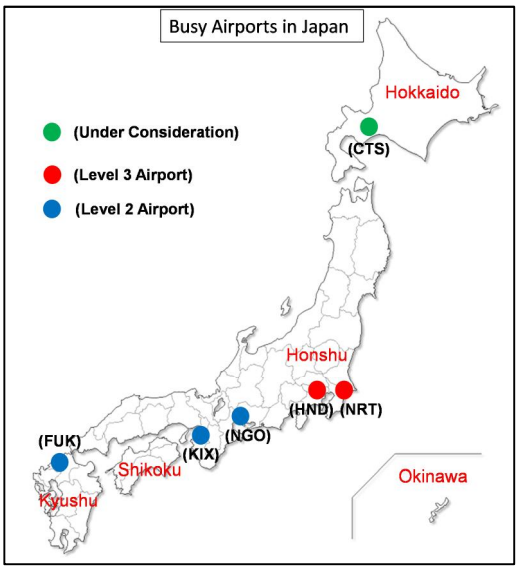
New Chitose Airport (CTS)

Capacity Analysis 2012



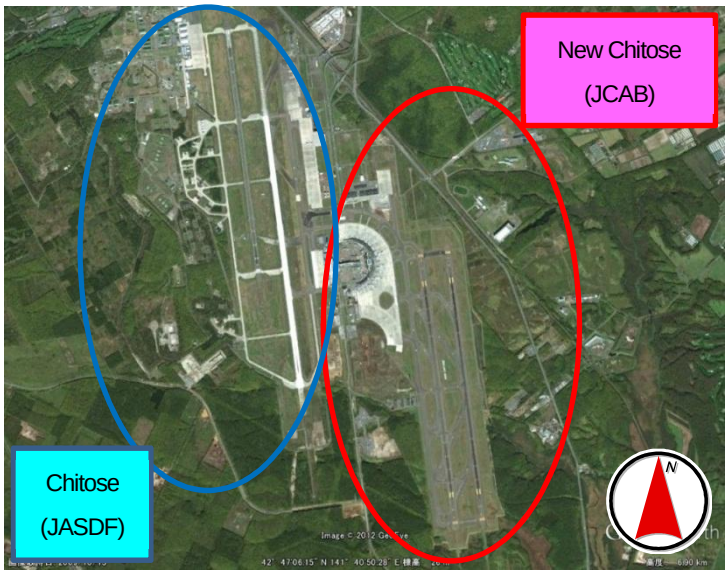
1. Introduction

1.1 Airport Characteristic

New Chitose Airport (IATA: CTS, ICAO: RJCC) is an airport located 5.0 km southeast of Chitose City, Hokkaidō, the northern most island of Japan, serving the Sapporo metropolitan area (1.9 million). It is the largest airport in Hokkaido. As of 2010, New Chitose Airport was the third busiest airport in Japan following Haneda and Narita airports and ranked #64 in the world in terms of passengers carried. The New Chitose - Tokyo Haneda route (894 km) is the busiest air route in Japan, with 8.8 million passengers carried in 2010.

1.2 Co-shared Infrastructure

New Chitose Airport opened in 1988 to replace the adjacent Chitose Airport (ICAO: RJCJ), a joint-use facility which had served passenger flights since 1963. Chitose Airport is located on the west side, which is dedicated for use by Japan Air Self-Defense Force (JASDF). New Chitose Airport is situated in newly developed area on the east side, which is operated by Japan Civil Aviation Bureau (JCAB) for civil aviation use.



There are 4 separate runways at this airport: Two close parallel runways on the west side (2,700m (18R/36L) and 3,000m (18L/36R)) are operated and maintained by JASDF including the environmental protection. Two close parallel runways on the east side (3,000m (01R/19L) and 3,000m (01L/19R)) are operated and maintained by JCAB including the environmental protection. While Chitose Airport and New Chitose Airport have separate runways, they are interconnected by taxiways, and aircraft at either facility can enter the other by ground if permitted; the runways at Chitose Airport are occasionally used to relieve runway closures at New Chitose Airport due to winter weather.

1.3 ATC Service Provider

While the runways are operated and maintained by JASDF and JCAB separately, Air Traffic Control (ATC) services for both facilities are being provided by JASDF.

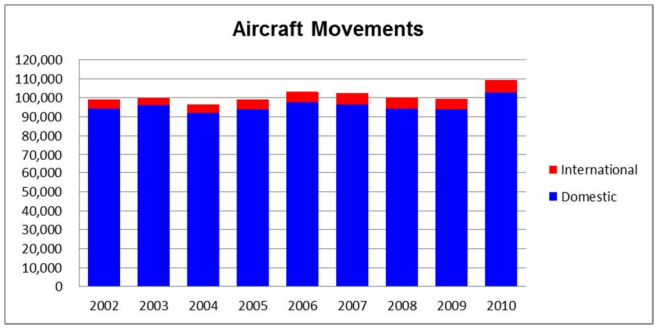
2. Air Traffic Analysis in the Past

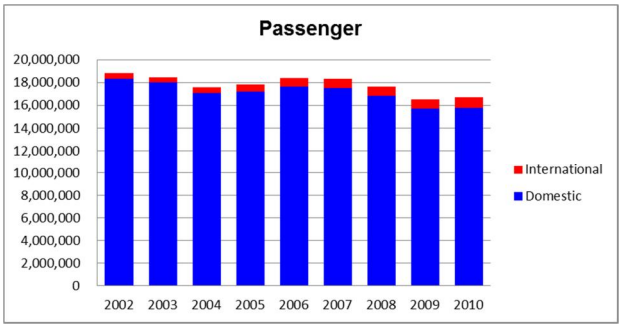
2.1 Aircraft Movements and Passengers

The statistical data and graphs for aircraft movements and passenger for civil aviation from 2002 to 2010 are shown below. While the aircraft movements from 2002 to 2009 are very stable, the data for 2010 sharply increased (10% increase). It is estimated the data for 2011 is also increased despite the formal data has not been published yet. Although the number of passenger has a tendency of slight decrease, this is due to the downsizing of the aircraft fleet.

Movements	2002	2003	2004	2005	2006	2007	2008	2009	2010
International	4,720	3,766	4,634	5,350	5,584	5,684	5,890	5,748	6,394
Domestic	94,376	96,152	91,906	93,910	97,686	96,750	94,334	93,904	102,812
Total	99,096	99,918	96,540	99,260	103,270	102,434	100,224	99,652	109,206

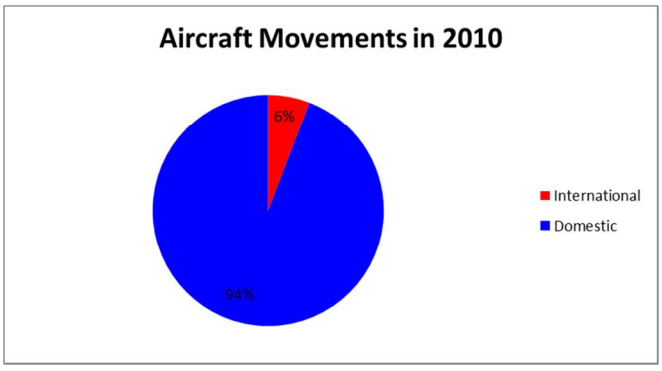
Passenger	2002	2003	2004	2005	2006	2007	2008	2009	2010
International	516,187	433,514	523,090	622,729	749,106	801,948	794,864	795,054	947,148
Domestic	18,319,009	18,023,953	17,082,412	17,249,023	17,643,529	17,527,464	16,861,398	15,742,512	15,801,032
Total	18,835,196	18,457,467	17,605,502	17,871,752	18,392,635	18,329,412	17,656,262	16,537,566	16,748,180

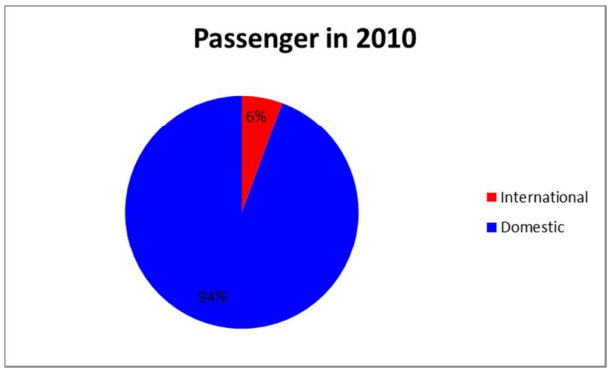




2.2 International Ratio

The percentage of international flights in aircraft movements and passenger in 2010 is shown below. As shown, the international ratio of 6% is rather low compared with major international airports. But this number is expected to increase because of the introduction of open sky policies in Japan.





3. Passenger and Cargo Terminals

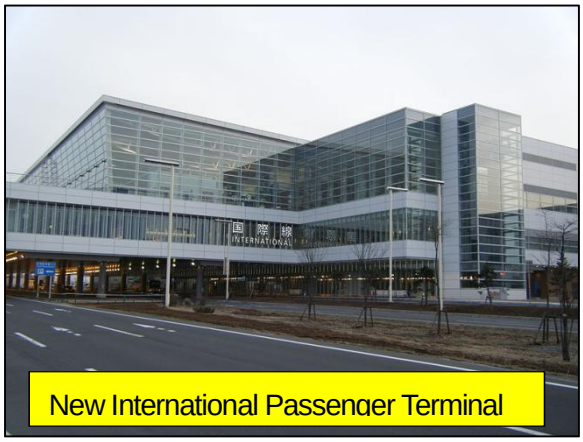
3.1 Domestic Passenger Terminal

A semicircular terminal, which was built on the east side of airport, has been used as domestic and international flights since 1992. As the international portion had been crowded, new separate international

terminal was planned. After the new international terminal was inaugurated in March 2010, this terminal is now used exclusively for domestic flights. The domestic terminal is 4 story building with one basement whose total floor area is 182,517m^2. There are 9 baggage carousels. The annual capacity of the domestic terminal is 20 million. There are 18 aircraft parking spots with 18 boarding bridges in front of this domestic terminal.

3.2 International Passenger Terminal

The new international terminal which is four story building and one basement was built on the west side of airport in order to cope with the rapidly growing demands for international flights in the foreseeable future. This new international terminal is connected with the domestic terminal by the moving side walk. The new international terminal is 4 story building and one basement whose total floor area is 59,156m^2. There are 4 baggage carousels. The capacity of the international terminal is 530 persons per hour (730 for future), or the annual capacity of 2 million. There are 6 aircraft parking spots with 5 boarding bridges in front of this international terminal.



New International Passenger Terminal


Domestic Passenger Terminal

3.3 Cargo Terminal

There are three cargo terminals; one for airlines and two for cargo agents. Airline cargo terminal building is two stories with the total floor area of 15,663 m^2. One of cargo agent terminal is two stories building with 3,989 m^2, and the other is two stories building with 2,157 m^2.

4. Aircraft Parking Spots

In addition to 18 aircraft parking spots in front of domestic terminal and 6 aircraft parking spots in front of international terminal, there are 8 domestic passenger spots and 6 international passenger spots as remote parking. There are also 10 domestic cargo spots and 9 international cargo spots for freighter use.

	Domestic		International		Total
	Passenger	Cargo	Passenger	Cargo	
Large	22	4	11	9	46
Medium	3	0	0	0	3
Small	1	6	1	0	8
Total	26	10	12	9	57

5. Current Airport Constraints

Since ATC services are being provided by JASDF, the airport constraints are determined jointly by both JASDF and JCAB in close consultation. There are currently three major constraints at New Chitose Airport.

5.1 Hourly movements

The maximum operations (take-offs and landing) for civil aviation are limited to 32 per hour from 7:00 to 21:59 in summer 2012. This is the maximum ATC capacity being provided by JASDF.

5.2 Noise Abatement Measures

While New Chitose became Japan's first 24-hour airport in 1994, the operations from 22:00 to 06:59 are currently limited to six flights per day as noise abatement measures. Four of these slots are currently used by passenger flights to Tokyo while the other two are used by cargo flights.

(Note 1) For departure flight, it is allowed from 21:45 to 06:59 from December to March.

(Note 2) For departure flight, it is allowed from 21:50 to 06:59 for the rest of year.

5.3 International Flights

Operating hours and days for international flights are restricted based on the results of close consultations in view of national security between Ministry of Defense (MOD) and Ministry of Land, Infrastructure, Transport and Tourism (MLIT) in order to avoid the interference with the operation and the training of JASDF Corps at Chitose Air Base. As of 28 February 2012, international flights designated by JASDF are permitted on Tuesdays and Wednesdays from 12:00 to 15:59, on Friday after 17:00, and on Saturday and Sunday all day long.

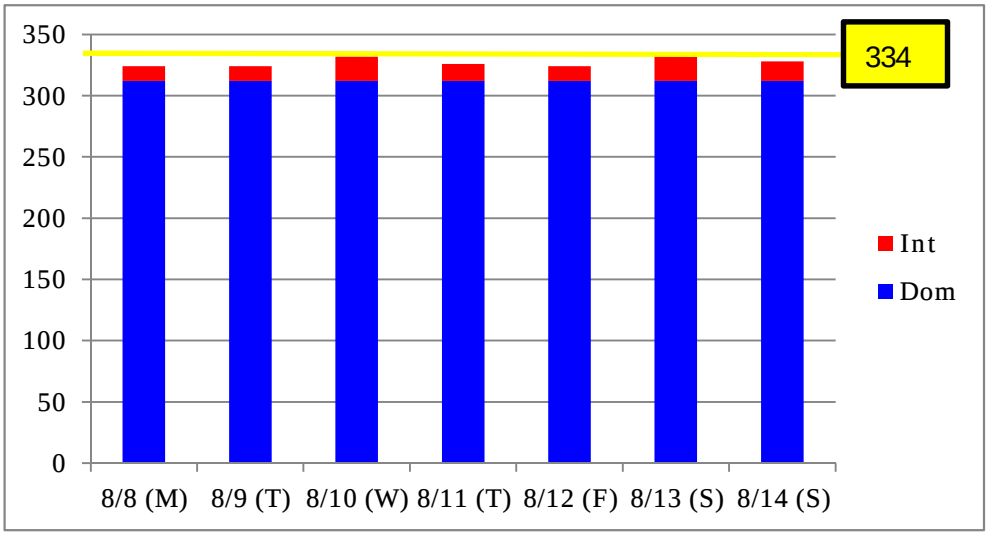
6. Capacity Analysis for summer 2011

6.1 Daily Fluctuation

The peak week in summer 2011 was studied and found to be second week of August. As shown below, the peak day in this week was found to be 13 August (Saturday) that recorded 334 flights /day. It is also shown that domestic operations which constitute 94% are constant number of 312 throughout the week. Since the international is only 6%, the fluctuation of international flights dose not contribute significantly maintaining the fairly stable operations through the week. However, the effect of restriction on international flights designated by JASDF can be seen in the daily usage of slots.

2011/2nd Week in August

Day	*8/8 (M)*	*8/9 (T)*	*8/10 (W)*	*8/11 (T)*	*8/12 (F)*	*8/13 (S)*	*8/14 (S)*	*Total*
Dom	312	312	312	312	312	312	312	2184
Int	12	12	20	14	12	22	16	108
Total	324	324	332	326	324	334	328	2292

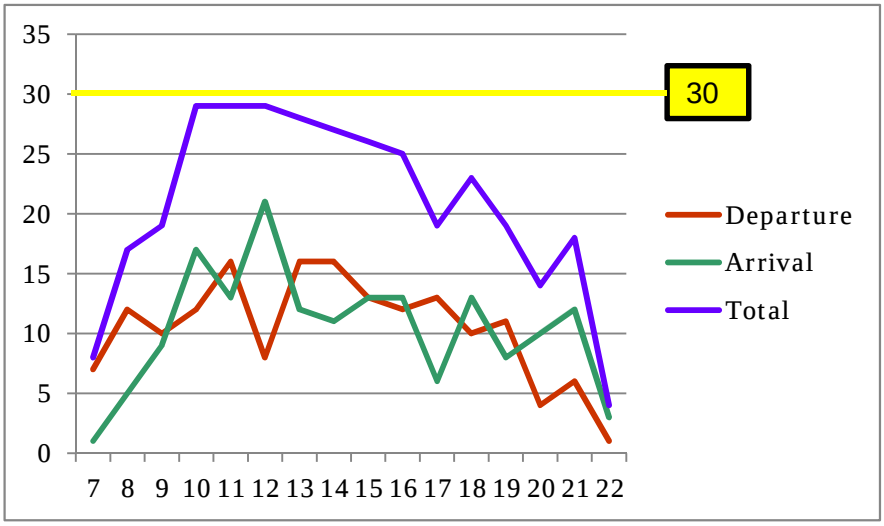


6.2 Runway Capacity

The hourly operations for departure and arrival are shown below on the peak day of 13 August (Saturday). The peak of 29 operations was recorded at 10:00, 11:00 and 12:00 consecutively. Departure peak was 16 at 11:00, 13:00 and 14:00 and arrival peak was 21 at 12:00. Since the maximum hourly operations in summer 2011 were 30, the number of operations at these peak hours almost reached the maximum hourly operations.

2011/8/13 (Saturday)

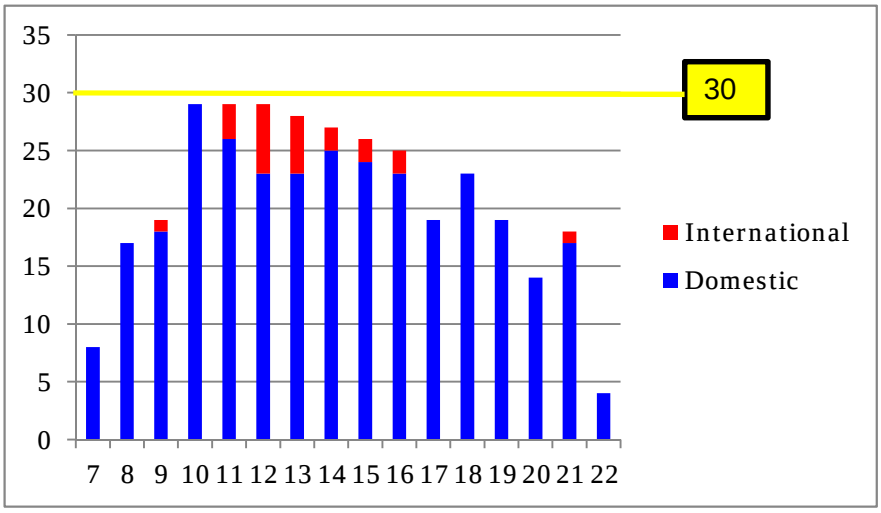
Hour	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*Total*
Departure	7	12	10	12	16	8	16	16	13	12	13	10	11	4	6	1	167
Arrival	1	5	9	17	13	21	12	11	13	13	6	13	8	10	12	3	167
Total	8	17	19	29	29	29	28	27	26	25	19	23	19	14	18	4	334



6.3 Terminal and Spot Capacity

The hourly operations for domestic and international are shown below on the peak day of 13 August (Saturday). The domestic peak was 29 at 10:00 and the international peak was 6 at 12:00 and 5 at 13:00.

2011/8/13 (Saturday)																	
Hour	***7***	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***	***16***	***17***	***18***	***19***	***20***	***21***	***22***	***Total***
Domestic	8	17	18	29	26	23	23	25	24	23	19	23	19	14	17	4	312
International	0	0	1	0	3	6	5	2	2	2	0	0	0	0	1	0	22
Total	8	17	19	29	29	29	28	27	26	25	19	23	19	14	18	4	334



(1)Domestic Flights

While the peak domestic operation was recorded 29 at 10:00, there will be sufficient capacity at domestic terminal building since the renovation work of old international area is now progressing. As to the parking spots, there was some shortage of boarding bridge since there are 18 boarding bridges at the domestic terminal. In addition, there was some shortage of parking spot since there are only 8 remote parking spots for domestic passenger use at this peak hour. The use of domestic cargo spot currently mitigates the parking congestion.

(2) International Flights

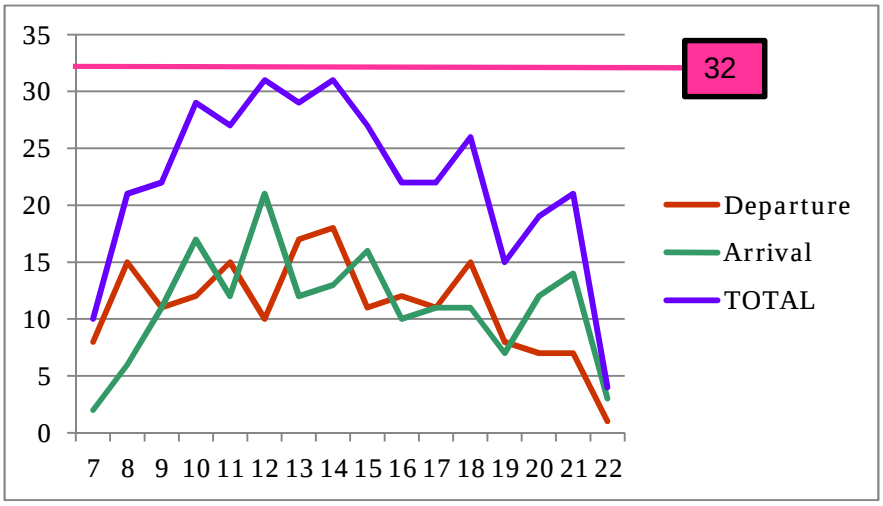
The peak international operation was recorded 6 at 12:00 and 5 at 13:00. If the average passenger for short haul international is assumed 120 persons, then the passenger flow is calculated to be 720 which are already above the design capacity of 530 persons per hour. By shifting the slot timing, passenger flow is expected to be reduced less than the design capacity. As to the parking spots, there is already a shortage of boarding bridge since there are 5 boarding bridges.

7. Demand Estimation and Capacity Analysis for summer 2012

7.1 Runway Capacity

The peak week in summer 2012 was studied and found to be fifth week of August. Then, the peak day in the week was found to be 29 August (Wednesday) that would have 356 flights /day which is 7% increase compared with 10 August 2011. The hourly operations for departure and arrival are shown below on that day. The peak operations of 31 are filed at 12:00 and 14:00. Departure peak is 18 at 14:00 and arrival peak is 21 at 12:00. Since the maximum hourly operations in summer 2012 are 32, the peak hour would have almost reached these maximum hourly operations despite the fact that the maximum hourly operation was increased from 30.

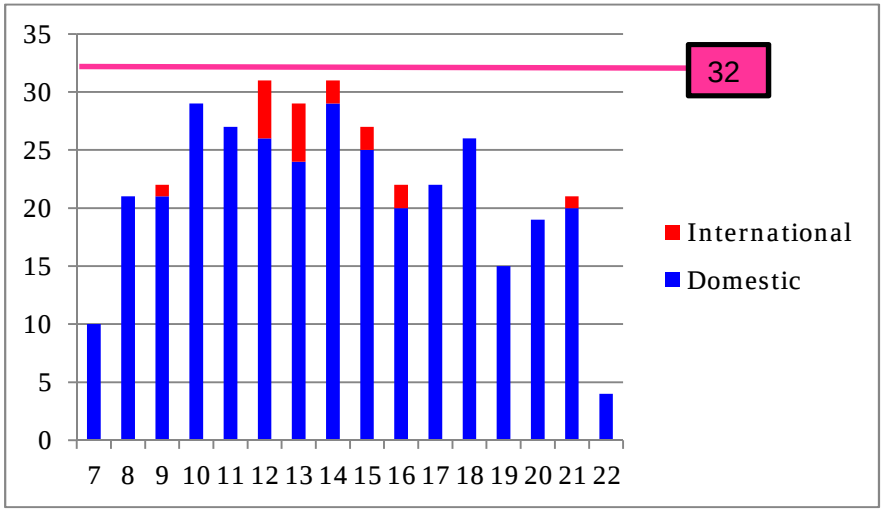
2012/8/29	(Wednesday)																
Hour	***7***	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***	***16***	***17***	***18***	***19***	***20***	***21***	***22***	***Total***
Departure	8	15	11	12	15	10	17	18	11	12	11	15	8	7	7	1	178
Arrival	2	6	11	17	12	21	12	13	16	10	11	11	7	12	14	3	178
TOTAL	10	21	22	29	27	31	29	31	27	22	22	26	15	19	21	4	356



7.2 Terminal and Spot Capacity

The hourly operations for domestic and international are shown below on 29 August (Wednesday). The domestic peak is 29 at 10:00 and 14:00. The International peak is 5 at 12:00 and 13:00 consecutively.

2012/8/29	(Wednesday)																
Hour	***7***	***8***	***9***	***10***	***11***	***12***	***13***	***14***	***15***	***16***	***17***	***18***	***19***	***20***	***21***	***22***	***Total***
Domestic	10	21	21	29	27	26	24	29	25	20	22	26	15	19	20	4	338
International	0	0	1	0	0	5	5	2	2	2	0	0	0	0	1	0	18
TOTAL	10	21	22	29	27	31	29	31	27	22	22	26	15	19	21	4	356



(1)Domestic Flights

While the peak domestic operation is filed 29 at 10:00 and 14:00, there will be sufficient capacity at domestic terminal building because of renovation work. As to the parking spots, there will be more shortage of

boarding bridge since there are 18 boarding bridges at the domestic terminal. In addition, there will be more shortage of parking spot since there are only 8 remote parking spots for domestic passenger use at this peak hour. The more use of domestic cargo spot will be needed in order to mitigate the parking congestion.

(2) International Flights

The peak international operation is filed 5 at 12:00 and 13:00 consecutively. Since the calculated passenger flow is already above the design capacity of 530, the shifting the slot timing is more needed due to the consecutive peak hours. As to the parking spots, it will barely accommodate this international peak operation since there are 5 boarding bridges.

8. Air Traffic Trend in the future

8.1 Visit Japan Campaign

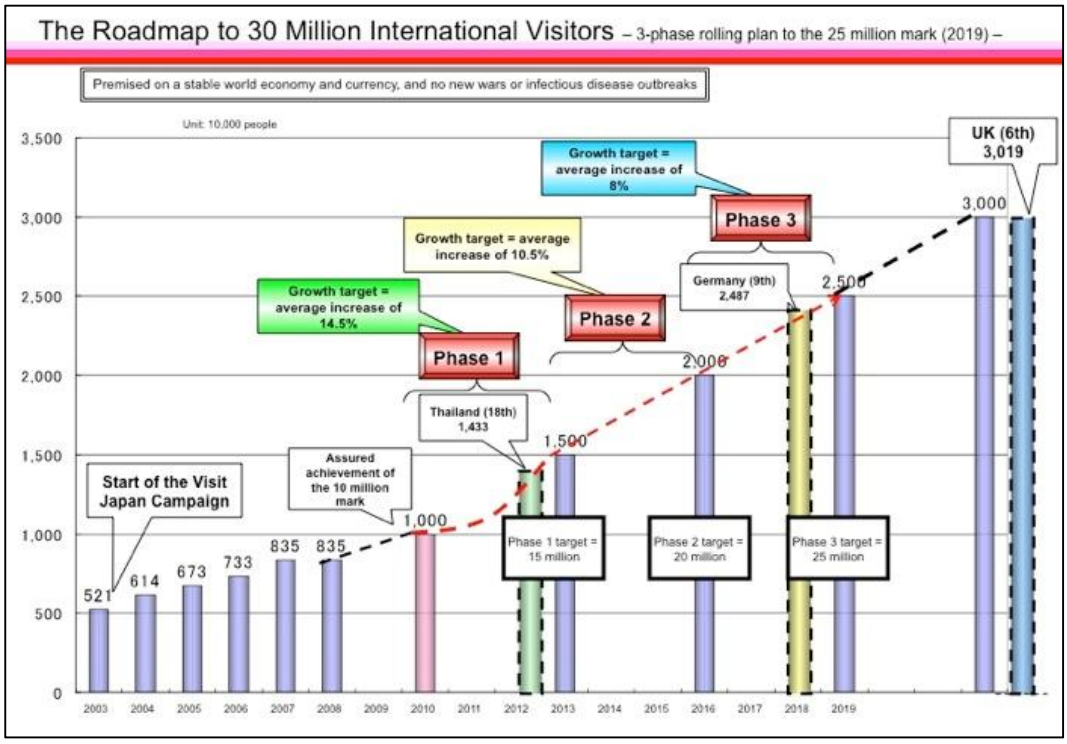
The Japan Tourism Agency (JTA) under the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) is promoting the “Visit Japan Campaign” which was launched to “achieve the goal of 10 million overseas visitors to Japan in 2010” by the then Prime Minister Koizumi in his 2003 policy speech. It contributes not only to mutual international understanding but also the arrival of international visitors can result in regional revitalization and business expansion. The special attention is focused on China and other East Asian nations (Korea, Taiwan and Hong Kong) as immediate priority markets to achieve the Phase 1 goal of 15 million visitors by 2013. The established goal is to have 30 million international visitors to Japan in the long term which is shown in the following graph.

8.2 Open Sky Policy

In harmony with “Visit Japan Campaign”, the JCAB under MLIT is promoting the “Open Sky Policy” to attract foreign air carriers to fly into Japanese airports more freely. As the JCAB has been vigorously conducting the bilateral air talks focusing on the East Asian nations and ASEAN nations, 12 countries have already agreed to implement the “Open Sky Policies” including US, Korea, Singapore, Malaysia, Hong Kong, Viet Nam, Macau and Indonesia, etc.

8.3 Future Trend

With those growth strategies adopted by MLIT, the international flights from East Asian nations and ASEAN nations are expected to increase rapidly. As a matter of fact, quite numbers of new Low Cost Carriers (LCC) have already filed the route schedule to New Chitose Airport from summer 2012. The air traffic to New Chitose Airport is expected to grow more than anticipated in the near future.



9. Conclusion

It was found that the peak hourly operations in summer 2011 have almost reached the maximum capacity of hourly operations of 30. It was also found that the peak hourly operations in summer 2012 will almost reach the maximum capacity despite the increase of hourly operations to 32. In addition, it was found that there are some parking spot problems for domestic flights. This trend is expected to continue in summer 2013 too because of the growth strategies of “Visit Japan Campaign” and “Open Sky Policy” adopted by MLIT.

Although there are some spare slots at off peak hours, it is the time to introduce the schedule facilitator to collect data, make available details of coordination parameters and utilization of available capacity, and facilitate the process of voluntary schedule adjustments for all the airlines concerned at New Chitose Airport.

The JCAB, thus, strongly believes that New Chitose Airport should be categorized as level 2 airport by IATA and the schedule facilitation services should be provided by Japan Schedule Coordination (JSC) in a neutral, non-discriminatory and transparent manner.