Draft

REPORT OF THE
ASIA/PACIFIC AREA TRAFFIC FORECASTING GROUP
(APA TFG)
FOURTEENTH MEETING
BANGKOK, 22 TO 29 SEPTEMBER 2008

Includes:

- Forecasts of Transpacific and Intra-Asia/Pacific Traffic to the Year 2012
- Forecasts for Major City-Pairs of Intra-Asia/Pacific and Transpacific to the Year 2025
- Analysis of FIR Data

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SUMMARY

1. The ICAO Pacific Area Traffic Forecasting Group was formed in 1991 with the primary objective of developing forecasts of civil aviation activity in the Transpacific market to support air navigation systems planning activity for ICAO and its Contracting States. The scope of the Group was subsequently broadened to include Intra-Asia/Pacific which is reflected in the current designation as Asia/Pacific Area Traffic Forecasting Group (APA TFG). The Group maintains close relationships with and provides essential data for regional meetings as well as groups charged with air navigation planning and implementation in North America (NA) and Asia/Pacific (AP). This report contains forecasts produced by the Group at its fourteenth meeting held on 22-29 September 2008 in the premises of the ICAO Regional Office in Bangkok.

2. During the period 1980 to 2007, Gross Domestic Product (GDP), measured in real terms, grew at average annual growth rates of about 3.5 per cent, 2.8 per cent and 4.7 per cent for the world, the North American and Asia/Pacific regions, respectively. In the aggregate, GDP in the Transpacific area grew at 3.7 per cent (Table 2).

3. The average revenue yield, measured in real terms, of the world's airlines total scheduled passenger traffic decreased at an average annual rate of 2.7 per cent during the same period. It is estimated that the Transpacific yields for the period declined at an average annual rate of about 2 per cent (Table 2).

4. During the same period, international passenger traffic in the Transpacific market increased from 6.4 million to 29.5 million passengers, at an average annual growth rate of 5.8 per cent (Table 1). The comparable world international passenger traffic increased by 6.2 per cent per year over the same period. However, the Transpacific traffic experienced a decline of some 10 per cent both in 2001 and 2003 and about 2.1 per cent in 2002. It rebounded in 2004 and increased by over 19 per cent and continued to grow by over 6 per cent in 2005. It continued to expand in 2006 and 2007 albeit at more modest growth rates (by some 1.1 and 3.3 per cent, respectively).

5. For the period 2007-2015, the GDP for the North American and Asia/Pacific regions is expected to increase at average annual rates of 2.5 per cent and 4.7 per cent, respectively and for the period 2015-2025, at 2.4 per cent and 4.0 per cent per annum, respectively. In the aggregate, the most likely scenario (baseline) GDP average annual growth rate for the Transpacific area is projected at 3.5 per cent for the forecast horizon 2007-2025 (Table 3).

6. Average Transpacific airline passenger yield is expected to increase in real terms by 0.3 per cent per annum for the period 2007-2015 and to decline at about 0.5 per cent annually during the period 2015-2025 (Table 3). Average Intra-Asia/Pacific yield is expected to decline only marginally over the forecast horizon, at a rate similar to that for Transpacific yield.

7. Based on these "most likely" GDP and yield projections, Transpacific traffic is forecast to increase at an average annual rate of 5.6 per cent for the period 2007-2015, reaching some 45.7 million passengers in the year 2015. A growth rate of 5.6 per cent per annum is also expected for the period 2015-2025 resulting in a forecast of about 78.6 million passengers by the year 2025 (Table 4).

8. Consistent with the forecasts of passenger traffic growth, future expectations of load factors and average aircraft size (Table 5), total aircraft (including cargo) movements across the Pacific are expected to increase from an estimated 150 thousand in 2007 to 211 thousand in the year 2015, at an average annual growth rate of 4.4 per cent. For the whole period 2007-2025, these aircraft movements are expected to increase at an annual growth rate of 4.3 per cent, and reach 321 thousand aircraft movements by the year 2025 (Table 6).

9. Intra-Asia/Pacific passenger traffic is expected to increase at a "most likely" average annual rate of 5.8 per cent during 2007-2015, reaching some 174.1 million passengers in the year 2015. An average annual growth rate of 5.2 per cent is forecast for the period 2015-2025, resulting in almost 290 million passengers by the year 2025 (Table 9).

10. Intra-Asia passenger aircraft movements are forecast to increase from 950.3 thousand in 2007 to some 1 388 thousand in 2015, at an average annual growth rate of 4.8 per cent. For the period 2007 to 2025, aircraft movements are forecast to increase at an average annual growth rate of 4.4 per cent and reach some 2 078 thousand by 2025 (Table 11).

11. The selected top 45 city-pairs in terms of numbers of passengers in the Asia/Pacific and Transpacific are expected to show traffic increases in aggregate terms of passenger flow at an average annual growth rate of 4.5 per cent from 2007 to 2012. This growth will result in an increase in passenger traffic on the routes concerned from some 53.3 million passengers in 2007 to some 66.4 million passengers in the year 2012 (Table 12).

1. INTRODUCTION

1.1 This report includes medium-term forecasts of air traffic in the Transpacific area, in the Asia/Pacific region, and for selected Transpacific and Asia/Pacific city-pair markets through to 2012. The report also contains a long-term forecast with a horizon to the year 2025, including a short-term forecast for 2008-2010 and intermediate forecasts for each of the years 2015 and 2020. Forecasts are provided for total passenger traffic and aircraft movements, and in the case of the aggregate Transpacific market, also for peak hour movements on selected route groups for the year 2012. The peak hour analysis is based on a detailed review of traffic during a typical July week of 2007 and 2008, summarized in **Appendix B**.

1.2 These forecasts were produced by the APA TFG at its fourteenth meeting, held in Bangkok from 22 to 29 September 2008. Representatives from Canada, China, Japan, and Thailand. participated at the meeting (list of participants appears in **Appendix A)**. Representatives from China attended the meeting for the first time. In addition to inputs from the participants traffic and financial data for Transpacific market were received from the US FAA and Hong Kong FIR data was provided by the Hong Kong SAR CAD. The Group's activities are serviced and co-ordinated by the ICAO Secretariat at Headquarters, in close consultation with the ICAO Asia and Pacific Regional Office.

1.3 The economic downturn experienced in 1997/1998 in the Asia/Pacific region had major impacts on traffic levels, but the region regained economic strength. This was evidenced by a 5.7 per cent growth in total Asia/Pacific region GDP in 2000. The GDP of China grew at 8.0 per cent while Asia's four newly industrialized economies grew by almost 10 per cent. Consequently, traffic in the Transpacific and the Intra-Asia/Pacific regions in 2000 increased by 6.8 and 5.8 per cent, respectively. Tourism in the region also benefited from the recovery and experienced high growth rates. It was against this background that the tenth meeting of the APA TFG revised the Transpacific and Intra-Asia/Pacific forecasts in June 2001. In addition, forecasts of aircraft movements to the year 2015, for the Intra-Asia/Pacific route group, were introduced for the first time. The Group also considered ways and means of addressing the requirements identified by the ICAO Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) and its relevant sub-groups.

1.4 The events of 11 September 2001 in the United States precipitated a sudden drop in traffic and thereby invalidated the forecasts which had been developed by the Group in June 2001, particularly as weaknesses in the global economy began to emerge and as consumer confidence eroded.

1.5 In light of the above developments, the eleventh meeting of APA TFG concentrated primarily on the revision of the Transpacific and Intra-Asia/Pacific forecasts together with forecasts of aircraft movements to the year 2015 for the Intra-Asia/Pacific region.

1.6 The SARS outbreak had devastating effects on air traffic to, from and within the affected areas in the first half of 2003. Reported monthly figures suggest that the drop in passenger traffic reached its lowest in May after which it started a steady recovery. It is estimated that in 2003, passenger traffic on Transpacific and Intra-Asia/Pacific routes dropped by some 10 per cent. It was against this background that the twelfth meeting of the APA TFG focussed on the revision of the medium- and long-term forecasts for Transpacific and Intra-Asia/Pacific; the horizon of the long-term forecasts being extended to the year 2020.

1.7 The thirteenth meeting of the Group focussed on the update of the forecasts developed during the previous meeting of the Group, taking into account the developments which have taken place on both Transpacific and Intra-Asia air transport markets since mid-2004.

1.8 The fourteenth meeting of the Group updated the forecasts for the Transpacific and Intra Asia/Pacific markets bearing in mind the developments in theses markets up to the mid-2008 including

the surge in the fuel prices and the slowdown in the economic. The Group also decided to extend the time horizon of the long-term forecasts up to year 2025.

1.9 Apart from ICAO member States, the primary users of these area forecasts are expected to be air navigation service providers in the regions concerned and planning groups, especially APANPIRG. This information is also likely to be of interest to airports and airlines of the regions concerned to assist in their planning processes. The format and content of reports as well as the forecasts of the APA TFG will be modified progressively to respond to the requirements of primary users such as APANPIRG and assist the progressive implementation of CNS/ATM systems in the region. In that context the Group received a brief information about the recent APANPIFG meeting held in early September 2008 in the premises of ICAO Regional Office in Bangkok. The APANPIRG had confirmed that the forecasts produced by the APA TFG are broadly used in the planning process of the air navigation facilities and services of the Region.

2. FACTORS AFFECTING DEMAND FOR AIR TRAVEL AND TRAFFIC TRENDS

2.1 Factors Affecting Demand for Air Travel

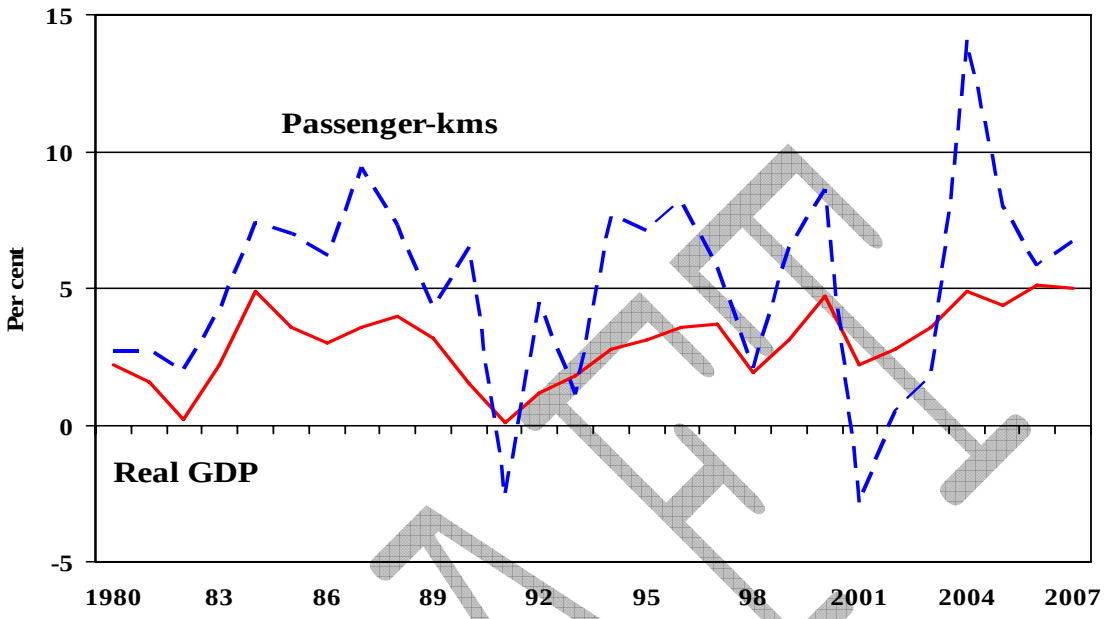
2.1.1 Economic theory and analytical studies indicate a high correlation between the air traffic growth patterns and economic trends in that the demand for air travel is primarily determined by economic factors such as income levels and the cost of travel. Changes in personal income affect the level of consumer purchasing power and the propensity to undertake leisure travel. Commercial activity and trade have a direct impact on the demand for business travel and for air freight. **Figure 1** illustrates the fluctuations in the GDP and traffic growth rates for the 1980-2007 period. It should be noted that the impact of event-related developments (such as events of 11 September 2001, war in Iraq and SARS outbreak) on air travel indicate the air transport industry is sensitive to safety and security concerns which influence consumer confidence.

2.1.2 The world recession in 1981, the sharp increase in oil prices in 1991, the financial crisis in Asia/Pacific in 1997 and the events of 11 September 2001 created a difficult environment for the global economic growth and consequently for the growth of world airline traffic. Even though the world economy has shown signs of improvement in 2002, the world airline traffic remained depressed in 2002 and 2003 due mainly to a slow recovery after the events of 11 September 2001 and the SARS outbreak in the eastern part of Asia/Pacific. In 2004, traffic recovery gained strength registering a growth of 14.1 per cent as a result of the improved global economic performance and also a recovery from the SARS effects. The continued momentum and resilience of the global economy in 2005 led to a traffic growth estimated at 8.0 per cent. Further improvements in the performance of the world's economy contributed to increases of the air traffic in 2006 and 2007 (6.0 per cent and 6.6 percent, respectively). In 2008 a moderate increase is expected as a result of the economic slowdown witnessed in North America and soaring fuel prices which reached a historic peak in July.

2.1.3 In addition to broad economic trends, in the Transpacific and Intra-Asia/Pacific markets, the factors which influence demand may at times be more complex than in comparable markets. Factors such as regulatory/liberalization policies including traffic rights for foreign carriers in each country and designation of multiple international gateways, policies toward travel including restrictions or promotion, can be complex, and affect traffic in the area. Overall economic factors, including the prospects for trading blocs, the pace of economic growth, especially for developing economies, the overall movement of business capital within the region, and the pace and cost of travel infrastructure development, may be volatile, especially in the long run horizon used in this forecast.

FIGURE 1

GDP AND SCHEDULED PASSENGER TRAFFIC
WORLD GROWTH, 1980-2007



2.1.4 Other economic factors that affect air traffic demand include airline costs and hence fares and rates. Rapid growth of air traffic in 1960s coincided with the replacement of piston-engine aircraft with jet aircraft which led to reduced fares. In addition to an adverse effect on the world economy, sharp changes in the price of oil and aviation fuel have had important effect on airline costs over the past decades. Recently airline costs have been negatively affected by increasing insurance and security costs in addition to the sharp hikes in oil prices.

2.1.5 The airline industry has a long history of improving productivity. As a result, the growth in output has been greater than the growth in various inputs used by the industry. Over the period concerned, there were significant improvements in partial productivity measures, i.e. for labour, fuel and aircraft. The progressive absorption of new technology aircraft into airline fleets has been a major reason for the improvement in productivity. In particular, the new aircraft are more fuel and labour-efficient. Improved aircraft utilization and load factors have also made important contributions. As a consequence of productivity improvements, airline customers have benefited from lower real yields (it is estimated that over the period 1980-2007, an average global passenger yield expressed in real terms has decreased by some 2.7 per cent) which was possible by the combined effect of productivity growth and declines in the real input prices (the latter except for fuel prices in the recent years).

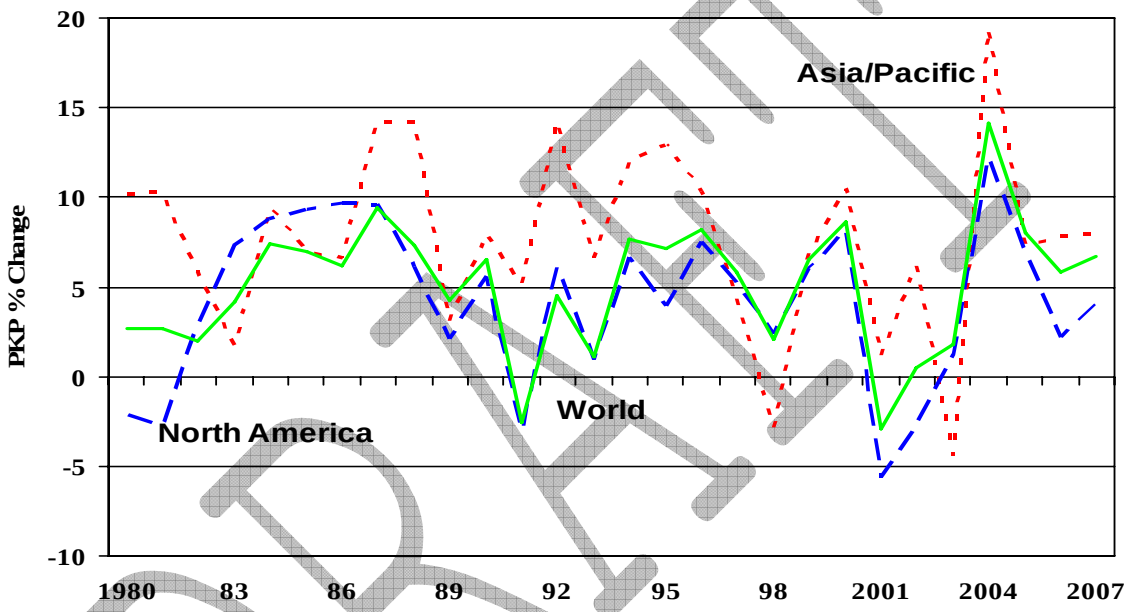
2.2 Regional Air Traffic Trends

2.2.1 During the period from 1980 to 2007, airlines in the Asia/Pacific region increased their traffic from some 160 billion to 1 126 billion PKPs, at an average annual growth rate of 7.5 per cent, the highest growth rate achieved by any region. Traffic of airlines registered in the North America region increased over the 1980-2007 period from 446 billion PKPs to 1 419 billion PKPs, at an average annual

growth rate of 4.4 per cent. However, since 1998, Intra-Asia/Pacific traffic, in terms of passengers carried, suffered some declines, namely in 1998, 2001 and 2003. The latter has been estimated at some 10 per cent resulting from the SARS outbreak which had a significant adverse impact on the passenger traffic to, from and within the affected areas. Due to the events of 11 September 2001 and the SARS outbreak, traffic declined sharply on all Transpacific corridors in 2001 and 2003 and as a result, a total decline of some 10 per cent was registered in both years. The year-to-year growth rates for the world airlines' scheduled passenger traffic and those of the Asia/Pacific and North American regions over the period 1980-2007 are depicted in **Figure 2**.

FIGURE 2

SCHEDULED PASSENGER TRAFFIC GROWTH
1980-2007



3. TRANSPACIFIC TRAFFIC TRENDS AND FORECASTS

3.1 Geographical Scope

3.1.1 For the purpose of these forecasts, the Transpacific is defined as traffic between the ICAO statistical regions of North America (Canada and United States) and of Asia/Pacific (see **Appendix D**).

3.2 Historical Transpacific Traffic

3.2.1 For the purposes of this analysis, the most useful source of traffic data are the U.S. Immigration and Naturalization Service and the Canadian government statistics for Canadian gateway traffic. The data used for the basic time series of passenger traffic is shown in **Table 1**. Over the 1980-2007 period, the number of Transpacific passengers carried on scheduled air services increased from 6.4 million to some 29.5 million at an average annual growth rate of 5.8 per cent. This compares with an average annual growth rate of 4.2 per cent for the world. The Transpacific traffic declined in 1998 by about 6 per cent due to the financial downturn that spread throughout the Asia/Pacific region towards the latter half of the year 1997. It rebounded in 1999 reaching almost the same level as that of 1997. In 2000,

traffic grew by some 6.8 per cent, marginally below the average growth rates experienced in the decade prior to the financial downturn. In 2001, traffic declined by 10.6 per cent, due primarily to the ramifications of the events of 11 September. It further declined by some 2.1 per cent in 2002 and by 10.4 per cent in 2003 due to the effects of the SARS outbreak. However, in 2004 the traffic rebounded by over 19 per cent and continued to increase by 6.2 per cent in 2005. In 2006 and 2007 it further expanded, although at moderate rates of about 1.1 and 3.3 per cent, respectively.

3.2.2 Traffic flow patterns for several major U.S. gateways are shown in **Figures 3 a), 3 b)** and **3 c)**. It is interesting to note that the gateways through which traffic has flown, have changed considerably in recent years, particularly in the case of U.S. gateways with the advent of the nonstop evolution of traffic.

TABLE 1

TRANSPACIFIC PASSENGERS CARRIED
(Thousands)

Year	U.S.- Asia	Canada-Asia	Total	U.S.-Oceania	Total Transpacific
1980	4 925	258	5 183	1 220	6 403
1981	5 286	287	5 573	1 272	6 845
1982	5 450	284	5 734	1 302	7 036
1983	5 525	303	5 828	1 230	7 058
1984	6 535	352	6 887	1 409	8 296
1985	7 002	370	7 372	1 517	8 889
1986	7 725	455	8 180	1 864	10 044
1987	8 863	577	9 440	2 077	11 517
1988	10 283	720	11 003	2 360	13 363
1989	11 481	810	12 291	2 438	14 729
1990	12 990	895	13 885	2 148	16 033
1991	13 228	974	14 202	2 161	16 363
1992	14 754	1 150	15 904	2 217	18 121
1993	15 390	1 356	16 746	2 221	18 967
1994	16 635	1 511	18 146	2 120	20 266
1995	18 548	1 776	20 324	2 243	22 567
1996	20 365	1 958	22 323	2 493	24 816
1997	21 845	2 306	24 151	2 628	26 779
1998	20 392	2 265	22 657	2 527	25 184
1999	21 450	2 351	23 801	2 806	26 607
2000	22 859	2 466	25 325	3 103	28 428
2001	20 142	2 433	22 575	2 848	25 423
2002	19 404	2 627	22 031	2 848	24 879
2003	17 336	2 076	19 412	2 876	22 288
2004	20 660	2 723	23 383	3 186	26 569
2005	22 024	3 050	25 074	3 148	28 222
2006	22 253	3 008	25 261	3 268	28 529
2007	23 246	3 157	26 403	3 063	29 466
Average annual percentage growth rate					

1980-2007	5.9	9.7	6.2	3.5	5.8

Source: ICAO, Transport Canada, United States (Federal Aviation Administration (FAA), DOT.

FIGURE 3 a)

US TRAFFIC TO/FROM ASIA

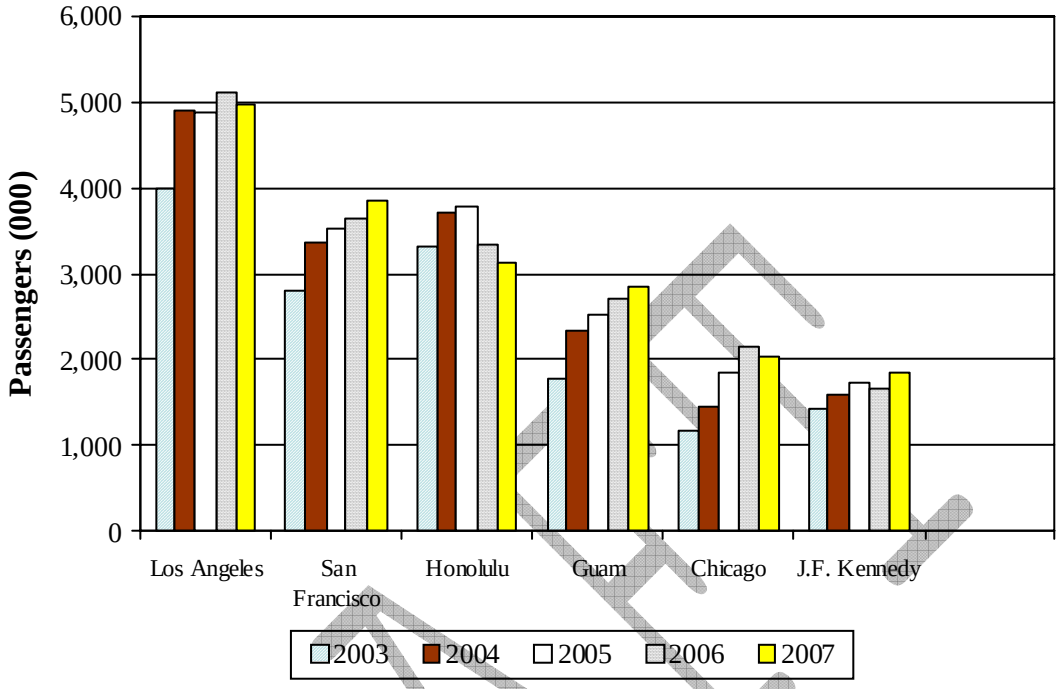


FIGURE 3 b)

US TRAFFIC TO/FROM ASIA

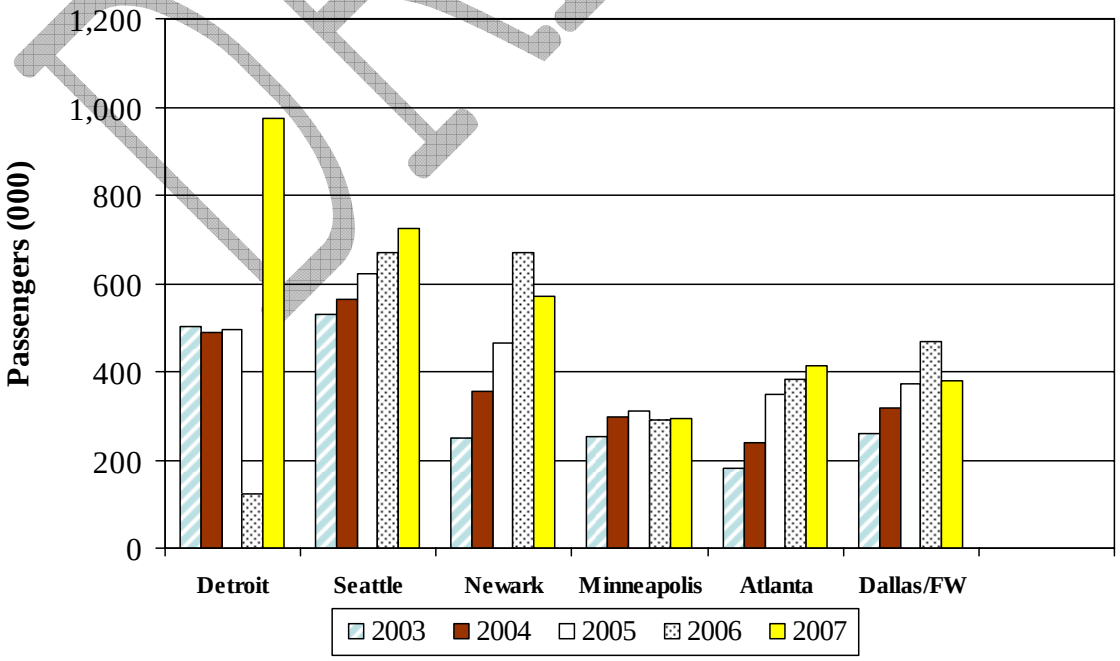
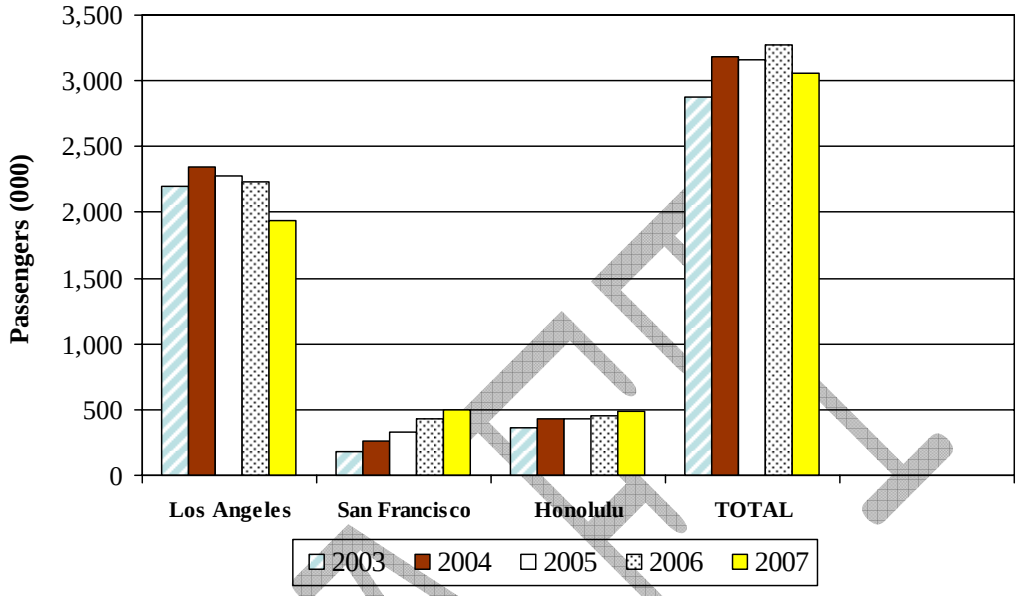


FIGURE 3 c)

US TRAFFIC TO/FROM AUSTRALIA AND OCEANIA



3.3 Regional Economic and Yield Developments

3.3.1 In order to study the relationship between traffic and the socio-economic trends in the Transpacific area, data from several sources were collected on the economies of the countries in the area. GDP data originate mainly from the Global Insight and the International Monetary Fund (IMF). Over the 1980-2007 period the combined average annual economic growth of the North American and Asia/Pacific regions is estimated at 3.7 per cent. At the same time the Transpacific traffic increased at an average annual rate of 5.8 per cent per annum. As an evidence of strong correlation between the economic and traffic development, it should be observed that over the periods of strong economic performance during 1984-1989 and 1994-1997, when the combined GDP of both regions grew at over 4 per cent per annum, the average traffic growth rates were about 10 per cent per annum, well over the average for the whole 1980-2007 period. High GDP growth rates were also experienced by the combined economies of the two regions during the period 2003-2007, at some 5 per cent per annum. Traffic grew at that period on average at only 7.2 per cent per annum which indicates there were other factors affecting traffic growth including the SARS outbreak in 2003 and the increase in the cost of travel (as measured by yields) observed since 2004.

3.3.2 The revenue yield index is a weighted index based on information provided by airlines of the States of the North America and Intra-Asia/Pacific regions operating in the Transpacific market. In real terms, airline yields have declined almost every year since the advent of jet aircraft. This is a consequence of airlines passing on to the consumer most of the cost savings that have resulted from technological advances, increased labour productivity, longer average trip length, and other economies of scale. Consequently, the marketing of air transportation has been aided by the fact that air fares represent

a steadily increasing bargain in comparison with most other goods and services. However, during the last four years, the Transpacific yield in real terms is estimated to increase mainly due to high fuel prices and it is expected to further increase in 2008 and to stabilize and decrease thereafter. The trends in the GDP and yields are summarized in **Table 2.**

TABLE 2

AGGREGATED GROSS DOMESTIC PRODUCT AND AIRLINE YIELD INDEX

Year	Gross Domestic Product (Billions of U.S.$ in 1990 real prices)			Trans- Pacific Yield Index
	North America	Intra- Asia/Pacific	Transpacific Total	
1980	4 708	2 980	7 688	139.5
1981	4 799	3 108	7 907	145.7
1982	4 692	3 216	7 908	134.5
1983	4 870	3 347	8 217	132.1
1984	5 172	3 532	8 704	127.4
1985	5 344	3 713	9 057	119.3
1986	5 501	3 862	9 363	126.1
1987	5 677	4 073	9 750	115.6
1988	5 905	4 364	10 269	108.4
1989	6 054	4 588	10 642	103.2
1990	6 120	4 817	10 937	100.0
1991	6 077	5 032	11 109	100.8
1992	6 207	5 287	11 494	93.6
1993	6 396	5 331	11 727	94.0
1994	6 659	5 526	12 185	93.7
1995	6 873	5 859	12 732	88.0
1996	7 084	6 157	13 241	83.9
1997	7 360	6 379	13 739	80.4
1998	7 626	6 315	13 941	80.4
1999	7 946	6 536	14 482	78.8
2000	8 280	6 909	15 189	84.8
2001	8 321	7 178	15 499	77.2
2002	8 504	7 508	16 012	70.2
2003	8 768	7 959	16 727	67.5
2004	9 100	8 500	17 600	72.6
2005	9 401	9 061	18 462	75.1
2006	9 702	9 705	19 407	78.0
2007	9 925	10 432	20 357	82.6
Average annual percentage growth rate				
1980 - 2007	2.8	4.7	3.7	-1.9

3.4 Forecast Methodology

3.4.1 For the present forecast, the long-term demand for air travel is assumed to be primarily determined by economic developments, notably the growth of global and regional income levels as measured by variations in GDP, demographic trends, and the cost of air travel as measured by yields. It is also that the political and the economic climate is generally conducive to growth, and no specific assumptions are made about various possible political and economic scenarios (beyond basic GDP growth assumptions). World energy demand, supply and prices are important both to economic progress and to the cost of air travel. It is assumed that during the forecast period, there will not be any major disruptions in the availability of oil.

3.4.2 As discussed previously, there are complex causal relationships and factors which have and will affect traffic volumes. However, the demand for air travel is primarily determined by economic activity and the demographics of the travelling population, as well as by the cost, and hence the price of air travel.

3.4.3 The first step in forecasting is to develop a model which can be used to explain the causes of historical traffic changes, and to forecast future traffic. At its earlier meetings, the APA TFG considered several types of models. The statistical model providing the best fit to traffic data was one which used GDP growth rates and an index of real yield in a multiplicative form (all terms transformed into logarithms). The logarithmic transformation causes the statistical model to be based on rates of change, rather than absolute changes in the values of the variables.

3.4.4 Following testing and evaluation of various functional forms and explanatory variables, the Group decided that a log-log model of the general form given below provides the most satisfactory explanation of likely future trends. Three "dummy variables" were introduced to the model; the first two to capture the impact of the traffic downturn that occurred in 2001 and 2003 (Dummy 1) and in 2002 and 2003 (Dummy 2), the third to account for sharp increases of fuel prices and consequently the yield index for the years 2004-2005. The introduction of these variables provided a more accurate simulation of the traffic forecast and improved the predicting capability of the model.

$$Log\ (Passengers) = Constant + A\ Log(GDP) + B\ Log(Yield) + C\ Dummy_1 + D\ Dummy_2 + E\ Dummy_3$$

In this functional form, A, B, C, D and E are constant coefficients, and A and B represent GDP and Yield elasticities.

3.4.5 The analysis resulted in the following formula:

$$\mathbf{Log\ (Passengers) = 0.05 + 1.50\ log(GDP) - 0.95\ log(Yield) - 0.25(Dummy_1) - 0.41(Dummy_2) - 0.46(Dummy_3)}$$

$$\mathbf{(R^2 = 0.99,\ S.E. = 0.05,\ t_{GDP} = 8.4,\ t_{Yield} = -4.93)}$$

3.4.6 In recognition of the level of uncertainty necessarily associated with forecasts – particularly long-range horizons such as those to the year 2025 – the Group adopted the approach of

formulating and using a three-tiered range of input assumptions or scenarios on future values of GDP and yield. For descriptive purposes, these were categorized into the generic categories of:

- most likely (baseline);
- high (high GDP and low yield growth); and
- low (low GDP and high yield growth).

These categories of assumptions provided the basis for upper and lower bounds for resultant forecasts of both passenger traffic and aircraft movements.

3.5 Forecasts of GDP and Yield Scenarios

3.5.1 The forecasts of traffic were developed based on different assumptions of GDP and yield. The forecast for the most likely economic scenario was developed using the economic forecasting services of Global Insight. High and low ranges for GDP were developed taking into account pertinent data and prevailing conditions that are likely to produce more optimistic or pessimistic conditions. Accordingly, the most likely scenario is for 3.7 per cent increase over the 2007-2015 period, 3.3 per cent for the 2015-2025 period and 3.5 per cent for the whole period from 2007 to 2025. Under the low case scenario, it is anticipated that the combined GDP for the two regions will increase at 3.3 per cent during the 2007-2015 period and 2.9 per cent during the 2015-2025 period, with the average for the whole forecast horizon at 3.1 per cent. Under the high case scenario, these growth rates are expected to be 4.2, 3.8 and 4.0 per cent, respectively.

3.5.2 Airline yields are dependent on a number of factors such as efficiency gains, operating expenses and the level of competition. Major developments related to these factors include changes in fuel and labour costs, the continuing introduction of new, more efficient aircraft types and continuing strong competition. The APA TFG developed a new methodology to estimate future airline yields. This methodology takes into account the major airline cost components and other efficiency parameters that would have an impact on the make-up of airline yields. Among those factors considered were the following primary factors:

- Labour, fuel and capital costs;
- Labour productivity; and
- Aircraft fuel efficiency (based on anticipated mix of the aircraft fleet).

3.5.3 It should be noted that recently the crude oil prices have reached record breaking high levels. Subsequently, escalation in jet fuel prices affected the prices of air travel, which is partly reflected in estimated increases in passenger yields for the period 2004-2007 (**Table 3**). For the year 2008, the Group assumed that the average fuel price will be at U.S.$ 111.15 per barrel, an increase of some 35 per cent over 2007. It was further assumed that only half of the increase of the fuel price will be passed over to the consumers while the other half will be absorbed by the airlines (decreasing their financial performance). For the period beyond 2008, it was assumed that the fuel price will not increase above the 2008 level in current terms, which implies the fuel prices will decrease by some 2 per cent per annum in real terms.

3.5.4 The Group made also some assumptions relating to labour costs and aircraft fuel efficiency. It is anticipated that the labour costs will increase in real terms by 0.5 per cent per annum while the labour productivity is projected to increase by some 0.7 per cent per annum over the forecast horizon. It was assumed the aircraft fuel efficiency will improve over the 2007-2025 period at 1.8 per cent per annum as airlines will continue to replace older aircraft in their fleets with more fuel efficient aircraft such as A380s and B787s. On the other hand capital is assumed to stay constant in real terms until the end

of the forecast horizon. Bearing in mind all the above assumptions, following an expected increase of about 6.2 per cent in 2008, the yields, expressed in real terms, will decrease on average by 0.5 per cent per annum up to 2025 which will result in a 0.1 per cent decrease over the whole forecast horizon (2007-2025).

TABLE 3

TRANSPACIFIC AREA ECONOMIC AND YIELD ASSUMPTIONS
(North America and Asia/Pacific regions combined)

Year	**GDP Estimates** (billions of U.S.$ in 1990 prices)			**Yield Index**		
	Low	**Most Likely**	**High**	**High**	**Most Likely**	**Low**
Historical						
2000		15 189			84.8	
2001		15 499			77.2	
2002		16 012			70.2	
2003		16 727			67.5	
2004		17 610			72.6	
2005		18 462			75.1	
2006		19 407			78.0	
2007		20 357			82.6	
Forecast						
2008	21 018	21 099	21 201	89.6	87.8	85.9
2009	21 637	21 805	22 016	88.2	87.3	86.4
2010	22 352	22 613	22 942	88.2	86.9	85.6
2015	26 338	27 165	28 231	88.1	84.7	81.3
2020	30 617	32 196	34 276	88.0	82.6	77.3
2025	35 204	37 746	41 167	87.8	80.6	73.3
Average annual percentage growth rate						
2007-2015	3.3	3.7	4.2	0.8	0.3	-0.2
2015-2025	2.9	3.3	3.8	0.0	-0.5	-1.0
2007-2025	3.1	3.5	4.0	0.3	-0.1	-0.7

3.6 Passenger Forecast

3.6.1 Applying the above scenarios of economic and yield trends to the econometric model resulted in alternative predictions of passenger traffic ("most likely", "low" and "high") for the forecast horizon. The forecasts of passenger traffic are given in **Table 4**, and illustrated in **Figure 4**.

3.6.2 Transpacific passenger traffic is expected to increase at a "most likely" average annual rate of 5.6 per cent for the period 2007-2015, reaching some 45.7 million one-way passengers in the year 2015. An average annual growth rate of 5.6 per cent is also forecast for the remainder of the forecast horizon, resulting in 78.6 million one-way passengers by the year 2025. The most likely average annual growth rate for the period 2007-2025 is forecast to be 5.6 per cent. The low and the high growth rates for the period concerned are projected at 4.5 per cent and 7.0 per cent, respectively. Table 4 and Figure 4 depict the forecasts.

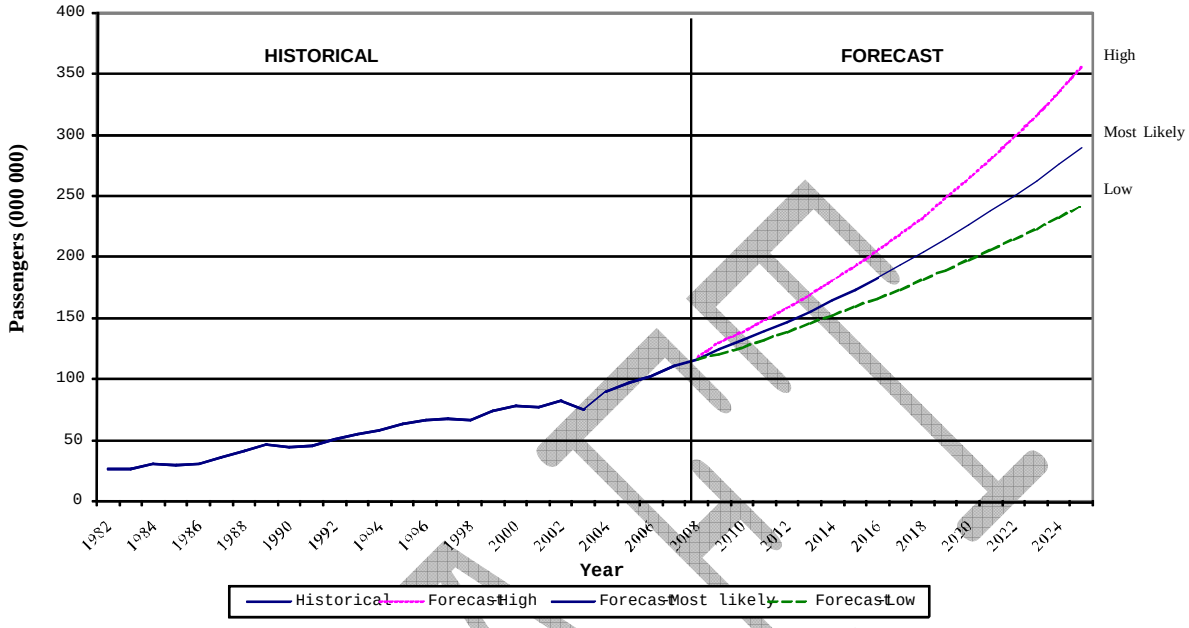
TABLE 4

TRANSPACIFIC PASSENGER FORECAST
(Thousands of one-way journeys)

Year	Low	Most Likely	High
Historical			
2000		28 428	
2001		25 423	
2002		24 879	
2003		22 288	
2004		26 569	
2005		28 222	
2006		28 529	
2007		29 466	
Forecast			
2008	29 340	30 090	30 920
2009	30 710	31 670	32 760
2010	32 510	33 880	35 470
2015	41 630	45 720	50 850
2020	52,260	60 440	71 480
2025	64 580	78 610	98 940
Average annual percentage growth rate			
2007-2015	4.4	5.6	7.1
2015-2025	4.5	5.6	6.9
2007-2025	4.5	5.6	7.0

FIGURE 4

TRANSPACIFIC PASSENGER FORECAST
(International Scheduled Operations)



3.7 Aircraft Movement Forecast

3.7.1 Using the above passenger forecasts, aircraft movement estimates for the total Transpacific market area were developed by estimating average aircraft size, in terms of seats, and estimating load factors for the future.

3.7.2 In the development of the average aircraft seat size, the Group made use of detailed OAG data available from OAGback Aviation Solutions. The current Transpacific fleet was grouped into 13 generic seat categories. The evolution of the historical frequency and capacity and its future trends based on the current in-service fleet and planned deliveries, as well as anticipated new aircraft types, were taken into consideration.

3.7.3 In this context, the introduction of the large capacity aircraft such as the A-380 towards the end of the decade was taken into account. It was assumed that these aircraft will account for about 20 per cent of the fleet by the year 2025. The Group made an assumption that B787 aircraft will enter the Transpacific market in 2011 and by the end of the forecast horizon their market share will reach some 11 per cent. The penetration of aircraft types such as the B-777 and A350 was also considered. With respect to the former aircraft type, it was taken into account that the new generation of B777s will have higher seat capacity then the present one. These developments in the fleet mix are expected to reduce gradually the current share of the B-747 market from some 40 per cent in 2007. It is anticipated that this aircraft type would disappear from the fleets operated in the Transpacific market by 2020. The analysis of the anticipated shares of specific aircraft seat categories indicated that the average aircraft seat size will increase from 315 seats per flight in 2007 to about 372 seats by 2025.

3.7.4 Load factors are high in the Transpacific market, and are expected to remain so. They are anticipated to fluctuate only marginally and reach 82 per cent by 2025. The trends in average number of seats per flight and in average load factors are shown in **Table 5**.

TABLE 5

ESTIMATED TRANSPACIFIC AVERAGE AIRCRAFT SIZE AND LOAD FACTOR

Year	Average number of seats per flight	Average load factor (per cent)
Historical		
2000	348	74
2001	338	72
2002	333	78
2003	325	74
2004	318	81
2005	319	80
2006	317	80
2007	315	80
Forecast		
2008	312	79
2009	313	80
2010	315	80
2015	338	81
2020	360	82
2025	372	82
Average annual percentage growth rate		
2007-2015	0.9	0.2
2015-2025	1.0	0.1
2007-2025	0.9	0.1

3.7.5 The forecast passenger aircraft movements developed by applying the aircraft size and load factor parameters are shown in **Table 6**. The aircraft movement forecast for cargo aircraft was analysed separately using data from OAGback Aviations Solutions and trends in freight forecasts developed by ICAO.

TABLE 6

TRANSPACIFIC AIRCRAFT MOVEMENT FORECAST

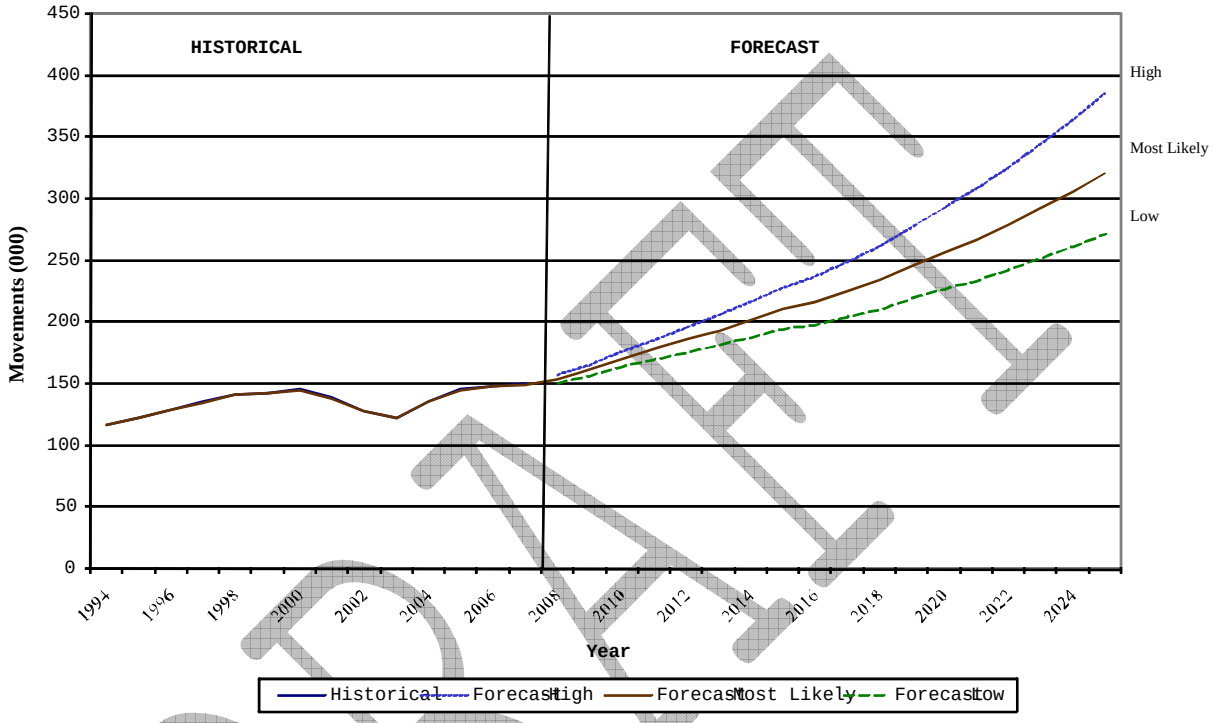
Year	Passenger Aircraft Movements			Cargo	Others	Total Movement Forecasts		
	Low	Most Likely	High			Low	Most Likely	High
Historical								
2000		112 283		24 810	8 000		145 093	
2001		107 692		22 857	8 000		138 549	
2002		94 444		25 413	8 000		127 857	
2003		90 762		23 900	8 000		122 662	
2004		103 522		24 736	8 000		136 258	
2005		113 584		26 072	8 000		147 656	
2006		116 420		23 778	8 000		148 198	
2007		120 252		21 780	8 000		150 032	
Forecast								
2008	120 900	123 800	127 400	22 100	8 000	150 900	153 900	157 400
2009	124 500	129 700	132 800	24 000	8 000	156 600	161 700	164 900
2010	130 900	137 800	142 800	25 500	8 000	164 400	171 300	176 300
2015	154 500	171 300	188 700	31 700	8 000	194 200	211 000	228 400
2020	179 900	210 100	246 100	38 900	8 000	226 800	257 000	293 000
2025	214 900	264 200	329 200	48 900	8 000	271 800	321 100	386 100
Average annual percentage growth rate								
2007-2015	3.2	4.5	5.8	4.8	0.0	3.3	4.4	5.4
2015-2025	3.4	4.4	5.7	4.4	0.0	3.4	4.3	5.4
2007-2025	3.3	4.5	5.8	4.6	0.0	3.4	4.3	5.4

3.7.6 Passenger aircraft movements are forecast to grow at an average annual rate of 4.5 per cent for the period 2007-2025. Accordingly, they will increase from 120.3 thousand in 2007 to some 264.2 thousand in 2025. The intermediate forecasts for the periods 2007-2015 and 2015-2025 are projected to be around that rate as well, with only marginal decrease to 4.4 per cent for the latter time period.

3.7.7 All-cargo flights are projected to increase by 4.8 per cent annually to the year 2015, and continue to increase at 4.4 per cent for the remainder of the forecast horizon. The average annual forecast growth rate of 4.6 per cent is forecast for the whole period up to 2025. The all-cargo flights are forecast to increase from some 21.8 thousand in 2007 to some 48.9 thousand flights by the year 2025. Other aircraft movements were estimated based on an analysis of sample week traffic supplemented by data from

Fukuoka Air Traffic Control Centre (formerly known as Tokyo/Naha Air Traffic Control Centre) and expected to remain at around 8 thousand flights per year. The total aircraft movement forecasts for the Transpacific market are shown graphically in **Figure 5.**

FIGURE 5
TRANSPACIFIC AIRCRAFT MOVEMENT FORECAST



3.8 Analysis of Sample Week Traffic (Historical and Forecast)

3.8.1 Transpacific aircraft movements records for the period July 1-7 were provided by the Anchorage and Oakland Air Traffic Control Centres and the Fukuoka (formerly known as Tokyo/Naha) Air Traffic Control Centre for each year from 1989 to 2008. The analysis of these peak week records is summarized in Appendix B, Tables B-1 to B-6.

3.8.2 Tables B-1 and B-2, Appendix B, summarize the flights in 2007 and 2008 by route and day of the week. Tables B-3 and B-4 summarize the flights in the sample weeks of 2007 and 2008 by route and aircraft type. Tables B-5 and B-6 present the busiest hour for each route as well as the corresponding traffic for the other routes.

3.8.3 **Appendix C** shows the allocation of countries to the groups used in the analysis.

3.8.4 The peak hour traffic analysis was conducted by examining the traffic flow in the period as it passed through the defined meridians of longitude and latitude. Due to the geographic size of the Pacific area, three lines are needed to account adequately for all traffic. The meridians used were 165 East

longitude for markets in the North Pacific, 162 West longitude for markets in the Central Pacific and 3.5 north latitude for markets in the South Pacific.

3.8.5 The busiest hour for a single route for 2007 was reported on Asia/Pacific No-US West (Route 20), 2 July between 0800 and 0900 hours with 13 movements; the busiest hour of the week on all routes was reported twice: 7 July, between 0600 and 0700 hours and 4 July between 0600 and 0700 hours, with 33 movements. The busiest hour for 2008 for a single route was reported twice: 5 July, on US West-Asia/Pacific No (Route 6), between 0700 and 0800 hours and 1 July on US Other-Asia/Pacific No (Route 9) between 0600 and 0700 hours, with 12 movements. The busiest hour of the week on all routes was reported for 5 July between 0700 and 0800 hours, with 38 movements.

3.8.6 The most widely used aircraft type during the sample period was the B747, which accounted for some 52.1 and 50.2 per cent of the flights for 2007 and 2008, respectively. It is interesting to note that this proportion is higher that the share of 40 per cent for 2007 calculated on the basis of data available from OAGback Aviation Solutions. It is rational to believe that airlines tend to operate bigger aircraft in the peak season of the year (July). The next most used aircraft was the B777 with 17.4 and 17.7 per cent of the movements in 2007 and 2008, respectively.

3.8.7 The average day volume in 2007 and 2008 was 318 and 347 movements, respectively. The average day volume is forecast to be some 440 movements in 2012, with an average annual increase of 6.1 per cent for the period 2008-2012, as depicted in **Table 7**.

TABLE 7

TRANSPACIFIC TRAFFIC: AVERAGE DAILY FLIGHTS
DATES OF SAMPLE WEEK: JULY 1-7

		ACTUAL TRAFFIC REPORTED BY FIR															FORECAST
	Direction/Route	**1989**	**1991**	**1993**	**1995**	**1997**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2012**
	WESTBOUND																
1	ALASKA-ASIA PAC NO	29	22	25	30	36	34	35	26	26	25	38	37	33	31	28	36
2	ALASKA-ASIA PAC CE				1	1	3	4	3	8	4	4	6	6	6	8	10
3	HONOLULU-ASIA PAC NO	15	22	19	23	24	21	21	19	17	13	17	19	16	16	12	16
4	HONOLULU-ASIA PAC CE				1	0	0	1	1	1	0	1	2	1	1	1	1
5	HONOLULU-ASIA PAC SO														0	0	0
6	US WEST-ASIA PAC NO	28	34	36	42	47	46	49	41	36	33	48	47	50	44	52	66
7	US WEST-ASIA PAC CE				7	7	7	6	6	5	4	5	8	9	9	13	16
8	US WEST-ASIA PAC SO														0	0	0
9	US OTHER-ASIA PAC NO	9	13	15	15	17	24	25	24	21	21	24	25	27	25	30	38
10	CANADA-ASIA PAC NO	4	5	6	8	10	10	10	10	9	6	11	12	11	10	11	14
11	CANADA-ASIA PAC CE				3	4	4	4	4	4	3	5	4	4	5	6	7
	WB TOTAL	84	95	101	129	147	148	154	135	128	111	153	158	157	146	160	203
	EASTBOUND																
15	ASIA PAC NO-ALASKA	28	25	24	26	33	34	38	28	30	26	46	50	51	45	49	62
16	ASIA PAC CE-ALASKA				3	3	4	3	5	7	6	5	7	7	7	12	15
17	ASIA PAC NO-HONOLULU	15	21	20	24	24	20	19	19	17	14	18	17	16	14	13	17
18	ASIA PAC CE-HONOLULU				0	0		0	0		0	0	0	0	0	0	1
19	ASIA PAC SO-HONOLULU														0	0	0
20	ASIA PAC NO-US WEST	30	33	36	44	50	51	52	44	37	33	47	50	48	47	51	65
21	ASIA PAC CE-US WEST				8	7	7	8	8	7	5	7	9	9	11	13	16
22	ASIA PAC SO-US WEST												0		0	0	0
23	ASIA PAC NO-US OTHER	9	13	16	16	18	27	29	26	22	22	28	32	32	32	33	42
24	ASIA PAC NO-CANADA	4	5	6	8	10	11	10	9	9	6	12	13	13	12	10	13
25	ASIA PAC CE-CANADA				3	4	4	4	4	4	3	5	4	4	5	5	7
	EB TOTAL	86	96	101	131	150	158	163	142	133	115	169	182	181	173	187	237
	TOTAL (EB + WB)	170	192	202	260	296	306	317	277	260	226	322	340	338	318	347	440

4. INTRA-ASIA/PACIFIC TRAFFIC TRENDS AND FORECASTS

4.1 Geographical Scope

4.1.1 For the purpose of these forecasts, Asia/Pacific is defined as the ICAO statistical region concerned (see **Appendix D**).

4.2 Historical Passenger Traffic

4.2.1 Intra-Asia/Pacific traffic increased from 26.7 million passengers in 1982 to an estimated 111 million in 2007 at an average annual rate of 5.9 per cent. The GDP of Asia/Pacific States for the same period increased by 4.8 per cent per year in real terms. The airline revenue yield index for the region fluctuated during the period 1982-1994, as shown in **Table 8**. However, yield indexes have since declined steadily, from 110.8 in 1994 to an estimated value of almost 92.1 in the year 2003 but the trend reversed in 2004 and increases were observed for each of the years up to 2007, except for 2006. This trend can be attributed to the rise in fuel prices.

4.3 Forecast Methodology

4.3.1 Following testing and evaluation of various functional forms and explanatory variables, the Group decided on an exponential model similar to that developed for the Transpacific market. In addition, three "dummy" variables were also introduced to improve the predictive capability of the model and to account for the impact of the traffic downturn that occurred in 2001 and 2003, for the cyclical fluctuation of the yield index for the years 1982-1985 and for the impact of fuel prices for the years 2004-2007. The introduction of these variables provided a more accurate calibration and simulation of the historical trends.

4.3.2 The econometric model resulted in the following equation:

Log (Passengers) = 2.71 + 1.16 log(GDP) - 0.38 log(Yield) - 0.14 (Dummy1) - 0.15 (Dummy2) – 0.10 (Dummy3)

(R^2 = 0.99, S.E. = 0.04, t_{GDP} = 14.31, t_{Yield} = -3.48)

TABLE 8

INTRA-ASIA/PACIFIC PASSENGER TRAFFIC, GDP AND YIELD

Year	Passengers (Thousands)	Real GDP (Billions U.S.$ in 1990 prices)	Real Yield Index
1982	26 716	3 216	100.0
1983	26 486	3 347	148.6
1984	31 000	3 531	91.9
1985	29 858	3 713	113.6
1986	31 305	3 862	125.8
1987	36 910	4 073	148.6
1988	41 476	4 364	135.4
1989	46 642	4 588	116.2
1990	44 627	4 817	124.7
1991	45 660	5 032	129.3
1992	51 142	5 287	120.3
1993	55 230	5 331	114.0
1994	59 096	5 526	110.8
1995	63 646	5 859	107.5
1996	67 100	6 157	104.3
1997	68 100	6 379	97.0
1998	67 480	6 315	97.0
1999	73 891	6 536	97.0
2000	78 197	6 909	97.9
2001	77 102	7 178	94.0
2002	83 270	7 508	94.0
2003	74 943	7 959	92.1
2004	89 857	8 500	96.3
2005	97 495	9 061	96.8
2006	102 760	9 705	94.8
2007	110 980	10 432	101.0
Average annual percentage growth rate			
1982 - 2007	5.9	4.8	0.0

4.4 Forecasts of GDP and Yield Scenarios

4.4.1 GDP growth rates of 4.7 per cent per year for the period 2007-2015 and 4.0 per cent for the period 2015-2025 were used in the development of the "most likely" forecast, averaging 4.3 per cent for the whole period. High and low range forecasts were developed in a manner similar to that used in the Transpacific forecast. Low and high case scenarios were developed using a low GDP increase per year of 3.9 per cent and a high GDP increase of 4.8 per cent, respectively, from 2007-2025.

4.4.2 Intra-Asia/Pacific yield expressed in real terms is expected to increase by about 3.5 per cent in 2008 and to decline over the 2009-2025 period at a rate similar to that for Transpacific yields (0.5 per cent). For the low and high case scenarios, an increase of 0.2 per cent and a decrease of 0.8 per cent per annum over the forecast horizon were used, respectively. It should be recognized that the price elasticity for the Intra-Asia market is relatively low compared to that of the Transpacific market.

4.5 Passenger Forecast

4.5.1 Intra-Asia/Pacific passenger traffic is forecast to increase at a "most likely" average annual rate of 5.5 per cent for the period 2007-2025, reaching 289.7 million passengers in the year 2025. For the two interim periods of 2007-2015 and 2015-2025, traffic is projected to grow at average annual rates of 5.8 and 5.2 per cent, respectively. Under the low case scenario, traffic is expected to grow at an average annual growth rate of 4.4 per cent and 6.7 per cent growth rate is anticipated under the high case scenario. The range of forecasts are shown in **Table 9** and depicted in **Figure 6**.

TABLE 9

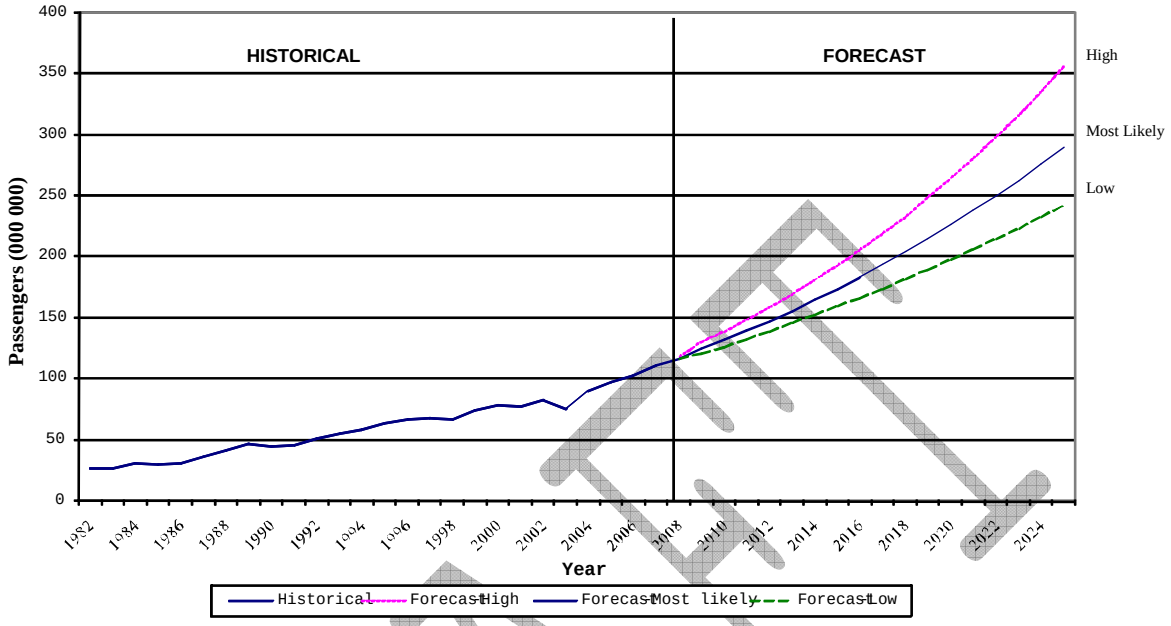
INTRA-ASIA/PACIFIC PASSENGER TRAFFIC FORECASTS

(Thousands of one-way journeys)

Year	Low	Most Likely	High
Historical			
2000		78 197	
2001		77 102	
2002		83 270	
2003		74 943	
2004		89 857	
2005		97 495	
2006		102 760	
2007		110 980	
Forecast			
2008	116 250	117 050	117 720
2009	120 830	124 840	130 140
2010	126 610	132 040	139 070
2015	159 380	174 110	193 090
2020	198 000	226 490	264 420
2025	241 940	289 670	355 930
Average annual percentage growth rate			
2007-2015	4.6	5.8	7.2
2015-2025	4.3	5.2	6.3
2007-2025	4.4	5.5	6.7

FIGURE 6

INTRA-ASIA/PACIFIC PASSENGER FORECAST
(International Scheduled Services)



4.6 Aircraft Movement Forecast

4.6.1 In addition to the passenger traffic forecast, the Group developed air traffic movement forecasts for the region, similar to the movement forecasts developed for the Transpacific market. In order to develop the aircraft movement growth rates, passenger traffic forecast, expected trends in average aircraft size (seats/flight) and the average load factor were utilized. As in the case of the Transpacific market, future average aircraft size for the period 2007-2025 was estimated using the distribution of current in-service fleet, evolution of frequency vs. capacity in the market and the aircraft orders and deliveries expected by the airlines of the region. The analysis of the distribution of the year-end 2008 fleet indicates that wide-body aircraft dominate the Intra-Asia/Pacific market. This trend is expected to continue through the forecast horizon. Based on the above analysis, the average aircraft size in the Intra-Asia/Pacific market is projected to decline moderately from 224 seats in 2007 to 221 by the year 2010 and then to increase through to the end of the forecast horizon and reach the level of 253 seats. An average load factor of 74 per cent was reached in 2007 and a decline of two percentage points is expected for 2008 resulting in the drop of the average load factor for the year to 72 per cent. From 2009 the load factor is anticipated to increase at modest rates and by 2025 it is anticipated to reach 75 per cent. The trends in average seats per flight and in load factor are given in **Table 10**. Using the above expectations of average aircraft size, average load factor and the forecast of passenger traffic, the aircraft movement forecast was developed. Growth rates for low and high movements were estimated using the same approach as for the Transpacific market.

TABLE 10

ESTIMATED INTRA-ASIA/PACIFIC AVERAGE AIRCRAFT SIZE AND LOAD FACTOR

Year	Average number of seats per flight	Average load factor (per cent)
Historical		
2000	239	71
2001	238	68
2002	238	71
2003	237	67
2004	236	69
2005	233	70
2006	232	71
2007	224	74
Forecast		
2008	219	72
2009	220	72
2010	221	73
2015	234	73
2020	247	74
2025	253	75
Average annual percentage growth rate		
2007-2015	0.6	-0.2
2015-2025	0.8	0.3
2007-2025	0.7	0.1

4.6.2 The growth rates for the aircraft movements developed in this manner were applied to the data on aircraft movements for the year 2007 available from OAGback Aviation Solutions. Similarly, the low and the high growth rates were used to obtain the range of aircraft movements for the forecast horizon.

4.6.3 The most likely Intra-Asia/Pacific passenger aircraft movements are expected to increase from some 950.3 thousand in 2007 to about 2 078 thousand movements by the year 2025 at an average annual growth rate of 4.4 per cent. The growth rates for the intermediate periods of 2007-2015 and 2015-2025 are 4.8 and 4.1 per cent, respectively. The range of growth rates for low and high movement forecasts are also provided in **Table 11** and in **Figure 7**.

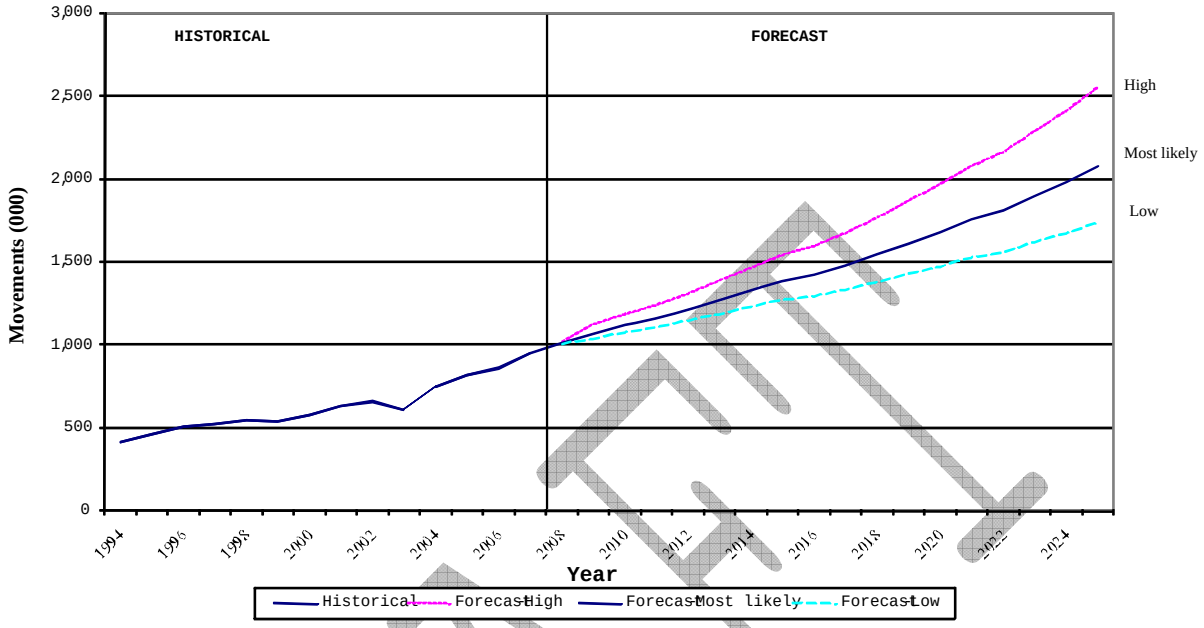
TABLE 11

INTRA-ASIA/PACIFIC AIRCRAFT MOVEMENT FORECASTS

Year	Low	Most Likely	High
Historical			
2000		577 819	
2001		633 020	
2002		662 000	
2003		613 338	
2004		750 975	
2005		818 845	
2006		863 021	
2007		950 297	
Forecast			
2008	1 006 000	1 012 000	1 018 000
2009	1 038 000	1 072 000	1 118 000
2010	1 075 000	1 122 000	1 181 000
2015	1 270 000	1 388 000	1 539 000
2020	1 474 000	1 686 000	1 968 000
2025	1 736 000	2 078 000	2 554 000
Average annual percentage growth rate			
2007-2015	3.7	4.8	6.2
2015-2025	3.2	4.1	5.2
2007-2025	3.4	4.4	5.6

FIGURE 7

INTRA-ASIA/PACIFIC AIRCRAFT MOVEMENT FORECAST
(International Scheduled Services)



5. SELECTED MAJOR CITY-PAIRS WITHIN TRANSPACIFIC AND INTRA-ASIA/PACIFIC

5.1 Scope and Methodology

5.1.1 In accordance with Recommendation 14/5 of the Asia/Pacific/RAN/3 meeting, the APA TFG expanded its forecasts to include the 40 busiest routes in terms of passengers carried. The number of city-pairs was further expanded to 41 in 2001 and to 43 in 2006, and the Group decided to add two more city pairs during the present meeting. It was noted that the number of city-pairs should be further expanded in the future bearing in mind rapidly increasing traffic on other city-pairs not covered by the present analysis. The 45 city-pairs concerned have been classified into two major categories: Transpacific and Intra-Asia/Pacific. Intra-Asia/Pacific city-pairs have been further sub-divided into short-, medium- and long-haul categories.

5.1.2 These forecasts are based on historical city-pair time series. Projections were adjusted as necessary by the Group's expertise and judgment as well as the macro-economic forecasts developed by the Group at the present meeting.

5.2 Passenger Forecast

5.2.1 The projected average annual traffic growth rates for the period 2007-2012 for the city-pairs concerned (45) are depicted in **Table 12**.

TABLE 12
PASSENGER FORECAST FOR SELECTED TOP 45 CITY-PAIRS
TRANSPACIFIC AND INTRA-ASIA/PACIFIC
(One way passengers carried)

CITY - PAIR	1984	1995	2000	2001	2002	2003	2004	2005	2006	2007	Average annual growth (%) 1984-1995	Average annual growth (%) 1995-2007	Passenger Forecast 2012	Average annual growth (%) 2007-2012
LONG HAUL CITY - PAIRS														
Tokyo-Sydney	144 609	449 489	435 884	426 670	475 909	445 451	465 942	457 555	421 669	452 657	10.9	0.1	490 000	1.6
Hong Kong-Sydney	179 077	468 561	485 792	607 290	599 689	513 334	640 641	835 395	919 893	894 436	9.1	5.5	1 214 000	6.3
Singapore-Sydney	225 185	473 706	855 525	1 003 607	1 042 987	1 002 311	1 051 424	1,025 138	1 018 290	1 042 478	7.0	6.8	1 174 000	2.4
Singapore-Melbourne	147 848	334 714	569 924	689 049	726 487	682 898	749 822	809 808	840 850	845 216	7.7	8.0	1 004 000	3.5
Tokyo-Singapore	328 380	1 163 384	1 275 803	1 136 324	1155 667	921 067	1,090,543	1 063 279	1 122 265	1 193 005	12.2	0.2	1 403 000	3.3
Singapore-Osaka	166 046	522 481	504 965	431 091	401 626	211 255	347 304	337 579	336 587	352 051	11.0	-3.2	398 000	2.5
Tokyo-Bangkok	264 891	1 049 392	1 607 319	1 512 283	1 675 610	1 538 210	1 719 718	1 661 248	1 808 036	1 934 599	13.3	5.2	2 688 000	6.8
Singapore-Perth	162 811	439,395	635 704	745 961	779 347	686 605	705 143	795 401	854 838	906 128	9.4	6.2	1 241 000	6.5
Singapore-Taipei	113 227	339 766	754 447	620 669	621 149	413 685	512 970	568 883	837 203	832 732	10.5	7.8	1 125 000	6.2
Tokyo-Manila	494 323	655 574	883 831	859 492	936 846	922 794	920 025	969 707	1 095 768	1 084 811	2.6	4.3	1 301 000	3.7
Singapore-Shanghai					139 500	543 639	840 721	944 291	1 086 344	1 179 123			1 773 000	8.5
MEDIUM HAUL CITY - PAIRS														
Hong Kong-Tokyo	1 242 588	2 042 946	2 037 093	1 868 033	1 972 643	1 485 400	1 861 206	1 894 708	2 038 889	1 906 953	4.6	-0.6	2 287 000	3.7
Hong Kong-Singapore	705 752	1 355 247	1 699 685	1 859 566	1 823 950	1 386 202	1 888 007	2 084 360	2 248 050	2 374 526	6.1	4.8	3 148 000	5.8
Hong Kong-Kuala Lumpur	133 173	410 977	569 717	525 655	647 710	390 569	595 227	635 703	622 989	796 281	10.8	5.7	1 011 000	4.9
Bangkok-Taipei	56 483	418 009	530 173	529 802	463 698	362 148	448 702	531 711	513 289	508 156	20.0	1.6	583 000	2.8
Hong Kong-Osaka	440 932	707 908	717 036	541 655	606 027	505 427	562 034	587 326	678 970	722 968	4.4	0.2	850 000	3.3
Tokyo-Saipan	115 902	526 470	487 904	411 735	421 992	424 102	471 601	412 651	302 776	252 703	14.8	-5.9	280 000	2.1
Tokyo-Taipei	780 554	965 328	1 148 199	1 449 833	1 661 509	1 163 056	1 451 494	1 486 330	1 501 193	1 486 181	2.0	3.7	1 799 000	3.9
Tokyo-Beijing	132 947	546 482	722 943	796 773	756 934	554 076	778 477	808 059	932 233	1 009 952	13.7	5.3	1 477 000	7.9
Sydney-Auckland	479 470	720 899	937 056	1 011 430	1 016 685	1 092 936	1 241 576	1 077 688	914 425	742 903	3.8	0.3	812 000	1.8
Seoul-Hong Kong	270 530	1 027 093	1 326 504	1 407 736	1 379 683	1 181 009	1 151 483	1 224 027	1 587 557	1 651 059	12.9	4.0	2 168 000	5.6
Singapore-Chennai					479 168	419 660	447 935	490 527	560 521	669 543			1 025000	8.9

CITY - PAIR	1984	1995	2000	2001	2002	2003	2004	2005	2006	2007	Average annual growth (%) 1984-1995	Average annual growth (%) 1995-2007	Passenger Forecast 2012	Average annual growth (%) 2007-2012
SHORT HAUL CITY - PAIRS														
Shanghai-Tokyo								1 591 677	1 727 449	1 821 278			2 603 000	7.4
Hong Kong-Bangkok	903 472	1 845 993	2 036 646	1 996 351	2 068 146	1 768 265	1 867 288	1 906 501	1 975 242	1 896 232	6.7	0.2	2 145 000	2.5
Seoul-Taipei	238 573	522 925	418 119	479 085	475 928	504 960	386 294	693 784	577 661	577 661	7.4	0.8	716 000	4.4
Singapore-Bangkok	665 235	1 498 115	2 131 251	2 265 875	2 506 383	2 243 213	2 622 316	2 436 131	3 028 259	2 827 812	7.7	5.4	3 541 000	4.6
Tokyo-Seoul	836 515	1 909 888	2 498 117	2 601 310	2 437 427	2 313 119	2 960 792	2 931 184	2 995 337	2 935 430	7.8	3.6	3 537 000	3.8
Hong Kong-Manila	584 855	1 344 489	977 181	788 995	740 736	623 700	945 529	1 085 467	1 105 947	1 058 182	7.9	-2.0	1 363 000	5.2
Singapore-Jakarta	584 457	2 043 076	1 509 493	1 887 706	1 956 691	1 880 380	1 863 457	1 887 682	2 276 202	2 410 401	12.1	1.4	3 195 000	5.8
Seoul-Osaka	380 634	837 812	1 522 414	1 447 360	1 632 622	1 461 197	1 699 372	1 706 169	1 343 477	1 343 477	7.4	4.0	1 535 000	2.7
Hong Kong-Taipei	863 896	2 556 230	2 759 426	2 622 293	2 698 445	1 621 765	2 538 063	2 840 092	2 785 311	2 813 164	10.4	0.8	3 183 000	2.5
Singapore-Penang	331 379	611 463	620 614	615 343	572 117	384 463	435 596	405 540	510 318	514 016	5.7	-1.4	662 000	5.2
Singapore-Kuala Lumpur	1 316 148	2 304 079	2 180 393	2 190 116	2 027 226	1 542 719	1 636 825	1 566 441	1 686 837	1 697 682	5.2	-2.5	1 949 000	2.8
Shanghai-Osaka								734 169	786 908	829 899			1 153 000	6.8
TRANSPACIFIC CITY - PAIRS														
Tokyo-Honolulu	970 715	2 264 427	1 776 873	1 538 565	1 664 802	1 468 355	1 789 925	1 782 765	1 662 168	1 583 969	8.0	-2.9	1 827 000	2.9
Tokyo-Los Angeles	677 653	1 112 387	1 659 023	1 393 749	1 560 999	1 420 509	1 511 422	1 529 559	1 216 994	1 002 362	4.6	-0.9	1 112 000	2.1
Tokyo-Guam	382 042	859 986	990 499	781 023	823 733	733 122	1 071 825	1 111 482	1 244 860	1 332 001	7.7	3.7	1 660 000	4.5
Tokyo-San Francisco	418 864	789 694	905 590	859 598	953 169	863 571	902 432	863 627	856 787	865 597	5.9	0.8	1 013 000	3.2
Honolulu-Osaka	458 839	915 818	846 995	640 386	740 927	644 606	765 147	807 231	654 688	641 594	6.5	-2.9	678 000	1.1
Tokyo-New York	400 831	752 085	937 721	841 236	1 028 666	984 433	1 106 503	1 031 261	848 123	777 519	5.9	0.3	888 000	2.7
Hong Kong-San Francisco	183 433	524 953	493 199	572 607	634 841	505 333	687 759	693 261	695 087	785 448	10.0	3.4	1 066 000	6.3
Tokyo-Chicago	215 801	445 446	759 332	669 677	706 797	674 991	688 491	719 473	820 526	783 863	6.8	4.8	918 000	3.2
Los Angeles-Seoul	205 828	667 126	888 988	780 346	773 832	904 610	804 198	810 632	761 311	776 537	11.3	1.3	958 000	4.3
Los Angeles-Sydney	125 778	584 170	604 572	719 970	731 490	753 434	809 942	868 258	757 254	746 962	15.0	2.1	845 000	2.5
Hong Kong-Vancouver	113 579	308 038	525 675	614 093	702 511	304 890	491 787	464 247	475 465	473 181	9.5	3.6	610 000	5.2
TOTAL - ALL ROUTES	17 443 255	39 316 021	45 227 625	44 740 338	47 222 303	40 447 467	47 526 955	49 576 330	53 034 847	53 332 729	7.7	2.6	66 413 000	4.5

6. ASIA/PACIFIC AIRCRAFT MOVEMENTS (PEAK PERIOD)

6.1 Fukuoka FIR Traffic

6.1.1 As a first step in meeting the requirements of APANPIRG's CNS/ATM Sub-Group, the Group reviewed data provided by the Fukuoka FIR. Traffic flows to and from the Fukuoka FIR for a sample week of July 2007, and 2008 are illustrated in **Figures 8 a),** and **8 b)**, respectively.

6.2 Fukuoka FIR City-Pairs

6.2.1 Aircraft movements for the major city-pairs passing through the Fukuoka FIR were also analysed. This information for the first week of July in each of the years 1990-2008 is illustrated in **Table 13**.

6.2.2 Of the 50 city-pairs, two have exhibited high growth rates of 10 per cent and more per annum during the period concerned. The highest traffic density in 2008 was on the Tokyo-Shanghai (Pundong) city-pair, amounting to 264 movements.

6.2.3 This information is presented to indicate the level of traffic on the high-density city-pairs within the Transpacific and the Intra-Asia/Pacific regions. Forecasts of this density may be developed in the future as resources permit and priorities for various tasks have been clearly defined.

FIGURE 8 a)

ZONE PAIR TRAFFIC MOVEMENTS
(To/from/through Fukuoka FIR, from July 1 to July 7, 2007)

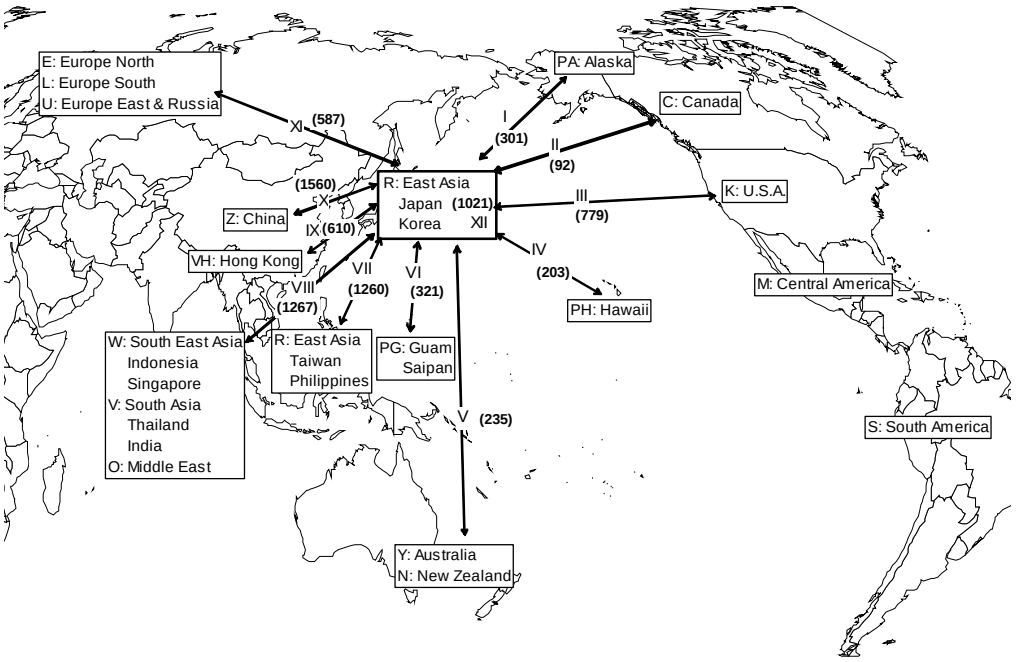


FIGURE 8 b)

ZONE PAIR TRAFFIC MOVEMENTS
(To/from/through Fukuoka FIR, from July 1 to July 7, 2008)

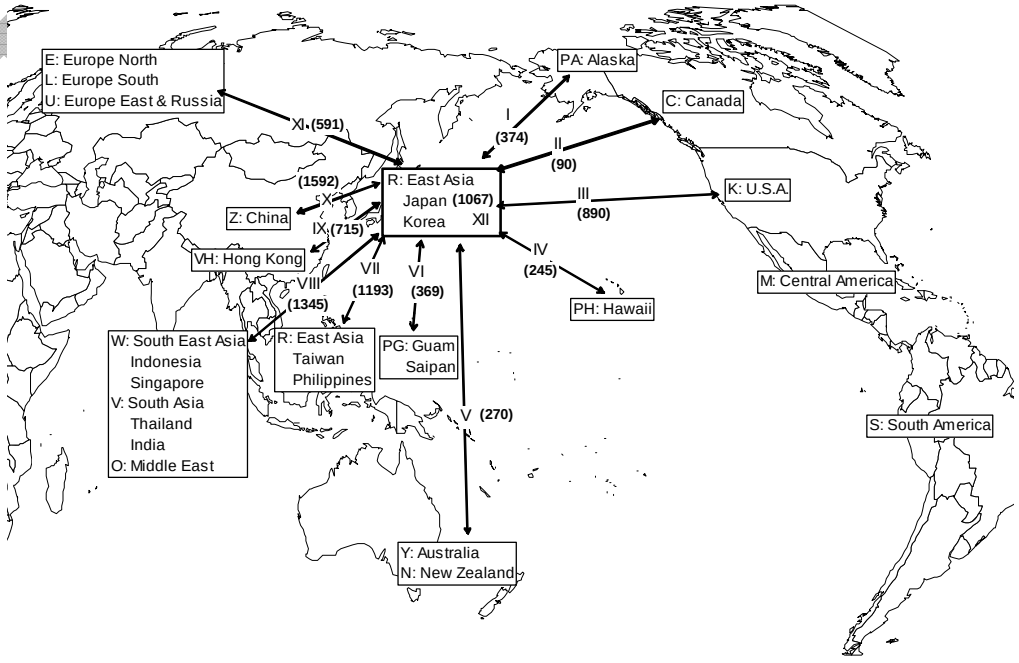


TABLE 13

AIRCRAFT MOVEMENTS BETWEEN MAJOR CITY-PAIRS THROUGH FUKUOKA FIR

(1-7 July 1990-2008)

	CITY - PAIR	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Annual Growth (%)			
																					05-06	06-07	07-08	90-08
1	TOKYO - PUDONG (SHANGHAI)											50	38	106	142	199	200	230	258	264	15.0	12.2	2.3	
2	HONG KONG - SEOUL	83	102	97	97	104	98	105	100	99	110	133	153	170	164	194	175	206	225	233	17.7	9.2	3.6	6.8
3	TOKYO - SEOUL	204	205	193	175	155	152	141	149	165	169	179	200	291	240	254	232	255	234	227	9.9	-8.2	-3.0	1.0
4	OSAKA - PUDONG (SHANGHAI)											34	40	42	87	149	140	146	208	216	4.3	42.5	3.8	
5	TOKYO - TAIPEI	145	128	117	118	115	124	109	109	108	116	119	116	238	186	232	225	231	231	212	2.7	0.0	-8.2	2.3
6	TOKYO - HONG KONG	176	172	164	171	169	166	181	160	152	166	168	159	248	170	219	229	220	192	205	-3.9	-12.7	6.8	0.5
7	OSAKA - SEOUL	52	50	47	52	52	104	100	110	108	117	154	173	144	140	131	147	148	150	173	0.7	1.4	15.3	7.1
8	SEOUL - ANCHORAGE	93	74	100	107	129	140	142	176	147	154	175	133	207	212	201	139	129	127	166	-7.2	-1.6	30.7	2.9
9	HONG KONG - ANCHORAGE					30	39	50	67	69	72	81	75	142	104	86	92	94	94	166	2.2	0.0	76.6	
10	TOKYO - BANGKOK	104	109	103	102	101	99	96	117	125	113	113	116	120	114	140	160	158	166	162	-1.3	5.1	-2.4	2.9
11	TOKYO - HONOLULU	140	163	156	142	143	149	163	147	141	145	133	128	153	105	159	122	117	113	145	-4.1	-3.4	28.3	1.0
12	TOKYO - BEIJING	39	46	50	56	70	68	69	73	65	70	64	73	122	81	125	122	114	137	135	-6.6	20.2	-1.5	7.9
13	TOKYO - ANCHORAGE	236	250	225	203	206	190	250	203	220	211	204	185	214	208	205	170	140	110	131	-17.6	-21.4	19.1	-3.2
14	TOKYO - SINGAPORE	92	94	113	117	128	123	117	118	111	111	114	115	123	122	134	128	116	133	131	-9.4	14.7	-1.5	3.1
15	TOKYO - LOS ANGELES	111	122	132	124	116	119	130	123	154	141	132	127	109	101	119	128	110	109	126	-14.1	-0.9	15.6	0.6
16	TAIPEI - ANCHORAGE	18		52	46	56	65	95	104	104	128	135	117	125	129	181	155	161	159	122	3.9	-1.2	-23.3	11.3
17	OSAKA - TAIPEI	48	51	51	45	47	56	53	75	100	84	103	94	112	76	94	94	96	111	122	2.1	15.6	9.9	4.9
18	OSAKA - HONG KONG	37	36	48	46	48	56	79	75	69	84	111	115	107	89	110	108	106	111	118	-1.9	4.7	6.3	6.8
19	TAIPEI - LOS ANGELES	19		35	72	71	79	79	102	88	93	92	98	106	98	101	93	103	107	118	10.8	3.9	10.3	12.3
20	TOKYO (HANEDA) - SEOUL (KIMPO)															56	56	112	112	113	100.0	0.0	0.9	
21	TOKYO - GUAM ISLAND	62	69	63	50	48	44	49	28	28	63	66	68	92	92	92	86	84	102	113	-2.3	21.4	10.8	3.1
22	SHANGHAI - ANCHORAGE											2	18	28	27	43	69	84	74	103	21.7	-11.9	39.2	
23	SEOUL - TAIPEI	126	136	133	50	101	78	79	83	89	53	48	48	49	64	120	123	108	109	102	-12.2	0.9	-6.4	0.0
24	MANILA - SEOUL	33	32	44	45	59	56	78	77	49	60	51	51	71	63	62	68	70	98	101	2.9	40.0	3.1	6.6

	CITY - PAIR	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Annual Growth (%)			
																					05-06	06-07	07-08	90-08
25	BANGKOK - SEOUL	36	45	54	53	66	69	71	69	53	65	71	78	82	86	105	95	102	113	99	7.4	10.8	-12.4	7.5
26	SEOUL - LOS ANGELES	35	49	61	56	66	55	59	87	71	64	100	104	93	89	95	74	77	58	97	4.1	-24.7	67.2	6.4
27	SINGAPORE - SEOUL			29		41	63	69	69	66	74	92	96	93	79	87	87	86	89	94	-1.1	3.5	5.6	
28	NAGOYA - PUDONG (SHANGHAI)															59	71	79	90	94	11.3	13.9	4.4	
29	NAGOYA - SEOUL	43	44	46	44	42	43	42	44	42	42	42	58	50	42	50	89	96	99	88	7.9	3.1	-11.1	6.0
30	TOKYO - PARIS		32	36	43	46	48	56	42	56	58	58	56	62	65	74	81	84	90	85	3.7	7.1	-5.6	
31	TOKYO - GUANGZHOU															28	54	62	88	85	14.8	41.9	-3.4	
32	TOKYO - CHICAGO	24	36	40	40	40	40	39	40	56	70	71	76	72	70	70	73	78	79	84	6.8	1.3	6.3	6.8
33	TOKYO - SAN FRANCISCO	91	93	83	91	97	93	92	88	85	97	94	91	107	85	90	81	82	88	76	1.2	7.3	-13.6	-0.9
34	TOKYO - LONDON	28	62	72	71	72	70	69	74	74	74	74	74	77	68	84	84	72	72	72	-14.3	0.0	0.0	4.7
35	HONG KONG - VANCOUVER	28	26	37	33	37	40	50	47	29	62	76	61	75	57	61	75	41	53	70	-45.3	29.3	32.1	4.7
36	HONG KONG - SAN FRANCISCO	28	28	43	28	38	47	50	44	57	49	47	42	50	42	42	50	30	47	68	-40.0	56.7	44.7	6.4
37	HONG KONG - LOS ANGELES				34	43	40	28	28	44	40	38	41	24	33	41	24	16	47	67	-33.3	193.8	42.6	
38	NAGOYA - TAIPEI	27	30	30	30	30	34	34	34	42	42	42	42	42	33	42	70	76	71	66	8.6	-6.6	-7.0	6.0
39	TAIPEI - SAN FRANCISCO				47	51	55	58	62	65	61	65	65	50	51	51	47	60	65	-7.8	27.7	8.3		
40	FUKUOKA - SEOUL	34	46	47	45	44	45	42	42	43	42	42	46	42	42	51	56	64	64	64	14.3	0.0	0.0	4.4
41	TOKYO - MANILA	58	59	57	64	56	50	51	51	46	72	67	69	74	72	71	65	68	63	63	4.6	-7.4	0.0	0.5
42	SEOUL - SAN FRANCISCO						48	51	47	64	40	68	66	42	54	66	39	52	41	62	33.3	-21.2	51.2	
43	OSAKA - SINGAPORE						56	56	64	53	61	75	74	68	37	58	47	47	52	62	0.0	10.6	19.2	
44	OSAKA - BANGKOK						29	37	51	64	53	53	86	63	59	65	56	60	66	59	7.1	10.0	-10.6	
45	TOKYO - NEW YORK	47	48	52	52	52	55	56	61	63	62	64	79	77	76	75	76	62	54	56	-18.4	-12.9	3.7	0.6
46	OSAKA - BEIJING															51	54	52	74	56	-3.7	42.3	-24.3	
47	OSAKA - GUAM ISLAND						56	56	68	63	49	49	60	46	42	60	46	35	41	56	-23.9	17.1	36.6	
48	TOKYO - BUSAN								21	22	22	22	22	41	22	22	41	49	42	56	19.5	-14.3	33.3	
49	TOKYO (HANEDA) - SHANGHAI (HONGQIAO)																			56				
50	OSAKA - ANCHORAGE								73	73	62	88	69	60	65	69	60	59	43	55	-1.7	-27.1	27.9	

NOTE: "OSAKA" APPLIED THE DATA OF OSAKA TILL 1994, AND APPLIED THE DATA OF KANSAI FROM 1995

"SEOUL" APPLIED THE DATA OF KIMPO TILL 2000, AND APPLIED THE DATA OF INCHEON FROM 2001

"NAGOYA" APPLIED THE DATA OF NAGOYA TILL 2004, AND APPLIED THE DATA OF CHUBU FROM 2005

"BANGKOK" APPLIED THE DATA OF BANGKOK TILL 2006, AND APPLIED THE DATA OF SUVARNABHUMI FROM 2007

6.3 **Bangkok FIR City-Pairs**

6.3.1 Aircraft movements for the top 50 city-pairs passing through Bangkok FIR during the same week in July for the years 2007 and 2008 are depicted in **Table 14.** Traffic flows to, from and through the Bangkok FIR for the top routes during the sample weeks of 2007 and 2008 are illustrated in **Figures 9 a)** and **9 b).**

FIGURE 9 a)

MAJOR ROUTES THROUGH BANGKOK FIR
(Aircraft movements in both directions during sample week, 1 - 7 July 2007)

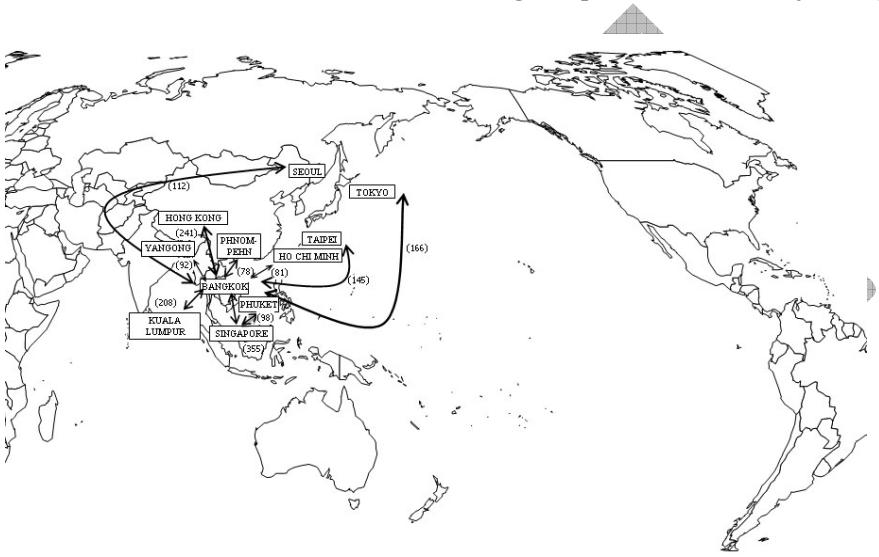


FIGURE 9 b)

MAJOR ROUTES THROUGH BANGKOK FIR
(Aircraft movements in both directions during sample week, 1 - 7 July 2008)

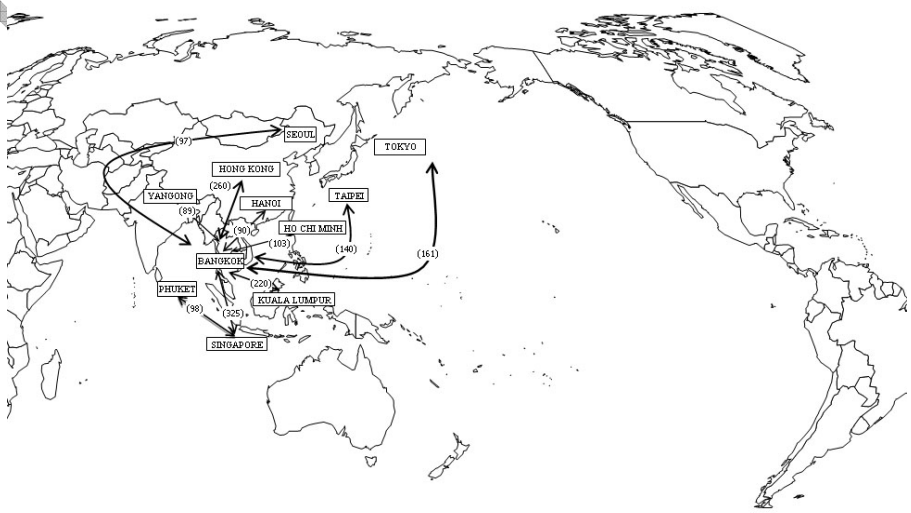


TABLE 14

AIRCRAFT MOVEMENTS THROUGH BANGKOK FIR

(During sample week 1-7 July)

	From	To	2002	2003	2004	2005	2006	2007	2008	Average Annual Growth Rate (%) 2002-2008
1	Bangkok	Singapore	266	234	327	412	363	355	325	3.4
2	Bangkok	Hong Kong	232	224	294	270	271	241	260	1.9
3	Bangkok	Kuala Lumpur	91	80	135	167	153	208	220	15.9
4	Bangkok	Tokyo	120	115	138	162	158	166	161	5.0
5	Bangkok	Taipei	151	130	145	144	146	145	140	-1.3
6	Bangkok	Ho Chi Minh City	76	61	73	81	72	81	103	5.2
7	Bangkok	Seoul	86	85	106	96	101	112	97	2.0
8	Bangkok	Hanoi	44	52	44	53	78	76	90	12.7
9	Bangkok	Yangon	47	50	72	71	63	92	89	11.2
10	Bangkok	Sydney	51	49	49	64	65	76	88	9.5
11	Phuket	Singapore	44	38	50	64	78	98	85	11.6
12	Bangkok	Macau	16	17	22	28	56	56	84	31.8
13	Bangkok	Phnom-Penh	84	90	84	84	98	78	83	-0.2
14	Bangkok	Dubai	40	45	51	63	58	63	74	10.8
15	Bangkok	Manila	68	51	73	48	48	65	73	1.2
16	Bangkok	Guangzhou	28	14	31	46	46	68	71	16.8
17	Bangkok	Shanghai	51	49	49	64	65	72	69	5.2
18	Bangkok	London	56	59	64	66	70	67	69	3.5
19	Bangkok	Siem Reap	57	42	56	62	60	67	66	2.5
20	Bangkok	Jakarta			27	38	18	29	64	
21	Bangkok	Vientiane	28	30	28	28	28	42	56	12.2
22	Phuket	Kuala Lumpur	28	28	42	28	40	56	55	11.9
23	Bangkok	Mumbai	26	23	18	41	52	48	55	13.3
24	Bangkok	Osaka	62	54	65	56	60	66	54	-2.3
25	Bangkok	Penang		15	42	57	56	54	53	
26	Bangkok	Delhi	37	34	37	53	40	56	51	5.5
27	Bangkok	Beijing	29	18	26	49	48	48	49	9.1
28	Bangkok	Kolkata	26	22	24	33	38	50	43	8.7
29	Bangkok	Frankfurt	41	46	60	46	50	48	42	0.4
30	Bangkok	Nagoya	17	18		29	30	29	37	13.8
31	Bangkok	Amsterdam	36	34	35	34	34	34	36	0.0
32	Phuket	Seoul			12	4	16	26	34	
33	Bangkok	Melbourne						30	32	
34	Phuket	Hong Kong						33	32	
35	Bangkok	Paris	32	27	28	28	28	34	32	0.0
36	Bangkok	Dhaka	31	29	28	31	30	31	31	0.0
37	Bangkok	Abu Dhabi	15	24	33	27	39	33	31	12.9
38	Bangkok	Zurich	28	28	26	25	27	27	29	0.6
39	Bangkok	Colombo	25	22	25	29	30	26	28	1.9
40	Bangkok	Doha	17	16	15	22	30	30	28	8.7
41	Bangkok	Copenhagen	22	18	18	24	25	24	26	2.8
42	Bangkok	Chennai			15	15	19	20	25	
43	Bangkok	Luang Prabang						20	24	
44	Bangkok	Busan	23		10	16	16	22	22	-0.7
45	Bangkok	Fukuoka						20	22	
46	Bangkok	Shenzhen						6	20	
47	Bangkok	Munich						20	20	
48	Bangkok	Bahrain						14	20	
49	Bangkok	Vienna	19		20	20	20	20	20	0.9
50	Bangkok	Muscat		2	4	4	14	0	19	

6.4 **Hong Kong FIR City-Pairs**

6.4.1 Aircraft movements for the top 50 city-pairs passing through Hong Kong FIR during the same week in July for the years 2006 to 2008 are depicted in **Table 15.** Traffic flows to, from and through the Hong Kong FIR for the top routes during the sample weeks of 2006, 2007 and 2008 are illustrated in **Figures 10 a), 10 b) and 10 c).**

FIGURE 10 a)

MAJOR ROUTES THROUGH HONG KONG FIR
(Aircraft movements in both directions during sample week, 1 - 7 July 2006)

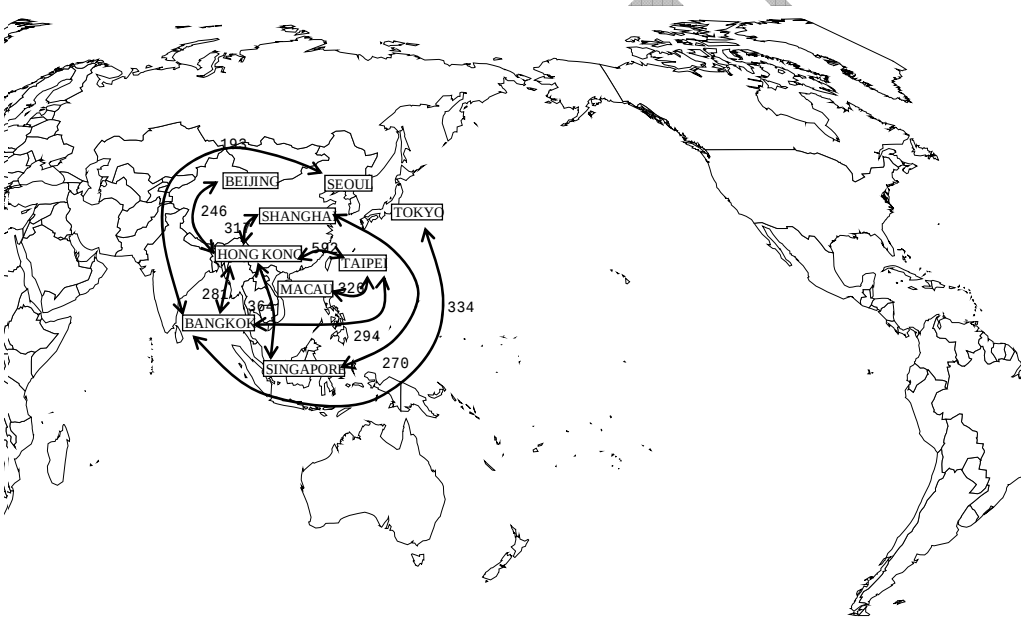


FIGURE 10 b)

MAJOR ROUTES THROUGH HONG KONG FIR
(Aircraft movements in both directions during sample week, 1 - 7 July 2007)

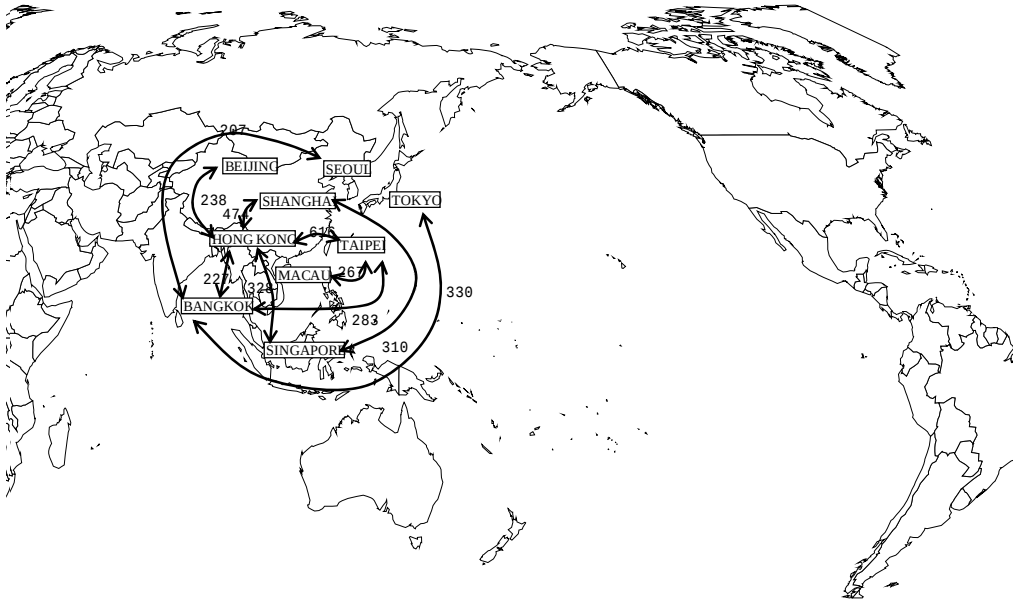


FIGURE 10 c)

MAJOR ROUTES THROUGH HONG KONG FIR
(Aircraft movements in both directions during sample week, 1 - 7 July 2008)

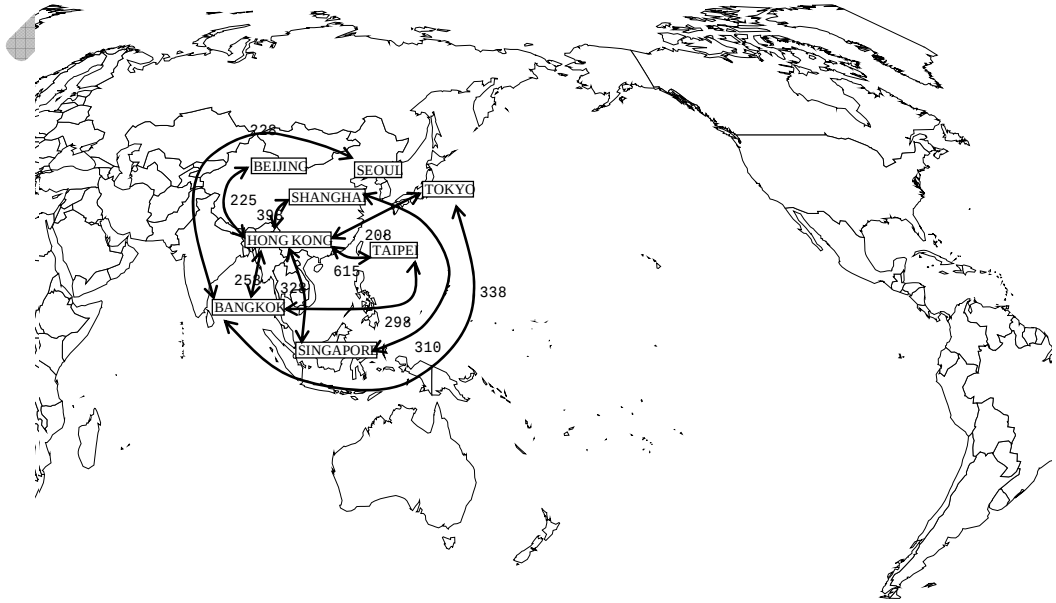


TABLE 15

AIRCRAFT MOVEMENTS THROUGH HONG KONG FIR

(During sample week, 1-7 July)

	From	To	2002	2003	2004	2005	2006	2007	2008	Average annual Growth rate (%) 2002-2008
1	Hong Kong	Taipei	601	433	666	667	592	616	615	0.4
2	Hong Kong	Shanghai	258	198	450	480	317	474	476	10.7
3	Hong Kong	Singapore	268	148	235	295	364	328	398	6.8
4	Bangkok	Tokyo	181	160	191	182	334	330	338	11.0
5	Singapore	Shanghai	72	47	129	123	270	310	331	28.9
6	Taipei	Bangkok	129	135	127	182	294	283	298	15.0
7	Hong Kong	Bangkok	274	245	315	281	281	227	258	-1.0
8	Bangkok	Seoul	103	100	126	113	193	207	228	14.2
9	Hong Kong	Beijing	172	104	212	287	246	238	225	4.6
10	Hong Kong	Tokyo	252	173	236	236	182	176	208	-3.1
11	Hong Kong	Seoul	180	171	202	184	173	180	206	2.3
12	Taipei	Macau	306	199	349	352	326	267	203	-6.6
13	Singapore	Beijing	55	20	60	74	165	163	180	21.8
14	Hong Kong	Kuala Lumpur	90	74	91	103	157	144	170	11.2
15	Hong Kong	Manila	164	115	176	161	155	70	148	-1.7
16	Singapore	Guangzhou	30	10	25	44	96	115	130	27.7
17	Hong Kong	London	82	78	99	108	117	120	130	8.0
18	Xiamen	Singapore	38	35	45	42	96	87	126	22.1
19	Ho Chi Minh City	Taipei	36	30	47	61	142	125	126	23.2
20	Hong Kong	Kaohsiung	112	99	134	128	109	121	118	0.9
21	Kuala Lumpur	Guangzhou	26	6	28	22	32	32	112	27.6
22	Hong Kong	Ho Chi Minh City	36	36	34	72	72	68	107	19.9
23	Hong Kong	Osaka	99	86	116	111	98	99	106	1.1
24	Hong Kong	Dubai	65	75	125	155	90	101	106	8.5
25	Bangkok	Osaka	79	72	66	72	120	125	104	4.7
26	Hong Kong	Anchorage	110	82	66	94	86	106	103	-1.1
27	Shanghai	Kuala Lumpur	20	21	71	65	69	45	101	31.0
28	Shanghai	Macau	99	72	150	115	103	88	96	-0.5
29	Hangzou	Hong Kong	59	33	57	85	84	82	92	7.7
30	Bangkok	Nagoya	17	15	17	29	57	51	90	32.0
31	Bangkok	Macau	11	16	29	42	63	51	90	42.0
32	Hong Kong	Jakarta	63	58	80	62	120	73	85	5.1
33	Phuket	Seoul	3	4	14	6	31	43	85	74.6
34	Kaochsiung	Macau					117	80	78	
35	Hong Kong	Sydney	74	42	74	93	88	68	76	0.4
36	Kuala Lumpur	Macau				14	25	15	72	
37	Ho Chi Minh City	Guangzhou	27	9	20	26	67	91	69	16.9
38	Hong Kong	Taizhong					14	36	68	
39	Hong Kong	Xiamen	55	33	64	74	48	75	67	3.3
40	Hanoi	Taipei	22	15	52	37	54	71	66	20.1
41	Kuala Lumpur	Shenzhen	19	19	21	24	13	18	63	22.1
42	Phnom-Phen	Seoul					4	18	59	
43	Kuala Lumpur	Beijing	14		20	24	17	29	56	26.0
44	Bangkok	Fukuoka	10	4	9	11	27	41	56	33.3
45	Hong Kong	Delhi	24	15	24	28	37	32	56	15.2
46	Hong Kong	Guangzhou	57	44	71	70	64	64	55	-0.6
47	Ho Chi Minh City	Seoul	29	31	31	33	28	44	53	10.6
48	Hong Kong	Fuzhou	57	53	72	90	58	80	53	-1.2
49	Hong Kong	Los Angeles	21	16	29	35	39	41	53	16.7
50	Hong Kong	Ningbo	24	19	43	67	55	50	53	14.1

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APPENDIX A

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APPENDIX B

ROUTES AND PEAK-HOUR MOVEMENTS

TABLE B-1

PACIFIC DAILY TRAFFIC SUMMARY
WEEK BEGINNING JULY 1, 2007

	Route	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Average
1	ALASKA-ASIA PAC NO	20	32	24	26	37	39	38	216	30.9
2	ALASKA-ASIA PAC CE	3	6	4	3	7	9	11	43	6.1
3	HONOLULU-ASIA PAC NO	16	16	14	16	15	15	17	109	15.6
4	HONOLULU-ASIA PAC CE	1	0	0	2	2	1	0	6	0.9
6	US WEST-ASIA PAC NO	41	40	43	49	43	53	42	311	44.4
7	US WEST-ASIA PAC CE	9	6	9	7	10	9	10	60	8.6
9	US OTHER-ASIA PAC NO	25	23	22	24	27	27	26	174	24.9
10	CANADA-ASIA PAC NO	8	10	9	11	9	12	9	68	9.7
11	CANADA-ASIA PAC CE	4	4	5	4	6	4	6	33	4.7
15	ASIA PAC NO-ALASKA	49	31	36	50	52	51	47	316	45.1
16	ASIA PAC CE-ALASKA	3	3	4	11	7	9	10	47	6.7
17	ASIA PAC NO-HONOLULU	14	10	14	17	14	15	15	99	14.1
18	ASIA PAC CE-HONOLULU	0	0	1	0	0	0	0	1	0.1
20	ASIA PAC NO-US WEST	46	44	49	49	46	45	51	330	47.1
21	ASIA PAC CE-US WEST	11	11	11	10	11	11	10	75	10.7
23	ASIA PAC NO-US OTHER	31	32	32	29	33	30	37	224	32.0
24	ASIA PAC NO-CANADA	10	14	11	12	11	13	13	84	12.0
25	ASIA PAC CE-CANADA	5	3	3	7	3	7	5	33	4.7
	WESTBOUND - TOTAL	127	137	130	142	156	169	159	1 020	145.7
	EASTBOUND - TOTAL	169	148	161	185	177	181	188	1 209	172.7

TABLE B-2

PACIFIC DAILY TRAFFIC SUMMARY
WEEK BEGINNING JULY 1, 2008

	Route	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Average
1	ALASKA-ASIA PAC NO	30	30	28	20	28	33	27	196	28.0
2	ALASKA-ASIA PAC CE	11	10	5	7	7	7	8	55	7.9
3	HONOLULU-ASIA PAC NO	13	10	13	12	13	12	13	86	12.3
4	HONOLULU-ASIA PAC CE	0	0	0	2	2	1	0	5	0.7
6	US WEST-ASIA PAC NO	51	51	51	51	56	55	50	365	52.1
7	US WEST-ASIA PAC CE	17	15	10	13	12	10	13	90	12.9
9	US OTHER-ASIA PAC NO	33	28	25	29	31	28	33	207	29.6
10	CANADA-ASIA PAC NO	12	10	10	11	9	10	13	75	10.7
11	CANADA-ASIA PAC CE	8	7	5	6	6	5	4	41	5.9
15	ASIA PAC NO-ALASKA	53	39	37	51	53	50	59	342	48.9
16	ASIA PAC CE-ALASKA	12	9	15	13	11	11	11	82	11.7
17	ASIA PAC NO-HONOLULU	13	15	12	15	12	13	14	94	13.4
18	ASIA PAC CE-HONOLULU	0	0	0	1	1	0	1	3	0.4
20	ASIA PAC NO-US WEST	48	50	49	54	55	49	55	360	51.4
21	ASIA PAC CE-US WEST	13	13	13	13	12	12	12	88	12.6
23	ASIA PAC NO-US OTHER	33	30	39	34	33	27	35	231	33.0
24	ASIA PAC NO-CANADA	10	8	11	11	11	10	10	71	10.1
25	ASIA PAC CE-CANADA	5	4	6	6	5	5	5	36	5.1
	WESTBOUND - TOTAL	175	161	147	151	164	161	161	1 120	160.0
	EASTBOUND - TOTAL	187	168	182	198	193	177	202	1 307	186.7

TABLE B-3

PACIFIC AIRCRAFT CATEGORY SUMMARY
WEEK BEGINNING JULY 1, 2007

	Route	B747	A340	MD11	B777	B767	Other	Total
1	ALASKA-ASIA PAC NO	123	0	74	0	15	4	216
2	ALASKA-ASIA PAC CE	25	4	14	0	0	0	43
3	HONOLULU-ASIA PAC NO	61	3	2	19	13	11	109
4	HONOLULU-ASIA PAC CE	1	3	2	0	0	0	6
5	HONOLULU-ASIA PAC SO	0	0	0	0	0	0	0
6	US WEST-ASIA PAC NO	168	11	7	69	0	56	311
7	US WEST-ASIA PAC CE	45	12	0	3	0	0	60
8	US WEST-ASIA PAC SO	0	0	0	0	0	0	0
9	US OTHER-ASIA PAC NO	69	0	3	80	0	22	174
10	CANADA-ASIA PAC NO	22	12	0	5	14	15	68
11	CANADA-ASIA PAC CE	10	23	0	0	0	0	33
12	CANADA-HONOLULU	0	0	0	0	0	0	0
13	US MAINLAND-HONOLULU	0	0	0	0	0	0	0
14	CSA - HONOLULU	0	0	0	0	0	0	0
15	ASIA PAC NO-ALASKA	200	0	97	0	15	4	316
16	ASIA PAC CE-ALASKA	18	4	24	0	0	1	47
17	ASIA PAC NO-HONOLULU	56	2	0	20	12	9	99
18	ASIA PAC CE-HONOLULU	0	1	0	0	0	0	1
19	ASIA PAC SO-HONOLULU	0	0	0	0	0	0	0
20	ASIA PAC NO-US WEST	170	11	7	84	0	58	330
21	ASIA PAC CE-US WEST	56	16	0	3	0	0	75
22	ASIA PAC SO-US WEST	0	0	0	0	0	0	0
23	ASIA PAC NO-US OTHER	102	3	5	93	0	21	224
24	ASIA PAC NO-CANADA	24	20	0	11	14	15	84
25	ASIA PAC CE-CANADA	12	21	0	0	0	0	33
26	HONOLULU - CANADA	0	0	0	0	0	0	0
27	HONOLULU-US MAINLAND	0	0	0	0	0	0	0
28	HONOLULU - CSA	0	0	0	0	0	0	0
	WESTBOUND - TOTAL	524	68	102	176	42	108	1 020
	EASTBOUND - TOTAL	638	78	133	211	41	108	1 209

TABLE B-4

PACIFIC AIRCRAFT CATEGORY SUMMARY
WEEK BEGINNING JULY 1, 2008

	Route	B747	A340	MD11	B777	B767	Other	Total
1	ALASKA-ASIA PAC NO	109	0	63	0	16	8	196
2	ALASKA-ASIA PAC CE	38	4	10	0	2	1	55
3	HONOLULU-ASIA PAC NO	46	1	0	13	14	12	86
4	HONOLULU-ASIA PAC CE	0	1	3	0	0	1	5
5	HONOLULU-ASIA PAC SO	0	0	0	0	0	0	0
6	US WEST-ASIA PAC NO	170	12	7	94	1	81	365
7	US WEST-ASIA PAC CE	164	19	0	0	0	0	183
8	US WEST-ASIA PAC SO	0	0	0	0	0	0	0
9	US OTHER-ASIA PAC NO	0	0	3	91	0	20	114
10	CANADA-ASIA PAC NO	16	12	0	8	23	16	75
11	CANADA-ASIA PAC CE	9	28	0	2	0	2	41
12	CANADA-HONOLULU	0	0	0	0	0	0	0
13	US MAINLAND-HONOLULU	0	0	0	0	0	0	0
14	CSA - HONOLULU	0	0	0	0	0	0	0
15	ASIA PAC NO-ALASKA	226	0	93	0	19	4	342
16	ASIA PAC CE-ALASKA	54	6	21	0	0	1	82
17	ASIA PAC NO-HONOLULU	48	2	0	14	15	15	94
18	ASIA PAC CE-HONOLULU	0	1	0	0	0	2	3
19	ASIA PAC SO-HONOLULU	0	0	0	0	0	0	0
20	ASIA PAC NO-US WEST	155	11	5	101	0	88	360
21	ASIA PAC CE-US WEST	68	20	0	0	0	0	88
22	ASIA PAC SO-US WEST	0	0	0	0	0	0	0
23	ASIA PAC NO-US OTHER	96	7	5	97	0	26	231
24	ASIA PAC NO-CANADA	13	12	0	10	21	15	71
25	ASIA PAC CE-CANADA	7	27	0	0	0	2	36
26	HONOLULU - CANADA	0	0	0	0	0	0	0
27	HONOLULU-US MAINLAND	0	0	0	0	0	0	0
28	HONOLULU - CSA	0	0	0	0	0	0	0
	WESTBOUND - TOTAL	552	77	86	208	56	141	1 120
	EASTBOUND - TOTAL	667	86	124	222	55	153	1 307

TABLE B-5

PACIFIC BUSY HOUR REPORT
WEEK BEGINNING JULY 1, 2007

	Route	Hour	Day	Flts	Busiest hour and corresponding traffic by route																												
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Sum
1	ALASKA-ASIA PAC NO	3	7-Jul-07	7	7	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	1	0	0	0	0	17
2	ALASKA-ASIA PAC CE	4	2-Jul-07	2	3	2	2	0	0	5	0	0	2	0	0	0	0	0	1	0	0	0	0	1	1	0	5	2	0	0	0	0	24
3	HONOLULU-ASIA PAC NO	1	4-Jul-07	4	2	0	4	0	0	1	0	0	0	1	0	0	0	0	3	0	0	0	0	1	0	0	3	1	0	0	0	0	16
4	HONOLULU-ASIA PAC CE	3	1-Jul-07	1	0	0	2	1	0	2	0	0	0	1	0	0	0	0	1	0	0	0	0	2	1	0	3	0	0	0	0	0	13
5	HONOLULU-ASIA PAC SO	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	US WEST-ASIA PAC NO	5	1-Jul-07	9	1	0	3	0	0	9	1	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	23
7	US WEST-ASIA PAC CE	16	6-Jul-07	4	2	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	10
8	US WEST-ASIA PAC SO	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	US OTHER-ASIA PAC NO	7	7-Jul-07	7	0	0	1	0	0	6	0	0	7	1	0	0	0	0	3	3	0	0	0	5	2	0	5	0	0	0	0	0	33
10	CANADA-ASIA PAC NO	11	2-Jul-07	3	0	0	0	0	0	4	0	0	1	3	0	0	0	0	0	0	2	0	0	2	1	0	1	1	0	0	0	0	15
11	CANADA-ASIA PAC CE	8	1-Jul-07	1	3	0	0	0	0	0	0	0	5	0	1	0	0	0	0	1	0	0	0	4	2	0	4	0	1	0	0	0	21
12	CANADA-HONOLULU	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	US MAINLAND-HONOLULU	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	CSA - HONOLULU	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	ASIA PAC NO-ALASKA	11	7-Jul-07	11	0	1	1	0	0	1	0	0	1	0	0	0	0	0	11	0	2	0	0	1	0	0	3	2	0	0	0	0	23
16	ASIA PAC CE-ALASKA	7	4-Jul-07	3	0	0	1	0	0	5	0	0	2	3	0	0	0	0	4	3	0	0	0	4	2	0	5	0	4	0	0	0	33
17	ASIA PAC NO-HONOLULU	13	1-Jul-07	6	0	0	1	0	0	2	1	0	0	1	0	0	0	0	3	0	6	0	0	1	1	0	0	0	0	0	0	0	16
18	ASIA PAC CE-HONOLULU	5	3-Jul-07	1	2	0	2	0	0	4	0	0	2	3	0	0	0	0	0	0	0	1	0	2	0	0	3	1	0	0	0	0	20
19	ASIA PAC SO-HONOLULU	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	ASIA PAC NO-US WEST	9	2-Jul-07	13	2	0	0	0	0	1	0	0	2	1	0	0	0	0	3	0	0	0	0	13	0	0	0	1	1	0	0	0	24
21	ASIA PAC CE-US WEST	13	6-Jul-07	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	7	0	3	0	0	1	3	0	1	1	0	0	0	0	17
22	ASIA PAC SO-US WEST	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	ASIA PAC NO-US OTHER	4	2-Jul-07	5	3	2	2	0	0	5	0	0	2	0	0	0	0	0	1	0	0	0	0	1	1	0	5	2	0	0	0	0	24
24	ASIA PAC NO-CANADA	4	1-Jul-07	3	0	0	2	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	3	0	0	0	0	18

Busiest hour and corresponding traffic by route

	Route	Hour	Day	Flts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	**Sum**
25	ASIA PAC CE-CANADA	7	4-Jul-07	4	0	0	1	0	0	5	0	0	2	3	0	0	0	0	4	3	0	0	0	4	2	0	5	0	4	0	0	0	33
26	HONOLULU - CANADA	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	HONOLULU-US MAINLAND	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	HONOLULU - CSA	0	1-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WESTBOUND	8	7-Jul-07	20	3	2	0	0	0	8	1	0	3	2	1	0	0	0	3	1	0	0	0	6	1	0	5	0	2	0	0	0	38
	EASTBOUND	7	4-Jul-07	22	0	0	1	0	0	5	0	0	2	3	0	0	0	0	4	3	0	0	0	4	2	0	5	0	4	0	0	0	33

TABLE B-6

PACIFIC BUSY HOUR REPORT
WEEK BEGINNING JULY 1, 2008

					Busiest hour and corresponding traffic by route																										
	Route	**Hour**	**Day**	**Flts**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	**Sum**
1	ALASKA-ASIA PAC NO	1	04-Jul-08	6	6	1	1	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	16
2	ALASKA-ASIA PAC CE	3	06-Jul-07	3	1	3	2	0	0	4	0	0	0	0	1	0	0	0	1	0	0	0	0	2	1	0	5	0	0	0	0	0	20
3	HONOLULU-ASIA PAC NO	5	02-Jul-07	4	1	0	4	0	0	1	3	0	4	1	0	0	0	0	0	1	0	0	0	1	1	0	3	0	0	0	0	0	20
4	HONOLULU-ASIA PAC CE	3	02-Jul-07	1	1	0	1	1	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	0	1	2	0	0	0	0	13
5	HONOLULU-ASIA PAC SO	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	US WEST-ASIA PAC NO	8	05-Jul-07	12	1	1	0	0	0	12	0	0	5	0	0	0	0	0	4	1	0	0	0	7	1	0	5	1	0	0	0	0	38
7	US WEST-ASIA PAC CE	5	02-Jul-07	3	1	0	4	0	0	1	3	0	4	1	0	0	0	0	0	1	0	0	0	1	1	0	3	0	0	0	0	0	20
8	US WEST-ASIA PAC SO	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	US OTHER-ASIA PAC NO	7	01-Jul-07	12	1	0	0	0	0	4	0	0	12	2	0	0	0	0	3	5	0	0	0	2	1	0	6	0	1	0	0	0	37
10	CANADA-ASIA PAC NO	7	06-Jul-07	4	1	0	0	0	0	1	0	0	9	4	0	0	0	0	2	1	0	0	0	4	2	0	4	0	3	0	0	0	31
11	CANADA-ASIA PAC CE	15	02-Jul-07	2	0	0	0	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	7
12	CANADA-HONOLULU	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	US MAINLAND-HONOLULU	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	CSA - HONOLULU	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	ASIA PAC NO-ALASKA	21	05-Jul-07	11	2	0	0	0	0	2	0	0	0	0	1	0	0	0	11	0	1	0	0	2	0	0	3	0	0	0	0	0	22
16	ASIA PAC CE-ALASKA	7	01-Jul-07	5	1	0	0	0	0	4	0	0	12	2	0	0	0	0	3	5	0	0	0	2	1	0	6	0	1	0	0	0	37
17	ASIA PAC NO-HONOLULU	13	05-Jul-07	7	1	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	7	0	0	0	2	0	1	0	0	0	0	0	15
18	ASIA PAC CE-HONOLULU	8	02-Jul-07	1	0	0	0	0	0	9	0	0	2	1	0	0	0	0	3	0	0	1	0	6	1	0	4	0	1	0	0	0	28
19	ASIA PAC SO-HONOLULU	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	ASIA PAC NO-US WEST	8	01-Jul-07	9	1	1	0	0	0	7	0	0	3	1	0	0	0	0	3	0	0	0	0	9	2	0	2	0	1	0	0	0	30
21	ASIA PAC CE-US WEST	12	02-Jul-07	3	1	0	0	0	0	6	1	0	0	0	0	0	0	0	1	0	2	0	0	0	3	0	0	0	0	0	0	0	14
22	ASIA PAC SO-US WEST	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	ASIA PAC NO-US OTHER	7	01-Jul-07	6	1	0	0	0	0	4	0	0	12	2	0	0	0	0	3	5	0	0	0	2	1	0	6	0	1	0	0	0	37

	Route	Hour	Day	Flts	Busiest hour and corresponding traffic by route																											
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	**Sum**
24	ASIA PAC NO-CANADA	11	01-Jul-07	4	1	0	0	0	0	3	0	0	1	0	0	0	0	0	5	1	1	0	0	1	0	0	1	4	0	0	0	0	18
25	ASIA PAC CE-CANADA	7	06-Jul-07	3	1	0	0	0	0	1	0	0	9	4	0	0	0	0	2	1	0	0	0	4	2	0	4	0	3	0	0	0	31
26	HONOLULU - CANADA	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	HONOLULU-US MAINLAND	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	HONOLULU - CSA	0	01-Jul-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WESTBOUND	7	02-Jul-07	20	0	1	0	0	0	7	0	0	9	3	0	0	0	0	2	5	1	0	0	3	2	0	3	0	1	0	0	0	37
	EASTBOUND	7	07-Jul-07	20	0	1	0	0	0	4	1	0	7	2	0	0	0	0	4	2	0	0	0	4	3	0	5	0	2	0	0	0	35

APPENDIX C

TABLE C-1

TRANSPACIFIC TRAFFIC: ROUTE AREA CODES

Region Code	Market Region	Region Code	Market Region
AK	Alaska	CAN	Canada
HA	Hawaii	APN	Asia Pacific Northern
USW	Conterminous US West Coast	APC	Asia Pacific Central
USO	Conterminous US Other	APS	Asia Pacific Southern

ID	Location	Region Code	ID Code	Location	Region Code
AB	Australia	APS	RJ	Japan	APN
AD	Australia	APS	RK	Korea, Rep of	APN
AG	Solomon Island	APS	RO	Japan (Ryukyu Island)	APN
AM	Australia	APS	RP	Philippines	APC
AN	Naura	APS	U	Russian Federation	APN
AP	Australia	APS	VA	India	APC
AS	Australia	APS	VB	Myanmar	APC
AY	Papua New Guinea	APS	VC	Sri Lanka	APC
C	Canada	CAN	VD	Cambodia	APC
CU	Canada	CAN	VE	India	APC
CW	Canada	CAN	VG	Bangladesh	APC
CY	Canada	CAN	VH	Hong Kong	APC
CZ	Canada	CAN	VI	India	APC
K	Conterminous US	USW, USO**	VL	Laos	APC
NC	Cook Island	APS	VM	Macao	APC
NF	Fiji, Tonga	APS	VN	Nepal	APC
NG	Kiribati, Tuvalu	APS	VO	India	APC
NI	Niue I	APS	VQ	Bhutan	APC
NL	Wallis I, Futuna I	APS	VR	Maldives	APC
NS	Samoa, American Samoa	APS	VT	Thailand	APC
NT	French Polynesia	APS	VV	Vietnam	APC
NV	Vanuatu	APS	WA	Indonesia	APC
NW	New Caledonia	APS	WB	Brunei Darussalam, Malaysia	APC
NZ	New Zealand	APS	WI	Indonesia	APC
PA	Alaska	AK	WM	Malaysia	APC
PB	Baker I (APC), Barter I (AK)	APC	WP	East Timor	APC
PC	Phoenix Island	APC	WR	Indonesia	APC
PF	Alaska	AK	WS	Singapore	APC
PG	Mariana Island, Guam	APC	ZB	China	APN
PH	Hawaii	HA	ZG	China	APN
PJ	Johnston I	APC	ZH	China	APN
PK	Marshall Is	APC	ZK	Korea, Dem People's Rep of	APN
PL	Line I, Kiribati	APC	ZL	China	APN
PM	Midway Island	APC	ZM	Mongolia	APN
PO	Alaska	AK	ZP	China	APN
PP	Alaska	AK	ZS	China	APN
PT	Micronesia	APC	ZU	China	APN
PW	Wake I	APC	ZW	China	APN
RC	China	APN	ZY	China	APN

****** Per Conterminous US: Airports located in California, Oregon and Washington States are assigned to the Conterminous US West Coast (USW) region; other airports are assigned to Conterminous US Other (USO) region.

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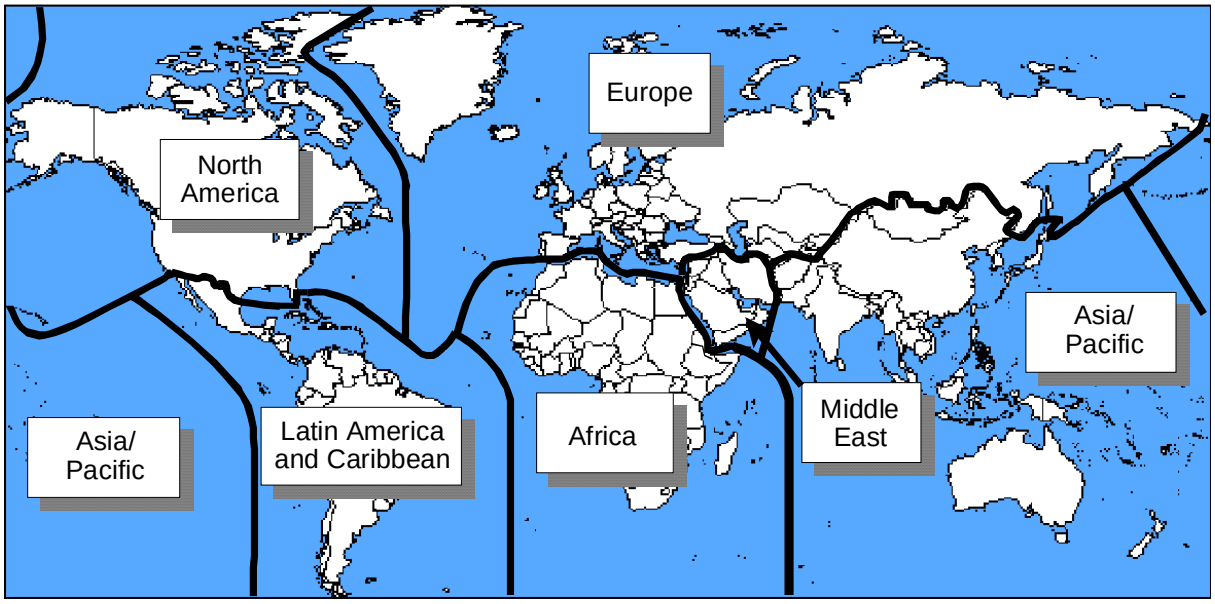
APPENDIX D

ICAO STATISTICAL REGIONS



International boundaries shown on this map do not imply official endorsement or acceptance by ICAO.

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