GOVERNMENT OF INDIA
MINISTRY OF CIVIL AVIATION
LOK SABHA
UNSTARRED QUESTION NO. : 3354
(To be answered on the 20th March 2025)

MODERNIZATION OF AIR NAVIGATION INFRASTRUCTURE

3354. SHRI KOTA SRINIVASA POOJARY

Will the Minister of CIVIL AVIATION
नागर विमानन मंत्री **be pleased to state:-**

(a) the steps taken by the Government to modernize air navigation infrastructure and upgrade air traffic management systems to meet the growing demands of air travel;
(b) the key initiatives being considered by the Government to adopt advanced technologies, such as AI and satellite-based navigation, to optimize airspace utilization;
(c) the steps taken to address delays and inefficiencies in the current air traffic management, framework to ensure smoother operations and minimize disruptions; and
(d) the measures taken to ensure that failures in Air Traffic Management, during the provision of Air Traffic Services, do not compromise the safe operation of aircraft?

ANSWER

Minister of State in the Ministry of CIVIL AVIATION
नागर विमानन मंत्रालय में राज्य मंत्री **(Shri Murlidhar Mohol)**

(a) to (c): The Airports Authority of India (AAI), as the sole Air Navigation Service Provider (ANSP) in India, continuously modernizes air navigation infrastructure and upgrades air traffic management systems to meet the growing demands of air travel. This is an ongoing process driven by traffic demand, technological advancements, commercial viability, and operational requirements. Key initiatives include:

1.New IP-based Voice Communication Control Systems (VCCS) and IP-based VHF radios have been deployed at multiple locations to improve VHF coverage and air-ground communication performance.

2.AAI has initiated the installation of a new pan-India Aeronautical Message Handling System (AMHS) to replace the existing AMHS and AMSS systems,

improving the performance of aeronautical, flight, and meteorological message exchanges.

3.Automatic Dependent Surveillance-Broadcast (ADS-B) ground stations, which utilize GPS and satellites for determining aircraft positions, have been commissioned at 21 airports. Installation at 15 additional locations has been completed. ADS-B enhances surveillance capabilities, reduces delays, and improves flight safety.

4.Performance-Based Navigation (PBN) procedures have been implemented at 62 airports, reducing reliance on sensor-specific routes and procedures, thereby optimizing operations and lowering costs. Many of these procedures utilize the indigenous GPS Aided Geo Augmented Navigation (GAGAN), a regional satellite-based augmentation system (SBAS).

5.22 RNP-Z (LPV) procedures based on GAGAN have been implemented at 14 airports to enhance navigation precision.

6.A Central Air Traffic Flow Management (C-ATFM) system has been established to manage demand and capacity imbalances at airports, optimizing the utilization of airspace and airport resources as per ICAO guidelines.

7.Airport Collaborative Decision Making (A-CDM) has been implemented at 9 airports namely, Mumbai, Delhi, Kolkata, Hyderabad, Jaipur, Trivandrum, Hyderabad (Shamshabad), Guwahati, and Ahmedabad, to reduce ground delays.

8.Arrival Manager (AMAN), a software tool for optimizing the sequencing and spacing of arriving aircraft, has been deployed at high-traffic airports such as Delhi, Mumbai, Chennai, Kolkata, Bengaluru, and Hyderabad to enhance operational efficiency.

(d): The accountability measures are in place to ensure that failures in Air Traffic Management, during the provision of Air Traffic Services do not compromise the safe operation of aircraft. Incidents like separation minima infringements, runway incursions/excursions, and aircraft accidents are thoroughly investigated by the Directorate General of Civil Aviation (DGCA) and/or the Aircraft Accident Investigation Bureau (AAIB). Based on the investigation findings, corrective actions are taken to prevent recurrence and enhance operational safety.

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