

GOVERNMENT OF INDIA
MINISTRY OF CIVIL AVIATION
RAJYA SABHA
UNSTARRED QUESTION NO. : 2414
TO BE ANSWERED ON THE 10th August 2026
GAGAN-ENABLED SATELLITE BASED NAVIGATION
TECHNOLOGY

2414. SHRI CONSTANDINE RAVINDRAN

Will the Minister of CIVIL AVIATION be pleased to state:-

- (a) whether Government proposes to expand the use of indigenous GAGAN-enabled satellite navigation technologies for fixed-wing aircraft and helicopter operations to reduce dependence on conventional ground-based navigation infrastructure;
- (b) the initiatives introduced by Government to establish satellite-based instrument approach procedures at airports and heliports, particularly in regions experiencing adverse weather and difficult terrain;
- (c) the measures taken by Government to facilitate training of pilots, air traffic personnel and flight procedure specialists in advanced satellite-based navigation systems; and
- (d) whether Government has a phased plan for satellite-guided aviation under the Regional Connectivity Scheme?

ANSWER

Minister of State in the Ministry of CIVIL AVIATION (Shri Murlidhar Mohol)

(a) & (b): The Government has been expanding the use of indigenous GAGAN (GPS Aided GEO Augmented Navigation) for fixed wing aircraft operations to reduce dependence on conventional ground-based navigation infrastructure. At present, GAGAN-based approach procedures have been developed for fixed-wing aircraft operations. Moreover, GAGAN based satellite navigation technologies can be utilised by suitably equipped fixed-wing aircraft and helicopters. Satellite based instrument approach procedures have already been implemented at 70 airports for fixed-wing aircraft operations.

(c): DGCA (Director General of Civil Aviation) has published Civil Aviation Requirement (CAR), Section 8, Series 'S', Part IV along with Operations Circular (OC) 03 of 2016 (Revision 1 dated 09.02.2021) to facilitate training of pilots in advanced satellite-based navigation systems. Further, Civil Aviation Requirement (CAR), Section 9, Series 'P', Part I specifies the requirements for advanced training of flight procedure specialists, including training related to satellite-based navigation systems. The training for Air Traffic personnel also includes training in satellite-based navigation systems.

(d): As part of the phased development, Satellite-based Performance-Based Navigation (PBN) approach procedures have been implemented at 23 Airports operationalised under the RCS (Regional Connectivity Scheme).
