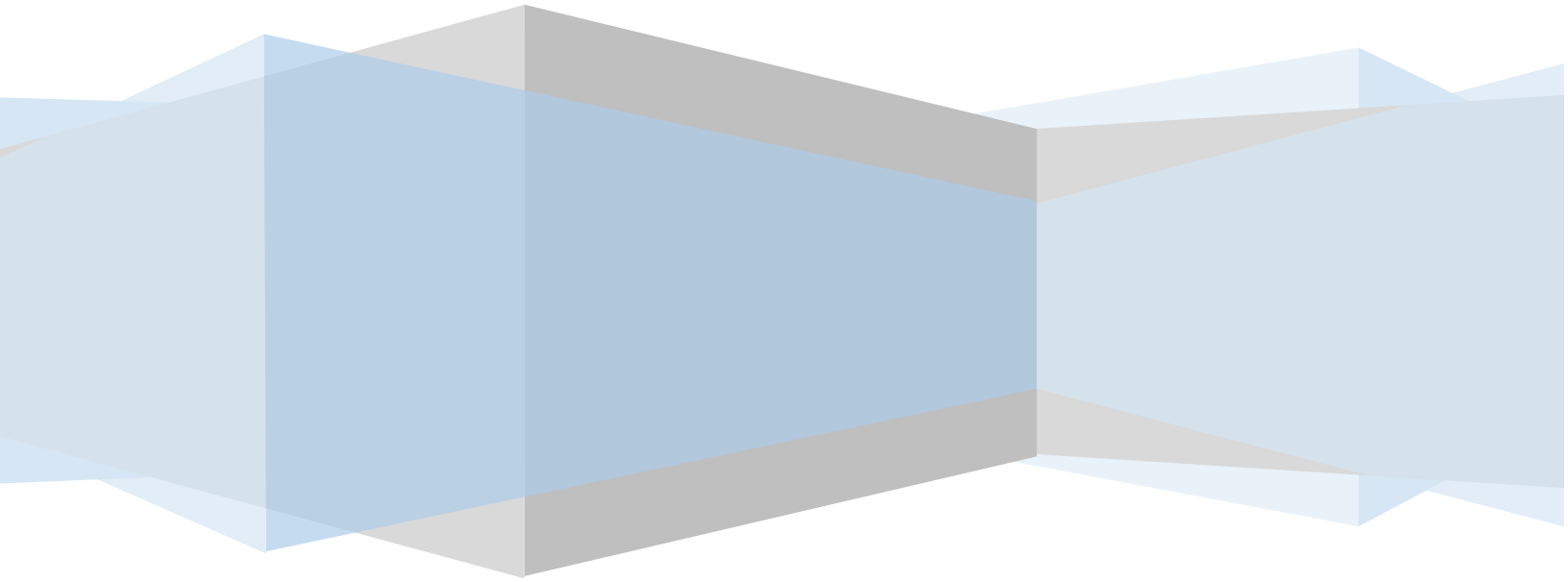
POST OPERATIONS ANALYSIS REPORT

February, 2025

CENTRAL COMMAND CENTER, C-ATFM, DELHI



Contents

List of Figures

A. Executive Summary

Average Domestic air traffic (28 days) has recorded an increase of 6.1% whereas the average international air traffic has decreased by 0.99 % in the month of February 2025 as compared to Janauary '25.

On average, the Indian Airports in the ATFCM area saw 5131 IFR flights per day in the month of February 2025. The peak days were on 21tst February 2025 (5610 IFR flights). Friday's were the busiest days throughout this month with an average of 5434 IFR flights per day.

Total Fifty Eight (58) ATFM measures were applied this month during periods of congestion at Bengaluru, Chennai, Delhi and Mumbai Airport.

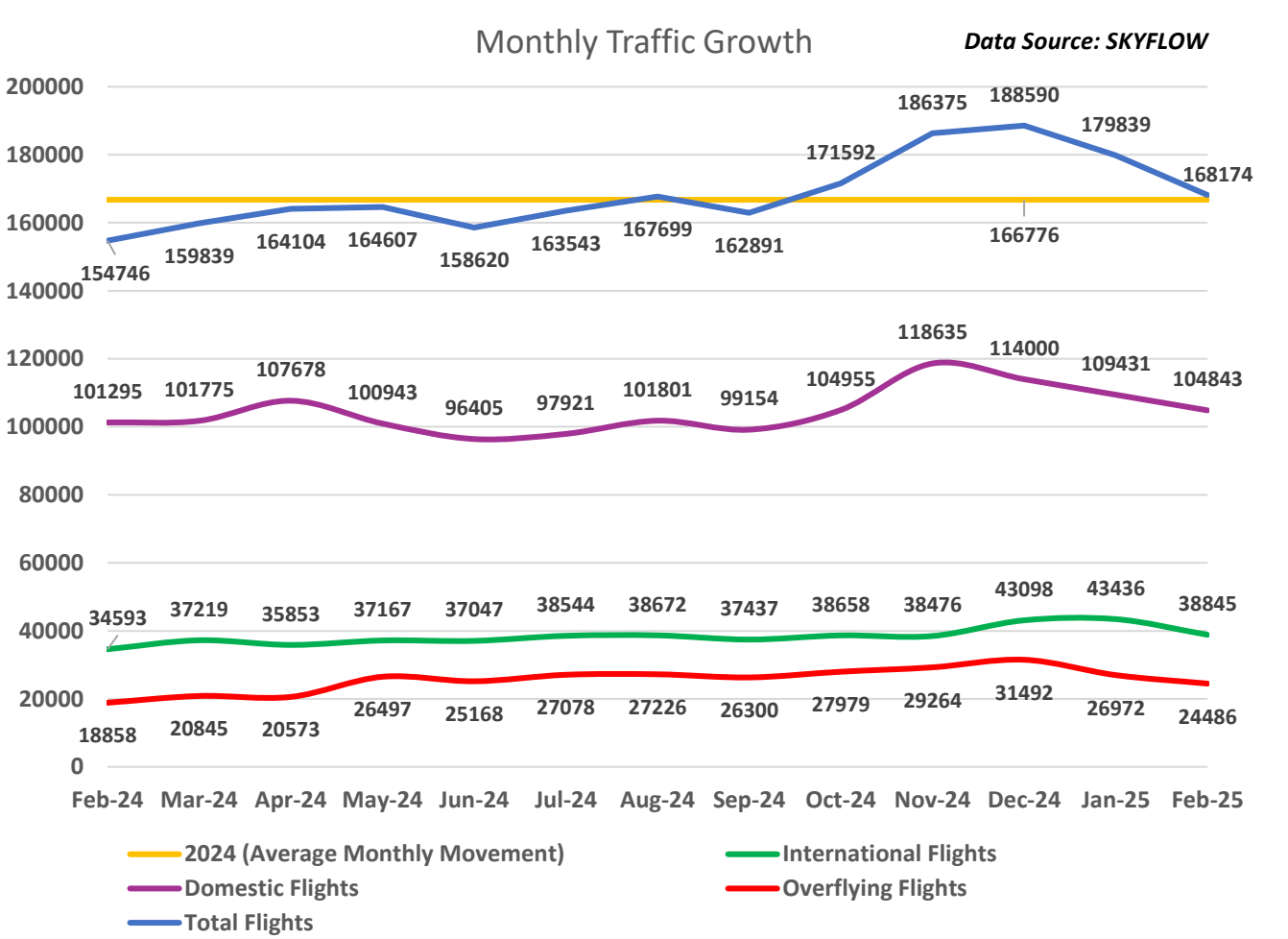


Figure 1: Monthly Traffic Growth

The graph above depicts the Domestic, International, overflying and total Air traffic in Indian ATFCM Area during the last 13 months (February'24 to February'25).

B. Traffic Analysis

I. Air Traffic Movement at Major Airports in India

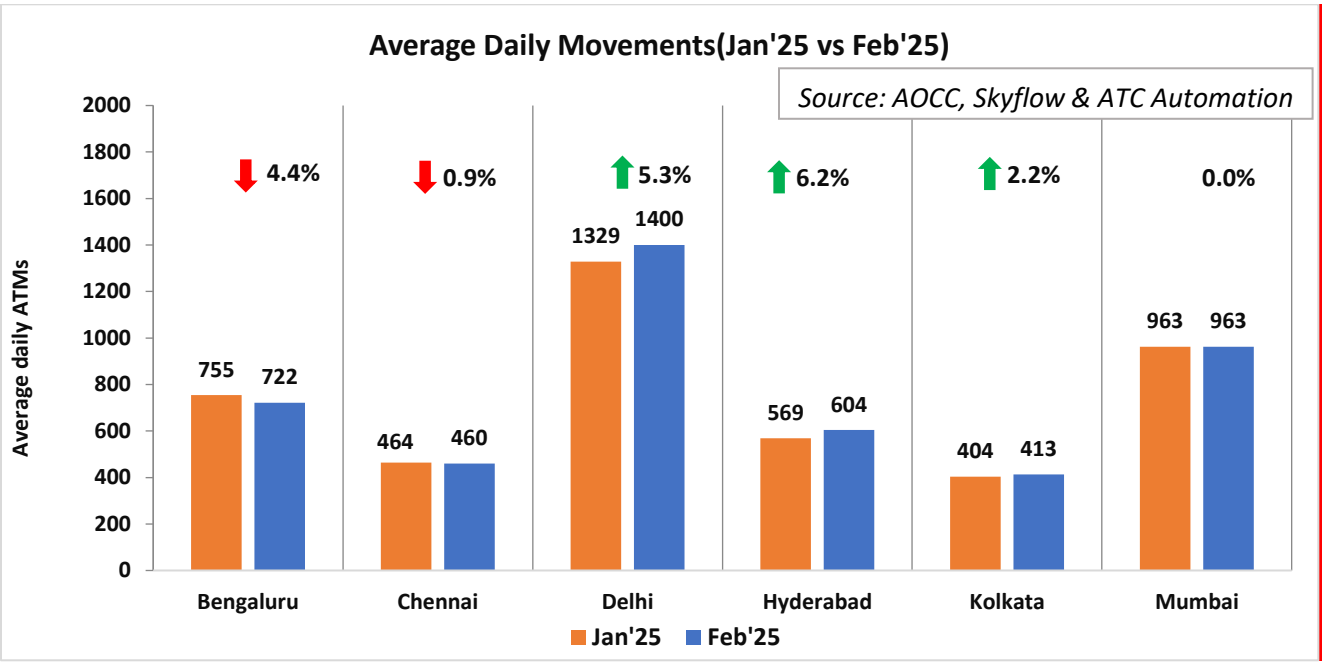


Figure 2: Average Daily Movements (Jan '25 vs Feb'25)

The above chart depicts the percentage change in average daily ATMs at six major Airports in February 2025 as compared to the previous month January 2025.

Airports\Year	Avg. Daily ATMs (YoY) for six major airports				
	Feb'21	Feb '22	Feb'23	Feb'24	Feb'25
Bengaluru	495	390	678	697	722
Chennai	311	265	411	406	460
Delhi	995	1006	1306	1329	1400
Hyderabad	357	324	486	506	604
Kolkata	331	285	392	375	413
Mumbai	588	604	936	968	963

Air Traffic Movement for each day in February 2025 is plotted for Delhi, Mumbai, Bengaluru and Hyderabad Airport along with the percentage change w.r.t. Avg. Daily Movements for the same month.

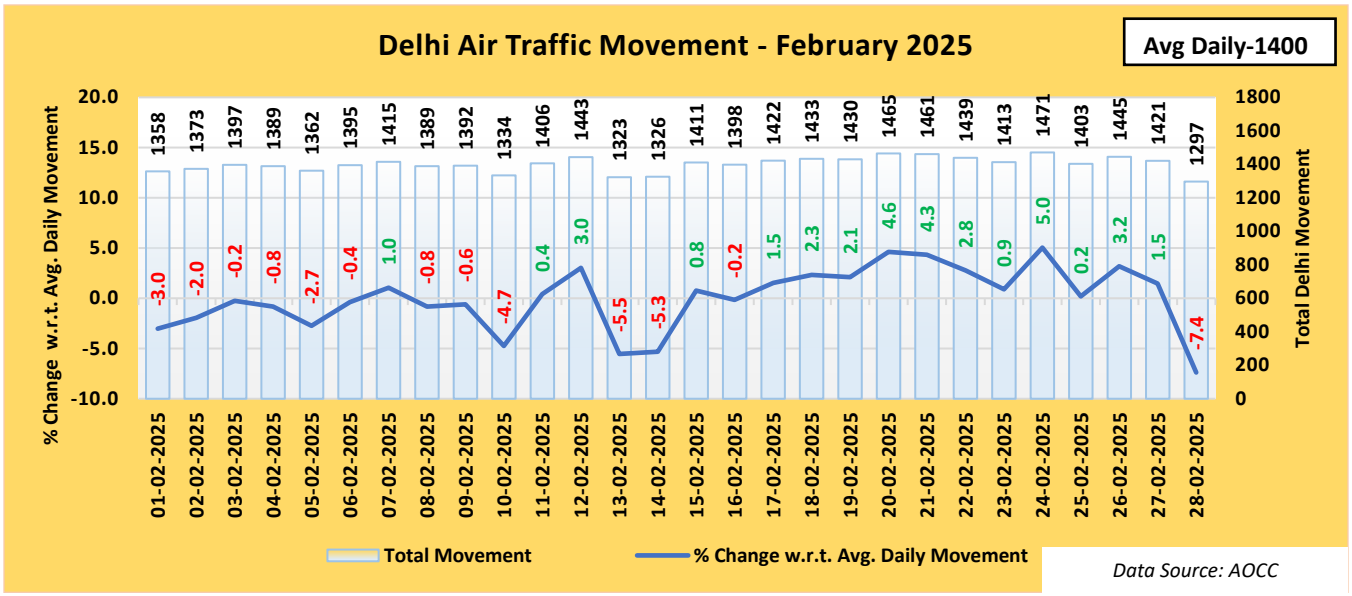


Figure 3: Air Traffic Movement for Delhi –Feb'25

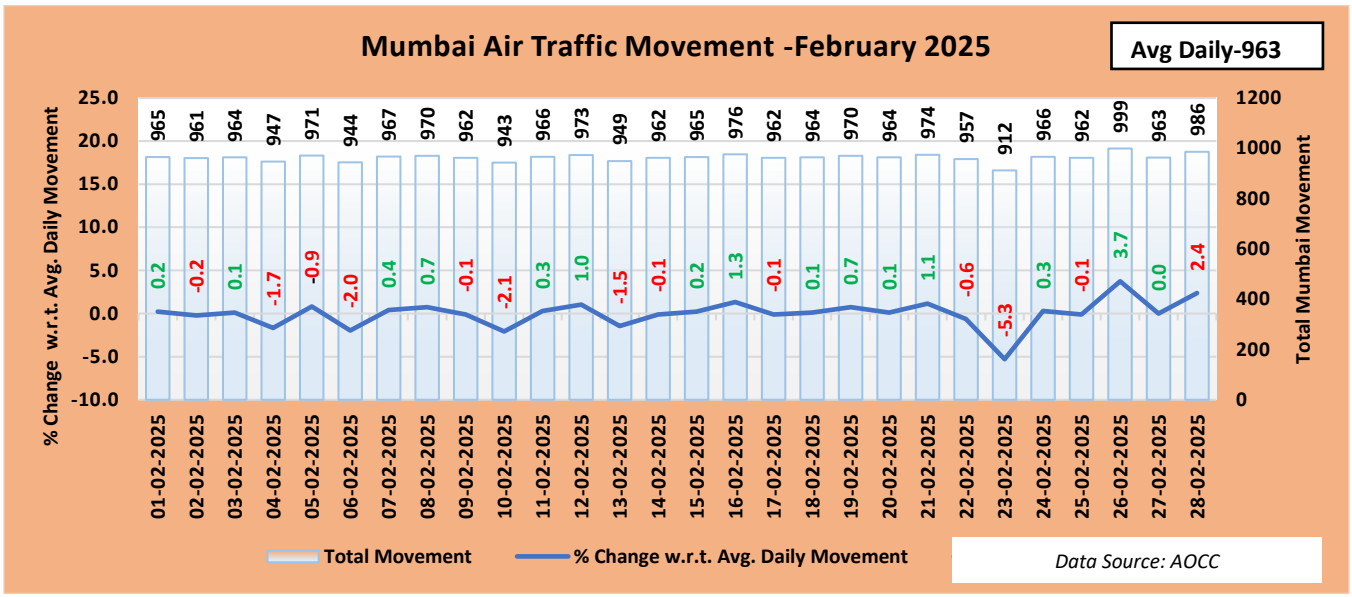


Figure 4: Air Traffic Movement for Mumbai – Feb'25

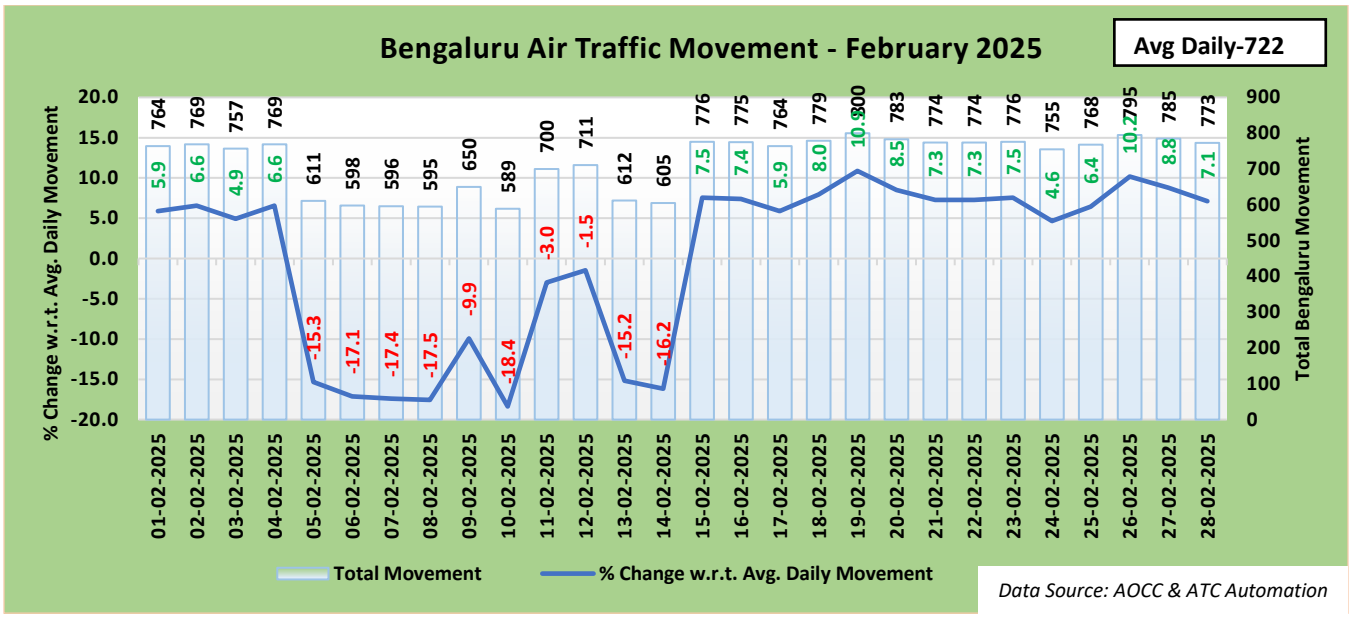


Figure 5: Air Traffic Movement for Bengaluru – Feb'25

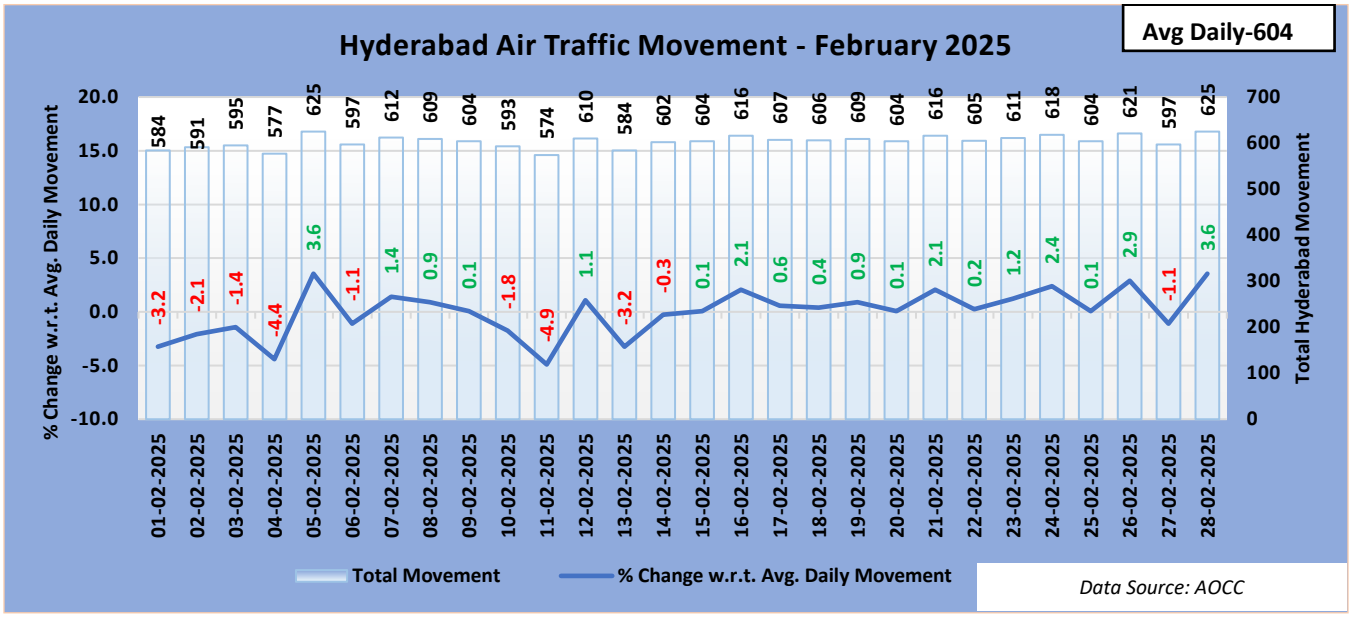


Figure 6: Air Traffic Movement for Hyderabad – Feb'25

It can be concluded from the above charts that the ATM at Delhi, Mumbai, Bengaluru and Hyderabad exceeds the average daily movement for 15 days, 15 days, 18 days and 18 days respectively in the month of February 2025.

II. Comparison of total ATMs (YoY) and Monthwise

The total Air traffic movement(ATMs) including Passenger and other flights such as Cargo flights, International scheduled, International non-scheduled, Domestic scheduled, Domestic non-scheduled, Air taxi & commercial business flights at six major Indian Airports namely Delhi, Mumbai, Bengaluru, Hyderabad, Kolkata and Chennai is plotted for the month of February for two consecutive years 2024 and 2025 respectively. Air Traffic movement is also plotted Airline wise for the last six months for the major Scheduled Operators.

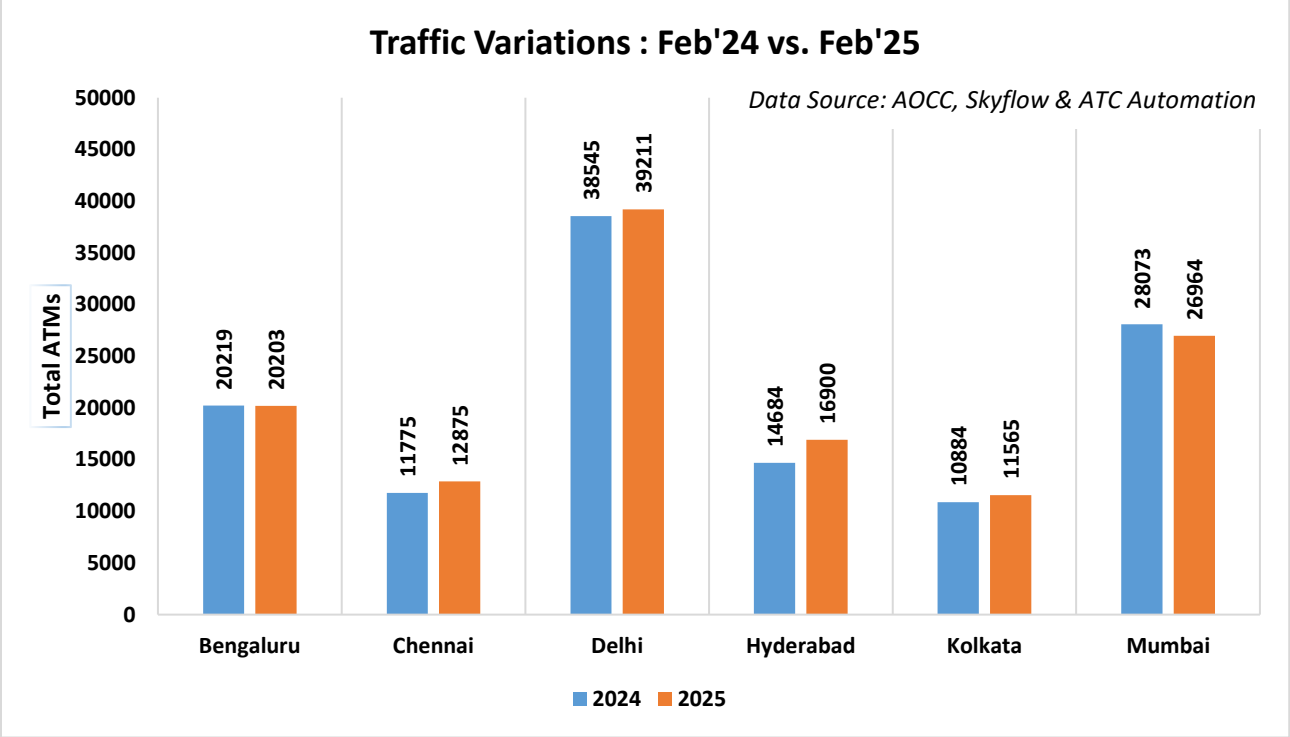


Figure 7: Traffic Variation (YoY)

III. Flight Operations – Airlinewise

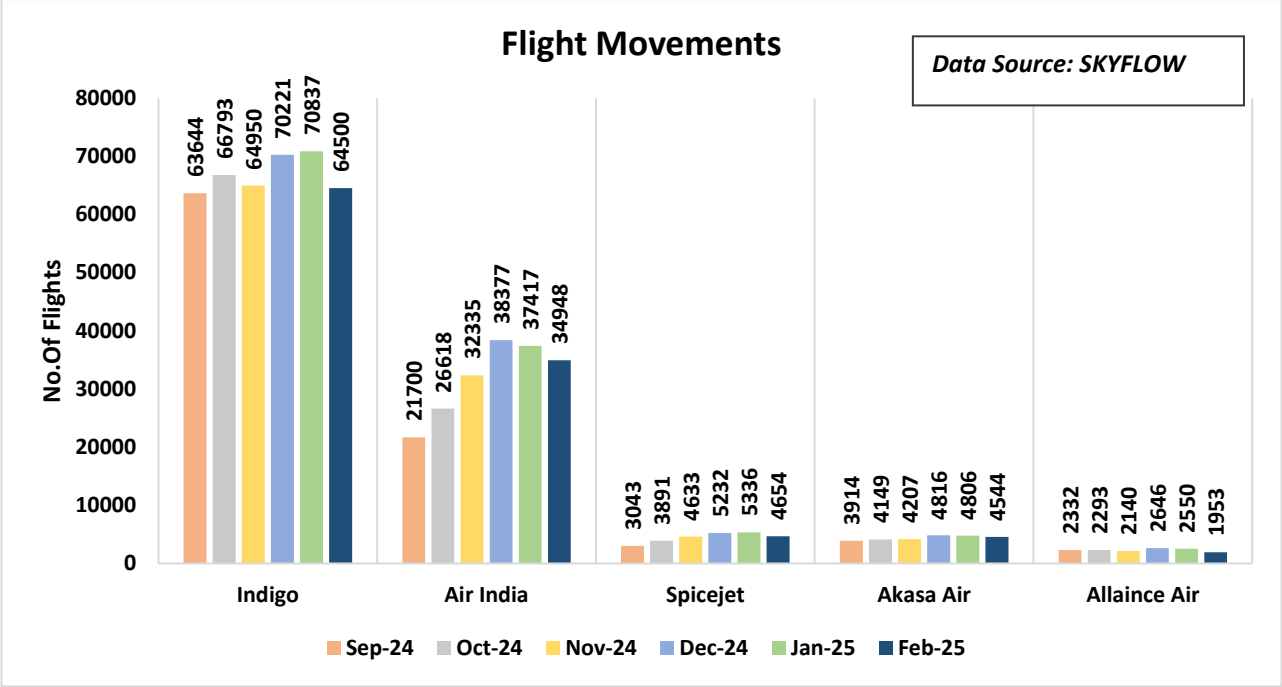


Figure 8: Flight Movements –Airlinewise

Inference:

1. Indigo, Air India and Akasa airlines have recorded an increase in the monthly average(28 days) Flight movement in February'25 as compared to January'25 while Spicejet and Alliance air airline have recorded a decline during the same period.

C. ATFM Post Operations – CDM Analysis

I. Introduction

Analysis Period **1st – 28th February 25**

Back Ground During the above mentioned period, **Fifteen (15)** ATFM measure was applied **for Bengaluru Airport, Six (06)** ATFM measures were applied **for Chennai Airport, Eleven (11)** ATFM measures were applied **for Delhi Airport and Twenty Six (26)** ATFM measures were applied **for Mumbai Airport** due to the following reasons as illustrated in the bar chart below:–

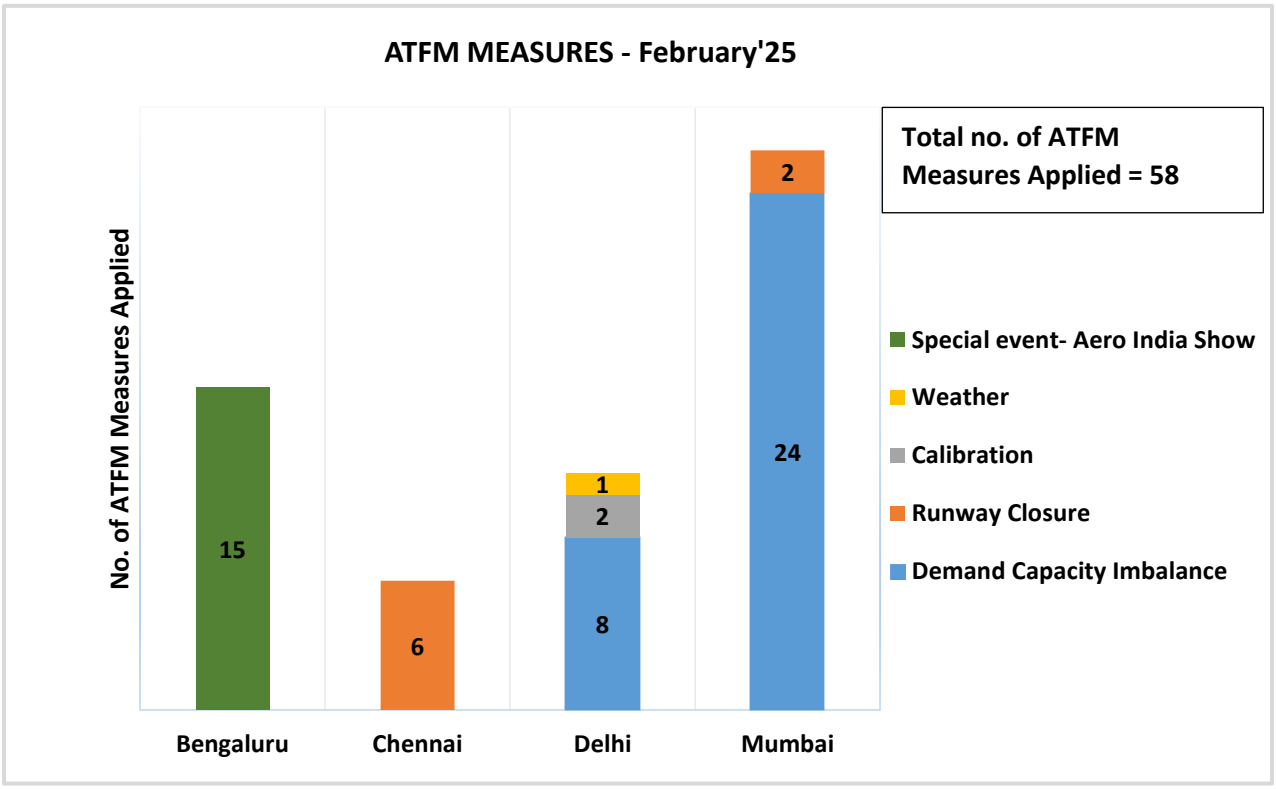


Figure 9: ATFM Measures –Feb'25

II. ATFM Measures Overview

Constrained Airport	Bengaluru	Chennai	Delhi	Mumbai
Number of ATFM measures applied	15	6	11	26
Average ATFM Ground delay(in min) due to measures*	16.7	24.5	20.9	22.7
Maximum ATFM Ground delay(in min) due to measures	49	45	92	54
% Compliance	98	97.3	96.9	98.4

Note: * $Average\ ATFM\ Delay = \frac{Total\ ATFM\ Delay}{Total\ Domestic\ Arrivals}$

Total Arrivals	3882
Total International Arrivals(exempted)	810
Total affected flights in scenario (Domestic Arrivals)	3072
Total Domestic Arrivals with zero ATFM delay	224
Total Domestic Arrivals with ATFM delay	2848

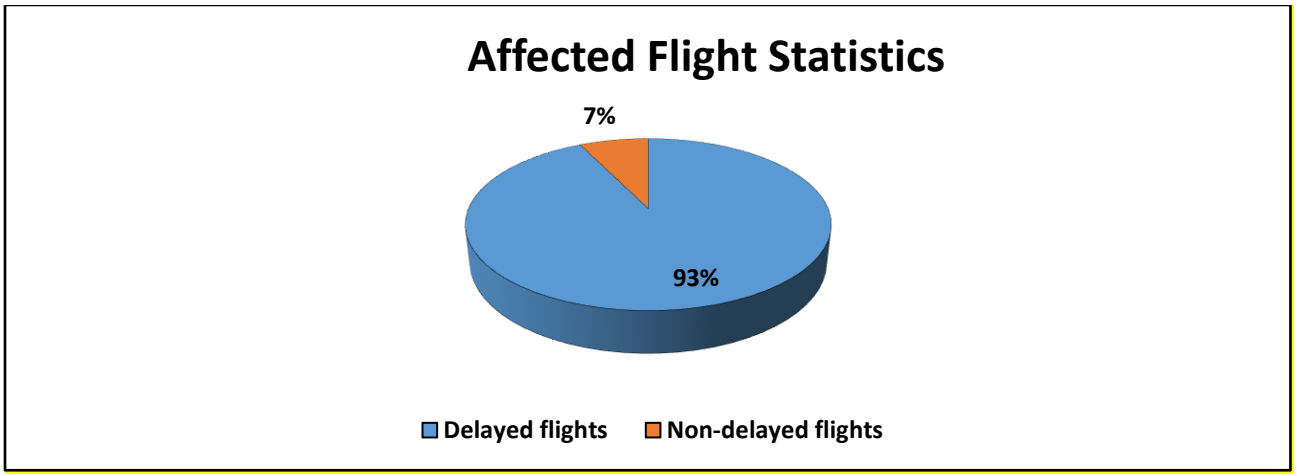


Figure 10: Affected Flight Statistics –Feb'25

III. Overall Compliance

Total arrivals	3882
Domestic arrivals	3072
Flights with complete data (ATOT)	3018
Flights with incomplete data	12
Flights Not Operated	42
Compliant*	2952
Non-Compliant	66

*Total No. of Revised CTOTs issued = 891 (Compliance calculation for flights which were issued revised CTOT is w.r.t. new CTOT issued)

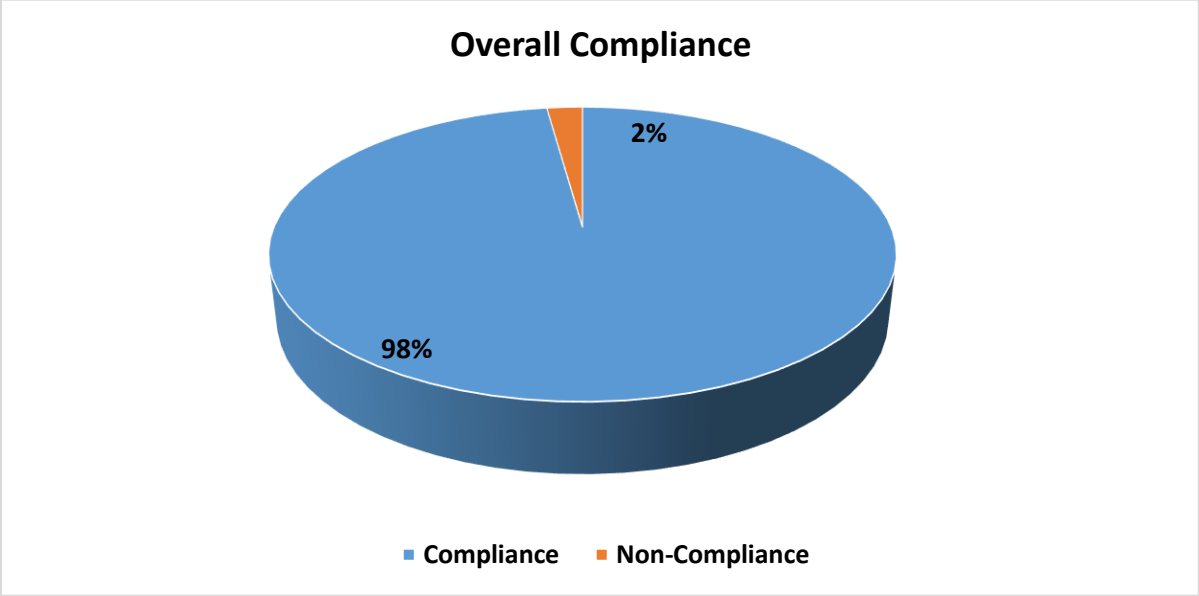


***Figure 11*: Overall Compliance – Feb'25**

NOTE: Flights with required data (i.e. ATOT) are only considered for compliance measurement

Out of the total domestic arrivals with complete data in the CDM scenario, 98% arrivals are compliant for the month of February 2025.

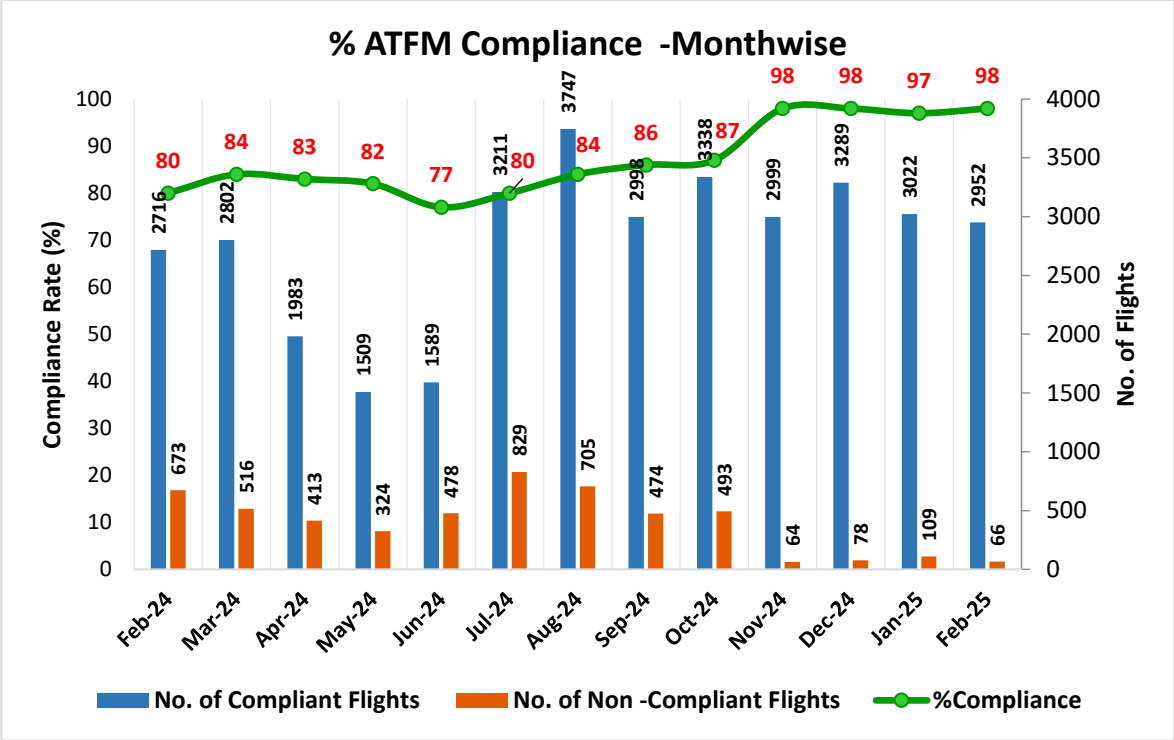


Figure 12: Compliance(Monthwise)

Inference

1. Out of the total arrivals captured(3882 flights) during the CDM scenario for the constrained Airports, 79.1% of flights i.e. domestic arrivals(3072 flights) were candidates for ground delay(participating).
2. Out of these Domestic Arrivals(3072), 92.7% (2848 flights) are assigned ATFM ground delay.
3. Out of the total arrivals captured(3882 flights) to the constrained Airport during the ATFM scenario, 73.4% of flights(2848 flights) were assigned ATFM Ground Delay.

IV. CTOT Compliance rate – Airportwise

MUMBAI FIR (98%)*	Compliant	Non Compliant	% Compliant
Ahmedabad	128	1	99%
Aurangabad	13	0	100%
Mumbai	139	2	99%
Bhuj	4	1	80%
Vadodara	20	1	95%
Bhopal	31	0	100%
Bhavnagar	1	0	100%
Hirasar, rajkot	24	0	100%
Indore	51	0	100%
Jabalpur	9	0	100%
Jalgaon	5	0	100%
Jamnagar	10	1	91%
Kandla	3	0	100%
Kolhapur	10	0	100%
Keshod	2	0	100%
Nagpur	45	0	100%
Nasik	7	1	88%
Pune	39	5	89%
Shirdi	15	0	100%
Surat	16	0	100%
Udaipur	32	0	100%
KOLKATA FIR (98%)*	Compliant	Non Compliant	% Compliant
Prayagraj	83	7	92%
Agartala	6	0	100%
Ayodhya	31	0	100%
Siliguri	40	0	100%
Shillong	1	0	100%
Varanasi	80	1	99%
Bhubaneswar	47	0	100%
Kolkata	183	1	99%
Chakeri	6	0	100%
Durgapur	11	0	100%

Darbhanga	9	0	100%
Deoghar	3	0	100%
Gorakhpur	17	2	89%
Guwahati	57	2	97%
Gaya	1	0	100%
Imphal	2	0	100%
Jharsuguda	8	0	100%
Aizawl	5	0	100%
Dibrugarh	3	0	100%
Patna	53	1	98%
Ranchi	43	1	98%
Raipur	30	1	97%
DELHI FIR (96%)*	Compliant	Non Compliant	% Compliant
Agra	2	0	100%
Amritsar	29	4	88%
Adampur	0	1	0%
Bikaner	1	0	100%
Bathinda	0	1	0%
Chandigarh	41	3	93%
Dehradun	21	0	100%
Delhi	325	8	98%
Hindon	1	0	100%
Kangra	4	0	100%
Gwalior	4	1	80%
Jodhpur	11	1	92%
Jaipur	76	1	99%
Jaisalmer	1	0	100%
Jammu	20	0	100%
Ludhiana	1	0	100%
Leh	5	1	83%
Lucknow	53	3	95%
Pantnagar	1	1	50%
Srinagar	26	0	100%
CHENNAI FIR (99%)*	Compliant	Non Compliant	% Compliant
Agatti	1	0	100%
Hal Bangalore	2	2	50%
Bangalore	210	4	98%

Belgaum	1	0	100%
Vijayawada	27	0	100%
Coimbatore	50	0	100%
Kochi	93	1	99%
Calicut	9	0	100%
MOPA Goa	60	0	100%
Goa	106	2	98%
Hubli	3	0	100%
Shamsabad, Hyderabad	172	3	98%
Begumpet Hyderabad	1	0	100%
Vijaynagar	1	0	100%
Kannur	12	0	100%
Madurai	17	0	100%
Mangalore	41	1	98%
Chennai	114	0	100%
Nanded	4	0	100%
Port Blair	14	0	100%
Pondicherry	6	0	100%
Rajahmundry	1	0	100%
Shivamogga	1	0	100%
Salem	1	0	100%
Tuticorin	7	0	100%
Tirupati	4	0	100%
Tiruchirappally	6	0	100%
Thiruvananthapuram	28	0	100%
Visakhapatnam	11	2	85%

**FIR wise compliance rate (decimals rounded off to nearest integer value).*

Note: The above list contains only those airports which had flights to the Constrained Airport and are affected by ATFM measures.

Airports with % compliance less than the average compliance(98%) for the month are highlighted in red.

V. CTOT Compliance rate – Airlinewise

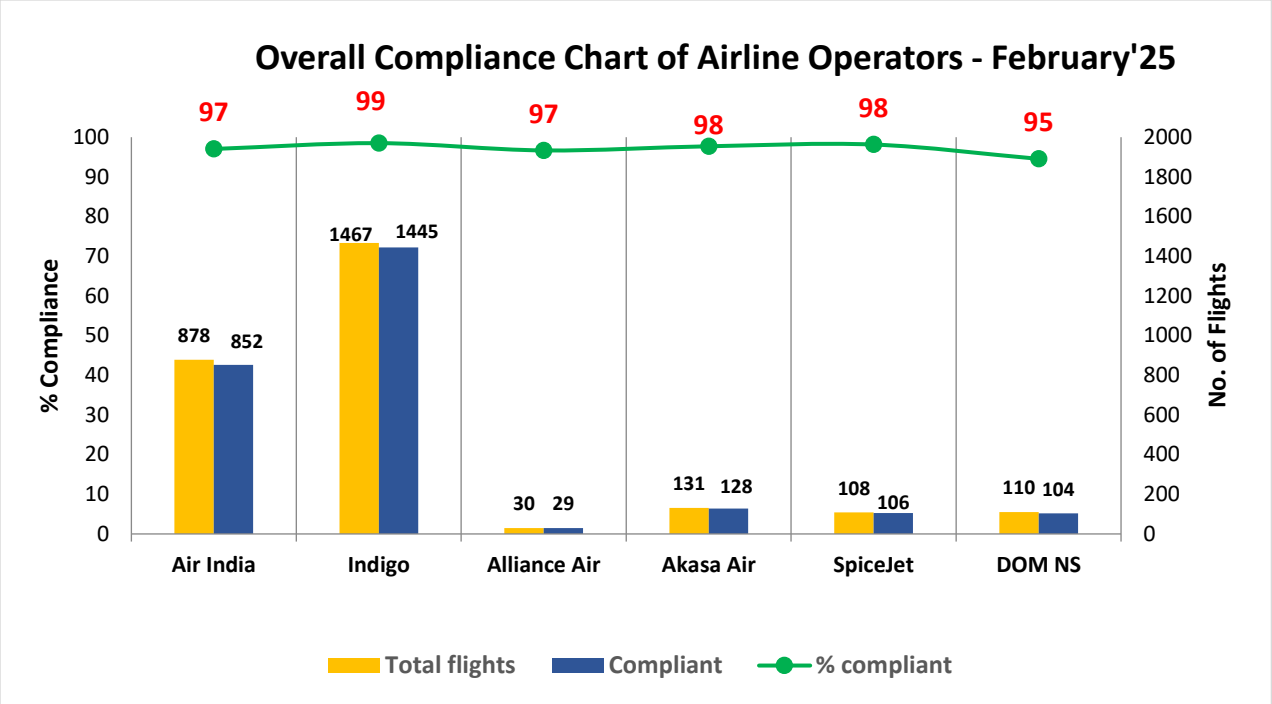


Figure 13: Airline wise Compliance –Feb'25

Inference

1. **Chennai region record the highest compliance of 99% whereas Delhi region has the lowest percentage compliance of 96%.**
2. Akasa, Indigo and Spicejet Airlines have a CTOT compliance higher than or equal to the average recorded compliance for the month of February'25.

VI. Reason For Non Compliance

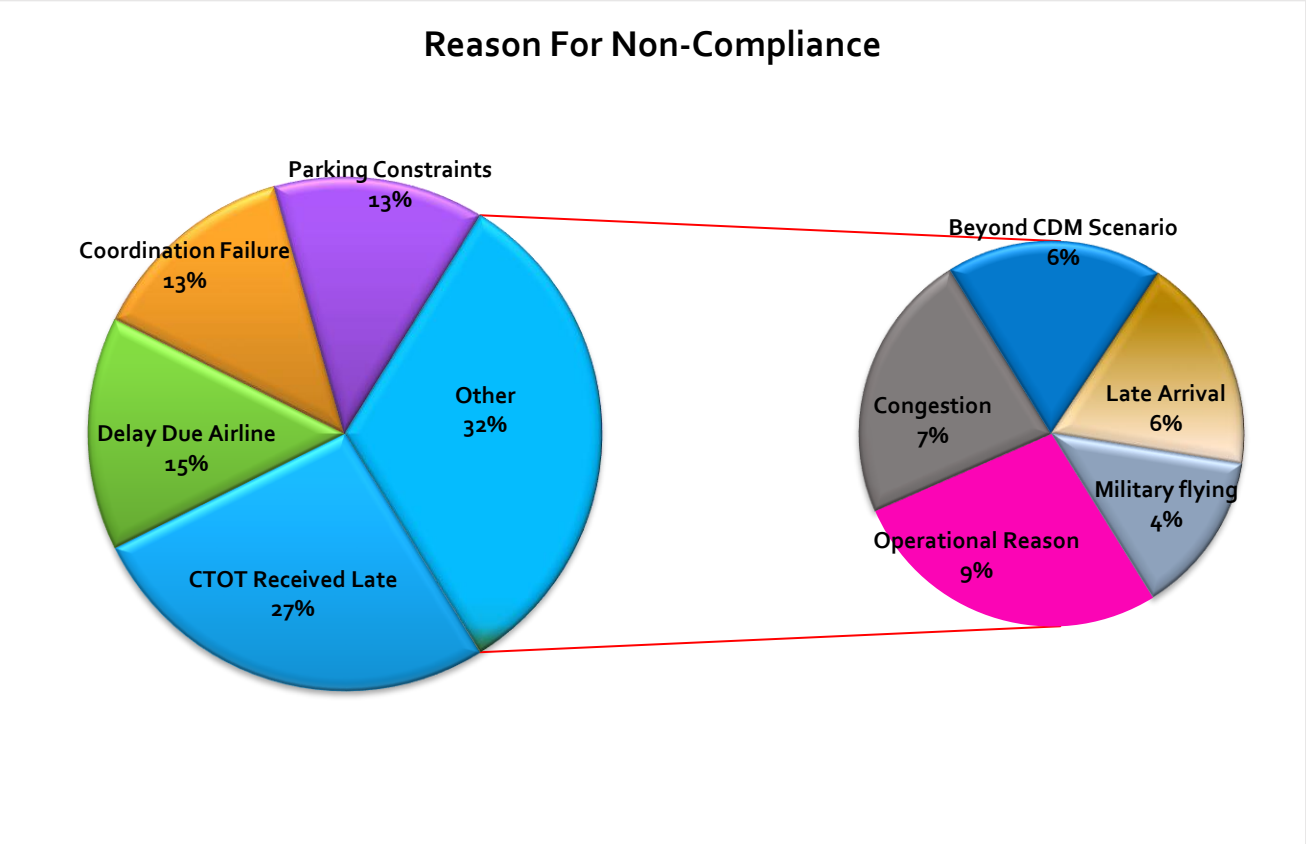


Figure 14: Reason for Non-Compliance as provided by FMPs

Inference:

1. 27 % of the CTOT Non- compliance was reported by concerned FMPs to be due to late receipt of CTOTs and by the time the aircraft had already initiated pushed back or startup.
2. 15 % of the CTOT Non- compliance was due to airline delay. Updated EOBTs of such flights was not available to ATFM unit leading to wastage of unused slots.
3. 13 % of CTOT Non- Compliance was reported by concerned FMPs to be due to coordination failure & parking constraints at various airports.

VII. Air Delay during the CDM Scenario period

Average Air Delay to domestic arrivals* within the CDM Scenario period for Bengaluru,Chennai, Delhi and Mumbai was 5.6,12.7,12.1 and 8.0 minutes respectively.

**Note: Only calculated for domestic arrivals with both ATOT and ALDT information*

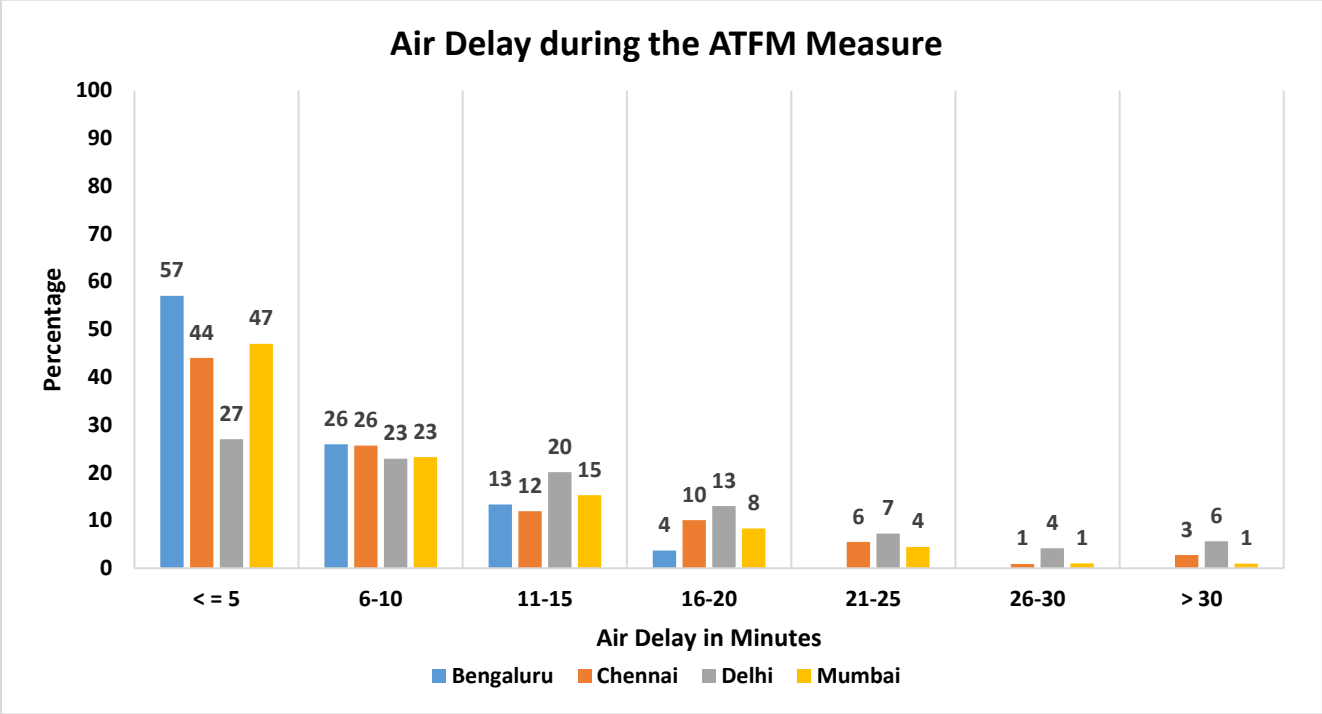


Figure 15: Air Delay distribution during the CDM period

Inference

1. 83% of domestic arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period.
2. 70% of domestic arriving flights to Chennai had an Air delay of equal to or less than 10 minutes during the CDM period.
3. 50% of domestic arriving flights to Delhi had an Air delay of equal to or less than 10 minutes during the CDM period.
4. 70% of domestic arriving flights to Mumbai had an Air delay of equal to or less than 10 minutes during the CDM period.

VIII. Tangible Benefits due to ATFM Measures

A modest attempt is made to find out the tangible benefit of ATFM measures applied.

Assumptions:

•When ATFM measures are not in force, all flights take off at their ETOT where Estimated take off time(ETOT)= Estimated off block time(EOBT) + default taxi time

•All flights have an Estimated elapsed time(EET) as calculated by SKYFLOW using the Flight Plan information and Basic Aircraft data.

Methodology:

Air delay (with ATFM measures in force) is calculated during the period when ATFM measures are in force by summing the air delay for all the flights landing at constrained Airport.

i.e. **Total Air Delay = ∑ (Actual Flying time – SKYFLOW calculated EET)**

Air delay (with no ATFM measures) is calculated as the sum of Air delay for all the flights during the above said period with no ATFM measures in place and the air delay for each flight is the difference in its ideal landing time and its ideal estimated landing time.

Total Air Delay (with no ATFM measures) = **∑ (Ideal LDT - Ideal ELDT)**

*Ideal LDT is taken by assuming every flight is landing at a specified interval based on the Arrival acceptance rate(AAR) defined,

*Ideal ELDT = ETOT + SKYFLOW calculated Flying time

Fuel Saving Calculation :

Great Circle Distance(GCD)* was calculated for all the arrivals during the ATFM Measure from the point of origin to destination. Assuming Airbus 320 as reference aircraft for flights (flight distance equal to or less than 3000 nm) and B777 for international flights (flight distance more than 3000nm):

Fuel consumption (Kgs / nm) for each affected flight in the scenario was then calculated using the Reference document: ICAO Carbon emissions calculator methodology, version10, Appendix C: ICAO Fuel Consumption Table.

The Fuel consumed per minute(Kg/min) was calculated for each affected flight.

Total Air Delay(with ATFM Measures)= 27428 mins

Total Air Delay (with no ATFM measures) = 53199 mins

Reduction in Air delay due to ATFM measures= (53199-27428) = **25771 mins**

Fuel Saving Calculation:

Total Fuel saved during the ATFM Measure: ***16,79,840.99 Kg***

Total reduction in CO_2 emission : 3.16(KgCO_2/kg fuel)* 16,79,840.99 **Kg** ***= 53,08,297.53 Kg***

**GCD (Great Circle Distance): The distance between origin and destination airports is derived from latitude and longitude coordinates originally obtained from ICAO Location Indicators database.*

3.16 = constant representing the number of tonnes of CO2 produced by burning a tonne of aviation fuel.

D. Glossary

ATFM Parameters	**Definition**
Affected Flight statistics	An insight of participating traffic in the scenario i.e. ratio of the domestic arrivals to the constrained airport affected by ATFM measures (assigned delay by the Ground Delay Program) to the domestic arrivals not affected by ATFM measures (not assigned any delay) within the CDM scenario.
ATFM Ground delay	ATFM ground delay defined as CTOT-ETOT (Calculated take off time – Estimated take off time)
Average ATFM delay	$\frac{\boldsymbol{Total\ monthly\ ATFM\ delay\ (in\ minutes)}}{\boldsymbol{Total\ Domestic\ Arrivals}}$
Maximum ATFM delay	Maximum ATFM delay (in minutes) assigned in the month
Overall compliance rate	Defined as monthly ATFM departure slot adherence rate of regulated flights. Flights having ATOT within theATFM Slot Tolerance Window (STW) of minus 5 to plus 10 minutes of CTOTs, are considered as compliant flights
CTOT Compliance rate of Airline operators	An overview of CTOT compliance rate of various Airline operators
CTOT Compliance rate of Airports within different Regions	An overview of CTOT compliance rate of Airports within 4 FIRs
Air delay statistics	Air delay defined as difference between AET & EET, whereAET(actual elapsed time) can be obtained from (ALDT-ATOT) and estimated elapsed time(EET)can be obtained from FPL/RPL or (CLDT-CTOT). **Therefore, Air delay = AET-EET** Average Air Delay is calculated as: $\boldsymbol{Average\ Air\ Delay} = \frac{\boldsymbol{Total\ Air\ Delay\ to\ domestic\ arrivals\ (with\ values\ greater\ than\ zero)}}{\boldsymbol{Total\ Domestic\ Arrivals}}$ *CLDT: Calculated Landing Time* *CTOT: Calculated Take off Time* *ALDT: Actual Landing Time* *ATOT: Actual Take off Time*

Annexure-A

Compliance by Airlines with Flight Planning Requirements of Common Business rules(CBR)- February 2025.

I. Introduction:

Accurate and timely input in respect of flight intent is paramount to the correct traffic demand projection and eventually effective ATFM implementation. FPLs remain the main source of tactical demand prediction for ATFM systems. Early filing of error free FPL helps in improving the lead time required for ATFM measures and reduces the number of unexpected flights(pop-up). This in turn helps in improving the accuracy of demand-capacity imbalance prediction and optimizes slot utilization.

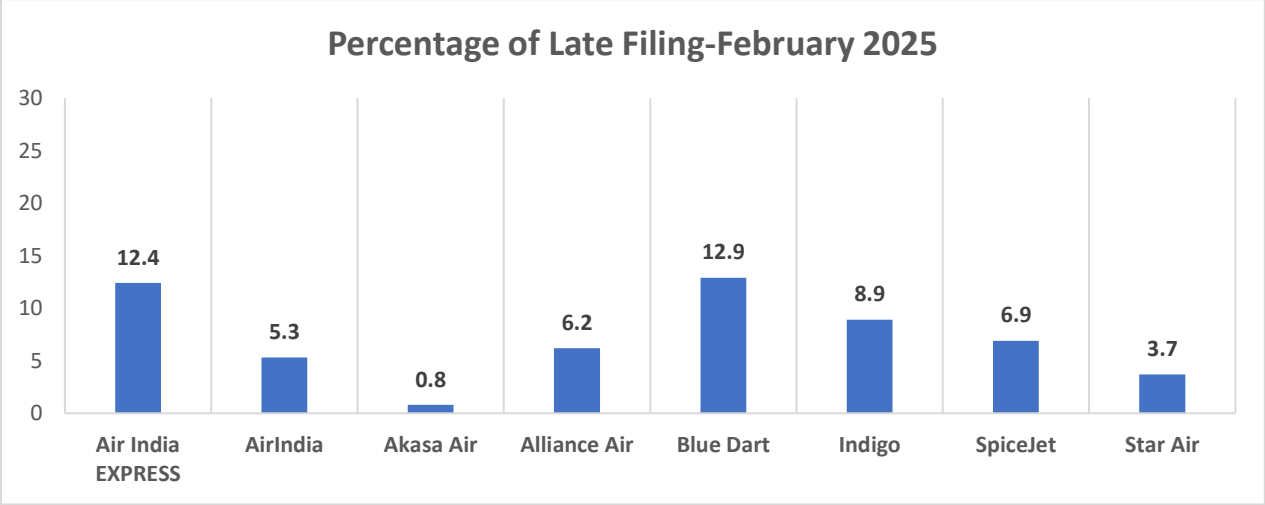
AIP India, ENR 1.9 section 4 on Flight Planning in the context of ATFM recommends Flight Planning requirements for all Airline Operators –

a) Flight plans shall be submitted at least 3 hours before the estimated off block time (EOBT);
b) The window for filing FPL is between 3 Hours and 120 Hours (Five days) before the EOBT. Earlier filing of FPL will give a realistic demand data to the CCC and hence the requirement of ATFM measures can be identified early for better planning. Late filing of a flight plan will lead to inaccuracies in predicting the demand and may lead to undesirable delay.

II. Analysis

A. An analysis has been conducted to find out the difference between the flight plan filing time and filed EOBT for all the FPLs received at ATFM system from 1st February 2025 to 28th February 2025.
The purpose of the analysis is to monitor the compliance with provisions of AIP India, section 4, ENR 1.9 regarding Flight Planning requirements in context of the ATFM.

This flight plan filing requirement has been reiterated through the recently agreed ATFM common business rules (CBR) document and is recognized as a metrics to be monitored regularly for any improvement.



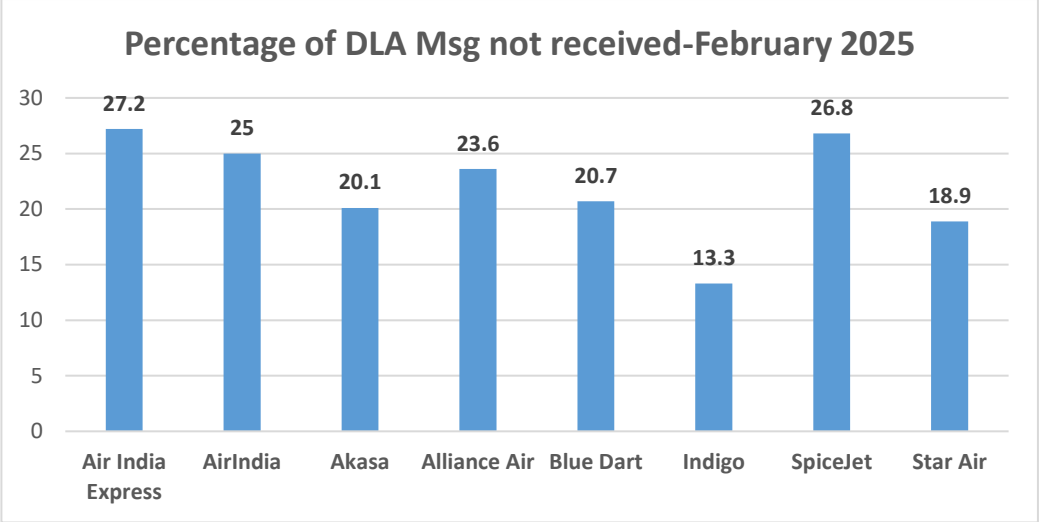
The table below lists number of filed flight plans (FPLs) with less than 3 Hours prior to EOBT:

Name of Airline	Late Filed FPL	Total No. Of FPL	% Delayed Filing
Air India EXPRESS	1675	13484	12.4
AirIndia	1114	20892	5.3
Akasa Air	34	3979	0.8
Alliance Air	106	1684	6.2
Blue Dart	74	571	12.9
Indigo	5693	63659	8.9
SpiceJet	296	4263	6.9
Star Air	43	1163	3.70
Total no. of FPLs for Scheduled Airlines	**9035**	**109695**	**8.24**

B. For the analysis of non-receipt of DLA (Delay) messages for flight plans filed, the EOBT of FPL received has been compared with Actual Take off time (ATOT)received through DEP(Departure)messages.
Thus, only those FPLs were considered for analysis for which DEP messages were available and no associated DLA messages was received.

The Table below lists number of flights for which no DLA message was received in February 2025. **{(EOBT of original FPL)- (ATOT received)} > 30 minutes)**

Name of Airline	DLA Message not received	Total No. of flights considered for analysis	% of flights for which no DLA message was received
Air India Express	2648	9725	27.2
AirIndia	4153	16604	25
Akasa	628	3123	20.1
Alliance Air	226	956	23.6
Blue Dart	110	530	20.7
Indigo	6372	47809	13.3
SpiceJet	768	2863	26.8
Star Air	82	433	18.9



C. For analysis of non-receipt of CNL (cancel) messages for February 2025, annulled FPLs were considered for which no CNL/DEP/DLA messages were received. A FPL gets annulled in SKYFLOW system, if it doesn't get activated through Dep message /surveillance data/ manual activation by FMP within a defined system parameter.

The table below lists the number of Flights for which no CNL Msg. was received in February 2025:

Name of Airline	**CNL message not received**	**No. of flights annulled**
Air India Express	109	116
AirIndia	39	40
Akasa	21	21
Alliance Air	117	117
Blue Dart	6	6
Indigo	144	147
SpiceJet	64	67
Star Air	11	11

Annexure-B

CASE STUDY

Aero India show, Bengaluru (2025)

A. Introduction:

Aero India is a biennial air show organised by the Defence Exhibition Organisation, Ministry of Defence. The 15th edition of AERO INDIA 2025 which included an Aerospace, Defence and Civil Aviation Exhibition was held from 10 - 14 February 2025, at Air Force Station, Yelahanka, Bengaluru.

Bengaluru Kempegowda Airport was closed from 05th Feb'25 to 14th Feb'25 during the following hours of the day as a consequence of Airspace closure in connection with Aero India show 2025 vide Notam no. A0365/25, A0367/25 and A0372/25.

(A0365/25 NOTAMN
Q) VOMF/QWALW/IV/BO/W/000/200/
A) VOMF B) 2502050330 C) 2502101000
D) 05 06 08 0330-0630 0930-1100
07 0330-0530 0930-1100
09 0330-0530
10 0330-0600 0900-1000
E) AIRSPACE BOUNDED BY 130100N0773300E TO 131156N0771401E ALONG WITH CLOCKWISE ARC CENTERED AT HAL AP VOR BBG TILL 131143N0780737E-130100N0774800E-130100N0773300E CLSD DUE AERO INDIA 2025
F) GND G) FL200

A0367/25 NOTAMN
Q) VOMF/QWALW/IV/BO/W/000/150/
A) VOMF B) 2502110630 C) 2502141130
D) 11 12 0630-0900
13 14 0400-0630 0900-1130
E) AIRSPACE BOUNDED BY 130100N0773300E TO 131156N0771401E ALONG WITH CLOCKWISE ARC CENTERED AT HAL AP VOR BBG TILL 131143N0780737E-130100N0774800E-130100N0773300E CLSD DUE AERO INDIA 2025
F) GND G) FL150

A0372/25 NOTAMN
Q) VOMF/QFALC/IV/NBO/A/000/999/1312N07742E005
A) VOBL B) 2502050330 C) 2502141130
D) 05 06 08 0330-0630 0930-1100
07 0330-0530 0930-1100
09 0330-0530
10 0330-0600 0900-1000
11 12 0630-0900
13 14 0400-0630 0900-1130
E) AD CLSD AS A CONSEQUENCE OF AIRSPACE CLOSURE IN CONNECTION WITH AERO INDIA 2025 ARRIVALS WILL BE ABLE TO LAND' TILL 10 MIN BFR THE CLOSURE OF AIRSPACE AND 12 MIN AFTER THE AVBL OF AIRSPACE. DEPARTURES WILL BE ALLOWED FM THE TIME AIRSPACE AVBL. LAST TURBOJET DEP WILL BE ALLOWED TILL 07 MIN BFR CLOSURE OF AIRSPACE. LAST TURBOPROP DEP WILL BE ALLOWED TILL 11 MIN BFR CLOSURE OF AIRSPACE)

B. Executive Summary

All stakeholders AAI-ATM KIA Bengaluru, Airport operator M/s BIAL, All Airlines and IAF at Airport level have undertaken the exercise to review the demand capacity imbalance arisen due to said event and associated closures. All stakeholders collaboratively decided to prepared a revised schedule for operation on the days of closures such that demand and capacity were balanced at pre-tactical level. Such revised schedule was smoothened for the whole days by curtailing and/or shifting the schedule appropriately. **Such smoothened schedule for the event has been proven to be effectively planned, as tactically i.e. on the day of operations, pre-closure/s there was no need to apply flow measures whereas after the closure/s the flow measures were required for limited duration.**

Stakeholder meetings on the subject matter were convened through VC to attain common situational awareness on the plan of operations and for the smooth and effective management of the air traffic flow at KIA Bengaluru.

C. Salient Points:

Total 16 flow measures were applied during the period from 05-02-25 to 14-02-25 of 10 days in respect of the said event.

- The calculated take of time (CTOT) compliances during such flow measures were in the range of 93% to 100%, with average CTOT compliance of 98 %.
- The accuracy of flow measures during such measures were in the range of 88% to 100%, with an average accuracy of 96 %.
- The average ATFM delays during such flow measures were in the range of 7 minutes to 26 minutes. Whereas average ATFM delay of all sixteen flow measures was 15 minutes.

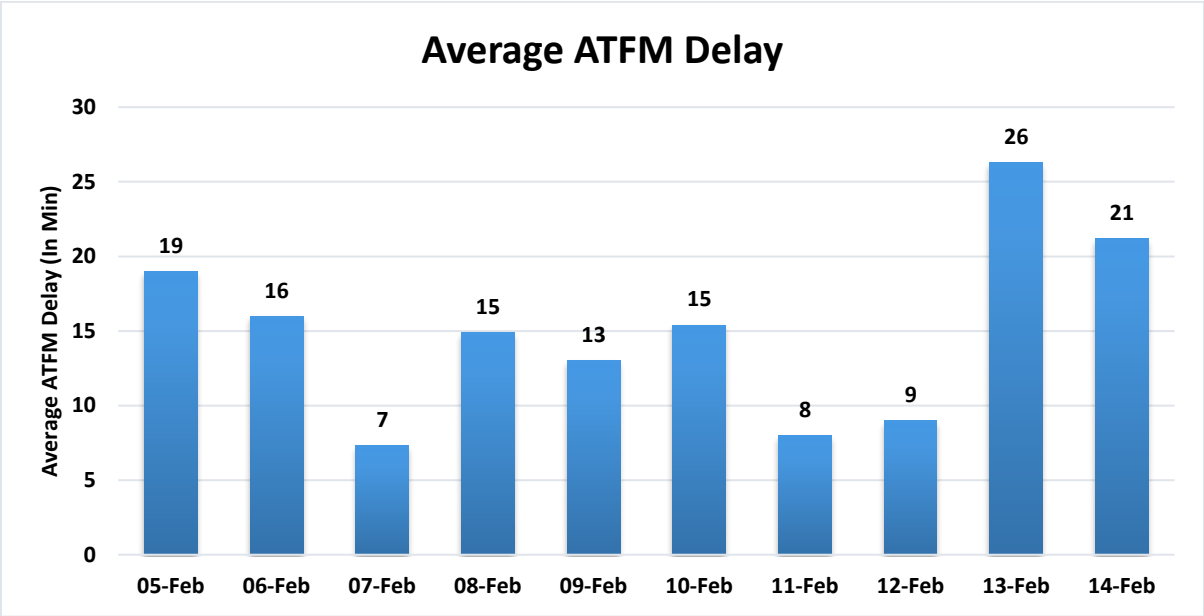
D. Challenges:

1. CTOT dissemination to smaller airports, IAF stations and coordination thereof, still remains a challenge.
2. It is proposed that for similar events, necessitating preparation of revised smoothened schedule due to demand capacity imbalance, associated strategic/ pre-tactical exercise should be started further in advance such that final revised smoothened schedule is sent from airport operator to airlines at-least 10 working days in advance.
3. Subsequently airlines should send such revised schedule to CCC CATFM in the designated format at-least 7 working days in advance. Availability of such revised schedule at CCC CATFM timely will facilitate such schedule to be fed in the Skyflow automation system, analyse it in detail and develop the strategy to handle such changed scenario. In case of requirement, CCC CATFM can also call meeting of stakeholders to share its analysis, strategies to handle changed scenario and conduct revised negations, if any, timely to facilitate efficient air traffic flow at constrained airport.

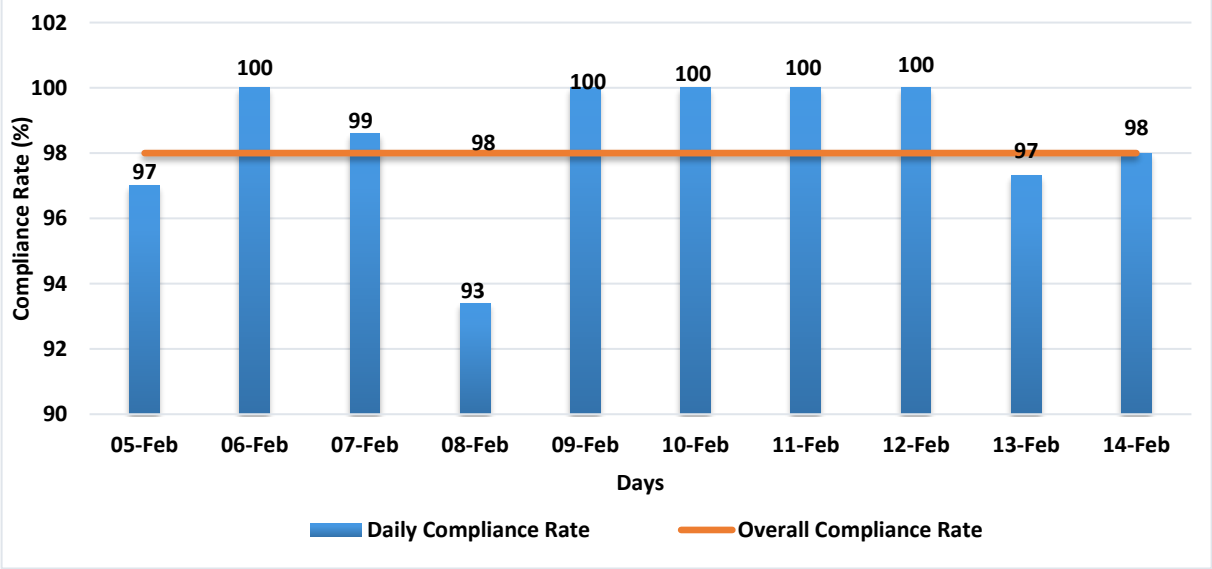
ATFM Measures Overview:

Only Flights with complete data i.e. ATOT, ALDT etc. are taken into consideration for calculation of ATFM parameters.

I. Average ATFM Delay – Day wise:



II. CTOT Compliance – Day wise:



III. CTOT Compliance – FIR wise:

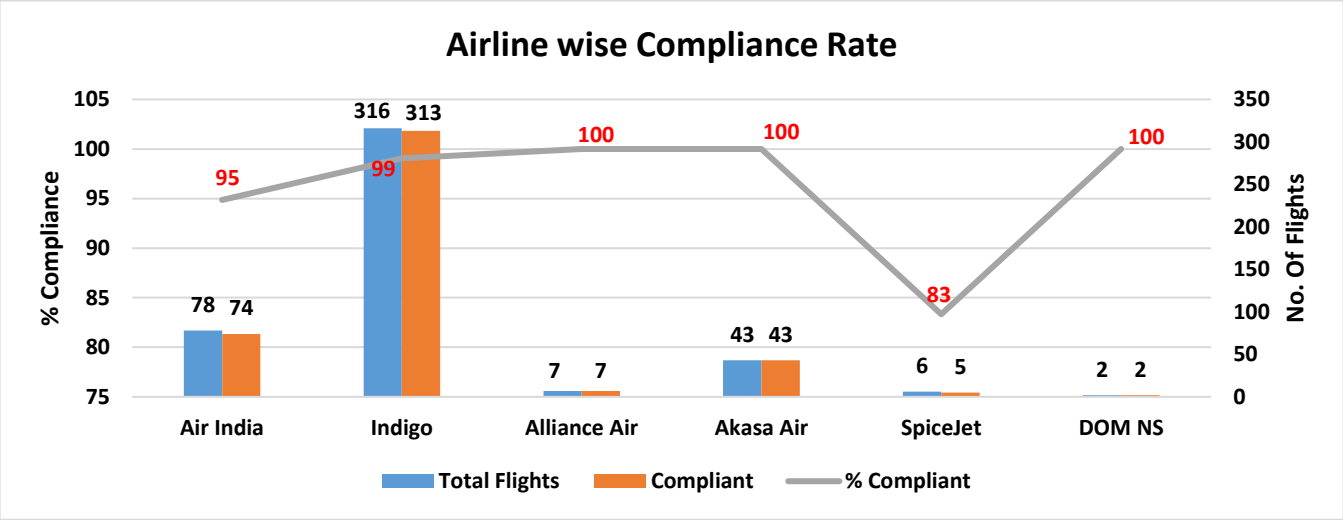
MUMBAI FIR (98%)*	Compliant	Non Compliant	%Compliant
Ahmedabad	13	0	100%
Mumbai	36	1	97%
Hirasar, Rajkot	5	0	100%
Indore	10	0	100%
Jabalpur	5	0	100%
Kolhapur	7	0	100%
Nagpur	1	0	100%
KOLKATA FIR (98%)*			
Prayagraj	10	3	77%
Agartala	4	0	100%
Ayodhya	20	0	100%
Siliguri	23	0	100%
Varanasi	38	0	100%
Bhubaneswar	11	0	100%
Kolkata	32	0	100%
Chakeri	4	0	100%
Deoghar	2	0	100%
Guwahati	16	0	100%
Jharsuguda	2	0	100%
Patna	12	0	100%
Ranchi	18	0	100%
Raipur	1	0	100%
DELHI FIR (95%)*			
Amritsar	2	0	100%
Chandigarh	2	0	100%
Dehradun	5	0	100%
Delhi	62	2	97%
Gwalior	3	1	75%
Jodhpur	7	1	88%
Jaipur	18	1	95%
Jammu	2	0	100%
Lucknow	18	1	95%
Srinagar	2	0	100%
CHENNAI FIR (99%)*			
Agatti	1	0	100%
Hal Bangalore	0	1	0%
Vijayawada	14	0	100%
Coimbatore	2	0	100%
Kochi	14	0	100%
Calicut	9	0	100%
MOPA Goa	13	0	100%

Goa	18	0	100%
Shamsabad, Hyderabad	35	0	100%
Vijaynagar	1	0	100%
Kannur	8	0	100%
Mangalore	19	0	100%
Chennai	18	0	100%
Nanded	3	0	100%
Port Blair	5	0	100%
Pondicherry	5	0	100%
Salem	1	0	100%
Tuticorin	1	0	100%
Tirupati	2	0	100%
Thiruvananthapuram	1	0	100%
Visakhapatnam	1	0	100%

Inference

- Chennai FIR had the highest compliance rate of 99% whereas Delhi FIR had the minimum compliance rate of 95%.

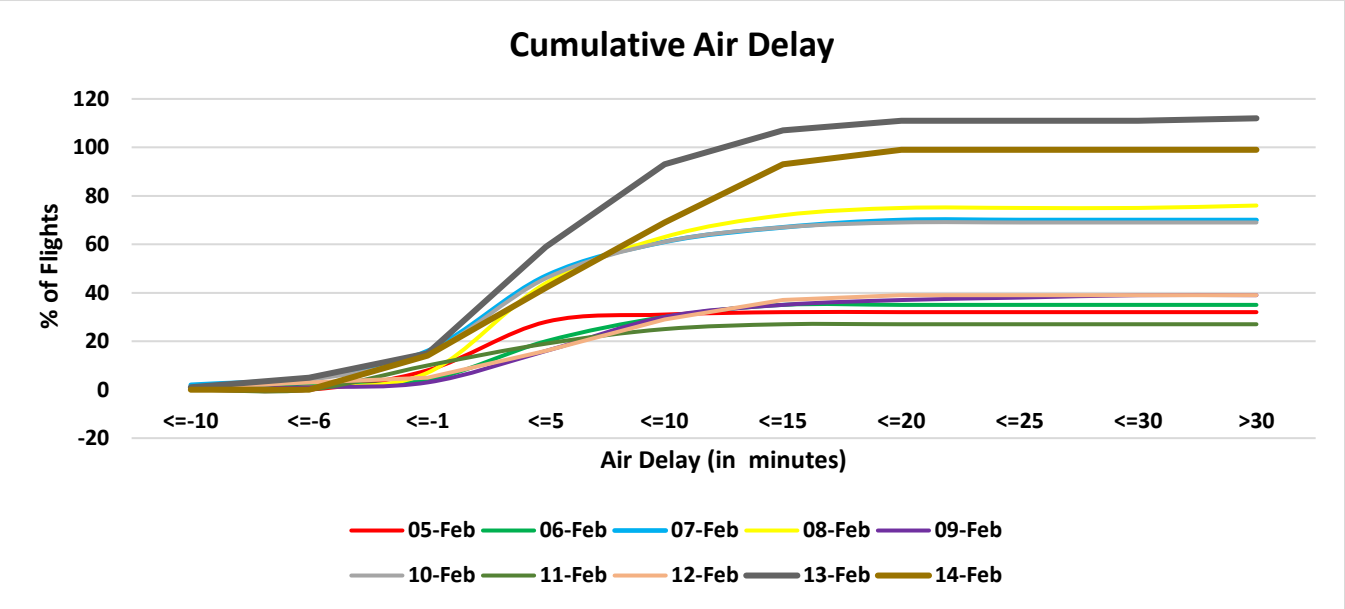
IV. CTOT Compliance – Airline wise:



Inference

- Alliance air and Akasa airline had the highest compliance rate of 100% whereas Spicejet had the lowest compliance of 83%.

V. Cumulative Air Delay:



Inference

1. 31% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 05th Feb'25.
2. 30% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 06th Feb'25.
3. 61% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 07th Feb'25.
4. 63% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 08th Feb'25.
5. 30% of arriving flights to Bengluru had an Air delay of equal to or less than 10 minutes during the CDM period on 09th Feb'25.
6. 61% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 10th Feb'25.
7. 25% of arriving flights to Bengluru had an Air delay of equal to or less than 10 minutes during the CDM period on 11th Feb'25.
8. 29% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 12th Feb'25.
9. 93% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 13th Feb'25.

10. 69% of arriving flights to Bengaluru had an Air delay of equal to or less than 10 minutes during the CDM period on 14th Feb'25.

E. Fuel Saving due to ATFM Measures during the Aero India Show closure:

The Fuel consumed per minute(Kg/min) was calculated for each affected flight.

Total Air delay (with ATFM measures) = **3062 min**

Total Air delay (with no ATFM measures) = **15337 min**

Total amount of Air delay reduced due to ATFM measures= 15337-3062= **12275 min**

Fuel Saving Calculation:

Total Fuel saved during the ATFM Measure: ***6,95,294.58 Kg***

Total reduction in CO_2 emission : 3.16(KgCO_2/kg fuel)* 6,95,294.58 Kg = 21,97,131 Kg

3.16 = constant representing the number of tonnes of CO2 produced by burning a tonne of aviation fuel.

-End OF Report-