

Messages from Departments and Centers of NILIM

With airport infrastructure that supports growth

SUGANUMA Fuminori, Director

Airport Department

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1. Aviation and airport policies that lead to national growth strategies

The genuine implementation of the Open Sky and aviation deregulation policies, which had been pending Japanese aviation policies for many years, has been made possible by expansion of the airport capacity of the Tokyo region by the opening of the fourth runway at Haneda Airport in October 2010 and the start of simultaneous independent departure at Narita Airport by the end of FY2014. Furthermore, this expansion has been accompanied by the other pillar of the so-called three-in-one revolution, namely the creation of an environment to promote the reform of strategic airport management through encouraging the entry to the market of new airlines including low cost carriers (below called “LCC”), flexible and expeditious setting of landing fees, and privatization of airports.

Eliminating restrictions on routes, number of flights etc. of scheduled international service encourages the stimulation of airlines and promotes the opening of new routes, establishing a foothold for the incorporation of booming economic growth in Asia and elsewhere overseas.

At the same time, in an interim report issued by the Council of Transport Policy, Aviation Committee, Basic Policy Subcommittee in June 2013, priority is placed on the following four points concerning the future roles of aviation in social and economic activities in Japan.

- (1) Appropriately responding to future new importance of international aviation demand etc.
- (2) Ensuring provision of smooth and reliable service under price competition among airlines
- (3) Future airport management in response to shift from establishment to operation
- (4) Future effective regional air networks

From among concrete challenges from these perspectives, matters closely linked to present research challenges of our research department in particular are discussed below.

2. Studying the strengthening of functions at Tokyo region airports

Strengthening the functions of Tokyo region airports as part of the Japan Revitalization Strategy:

Japan is Back in June 2013 is positioned as a matter which should be tackled preferentially in National Strategic Special Zones as a policy to further strengthen Japan’s competitiveness as a business hub. At the same time, at the end of FY2013, it was decided to continue studies to further strengthen functions, while steadily introducing 30,000 additional international slots at Haneda Airport and raising annual flights at Narita Airport to 300,000 during FY2014.

Turning to air transport, against a background of the advance of near eastern airlines and stimulation of new demand by the entry to the market of LCCs, it is predicted that throughout the Asia and Pacific region, average annual growth of 6.6% will make the region the world’s largest aviation market by 2025.

Aviation handling capacity of the entire Tokyo region will increase to about 750,000 flights at the end of FY2014, the largest among major airports in the countries of Asia. But with such demand predicted to continue to grow, it is also forecast that growth of passenger carrying capacity will strengthen as a result of construction and expansion of major airports in the countries of Asia, further intensifying competition among hub airports in the region. The fact that Narita Airport was already passed by Incheon Airport in Korea in terms of both total passengers in 2010 and in terms of connecting passengers in 2011 is simply one example.

Related to these points, in a document from the Basic Policy Subcommittee announced in September 2013, the following problems concerning predicted aviation demand in the Tokyo region of Japan which should be tackled in the future are pointed out below.

- (1) Overall aviation demand (total domestic and international) in Tokyo region airports will continue to show a rising trend, and international route demand in particular is predicted to rise by between about 60% and 80% during the 10 years beginning in 2012.
- (2) Overall aviation demand in Tokyo region airports in the first half of the 2020s is predicted to reach the limit of present planned capacity of about 750,000 flights.
- (3) It is possible that predictions will be surpassed through the creation of new demand by LCC etc.
- (4) Landing and take-off capacity by time period at

Narita Airport shows that supply and demand are tight and there are still time periods when it is not necessarily possible to meet the numbers demanded by the airlines.

3. Ensuring safety and security of aviation service users –Airport safety measures

As users of Tokyo region airports continue to increase in this way and LCC and other new entrants expand use, it is essential to specifically introduce measures to improve the reliability of airport infrastructure and to respond to emergency situations including large scale disasters such as the massive Nankai Trough Earthquake, so that airport users can use airport services without anxiety.

(1) Large-scale earthquake disaster countermeasures

When the Nankai Trough Earthquake has occurred, 18 airports will be temporarily shut down for inspections, and it is predicted that among these, Kochi Airport and Miyazaki Airport will be submerged by tsunami. It is estimated that at Kochi Airport, more than half of the airport will be submerged, to a maximum of 2.5m in front of the terminal building, and that the maximum depth throughout the airport will be about 5m at its south end. And at Miyazaki Airport, about half the airport will be submerged and the maximum submersion depth will reach 5m, which is the same depth as at Kochi Airport.

When an earthquake occurs, and particular when a tsunami is predicted, the first need is to ensure the safety of airport users and surrounding residents, but adequate measures including those to rapidly restore private aviation are demanded so that the ability of aircraft to move disaster victims out of the disaster area and to bring in materials and machinery and emergency provisions can be restored as quickly as possible.

And as a measure to prepare for an earthquake directly under the capital, liquefaction countermeasures are being steadily taken under basic facilities such as runways at Haneda Airport etc., but preparations for the Nankai Trough Giant Earthquake have just started. Tsunami evacuation plans have been enacted, but the immediate challenge is to create scenarios based on the form of airports able to contribute to the early removal of drifting wreckage or to reconstruction activities.

(2) Airport facility maintenance measures

In light of background events such as the Sasago Tunnel accident on the Chuo Expressway in December 2012, not only runways, taxiways, and basic facilities directly related to aircraft operation, but comprehensive inspections of facilities from the perspective of their impacts on human life have been carried out, and basic policies and long-term renewal

plans to steadily perform preventive type maintenance will be enacted for each airport.

And at Tokyo region airports, under conditions such as restricted hours during the night set accompanying extension of airport operating hours, greater efficiency of daily inspections, repair works etc. and facility maintenance of runway tarmac, which are all indispensable to ensure the safe operation of aircraft, will become increasingly big challenges.

4. Initiatives and prospects by the Airport Department

The following are the major initiatives now being taken by the Airport Department, including priority policy challenges such as those described above.

- (1) Further elaboration of aviation demand prediction methods, such as considering the creation of demand by the entrance of LCC to the market.
- (2) Verifying an airport's roles in and effects on its surrounding region.
- (3) Developing a risk management method for airport functions which contribute to the enactment of airport management plans and the enactment of business continuity plans for use in the event of a large-scale disaster.
- (4) Development of high speed tarmac performance evaluation technologies for runways etc. to contribute to the maintenance and restoration of airport functions after a disaster.
- (5) Study of methods of advancing and improving efficiency of inspection and repair technologies under time restrictions imposed on maintenance work.

Tokyo has been selected as the site of the 2020 Olympics and tourists using the airports to visit Japan and business demand are predicted to increase, so a reform of airport management through concessions may open new prospects for the promotion of the use of airports. On the other hand, achieving more efficient airport facility maintenance, which must be done by managers of airports operated by local governments, which face harsh financial conditions, will probably become an important challenge from perspectives different from those characteristic of airports in the Tokyo region.

Without losing sight of these various changes, we wish to continue to deepen our research activities concerning study challenges regarding airports as public infrastructure while considering the broad interrelationships linking the people, regions, industry, culture and so on, while not being held back by conventional itemization and technology development frameworks.