

- Airports Authority of India >>



South, North, East or West... **AAI in fast forward mode**

The growth in the number of fliers prompted the Airports Authority of India to launch a massive plan of modernising and upgrading its airports. The aim: first, to match and be a pace ahead of the increase in density — both of aircraft and the air travelling populace — and, second, to provide the country with world-class standard airports. Targeting 60 airports including those at Chennai and Kolkata were identified for modernisation and upgradation with the rationale to develop the state capitals and other airports that have the potential to attract tourists and business travellers who would meaningfully contribute towards the economic growth of the state. The following pages take a look at AAI's moves...



• Airports Authority of India

Connect India, the AAI way

THE AIRPORTS AUTHORITY OF INDIA HAS BEEN CONCENTRATING TO DEVELOP THE INFRASTRUCTURE OF THE AIRPORTS UNDER ITS PURVIEW AND HAS BEEN PUSHING AHEAD TO UPGRADE AND ENHANCE THE AIRPORTS AROUND THE COUNTRY. IT IS A HUMONGOUS TASK BUT ONE THAT AAI HAS BEEN MANAGING WITH APLOMB.

The opening-up of the skies after the liberalisation of the economy and the increased disposable income afforded by it has led to more people preferring air travel. There has been a slew of modernisation activity in the country with airports getting new equipment and facilities to handle the increased passenger and freight volumes.

Lauding the efforts of the Airports Authority of India, Prime Minister Dr Manmohan Singh inaugurated the New International Terminal Building at Thiruvananthapuram airport at a function organised early this year on February 12, 2011.

The Prime Minister emphasised the importance of airports and said the government had prioritised the enhancement of airport infrastructure in the country as airports were considered gateways to economic development of the country. He applauded the AAI and the Ministry for Civil Aviation for developing such an impressive and world-class project for passengers travelling to the state of Kerala. He added that making the terminal and building facilities more user-friendly was the need of the hour as airlines were competing with railways to attract the populace to air travel.

Speaking on the occasion Minister for Civil

The Prime Minister has emphasised the importance of airports and prioritised the enhancement of airport infrastructure in the country

Chairman, AAI, V P Agrawal, lights the inaugural lamp at the start of the first-ever airport directors' conference.

Aviation Vayalar Ravi said the new terminal building at Thiruvananthapuram Airport was a unique architectural feature. Built at a cost of ₹289 crore, the terminal is a state-of-the-art steel tabular shape structure with a pair of portals connected with a top enclosure struss shaped like a wave with 30 check-in counters, 26 immigration counters, 11 Customs booths, four pre-check X-ray machines and three aerobridges.

A few months earlier, the new airport at Mangalore was inaugurated at a function on May 15, 2010 by the then Minister of State for Civil Aviation, Praful Patel. The new terminal building was built over 70 acres of land at a cost of ₹150 crore. The facility is equipped with two aerobridges with provision for adding more in the future. The airport building is designed to separately handle domestic and international passengers. The facility can accommodate four A310-class and an A321-class aircraft at a time, with provision for three more aircraft to be added at a future stage.

On the same day, May 15, 2010, the new airport at Mysore too, was inaugurated. Mysore Airport is about ten kilometres from Mysore city. The airport had two fair weather strips (FWS) with a small terminal building that had been constructed two decades ago. It was used for scheduled flight



• Airports Authority of India



operations by Vayudoot with Dornier aircraft till 1990. The Indian Air Force/NCC used the strip for training flights apart from sporadic use by small private charter flights.

A Memorandum of Understanding (MoU) was signed between the Government of Karnataka and AAI on June 6, 2005, to upgrade the erstwhile Mysore airport for operation of ATR-72 and B-737/A-320 aircraft in a phased manner. AAI developed the new airport in an area of more than 650 acres at a cost of around ₹60 crore. Mysore Airport has also been provided with state-of-the-art CNS, security and fire safety facilities. The new building has a modular design and can accommodate 75 arriving and 75 departing passengers at a time with the scope for future expansion.

Last year, the Minister for Home Affairs, P Chidambaram, had inaugurated the New Integrated Terminal Building at Madurai airport in a ceremony organised on September 12, 2010.

The new Integrated Terminal Building covers a total area of 17,560 sq m. Constructed at an estimated cost of ₹128.57 crore, the facility is capable of handling domestic as well as international traffic even though the airport at present is only a domestic one. The new building will help handle 250 departing and 250 arriving passengers. The all-glass-and-steel structure makes use of maximum natural light. The New Integrated Terminal building has escalators, elevators, aerobridges and state-of-the-art conveyors.

Meanwhile, the Airports Authority of India has focused its efforts to upgrading and enhancing connectivity in the North-East, Vayalar Ravi, Union Minister for Civil Aviation, unveiled the new terminal building at Shillong Airport — designed in keeping with the architecture of buildings in the city — on June 25, 2011. The inauguration saw the presence of Dr Mukul Sangma, Chief Minister of Meghalaya and his Cabinet colleagues along with a host of dignitaries, P P Shrivastav, Member, North-East Council, V P Agrawal, Chairman, Airports Authority of India (AAI) and top officials of AAI at the inauguration.

On the occasion, Chief Minister Dr Mukul Sangma handed over the deeds of 192.253 acres of land around the airport to V P Agrawal. He praised the villagers for their selfless contribution towards development of the state. He felt proud to declare the contribution unique and one that had made history not only in the country but also in the world.

Chairman, AAI, also urged Union Minister for Civil Aviation to expedite the work like installation

Vignettes from the AAI's upgradation and enhancement plans: (L-R) The new terminal at Thiruvananthapuram; Shillong airport; and Vayalar Ravi, Union Minister for Civil Aviation unveiling the plaque to inaugurate the terminal at Bhopal's Raja Bhoj Airport

There has been a slew of modernisation activity in the country with airports getting new equipment and facilities to handle the increased passenger and freight volumes

of Instrument landing System (ILS) and the extension of the runway so that A321-like aircraft could be operated from Shillong, which has a huge passenger potential. He emphasised the need of air connectivity of this beautiful and land-locked state of Meghalaya with the rest of the country and abroad for rapid economic growth of the nation. V P Agarwal and S Raheja, Member (Planning), AAI, appreciated the project officials and all employees of Shillong Airport for the completion of the task and the successful organisation of the inauguration ceremony.

The construction of the new terminal building was undertaken by the AAI at an estimated cost of ₹30 crore in 2007 with a target date of completion within three years. But it was possible to finish the task before the due date due to the commitment of the AAI officials and staff. The members of the AAI family are proud of this remarkable achievement.

The new terminal building is equipped with state-of-the-art equipment such as explosive trace detectors, baggage X-ray machines, conveyor belts and close-circuit cameras. In addition, there are six check-in counters and a complete security-hold area. Separate blocks have been created for arrival and departures along with a modern medical inspection room. The runway of 6,000 ft will be lengthened to 7,500 ft and will have a strength of PCN (Permanent Classification Number) 54 to cater to operations of A321-like aircraft. The installation of ILS on Runway 22 is underway.

On June 28, 2011, Vayalar Ravi, Union Minister of Overseas Indian Affairs and Civil Aviation, inaugurated the new integrated terminal building at Raja Bhoj Airport, Bhopal. The new Terminal Building has been built at a cost of ₹135 crore and is equipped with modern facilities for passengers.

The terminal building has an aesthetic structural shape in a curvilinear form. With its total area of 26,936 sqmt and a provision for future expansion, the terminal is sleek and artistic and encompasses all modern facilities. The salient features of the building are 14 check-in counters, 10 immigration counters, four Customs counters, six security check X-ray machines, two escalators, enhanced parking facilities for 700 cars and 20 buses and apron. The state-of-the-art building has all modern user-friendly amenities such as Childcare Room, Smoking Room, etc. The apron has been constructed to accommodate 13 aircraft. The airport runway has been extended to 9,000 ft. to facilitate operation of bigger aircraft.



• Airports Authority of India

Chennai readies for a date in 2012

AAI'S SHOWPIECE AIRPORT IN THE SOUTH IS NEARING COMPLETION AND ONCE READY IT WILL BE ABLE TO HANDLE AROUND 30 MILLION PASSENGERS.

The revamped, modernised and expanded Chennai airport will throw open its doors for commercial traffic sometime in the first quarter of 2012. Till then, the existing facilities in terms of both airside and non-aeronautical sides including the existing terminals — domestic and international — will continue to operate.

As per the status of Chennai airport on date, it has a total land area of 1,298.01 acres with length of perimeter wall running 15 kilometres and the perimeter road meandering 14 kilometres. Its main runway 07/25 is 3,658 metres long or over 12,000 feet, which is enough for a Jumbo to operate. The secondary runway 12/30 which was 2,085 metres or 6,765 feet has been extended by way of a stilted bridge on the Adayar river by another 1,032 metres or nearly 3,400 feet to take the total length to just about 10,000 feet. The length and width of the RCC/pre-stressed concrete bridge is 200 metres by 447.50 metres to accommodate secondary runway and parallel taxi track. The bridge will be able to take an A 380 superjumbo landing.

Chennai airport has 17 taxiways and 81 parking stands. It has five aerobridges to cater to international passengers and three for domestic. Chennai airport falling under the 4E category is undergoing a massive renovation that will see a completely brand new all-steel-and-glass front when the passengers and airlines get to use it in early 2012. The domestic terminal, which was commissioned in April 1985, went through periodic upgrades and today is spread over 19,250 square metres. Against an annual passenger handling capacity of six million, in fiscal 2010-11, the airport handled 7.80 million domestic passengers. The peak hour handling capacity in the departure hall is 800 while in the arrival hall it is 1200. There are only four baggage conveyor belts in the domestic arrival hall. The domestic terminal has 48 check-in counters.

The international terminal, which was twice commissioned — once in April 1989 and later upgraded in May 2003 — is spread over 42,870 square metres with an annual passenger-handling capacity of three million. The airport, however, handled 4.25 million passengers in 2010-11. During peak hours, it has a handling capacity of 1200 in the departure hall and 750 in the arrival hall and another 350 in the transit hall. It has four baggage conveyor belts and 44 check-in counters besides nine arrival counters for customs and 22 arrival immigration counters as against two departure Customs and 16 departure immigration counters.

The proposed domestic integrated terminal building with its 3-level structure under construction will have an area of 72,614 square metres. It has a provision for seven gates and two hardstand hold rooms and 52 check-in counters excluding eight e-

The international terminal is spread over 42,870 sq metres with a passenger-handling capacity of three million

ticketing counters. The international terminal building with also a 3-level structure under construction shall be of 60,528 square metres and have a provision for two gates with multiple hardstand hold rooms, 52 check-in counters excluding eight counters for e-ticketing. Besides, the international terminal will have 18 immigration and four Customs counters for departure passengers.

While the capacity of the new domestic terminal building will be for 10 million passengers per annum, the new international terminal building will cater to four million passengers per annum. After completion of the two new terminal buildings, the capacity of Chennai airport will be 23 million passengers per annum against the 2010-11 handled 12.05 million (the designated capacity of both the terminals is 9 million only). In that sense, once the expanded and upgraded Chennai airport formally opens all its wings, Chennai would be able to handle nearly 30 million passengers though the actual handling capacity will be 16 million in



● Airports Authority of India

domestic and seven million in the international terminal with peak hour passenger-handling capacity of 3,300 for domestic and 2,300 for the international terminal.

In the revamped Chennai airport, the new international and domestic terminals will be connected with an elevated road (flyover) of a kilometre. With construction in full swing, the massive steel-and-glass structure will be defined by dramatic, twin wing-like hovering roofs providing a 300-metre-long column-free space. The straightforward planning and super-efficient organisation of the programme, security and circulation, as per an AAI official at the site, formed the basis of an innovative design that incorporates vibrant sustainable gardens. Unlike any other airport in the world, Chennai airport will have lush green gardens on view throughout the terminal creating a unique dialogue between engineering and nature.

The building volume will be clearly divided into the landside and airside and the spaces connected with a central security checkpoint for departure as well as two glass bridges on either side for arriving passengers. The circulation will be so organised that departing and arriving passengers will never mingle at any point in the terminal. Special energy-efficient technologies have been incorporated in the design besides various water management

The terminals will be equipped with a sophisticated baggage-handling system with Level-4 security screening system

techniques such as water-efficient landscaping, rain water harvesting, water-efficient fixtures, use of treated grey water for airconditioning cooling system and innovative effluent treatment plant. These will help in re-using waste water.

Both the terminals will be equipped with a sophisticated in-line baggage-handling system, which will be capable of Level-4 security screening system. This system consists of five departure conveyors including rejected baggage conveyor. There will be four arrival carousels in domestic and three in the international terminal. The total length of the conveyor will be 3,500 metres, which can handle 1,250 pieces of baggage per hour.

A glass tube connecting both international and domestic terminals at the mezzanine level for length of 600 metres has been proposed on the city side. This will facilitate the passengers to move from the domestic terminal to the international terminal and vice-versa. There will be two walkalators each of one metre width. It is also proposed to connect a metro station by a link tube to the main glass tube. In due course, the job for constructing

ROAD TO MODERNISATION:
(Left and below) Construction work in progress at Chennai Airport.



the two multi-level car parking will also be undertaken. Work will be initiated on the proposed metro rail station inside the airport premises with total area of 20,000 square metres with four-level terminal having concourse, platform, two wheeler parking for metro users and car park for airport users. AAI will execute the work of the metro station within the airport premises.

In terms of passenger traffic, Chennai airport is the third-busiest in the country. The airport is also undertaking a major revamp of its cargo facilities at a cost of ₹145 crore, which may be increased later. An automatic storage and retrieval system is also being planned to be installed at this cargo complex, which will improve efficiency of cargo handling substantially. The cargo complex proposed in Chennai will be much bigger than what is available in Hyderabad or Bengaluru. Already 75 per cent of the construction is over and once complete, this will be the most modern airport cargo complex in India.

• Airports Authority of India

Tagore inspired design for Kolkata

THE FIFTH-BUSIEST AIRPORT IN THE COUNTRY AND PRESENTLY HANDLING MORE THAN NINE MILLION PASSENGERS ANNUALLY, KOLKATA'S NETAJI SUBASH CHANDRA BOSE INTERNATIONAL AIRPORT IS THE LARGEST IN EASTERN INDIA. ITS PROSPECT OF BECOMING AN AVIATION HUB OF THE REGION HAS PROMPTED AAI TO UNDERTAKE ITS EXPANSION.



Kolkata's Netaji Subash Chandra Bose International Airport that is being expanded and modernised at a cost of ₹2,325 crore will help increase the passenger-handling capacity at the city airport from the present nine million passengers annually to 20 million passengers a year. The modernisation work launched in December 2008 is expected to be completed by January 2012. A consortium of ITD of Thailand and ITD Cementation India Limited bagged the contract for the civil construction and modernisation of the airport.

Located at Dum Dum near the city of Kolkata, it is the fifth-busiest airport in India. The main international airport in eastern India, it is also its largest. As the current infrastructure was unable to handle the influx of passengers, owing largely to the city's development and air traffic growth in recent years, the Airports Authority of India (AAI) took up large-scale airport development plans including a new state-of-the-art integrated airport terminal. This modern, glass-steel structure is being constructed using green building concepts, environment-friendly technology and world-class passenger facilities.

Airports Authority of India appointed an international architectural design consultant to design the new airport terminal with an emphasis on deriving operational synergy and optimum utilisation of available resources by developing an integrated terminal building. New York-based project management consultant, Parsons Brinkerhoff has been appointed to supervise and monitor the construction of the state-of-the-art terminal building.

The new integrated terminal will be a wide v-shaped structure with two-tier operations for arrivals and departures. The integrated passenger

INSPIRATION: Construction in full swing at Netaji Subash Chandra Bose International Airport.

The grand central garden will be a canvas inspired by paintings and poems by Tagore, and will have two levels separated by a sweeping curve—directly inspired from one of Tagore's famous paintings

terminal will have an apron for parking aircraft on its northern and north-eastern sides: 18 aircraft are proposed to be parked there in an in-contact configuration. These in turn will be supplemented by another 53 aircraft parking bays. Passengers will be able to embark/disembark from any aircraft stand and proceed to either domestic or international station.

A landscaped courtyard in the heart of the building will provide a symbolic and physical separation between the airside and landside. It will be further divided by an island of accommodation that projects forward between the check-in area and the baggage-reclaim area. These two large spaces will sit side-by-side in the landside section of the building. To unify these two spaces, a spectacular roof will pass above them, retaining it as a whole.

The landscape concept will be one of the biggest pieces of land art inspired by the works of Rabindranath Tagore. It will offer two disparate spatial experiences — the vastness of the grand central garden and the intimacy of the internal courtyards. The grand central garden will be a canvas inspired by paintings and poems by Tagore, and will have two levels separated by a sweeping curve — directly inspired from one of Tagore's famous paintings. Compared to the simplicity of the lower level, the upper level of the garden will be richly textured and patterned with letters and words extracted from one of the poems from Gitanjali.

AAI is on the job to upgrade the CNS and ATM systems in the airport, which will have a state-of-the-art ATC tower and an adjacent technical building. There will also be provision for metro rail connectivity from the city centre to the airport with city check-in facilities.

The first phase of modernisation will enable the airport to accommodate a peak flow of 1,800 passengers an hour. The airport will also have an inline baggage system, which will make it redundant for passengers to go for pre-check through X-ray machines. The approach road from the city will be uni-directional four-lane approach road merging with the existing road network without disrupting vehicular traffic flow from various other airport facilities. The proposed five-level terminal will be served by an elevated roadway leading to the departure facilities. The city side will be linked to the upcoming metro rail from the main city.

AAI is also doubling the area meant for commercial use from the earlier 45 acres to 90 acres. The work should be complete by December 2011. Extension and refurbishment of the runway were completed in December 2010.