

UPPER AIRSPACE HARMONIZATION

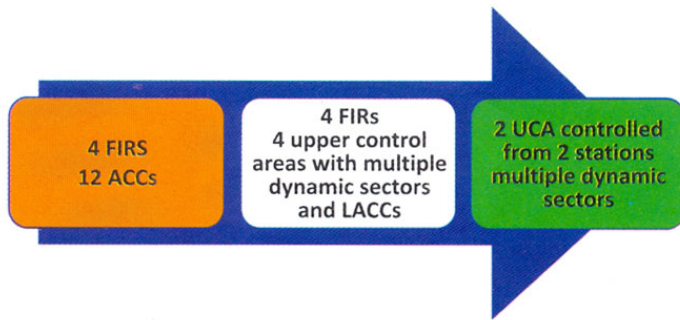
By Gp Capt Devinder C Mehta, Advisor (MR), AAI



The exponential growth witnessed in Civil Aviation in the recent past was undoubtedly of concern with respect to skies being safe. To substantiate the statement, the hustle and bustle that we have been hearing of and also seeing the density of air traffic increasing manifold, we thought it prudent to have a peek into the Indian skies, thus, viewing it from the safety angle. We could not

have asked for a better person than Shri V.P. Agrawal, Chairman, AAI to give us an in-depth insight to the procedures equipment being deployed to ensure safe and seamless transition of aircraft from Indian skies. Shri Agrawal had a person to person interaction wherein he enriched us with the various actions executed and also on projects on the anvil of AAI to ensure provisioning of safe skies.

Following is the gist of the road map drawn out by the AAI Chairman:



UPPER AIRSPACE HARMONISATION

The Indian airspace is divided into five Flight Information Regions (FIRs) with FIRs at Chennai, Mumbai, Delhi, Kolkata and Guwahati. There are eleven Area Control Centres (ACCs) located at Chennai, Hyderabad, Trivandrum and Mangalore within Chennai FIR, Mumbai, Ahmedabad and Nagpur ACCs within Mumbai FIR, Delhi and Varanasi ACCs within Delhi FIR, Kolkata ACC and Guwahati ACC within their respective FIRs.

With the new generation surveillance and communication capabilities and the concept of Upper Airspace Harmonisation, a plan has been drawn for restructuring the entire Indian airspace whereby 11 ACCs will be amalgamated into 4 ACCs initially and finally into 2 centres. Each FIR will have only one Upper ACC centre with multiple sectors to be operated from four major ATC Centers. The entire airspace will have overlapping surveillance cover through Radar/ADS-B/Multilateration combined with matching seamless air-ground communication to facilitate efficient air traffic management and AIDC for ground to ground communication. The surveillance data from Radar/ADS-B/Multilateration will be networked and electronically processed with relevant flight data from the Flight data processor to provide an integrated track data output correlated with flight plan so as to enable application of uniform radar separation throughout the FIRs.

With the introduction of improved ATS automation system and installation of additional Radars /ADS-B/Multilateration, the entire continental airspace will permit seamless surveillance in addition to the existing ADS-C over Oceanic airspace. India has successfully integrated all Radars in Chennai FIR in the first phase thus enabling seamless upper airspace with lower limit as FL 255. The newly introduced technique of cross coupling of VHF would facilitate creation of multiple sectorization over continental airspace. AIDC (ATS Inter-facility data communication) enabled through Automation will substantially reduce ATS coordination.

Accordingly, we can close on an optimistic note to state that there is no cause whatsoever for any apprehensions with regard to safety and as such "The Indian Skies are Safe"

In the pilot project of Chennai FIR, the Upper Airspace Harmonization includes one upper ACC centre with five dynamic sectors, where successful integration of 10 radars including a defence radar has been completed, and shall be operated from the Chennai ATC Center. Lateral jurisdiction of existing ACC centers at Hyderabad, Mangalore and Trivandrum has been re-designated as Lower ACC centre with revised lateral and vertical jurisdiction. Tower and approach will be operated from individual airports as per the existing jurisdictions.

Similar concept of integrating Radars and upper ACC is also planned for Delhi, Mumbai and Kolkata FIRs. This will facilitate to merge present 11 ACCs into 4 ACCs initially and finally into 2 ACCs. On successful implementation of similar project in all the Indian FIRs, the airspace will be classified as 'A' aligning with adjoining airspaces.

One of the key enablers of the upper airspace harmonization is the ATS Automation system. Flight plan / Radar Data processing system, Airspace situation awareness track displays, Automatic co-ordination and Hand-off, Controller Decision Support Tools, Flow management tools, Conflict detection and Safety alert tools, route conformance warning, etc constitute an integrated ATM automation system for the controller to handle the traffic effectively with enhanced Safety. Integrated Automation system is in place at Mumbai, Delhi, Bangalore and Hyderabad.

Integrated Surveillance Data from multiple radars viz., Hyderabad, Chennai, Mangalore, Bangalore, Bangalore HAL, Trivandrum, Bellary, Vishakapatnam radars is being processed by the Advanced ATS Automation System at Chennai and the improved situational awareness support application of uniform level of separation standards, procedures and dynamic sectorization.

CATFM (Central Air Traffic Flow Management)

An efficient ATM system should be flexible to enhance the capacity to meet the demand in an efficient manner without adverse impact on safety and in a very cost effective manner for the airspace users. Keeping in

view the current and future growth of traffic and to ensure safe and efficient flow of traffic through various airports and airspace, AAI has taken initiatives to implement Central Air Traffic Flow Management system integrating interfaces of various stakeholders in the system to manage various operational constraints strategically and tactically in such a way that the demand and capacity are optimally balanced through collaborative decision-making process.

Stage 1 plans to operationalise the C-ATFM for the entire Indian airspace and major airports by 2012. This would provide the ANSP, Aircraft Operator and Airlines with significant capabilities to perform strategic, pre-tactical, and tactical



ATFM and CDM, associated with sectoral demands of the Indian Airspace and arrivals into airports, especially the high density *Chhatrapati Shivaji International Airport in Mumbai, Indira Gandhi International Airport in New Delhi, Chennai International Airport, Netaji Subhash Chandra Bose International Airport in Kolkata, Bangalore International Airport, and Rajiv Gandhi International Airport in Hyderabad.*

In stage 2 the Regional ATFM integration with the Indian CATFM is envisaged. The specific functionality will be defined in collaboration with the international ANSP necessary to support the international ATFM integration identified by AAI. These integrations can be thought in several ways. In case an adjacent FIR of another country is not controlled by an ATFM system, this FIR can be included in AAI's C-ATFM system. In the case of adjacent FIRs or countries having their own ATFM system, a system-to-system integration can be provided to improve efficiencies across both ATFM systems.

The anticipated benefits of C-ATFM when implemented in six metro airports in the first phase, calculated based on the recent data collected on air/ground delays is presented:

- Substantial reductions in Air/ground delays in 5 metro airports per year would be 142845 minutes.
- 6 million kilogram of fuel savings annually.
- 18 million kilograms of reduction in carbon dioxide emissions per year; and
- USD 9 million airline costs savings annually.

Conclusion

Scrutiny of the facts elucidated above would clearly reveal that our aviation is in the 'Safe Hands' of AAI, a congregation of professionals with a deep reservoir of expertise. As regards the licensing of Pilots, we have intentionally not touched upon for it is beyond the preview of AAI, as it falls within the domain of DGCA, the regulating body. Accordingly, we can close on an optimistic note to state that there is no cause whatsoever for any apprehensions with regard to safety and as such "The Indian Skies are Safe". □

AMERICAN CRICKET SIGNS...

Contd. from page 20



Asia's commitment to be the Voice and Mirror of the South Asian Community in United States and Canada," added Mr. Shah who agreed to be on the Advisory Board of American College Cricket.

About American College Cricket

American College Cricket was founded November 2008 with the mission of "Bringing back the Original American and Canadian game". The first national Championship took place in March 2009 with 5 newly developed teams. It has grown, and developed enduring structures, in about 50 Colleges for the 2011 regional Championships.

In a major breakthrough for the game, American College Cricket has been featured in mainstream media such as the New York Times, Washington Post, Voice of America, NY Daily News, Canadian Broadcasting Corp, College media and the International Cricket Council film "Cricket in America Part 3".

About TV Asia

TV Asia is a US based pay Channel available on Echo Star's Dish Network Platform, on major Cable systems such as Cablevision, Time Warner, Comcast Xfinity, Cox, and on Verizon FIOS and A T & T u-verse as well as Rogers and Bell Canada.

TV Asia mission is to highlight South Asian Talent in the USA and Canada and promote our rich heritage in the arts, religion, sports and culture and inspire the current generation to uphold and carry forward the rich and ancient ideals of our glorious past.

TV Asia engages with the community and is the Voice and Mirror of the South Asian Community in North America. □