

## 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 spoke<sup>42</sup> 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

<sup>42</sup> 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 reduction<sup>43</sup> in fixed cost by ₹119.01 crore<sup>44</sup> and a potential revenue loss of ₹1024.80 crore (approx.)<sup>45</sup> 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	

<sup>43</sup> Reduction in fixed cost = Potential Revenue – Expected Variable Cost

<sup>44</sup> 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 )

<sup>45</sup> 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 revenue<sup>46</sup> to the tune of ₹724.76 crore and consequently recovered its fixed cost by ₹58.85 crore.

Similarly, review of operational performance of seven<sup>47</sup> 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 revenue<sup>48</sup> to the tune of ₹300.04 crore and non-recovery of its fixed cost by ₹60.16 crore<sup>49</sup>.

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.

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

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

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

<sup>49</sup> 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 hours<sup>50</sup>. 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.

<sup>50</sup> 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

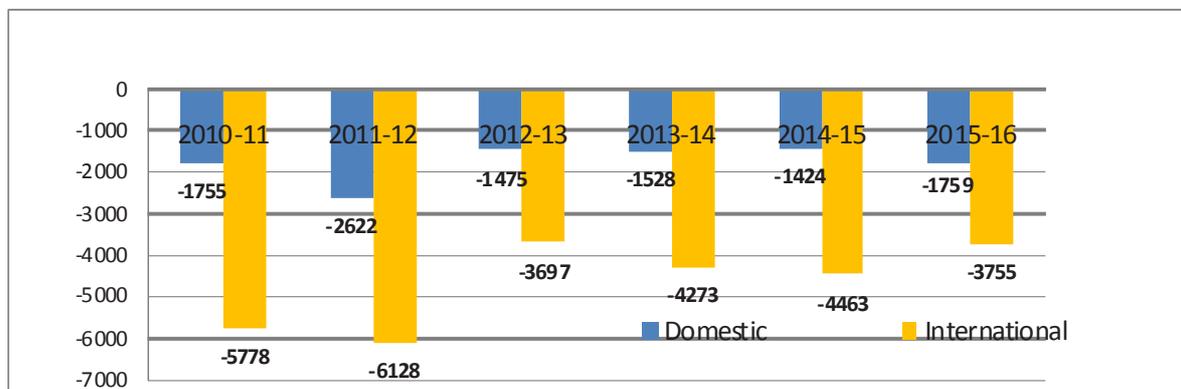
Source: AIL route economy statement

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
<b>Total</b>	<b>110</b>	<b>159</b>	<b>73</b>	<b>122</b>	<b>66</b>	<b>135</b>	<b>59</b>	<b>121</b>	<b>60</b>	<b>121</b>	<b>68</b>	<b>154</b>

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
<b>Total</b>	<b>110</b>	<b>(991.9)</b>	<b>(5,777.90)</b>		<b>60</b>	<b>1253.18</b>	<b>(4,463.03)</b>		<b>68</b>	<b>2918.68</b>	<b>(3755.14)</b>	

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)**

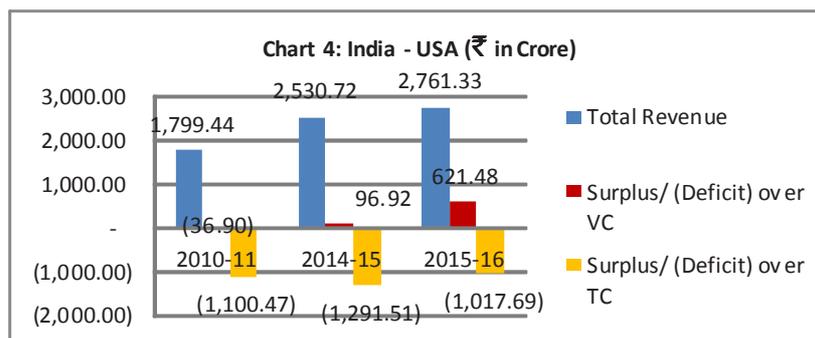
There were four services being operated by AIL to USA in 2015-16. Since the contribution of services to USA was the highest, these services were selected for specific scrutiny in audit.

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)
<b>Grand Total</b>	<b>14331.20</b>	<b>13756.62</b>	<b>21016.95</b>	<b>574.58</b>	<b>(6685.75)</b>

\*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 robin<sup>51</sup> 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

<sup>51</sup> Triangulated operation, like Delhi-Sydney-Melbourne-Delhi

factor of 85 *percent*, AIL provided a premium service between India and Australia as well as 5<sup>th</sup> 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 6<sup>th</sup> 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, three<sup>52</sup> 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 2015-16<sup>53</sup> 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

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

<sup>53</sup> 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.