

Tokyo International Airport (Haneda: HND)

Capacity Analysis 2010

1. Introduction

Tokyo International airport (hereinafter called Haneda Airport) is the 4th largest airport in the world in terms of the number of passengers, handling over 66 million passengers with 340,000 aircraft movements in 2008. Haneda Airport has been utilized as domestic hub airport in Tokyo Metropolitan Area since the inauguration of Narita International Airport in 1978. The past trend of passengers and aircraft movements for ten years at Haneda Airport is shown in Figure 1 and Figure 2.

As clearly shown, the ratio of international aircraft movement is quite low showing only 3.4% in 2008, since only international charter services have been allowed at Haneda Airport. Being used as mainly domestic hub airport, the annual growth rate for passengers and aircraft movements is calculated to be 2.0% and 3.7% respectively reflecting strong domestic demands. However, the current aircraft movements of 340,000 have already reached the airport capacity limit with current configuration of three runways (2 open parallel runways (3,000m) and one cross wind runway (2,500m)).

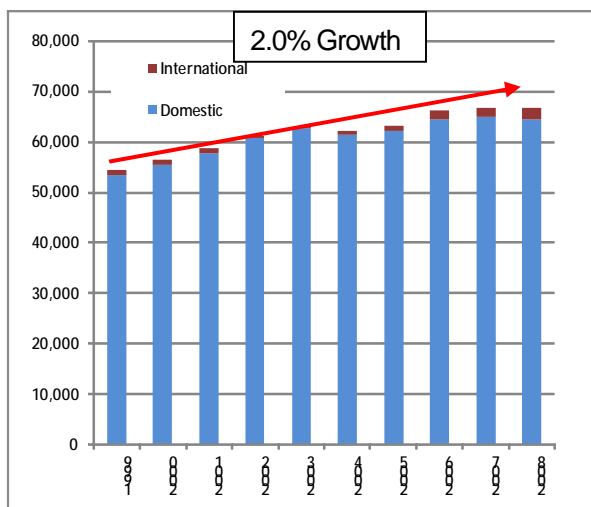


Figure 1: Annual Passengers (000s)

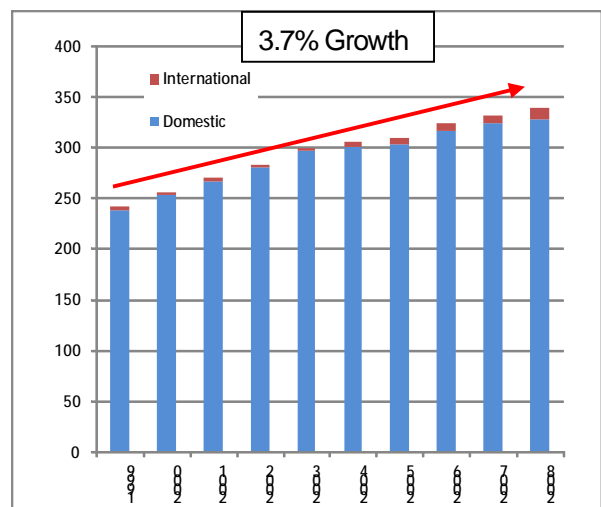


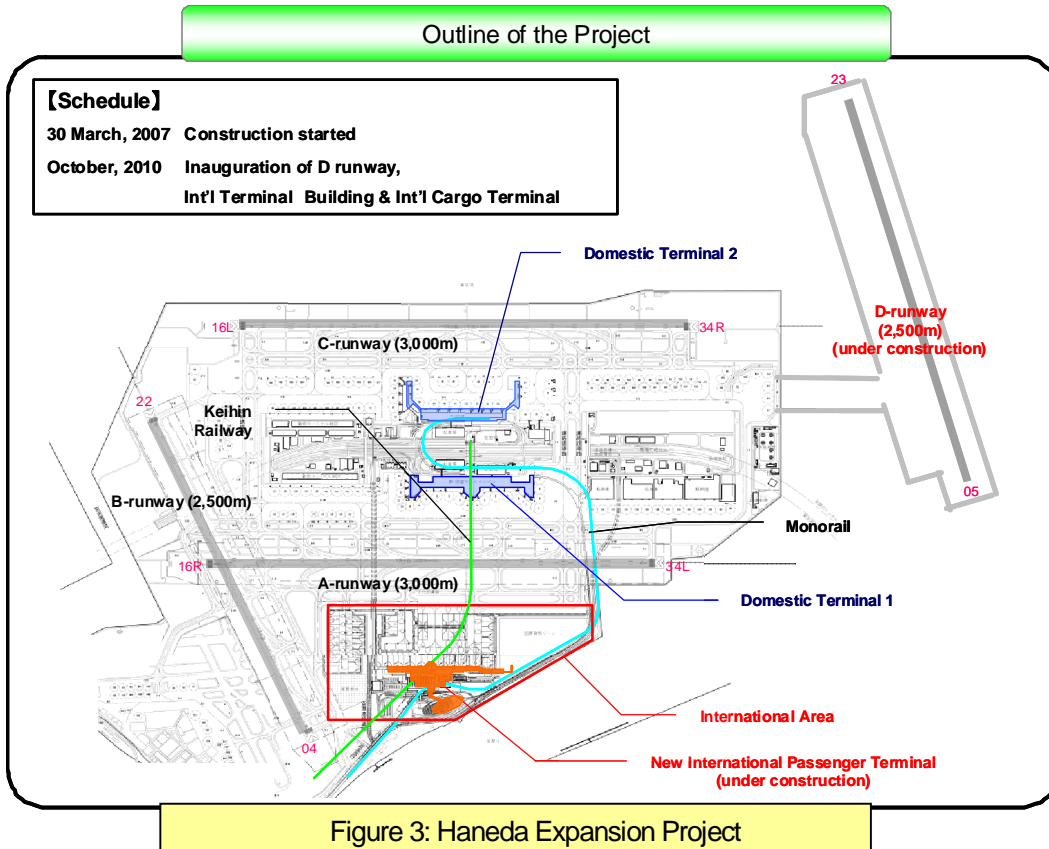
Figure 2: Annual Aircraft Movements (000s)

2. Haneda Expansion Project

Due to the continuous domestic demands for Haneda Airport, the Japan Civil Aviation Bureau (hereinafter called JCAB) has implemented the Haneda expansion project. In this project, the 4th runway, new cross wind D-runway (2,500m) will be constructed. In addition, the new international passenger terminal building (hereinafter called IPTB) as well as international cargo terminal buildings (hereinafter called ICTB) will be

constructed in order to accommodate international scheduled services.

The outline of the project is shown in Figure 3. The construction of new D-runway, IPTB and ICTB are now underway along with originally planned schedule and will be completed by October, 2010.



3. Introduction of International Scheduled Services

In October 2010, new D-runway, IPTB and ICTB will be inaugurated. With the inauguration of these facilities, the international scheduled services will be introduced again at Haneda Airport after an interval of almost 30 years.

The JCAB has been conducting bilateral air talks with the relevant aeronautical authorities based on the following policies;

(1) Daytime Hours (06:00-22:55):

Haneda Airport will accommodate international scheduled passenger flights up to 30,000 per year for short-haul services between Tokyo and Asian cities where the traffic demands for business travelers are very strong.

(2) Late Night and Early Morning Hours (23:00-05:55):

Haneda Airport will accommodate international scheduled passenger/cargo flights up to 30,000 per year for long-haul services between Tokyo and major cities all over the world including US and EU. This is to substitute for Narita International Airport which is closed from 23:00 to 06:00 due to night curfew, thus both

airports will compensate each other to assure the 24-hours operation of international flights for Tokyo Metropolitan Area.

4. Movement Restriction associated with ATC procedures

There is very strict restriction as to aircraft movements at Haneda Airport associated with ATC procedures. They are en-route, terminal approach, aerodrome and ground controls. As shown in Figure 3, especially aerodrome and ground controls are very difficult because of very complicated runway and taxiway configurations.

The restriction of hourly aircraft movements associated with ATC procedures at current, in 2010W, in 2010S and future is shown in Figure 4. During 23:00 to 05:55, the flight route of the departure and arrival operations should be limited over the Tokyo bay area, not over land areas, due to the environmental consideration. During this period, only D-runway will be used in principle for departure in the north wind operations, A and C-runways will be used for departure in the south wind operations.

The restrictions will be gradually relaxed in time according to the level of familiarization of ATC personnel as well as flight crews and the assessment of total safety analysis. As the slot allocation has been conducted at 5 minutes intervals at Haneda Airport, the same 5 minutes interval unit will be used as in the past.



Time Period		Current	2010 W	2011S	Planned
Daytime hours	0600-0655	32/26	40/5	40/5	40/40
	0700-0755	32/30	34/5	35/5	
	0800-1955	32/31	34/33	35/35	
	2000-2155	32/30	34/33	35/35	
Late night and early morning hours*	2200-2255	32/26	5/40	5/40	0/8
	2300-2325	10/10	0/8	0/8	
	2330-2355		4/4	4/4	
	2400-0555	8/8	8/8	8/8	

(Departure / Arrival)

*Restriction number of Late night and early morning hours are subject to change.

Figure 4: Movement Restriction

5. Terminal Building Capacity

New IPTB will be in service in October 2010, along with the inauguration of new D-runway. The layout of new IPTB is shown in Figure 5. In designing IPTB, the following design prerequisite was given by the concerned agencies. The number of take-offs and landings per year are 30,000 during day time, and 30,000 during

night time. The number of passengers per year is 7 million. Peak passenger per hour is 1,700.

Based on the design prerequisite, the total floor area of new IPTB was calculated to be 159,000 square meters. There are 96 check-in counters in 4 islands, 9 X-ray screening systems at security gates, and 22 immigration counters for embarkation. There are 6 quarantine counters, 24 immigration counters, and 28 custom inspection counters for disembarkation. There are 10 boarding bridges and 4 bus gates for 13 remote parking stands. The fully automated baggage handling system (BHS) and in-line security system will be furnished.

The handling capacity will be restricted up to 6 departures and 6 arrivals per hour due to the capability of IPTB facilities such as BHS, and CIQ facilities in the first phase. This IPTB will be operated by Tokyo International Air Terminal Corporation (TIAT), private company owned jointly by Japan Air Terminal Co., Ltd (JATCO), JAL, ANA and other companies.

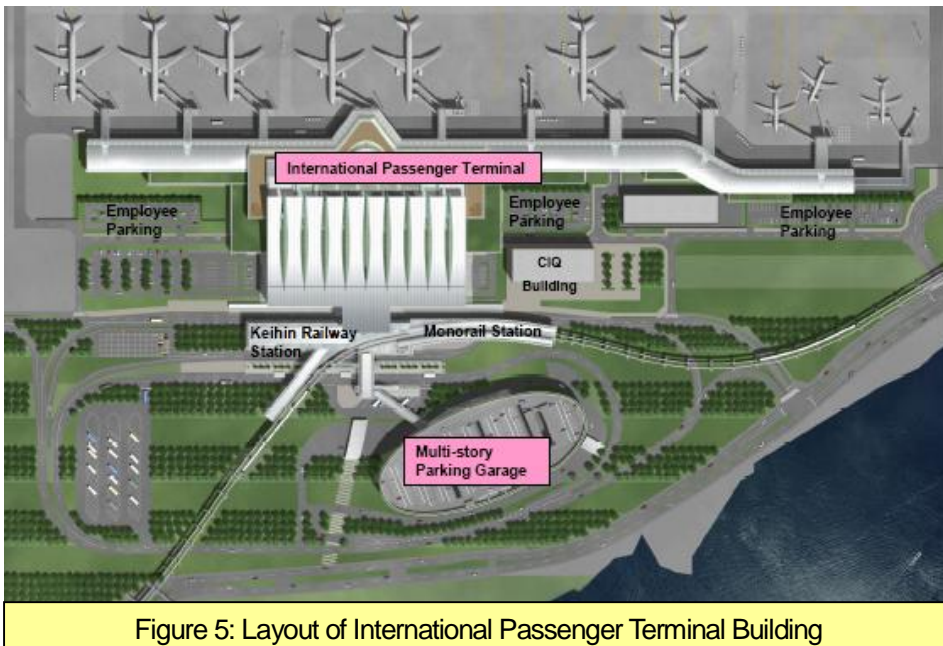


Figure 5: Layout of International Passenger Terminal Building

6. Schedule Management

Haneda Airport has not been filed for IATA airport level classification so far, as the airport has been used primarily for domestic flights. Schedule coordination for domestic flights has been conducted on voluntary basis by schedule coordination committee which is comprised of domestic airlines. With the introduction of international scheduled services planned in Oct, 2010, it was considered to be desirable that full coordination (domestic and international) by a third party should be conducted to maximize the utilization of the airport infrastructures with transparent process.

For this reason, the JCAB entrusted schedule coordination service at Haneda Airport to NRT/KIX schedule coordination, Japan Aeronautic Association (JAA) on February 4, 2010. JAA has already started preparing for the system adjustments and coordinating with airlines as well as Haneda Airport Office (JCAB) targeting for IATA 2010 winter season.

7. Capacity Analysis for Current Situation

The current hourly aircraft movement for departure and the movement restriction is shown in Figure 6. The hourly aircraft movement restriction comes from ATC procedures shown under the column of current in Figure 4. As shown, the departure slot is almost full during the daytime except for 6:00 and 14:00 - 16:55. During the night time, the departure operations will decline from 20:00 to 5:55 because the most of local airports have night curfew or are closed.

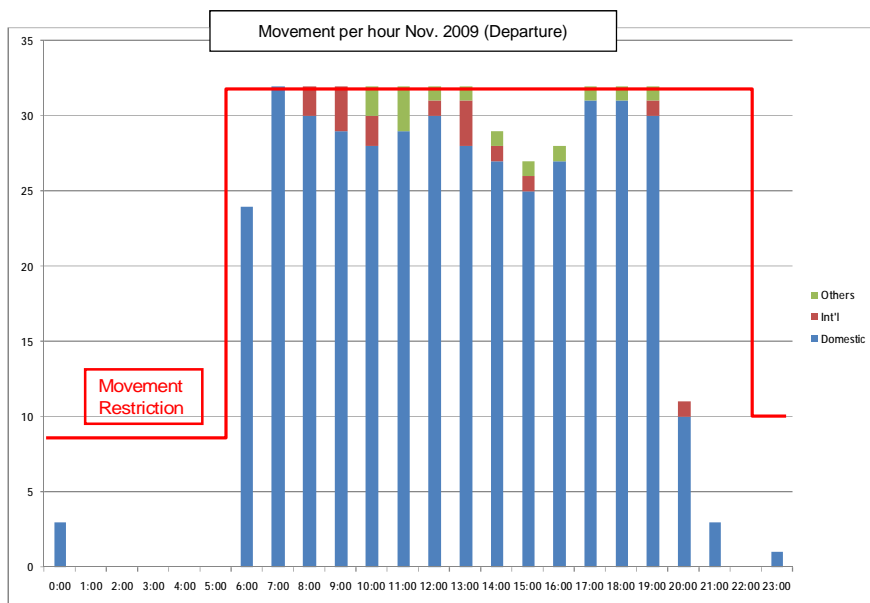


Figure 6: Current aircraft movement (Departure)

The current hourly aircraft movement for arrival and the movement restriction is shown in Figure 7. As shown, the arrival slot is almost full during the daytime except for 9:00 - 10:55 and 13:00 -14:55. During the night time, the arrival operations will decline from 23:00 to 7:55 because the most of local airports have night curfew or are closed.

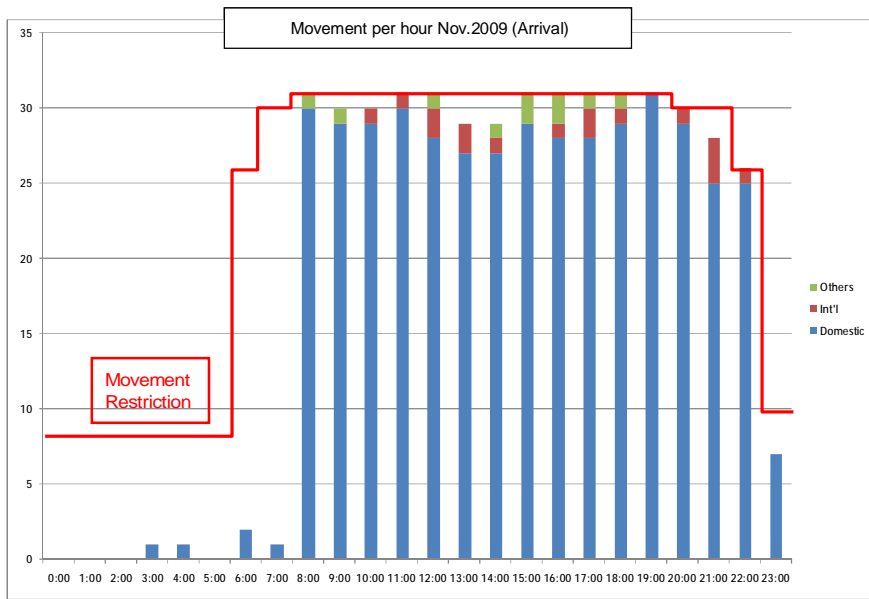


Figure 7: Current aircraft movement (Arrival)

*Numbers shown above are the maximum movement during high time in Nov., 2009.

*Almost all domestic flights are operated on daily basis, on the same time schedule.

*As of Nov., 2009, international charter flight for GMP, HKG, SHA and PEK are operated on daily basis

8. Demand Estimation and Capacity Analysis for Future

In December 2009, NRT/KIX schedule coordination conducted a survey by sending a questionnaire to all the airlines serving to Japanese airports in 2009W. The questionnaire asked such intentions as when to start, where to and from, and what time to arrive and depart. They received the answers from 49 airlines on their intentions. In making a capacity analysis for future, the answers only from airlines that are entitled to operate at Haneda Airport by JCAB were taken into consideration. In addition, the answers to start operations from 2010W were considered.

With the conditions mentioned above, the anticipated hourly aircraft movement for departure and the movement restriction is shown in Figure 8. The hourly aircraft movement restriction comes from ATC procedures shown under the column of 2010W in Figure 4. As shown, most of departure slots are full or exceeds the restriction limit during the daytime except for 14:00 - 16:55. During the night time, the demand for 23:00 - 0:55 exceeds the restriction limit.

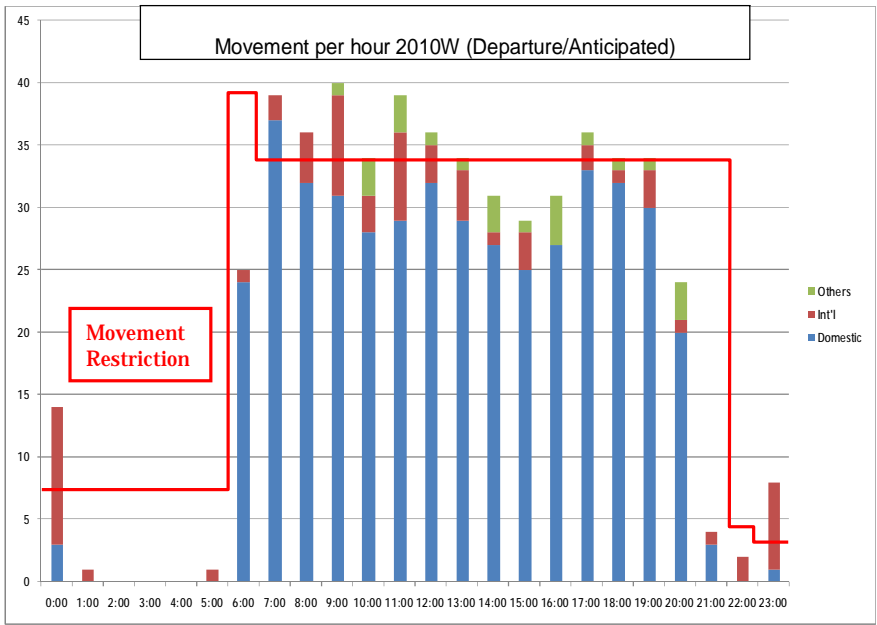


Figure 8: Anticipated aircraft movement 2010W (Departure)

The anticipated hourly aircraft movement for arrival and the movement restriction is shown in Figure 9. As shown, the arrival slot is almost full during the daytime except for 14:00 -15:55. During the night time, the demand for 16:00 - 22:55 exceeds the restriction limit peaking at 22:00.

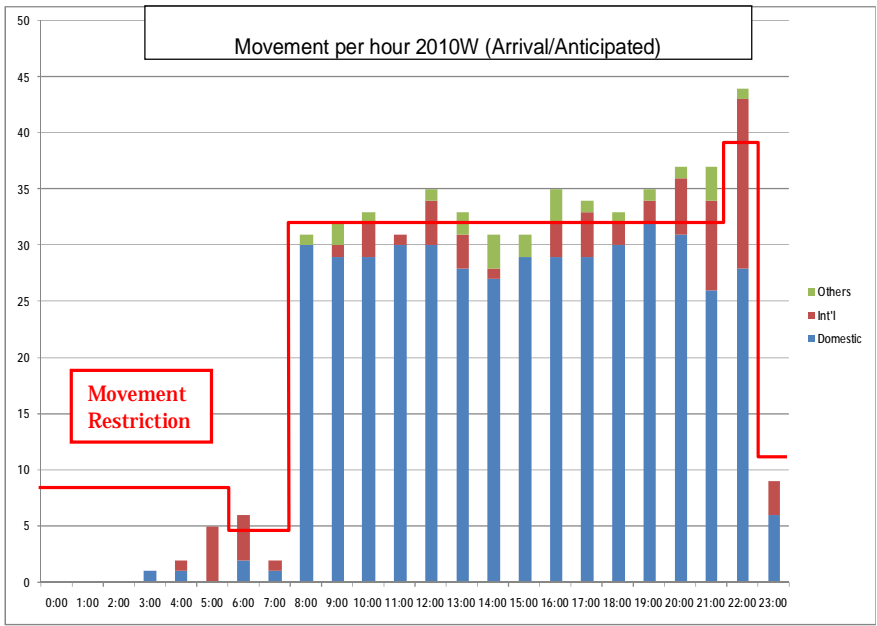


Figure 9: Anticipated aircraft movement 2010W (Arrival)

9. Conclusion

It is easily understood that Haneda Airport has been utilized to the maximum extent possible in the past and

the Haneda expansion program is desperately needed for future growth of Tokyo Metropolitan area as shown in the capacity analysis for current situation. It was also clearly shown that there exist some peak hours where demand exceeds the restriction limit even after the capacities of D-runway, IPTB and ATC operations will be increased at Haneda Airport as shown in the capacity analysis for future.

Although the current ratio of international aircraft movement is very small at Haneda Airport, the JCAB will continue to expand the international scheduled flights in Tokyo Metropolitan Area. The JCAB also thinks it appropriate that the slot swap or slot exchange between domestic and international flights should be encouraged at Haneda Airport. The JCAB, thus, strongly believes that Haneda Airport should be categorized as level 3 airport by IATA and the schedule coordination services should be conducted by NRT/KIX schedule coordination on neutral, non discriminatory and transparent basis according to IATA WSG.