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Airport Man: Bringing The World To India's Doorstep

AAI Mapping Carbon
Footprint

'Green' Taxi Debuts
At Paris Air Show

Satellite-Based Landing
System For Frankfurt

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Bringing the world to India's doorstep



The Chairman of the Airports Authority of India (AAI), **Mr. V.P. Agrawal**, has become a beacon to the Indian aviation industry by executing mega infrastructure projects, which have become world class examples of proficiency and professionalism. He has provided leadership in planning and executing projects that are not merely examples of engineering excellence, effective management and use of the latest technology, but also about serving people in India's hinterland. The Indian edition of *Airports International* recently caught up with him to know his mind.

AAI has stated its objective of providing airports in every district headquarters before the year 2020. Going by your experience so far, how will that goal be achieved?

I believe that a sturdy civil aviation infrastructure is vital for facilitating technological progress and growth of business and economy in the country. India is now becoming the fastest growing aviation market in the world and is expected to be the third largest domestic market.

Today we are living in a world that is rapidly progressing. The prospects for growth in the Indian aviation sector are enormous. In fact, I would like to spread these modernization projects to the remotest areas of our country and to non-operational airports.

There is the recent announcement that 51 new airports will be set up across the country. How will the AAI motivate the industry to plan, invest and operate?

India is a continent in itself. My vision and mission is to take aviation to the remotest corner of the country. Today only a very small percentage of Indians fly. As income increases the aviation industry will prosper and hubs will evolve. In recent years it is being recognized that this sector is vital for the development of the nation.

Several factors affect connectivity of airports, among them inherent traffic from catchment areas, willingness and viability of airlines to operate regular flights and suitable government policies and

incentives. AAI is making a roadmap for development of affordable, low-cost regional airports.

We have already renovated more than 60 airports, including Chennai, Kolkata and other non-metro airports. We are now ready to provide air connectivity in Tier-II and Tier-III cities of India by developing affordable airports. You will agree that AAI's track record in this regard is exemplary. The industry will follow suit.

In light of the economic slowdown, what financial resources are being made available to the AAI to implement new projects?

Frankly, we were no exception to the global meltdown. However, the effect on the AAI was less severe and we were able to face the challenge upfront by deployment of effective strategies that we had learnt over a period of time. We focused on ongoing projects which were not stalled due to resource crunch. We also prioritized our projects on the basis of their urgency. Resources were optimized and essential projects with respect to operations and capacity enhancement were given the go-ahead. Other projects that were

not immediately required were scaled down. The requirement of huge funds with large gestation periods to complete infrastructure projects was the biggest deterrent.

However, a balanced approach of utilizing internal resources, debt, use of the PPP (public-private participation) model and cost cutting helped us fund many important projects. Even the recession did not stop AAI from completing its projects in time and posting decent profits.

Flight safety and passenger security have become even more critical factors of operation at airports. Where does the AAI stand on this?

There can be no compromise on this count; and our airports are already 100% secure. The safety and security of passengers and our assets and resources is undoubtedly top priority. The security scenario in the country has improved tremendously over the last few years, but our vigil and efforts have to be top class at all times.

The major task that lies ahead is to keep pace with ever-changing technology. We need to adapt to the changing scenarios very

quickly and enhance levels of safety both on the ground and in the air. Among steps taken by AAI to ensure and enhance security include deployment of the Central Industrial Security Force for airport security; closed-circuit television surveillance system at sensitive airports; state-of-the-art screening systems for baggage; and smart cards for access control to vital installations. This is an ongoing process; we can never relax on security. As air navigation service provider (ANSP), we are in transition from voice to data-link, ground-based to satellite-based navigation, radar surveillance augmentation, state-of-the-art training and a sound research and development capability.

Is India benefitting from the values and skills that foreign investors are bringing in the joint ventures?

Foreign investors bring good experience and expertise in the form of capability to execute mega projects under different permutations and combinations – among them architectural and engineering consultancy services, engineering works





and project management and airport management. Luckily, AAI also has an extremely motivated professional work force that is not only technically oriented and well trained, but also proficient in terminal and airside operations management, facility management, airport planning, commercial functions and cargo management.

AAI has a mandate to provide modern and secure air navigation services. How confident do you feel on this count?

AAI bears the responsibility of managing the entire Indian airspace, about 2.8 million nautical square miles, from the Bay of Bengal to the Arabian Sea. That said, it must be noted that AAI has been internationally recognized and appreciated for providing safe, efficient, cost-effective and environment-friendly air traffic management services. Our motto is to achieve a collaborative and coordinated global approach to ensure harmonization and adoption of technological solutions that would be cost-effective and uniform. AAI has drawn up a master plan to put into practice the FANS (Future Air Navigation System).

Voice communication will shift to digital data communication and ground-based navigation to satellite-based navigation.

This master plan will put India among the elite group of countries having an efficient ATM (air traffic management) system, supported by a strong and robust infrastructure of digital data unit, integrated ATM automation network, and system-wide information management system.

AAI's initiatives for nurturing the environment have been quite innovative, and also earned it the 'Golden Peacock Eco-Innovation Award' in 2012.

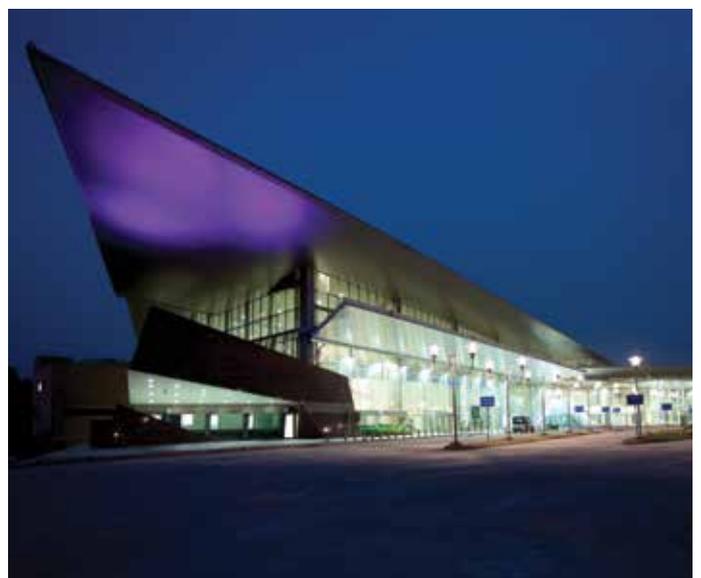
How important is this to the AAI?

Green initiatives are an ongoing and self-evolving process. Today, environment has become a very important concern, given the fact that its conservation has become more and more significant for everyone in society. We accept that the environment is the most treasured natural resource that is invaluable to the human race. Therefore, over the last few years, we have been inventing new solutions and implementing them.

I firmly believe that

Progress Report (2012-13)

- Integrated terminal building at Netaji Subhash Chandra Bose International Airport, Kolkata, was inaugurated on 20th January, 2013
- New international and domestic terminals and upgradation of air side facilities completed at Chennai airport on 31st January, 2013
- New integrated terminal building commissioned at Raipur airport
- Construction of new terminal building at Puducherry airport
- New integrated terminal building commissioned at Lucknow (Uttar Pradesh) airport
- Development of Jalgaon (Maharashtra) airport completed
- Construction of terminal building for new civil enclave completed at Bhatinda (Punjab) airport
- Construction of new civil enclave completed at Jaisalmer (Rajasthan) airport
- Construction of new integrated terminal completed at Ranchi (Jharkhand) airport
- Construction of new control tower and Doppler radar building at Agartala (Tripura) airport
- Construction of new terminal building at Bhubaneswar (Odisha) airport
- New terminals under construction in Dabolim (Goa), Tirupati (Andhra Pradesh), Tezu (Arunachal Pradesh), Vadodara (Gujarat), Chandigarh, Pakyong (Sikkim), Kadappa (Andhra Pradesh) and Khajuraho (Madhya Pradesh).



every venture should be open to the brilliance of innovative technologies. We implemented an integrated approach and tried to redefine benchmarks through innovation in use of solar energy, recycling of paper for routine stationery and waste water recycling. As far as air traffic management is concerned, we have undertaken a comprehensive scientific monitoring and implementation project to reduce space between aircraft for increased carrying capacity; streamlining routes to reduce travel time and fuel consumption; and using eco-friendly, self-propelled electrically operated devices for aircraft and passenger conveniences. We have undertaken about 14 environmental sustainability projects across India.

In the recent tragedy in Uttarakhand resulting from cloud bursts, the AAI made air rescue operations possible even in inaccessible terrain and under adverse weather conditions...

What happened was really very sad. The evacuation effort was daring and overwhelming, given the enormity of the tragedy. We launched one of the largest air rescue efforts in Indian history. Timely action was very important, because time wasted was lives lost. The AAI joined hands with state government and the Indian Air Force in these hours of need. We readied all infrastructure on a war-footing and extended immediate and round-the-clock services for efficient and smooth operations.

In the three decades of your

life, there would have been unanticipated moments of crisis. Can you recall any such challenging moment that made you proud of your organization?

I can never forget my days as airport director, when I had the privilege of repositioning operations from one airport to another in very complex and demanding situations. We were ordered to relocate from Srinagar to Avantipur airfield, which had never handled commercial aviation. We managed in a record time of just one week. The work entailed rigging up all facilities from scratch from Srinagar to Avantipur.

Despite constraints, the AAI has displayed great grasp of the civil aviation needs of the country and shown foresight. How will you ensure the good work continues in the upcoming projects?

I remember a very relevant line here: "A kilometer of road takes you nowhere, but a kilometer of runway connects you to the world." The AAI understands this need of improving air connectivity across India. We have incurred an expenditure of around Rs 12,000 crore during the 11th Plan for development of airports.

Another area of satisfaction is India's North-East. Our efforts in this direction have paid rich dividends: route dispersal guidelines have resulted in air connectivity to and from 11 airports in the North-East. Air connectivity to this region can be further improved, and AAI has plans for developing four more low cost airports.



Man of Action

Mr. Agrawal took up reins of the AAI on 1st January, 2009. A Master of Engineering and Bachelor of Engineering (Electrical) from the Indian Institute of Technology-Roorkee, he serves on the board of Airports Council International's world governing board and is Vice-President of ACI's Asia-Pacific region.

His contributions lie in the renovation of more than 60 airports, including Chennai, Kolkata and other non-metro airports across the country. He has also added a new dimension to Air Navigation Services through integrated air traffic services automation system at Chennai. His exceptional initiative – GAGAN (GPS-aided geo-augmented navigation), for precise signals in space for aircraft navigation – has propelled India into an elite group of countries.

Under his stewardship, AAI was chosen for the Jane's Award-2012, for achieving the best operational efficiency through upper airspace harmonization programme. Apart from a host of national and regional awards that its airports went on to earn, AAI was winner of the twin ATC Global Awards in 2013 in Amsterdam for excellence in air navigation services, management and strategic advancement in air transport. He has served on many forums related to civil aviation and is an active member of the Civil Air Navigation Service Organization and the International Civil Aviation Organization.

AAI mapping carbon footprint

Ideas, strategies emerge at conference on 'Eco-friendly airports' in New Delhi

India's sole civilian airspace manager and navigation services provider, the Airports Authority of India (AAI), has initiated steps to address the growing concern for pollution of the atmosphere and work towards achieving carbon-neutrality.

Speaking at a day-long conference on 'Eco-friendly airports' in New Delhi early in July, AAI's General Manager-Operations, Capt. Deepak Shastri, said a "collaborative decision-making process" had been launched in March 2011 to map the Indian aviation industry's carbon footprint and engage third parties – local populace and multi-disciplinary experts – to formulate strategies to cut emissions.

He was addressing more than a dozen experts from the fields of aviation, machinery manufacturing, airport administration and ecologists gathered at the Indian Aviation Academy, New Delhi. Their common aim: to discuss the problem of pollution caused by the aviation industry.

The conference was organized by the Bangalore-based Society of Indian Aerospace Technologies and Industries (SIATI) and supported by the Directorate General of Civil Aviation (DGCA) and the AAI.

Capt. Shastri listed the manner in which pollution in the aviation industry needs

to be controlled: route rationalization, reduction in air and ground congestion, improving efficiencies of flight schedules, better administration of airport facilities and passenger/ cargo traffic.

He announced that the AAI would set up 400-kW solar power plants at airports in Delhi, Jaisalmer (Rajasthan) and Guwahati (Assam). These would also have all obstruction lighting around the airports that would be powered by photo-voltaic panels.

The AAI is also pushing for ISO: 19064 certification for airports in Kolkata (West Bengal), Chennai (Tamil Nadu), Lucknow (Uttar Pradesh), Ahmedabad (Gujarat) and Jaipur (Rajasthan).

Speaking on behalf of the defence services, Commodore Amit Bhandari of the Coast Guard said it was for the Ministry of Defence to decide and implement initiatives for alternate energy. However, he said it was in the interests of all the four services (Army, Navy, Coast Guard and Air Force) to ensure energy security.

He added that the Coast Guard was in the process of establishing a wind turbine grid along the coast in Gujarat. At its stations in Maharashtra, the Coast Guard is installing rooftop photo-voltaic panels for day-to-day electricity needs. Maini Group Chairman, Mr. Sandeep

Maini, gave a presentation on several battery-operated vehicles in the service of ground handling agencies at airports. He said that when investing in 'green' technologies, it was important that decision-makers not get misled by the high upfront costs. Apart from aircraft towing tractors and passenger buggies, the Maini Group would roll out mobile water and toilet servicing units and baggage conveyors in early 2015.

The conference was inaugurated by Mr. K.N. Shrivastava, Secretary for Civil Aviation, in the presence of the DGCA, Mr. Arun Mishra, and AAI Chairman, Mr. V.P. Agarwal.

The Director of Indian Aviation Academy, Mr. Dinesh Kumar, set the tone for the day's deliberations by noting that although the aviation sector contributed a mere 2% of green-houses gases (GHG), its contribution of carbon-dioxide (CO₂) emissions was to the tune of 12%. CO₂ makes up for 95% of all GHG pollution and the resultant warming of the Earth's climate. In an airport's ecosystem, HVAC (heating, ventilation and air-conditioning) systems, captive power plants, ground support equipment, fleet of vehicles, fire-fighting and waste disposal facilities generate pollutants that should be tackled scientifically.

The Green Taxi

Tom Allett looks at a 'green' aircraft taxiing system demonstrated at this year's Paris Air Show.

The Electronic Green Taxiing System (EGTS), has been developed by EGTS International, a joint venture between Honeywell and Safran, to replace aircraft tractors. It works by using an aircraft's auxiliary power unit (APU) to run an electric motor to drive an airliner's mainwheels, enabling pilots to manoeuvre their aircraft without using their aircraft's engines or a tug. Each of an EGTS-equipped aircraft's powered wheels is fitted with an individual control system, giving pilots total control of speed and direction during taxi operations. In addition to cutting fuel costs, the system will also generate savings by reducing engine and brake wear while minimising the risk of damage to engine turbines from foreign objects on the tarmac.

Because an aircraft's engines are optimised for flight rather than taxiing, they burn a disproportionate amount of fuel during ground operations. With a short- or medium-range aircraft estimated to spend up to 2.5 hours of its time on taxiways every day, the manufacturer predicts EGTS could save around 1,322lb (600kg) of fuel that would otherwise be consumed during a routine day's taxiing operation. The manufacturers estimate this will save airlines up to 4% of fuel burn per flight while also reducing nitrogen oxide (NOx) exhaust gas emissions and airport noise levels.

The project was launched by EGTS International in 2011 and, having completed its first major test phase, made its first public demonstration – on an Airbus A320 – at the 50th International Paris Air Show held at Le Bourget Airport in June. EGTS International describes its product as being similar to a hybrid car, using electrical power at slow speeds, before letting the jet engines



Engine covers on and no tow-tractor, but this A320 can still taxi thanks to its electrically-driven wheels. (EGTS)

take over for departure. It also claims that by removing the need for a tow tractor, the EGTS will reduce gate and ramp congestion, improve on-time departure and enable passengers to disembark faster as a result of "smoother ground handling operations". The system is expected to be commercially available in 2016. The joint venture partners say, to date, development of the EGTS has involved more than 200 engineers working in 13 Safran and Honeywell facilities around the world. The component system and aircraft testing programme has accumulated more than 3,000 hours of tests on seven bespoke testing benches and rigs, including ground manoeuvres in Toulouse, France, on an A320 modified for the purpose. Since this aircraft's 'first move' in April, the EGTS fitted to it has logged around 100 miles (160km) of rolling tests to evaluate the system in various load configurations, runway conditions

and complex manoeuvres such as pushback, tight turns and U-turns; and at various specifications of acceleration and speed. Similar manoeuvres were demonstrated at the Paris Air Show at speeds up to 20 knots, at full performance and with the aircraft at maximum take-off weight (MTOW). Another boost for the project, announced at the Paris show, was the news that the manufacturer would extend its co-operation work with Air France. A memorandum of understanding (MoU) was signed on June 17 for the French national airline to analyse the potential technical, operational and financial benefits of the EGTS. In return, Air France will assist Safran and Honeywell in defining the estimated savings offered by the system and quantifying other operational benefits. ■

DOUBLE DELIGHT FOR AAI



Excellence in management, advancement in air transport recognized globally

The Airports Authority of India (AAI) was in March this year declared winner of two prestigious ATC Global Awards 2013. It annexed the two awards out of three entries submitted by India's only air navigation service provider (ANSP).

While the first award was for 'Excellence in ANSP Management' (outside Europe and North America), the other was for 'Strategic Advancement in Air Transport' through AAI's collaborative environment project, the Indian Ocean Strategic Partnership for Reduced Emission (Inspire).

The award for Inspire is recognition of India's ANS initiative and commitment in establishing a collaborative network of 16 ANSPs,

10 airlines and IATA, dedicated to improving the environmental efficiency and sustainability of aviation across the Indian Ocean and Arabian Sea region.

Inspire, which was founded by ANSP partners AAI, Air Services Australia and ATNS in 2011, has adopted and promoted best practices that have demonstrated significant operational efficiency and reduction in emission, contributing to environmental protection.

The aim of the Inspire initiative is to gauge the improved environmental impact of a perfect flight, minimizing on-ground delays using expeditious taxi routes and runways, conducting gradual climb and descent paths, and fly direct optimum routes

(user preferred route) based on existing meteorological and airspace conditions.

AAI's significant lead in conducting the user preferred route project involving 1031 Inspire City-Pair flights resulted in carbon savings to the tune of 6,885 tonnes till end-February 2013, has attracted world-wide acclaim.

The award for ANSP excellence was given in recognition of AAI's significant ANS initiatives undertaken in the recent past, resulting in improved operational efficiency and safety, not only in the country but across the region as well. The entry focused on India's initiatives in upper airspace harmonization, implementation of reduced horizontal separation on RNAV routes, reduction in separation on major routes based on enhanced and seamless radar coverage, establishment of RNAV-5 routes, continuous descent operations in Mumbai, Inspire

initiatives, ADS-B implementation, GAGAN, and implementation for automatic coordination between ATS units, in addition to its technological leap into Central Air Traffic Flow Management.

The ANS initiatives have, on a conservative estimate, resulted in total estimated savings worth US\$200 million and achieved reduction in carbon emission by 51 million tonnes.

The entry also highlighted AAI's safety initiative in the region through the Bay of Bengal-Arabian Sea Monitoring Agency (BOBASMA), which is entrusted with the responsibility of safety monitoring services in the horizontal plane in the region.

The coveted ATC Global Awards for AAI – coming on the heels of last year's Jane's International ATC Award – are recognition of AAI's leading role in the region and continuing excellence in ANS among many major ANSPs.

FRANKFURT AIRPORT SUPPORTS CHARITIES

Aviation security regulations require passengers to dispose of their liquid containers at the security checkpoint. Thus, all bottles and cans – valuable recyclable material – end up in the garbage. The deposit charged on the containers, as required by law, is equally lost.

To remedy the situation, Frankfurt Airport has now installed a bottle return machine in Terminal-1 (departures), offering passengers a convenient way to dispose of their bottles and cans. This is environmentally conscious and, at the same time, supports international and local charities.

Thanks to a special feature of this custom-made machine, the

full deposit fee is donated to four non-profit organizations. An internationally known organization, the World Wide Fund for Nature, featuring the Panda symbol, is one option.

By clicking on the 'Aviation Without Borders' logo, passengers support this relief organization. In addition to material donations, LOG organizes and coordinates the transport of people and humanitarian aid by air.

Those that prefer to support charities in the Frankfurt region can opt for Frankfurter Tafel or Franziskustreff. If no choice is made, the donation automatically goes to the WWF.

Ms. Veronika Iseler from the



product and process development division of Fraport's terminal management explains: "The consistently positive feedback from our passengers confirms that we are on the right track with this idea. We are now trying to attract the attention of our non-German guests by improving the positioning of the facility and by providing signs." Should the feedback remain positive, the return system will be installed at other locations throughout Frankfurt airport.

The bottle return machine for donations