quantum of benefit in terms of payload or fuel saving achieved for the flight.
12	Yield	Yield is revenue per passenger kilometre
13	PLF	Passenger Load Factor is revenue passenger kilometers' flown as a percentage of seat kilometers' available.
14	SESF	Special Extra Section Flight



List of Abbreviations

Sl. No	Abbreviations	Description
1	AAI	Airports Authority of India
2	AC	Air Canada
3	ACARS	Aircraft Communications Addressing and Reporting System
4	AIATSL	Air India Air Transport Service Ltd
5	AIESL	Air India Engenering Services Ltd
6	AIL	Air India Limited
7	AME'S	Aircraft Maintenance Engineers
8	AOG	Aircraft On Ground
9	APU	Auxiliary Power Unit
10	ARMS	Airlines Resource Management System
11	ASG	Aviation Specialist Group
12	ASKM	Available Seat Kilometers
13	ATF	Aviation Turbine Fuel
14	AUD	Australian Dollor
15	BG	Bank Guarantee
16	CA	Civil Aviation
17	CALC	China Aircraft Leasing Company
18	CCEA	Cabinet Committee on Economic Affairs
19	CCS	Central Civil Services
20	CMD	Chairman & Managing Director
21	CMS	Crew Management System
22	C of A	Certificate of Airworthiness
23	COS	Committee of Secretaries
24	CPCS	Central Planning & Control System
25	CTC	Cost to the Company
26	DCS	Departure Control System
27	DGCA	Directorate General of Civil Aviation
28	DIAL	Delhi International Airport Ltd
29	DPE	Department of Public Enterprises
30	EADS	European Aeronautic Defence and Space Company N.V.
31	EASA	European Aviation Safety Agency
32	EBITDA	Earning Before Interest, Taxes, Depreciation & Amortisation
33	EFH	Engine Flight Hour
34	EGOM	Empowered Group of Ministers

35	EOI	Economic Opportunity Institute
36	ERP	Enterprise Resource Planning
37	FAA	Federal Aviation Administration
38	FCNR	Foreign Currency Non-Resident
39	FDI	Foreign Direct Investment
40	FMS	Flight Management System
41	FRP	Financial Restructuring Plan
42	GDD	Global Data Dictionary
43	GE	General Electric
44	GF	Guarantee Fee
45	GH	Ground Handling
46	GHAL	GMR Hyderabad International Airport Limited
47	GOI	Government of India
48	GOM	Group of Ministers
49	GOO	Group of Officers
50	GTA	General Teams of Agreement
51	HCC	Hub Control Center
52	HCI	Hotel Corporation of India Ltd
53	HR	Human Resource
54	IAL	Indian Airlines Ltd
55	IARC	Implementation and Anomaly Rectification Committee
56	IATA	International Air Transport Association
57	ICAO	International Civil Aviation Organization
58	ICPA	Indian Commercial Pilot Association
59	IFE	In Flight Entertainment
60	IFS	In Flight Service
61	IOCC	Integrated Operation Control Centre
62	IP	Initial Provision
63	ISS	Indian Shuttle Service
64	IT	Information Technology
65	JDC	Justice Dharmadhikari Committee
66	JEOC	Jet Engine Overhaul Complex
67	JFK	New York
68	JVC	Joint Venture Company
69	L&DO	Land & Development Office
70	LCC	Low Cost Carrier
71	LD	liquidated Damages
72	LHR	London
73	LTC	Leave Travel Concession
74	LTL	Long Term Loan
75	LX	Swiss AIR

76	MADC	Maharashtra Airport Development Corporation
77	MCLR	Medium capacity Long Range
78	MIAL	Mumbai International Airport Limited
79	MM	Movement Manager
80	MMD	Material Management Department
81	MoCA	Ministry of Civil Aviation
82	MOF	Ministry Of Finance
83	MOU	Memorandum Of Understanding
84	MOUD	Ministry of Urban Development
85	MRA	Master Restructuring Agreement
86	MRO	Maintenance, Repair and Overhaul
87	MTOW	Maximum Take Off weight
88	NACIL	National Aviation Company of India Limited
89	NCD	Non-convertible Debentures
90	NOC	No Objection Certificate
91	O&D	Origin and Destination
92	OC	Oversight Committee
93	OCC	Operations Control Centre
94	OMC	Oil Marketing Companies
95	OTP	On Time Performance
96	PAC	Public Accounts Committee
97	PAX IS	Passenger Intelligence Services
98	PDEW	Per Day Each Way
99	PIC	Pilot in Command
100	PLF	Passenger Load Factor
101	PLI	Productivity Linked Incentive
102	PMC	Project Management Consultant
103	PMO	Prime Minister Office
104	PMS	Passenger Market Share
105	PSS	Passenger Service System
106	RBP	Revised Basic Pay
107	PRS	Passenger Reservation System
108	RPKMS	Revenue Passenger Kilometers
109	RSPL	Recommended Spares Provisioning LIST
110	RT	Return Trip
111	SBI	State Bank Of India
112	SBICAP	SBI Capital Markets Limited
113	SBU	Strategic Business Unit
114	SEZ	Special Economic Zones
115	SITA	Society for Information Technology Agency
116	SLB	Sale & Lease Back
117	SME	Subject Matter Experts

118	SOD	Staff on Duty Allowance
119	STL	Short Term Loans
120	TAP	Turn Around Plan
121	UAE	Dubai (United Arab Emirates)
122	VRS	Voluntary Retirement Scheme
123	WC	Working Capital



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