PRELIMINARY AIRCRAFT MOVEMENT FORECASTS FOR THE MIDDLE EAST REGION (2000 - 2015)

PREPARED BY:
FORECASTING AND ECONOMIC PLANNING SECTION
INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)

C:\My Documents\CNS-ATM-IC-SG-1\CNS-ATM-IC-1-REPORT\CNS-IC1-Rep on Agenda Item 3- App3C-MID-Forecasts3 upto 2015.wpd

October 2001

1. INTRODUCTION

1.1 The ICAO Middle East region Traffic Forecasting Group (MER TFG) was formed in 1997 with the objective of developing traffic forecasts and other planning parameters required for the planning of Air Navigation Services in the MIDANPIRG region. A uniform strategy has been adopted by ICAO for the purpose of preparing traffic forecasts in support of the regional planning process. This involves the establishment of a small group of forecasting and planning experts in each of the ICAO regions.

1.2 The main purpose of the MER TFG is to support the planning of air navigation services in the MIDANPIRG region. Traffic forecasts and peak-period planning parameters are important in anticipating where and when airspace and airport congestion occur. It is then possible to plan for the required expansion of capacity. These forecasts also have an important role in planning the implementation of CNS/ATM systems components. The primary users of the forecasts developed by the MER TFG are expected to be member states of ICAO, ATC service providers in the region, and MIDANPIRG, the ICAO regional planning and implementation group for the Middle East region.

1.3 At its second meeting held in Cairo from 7-9 September 1998, the group was informed of the forecast requirements of the CNS/ATM Sub-Group of MIDANPIRG. The group discussed this issue in detail and agreed that they would not be able to respond to this request prior to the forthcoming MIDANPIRG meeting. However, the MER TFG welcomed ICAO s offer to prepare preliminary forecasts, in lieu of its own work.

1.4 A special Meeting of Middle East Regional Traffic Forecasting Group was held in Cairo on 22 February 2001, following the Advanced Seminar on Traffic Forecasting held from 19 to 21 February. The meeting reviewed the composition, terms of reference and work programme of the Group.

1.5 It was agreed that the following tasks shall constitute the Group s future work programme:

i) Identify the major route groups to, from, and within the region;
ii) Research and gather traffic, economic, demographic, and other relevant data required for the development of forecasts;
iii) Develop medium and long-term passenger and aircraft movement forecasts for the major route groups to, from, and within the region;
iv) Expand the forecasts to meet the requirements for MIDANPIRG; and
v) Provide other inputs as requested by MIDANPIRG.

1.6 The meeting also discussed the requirements identified by MIDANPIRG and its subsidiary bodies. With respect to data requirements identified by other sub-groups concerned, it was agreed that for data collection purposes related to peak period analysis and forecasts, the week 1-7 July 2000 will be used and that data will be obtained from Jeddah, Cairo, Bahrain, Amman, Tehran and Emirates FIRs.

1.7 The Secretariat presented the meeting with detailed city pair aircraft movements developed using data from the Official Airline Guide. It was felt that this data should be reviewed by members of the Group. Accordingly, the Secretariat transmitted city-pair data in electronic form for review by the members of the Group.

1.8 The Group emphasized the need for a full meeting of the MER TFG prior to the next meeting of MIDANPIRG, scheduled to be held from 21 to 25 January 2001. The next meeting of the MER TFG is scheduled to be held from 15 to 18 January 2001, immediately before the meeting of the MIDANPIRG. The meeting will be conducted in two sections, the first part being an advanced training seminar/workshop followed by the meeting of the group.

1.9 This paper provides forecasts prepared by ICAO in support of the CNS/ATM requirements of MIDANPIRG. **It should be noted that these forecasts do not take into account the possible effects of the events of 11 September 2001 in the United States. It is too early to estimate their impact on traffic trends, which might well be more significant on the medium term growth than the long term forecast. It is assumed at present that the impact of these events on the long-term horizon will be minimal.**

2. GLOBAL OUTLOOK

2.1 Economic Trends and Prospects

2.1.1 The demand for air passenger travel is primarily determined by income levels and demographics, and the cost of air travel. World energy prices are critically important both to economic progress and to the cost of travel. Hence, the airline industry is highly vulnerable to economic cycles and fluctuations in fuel prices.

2.1.2 Between 1980 and 1999, the aggregate world economy measured in terms of Gross Domestic Product (GDP) grew at an average annual rate of 2.9 per cent in real terms. Growth rates varied across regions. World population growth between 1980 and 1999 increased at an average annual rate of 1.6 per cent. Hence, growth of the world sGDP per capita between 1980 and 1999 increased at an average annual rate of 1.3 per cent, significantly lower than the growth of GDP itself.

2.1.3 There appears to be consensus among economic forecasters that the world economic and financial conditions remain generally encouraging and the global economy will continue to expand over the medium term, although rising crude oil prices may have a dampening effect. Based on strong recovery in 1999, the world economic activity is expected to pick up to around 3.9 per cent in the year 2000 and continue to grow at over 3 per cent in 2001 and 2002. Over the long period up to 2010, the world economy is projected to grow at an average annual rate of 2.5 per cent in real terms.

2.1.4 For the forecast period, the airline industry faces substantial inflationary pressure on operating costs, particularly in the areas of labour and capital. The prospects for airline yields are closely related to cost developments and market conditions in the airline industry. Cost items under particular scrutiny at present are fuel and oil; ticketing, sales and promotion (notably in connection with product distribution); and general/administrative expenses. Productivity improvements in the airline industry should continue to produce some cost savings. However, the magnitude of improvements in cost efficiency resulting from fleet developments is likely to be significantly less than in the past due to high capital cost of new aircraft and the increase in cost of financing.

2.1.5 For the forecast period, airline yields are expected to decline at an average annual rate of 0.5 per cent in real terms for the 1999-2004 period and to remain stable for the following six years in real terms.

2.2 Historical Traffic Trends

2.2.1 World airline scheduled traffic, measured in terms of passenger-kilometres performed, grew at an average annual rate of 5.0 per cent between 1980 and 1999. World airline freight traffic measured in terms of tonne- kilometres grew at an average rate of 7.1 per cent per annum.

2.2.2 Air transport has for many years experienced greater growth than most other economic sectors. Increasing demand for passenger and freight services, rapid technological development and associated investment have combined to multiply the output of the industry by a factor of over 29 since 1960 (in terms of tonne-kilometres performed). To put this in perspective, the total world Gross Domestic Product (GDP) expressed in real terms, which is the broadest available measure of world output, has multiplied by 4 times over the same period. Total revenues generated by the world airlines increased tenfold during the same period.

2.2.3 While growth in world air traffic has been much greater than world economic growth, economic theory and analytical studies indicate that there is a high correlation between the two and that the demand for air transport is primarily determined by economic development. Developments 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.

2.2.4 Other factors which have affected traffic demand include changes in airline costs, and hence fares and rates, availability of air services, regulatory developments and tourism. Rapid growth in the 1960s coincided with the replacement of piston-engined aircraft with jet aircraft which led to reduced real fares and increased speed and comfort of travel. Sharp changes in oil prices have had important effects on traffic demand. In addition to an adverse effect on the world economy, the ten-fold increase in crude oil prices in 1973-74, and further escalation in 1979-81 (since ameliorated), greatly increased aviation fuel prices and hence air fares and rates.

2.2.5 The growth experienced by the total demand for air transport has been shared by each of its major components - passenger, freight and mail traffic.

2.3 Air Passenger Traffic Forecast

2.3.1 The global and regional scheduled passenger traffic forecasts for 2001, 2002 and 2003, and over the period to 2010 have been developed based on economic and yield assumptions and other considerations. General economic performance is expected to provide the main support for traffic demand. Global passenger traffic is expected to grow by 5.2, 5.6 and 5.8 per cent for the years 2001, 2002 and 2003, respectively. The long term forecast over the period to the year 2010 provides for an average annual increase of 4.5 per cent.

3. OUTLOOK FOR THE MIDDLE EAST REGION

3.1 Economic Trends and Prospects

3.1.1 The Middle East economy has been characterized by several pronounced cycles over the past decade. The oil-producing countries in the region suffered from declines in crude oil prices during the 1980s and from the effects of the Gulf War in 1990-1991. With a return to political and economic stability in the region, GDP growth recovered quite strongly in 1992. Continuous growth, though varying in strength, was sustained in the following five seven years. From 1989 to 1999, the aggregate GDP for the Middle East grew at an average annual rate of 3.2 per cent in real terms, while GDP per capita leveled off at 0.5 per cent per annum. In 2000, the economy of the region was boosted by higher oil prices combined with increased oil production and grew by an impressive 6.4 per cent, the highest rate among other regions.

3.1.2 The projected moderate decline in oil prices during the forecast period appears to be generally manageable by the Middle East economies partly due to gains from higher oil prices in the previous year. They are expected to grow, in aggregate, at 3.7, 4.2 and 4.3 per cent in 2001, 2002 and 2003, respectively. The GDP for the region is expected to increase at an average annual rate of 2.5 per cent for the period 1999-2010.

3.2 Air Passenger Traffic Trends and Forecast

3.2.1 Over the 1989-1999 period, scheduled passenger traffic (in PKPs) of the airlines of the Middle East region increased at an average annual rate of 5.9 per cent. Traffic growth has been reasonably buoyant since the declines in 1990 and 1991 associated primarily with the Gulf War. The year 2000 witnessed an impressive growth of traffic at 11.0 per cent over 1999.

3.2.2 Scheduled passenger traffic for the airlines of the Middle East region is expected to grow by 5.5 per cent per annum in 2001, 6.0 per cent in 2002 and 6.1 per cent in 2003. These rates reflect an expected good economic performance in the region. The long term average annual growth rate to the year 2010 is anticipated to be 4.5 per cent.

4. PRELIMINARY FORECASTS OF PASSENGER TRAFFIC FOR MAJOR ROUTE GROUPS TO, FROM AND WITHIN THE MIDDLE EAST REGION

4.1 Geographical Scope

4.1.1 In order to facilitate the group swork and the forecasting process, the following major route groups to, from and within the Middle East Region have been identified:

Between Middle East - Europe
Between Middle East - Africa
Between Middle East - Asia/Pacific
Between Middle East - North America
Intra Middle East

4.2 Historical Passengers Traffic on Major Identified Route Groups

4.2.1 It is estimated that the air traffic on the identified five major route groups to, from and within the Middle East region increased from some 20.0 million in 1993 to 32.4 million passengers in 1999 at an average annual growth rate of 8.4 per cent. The annual passengers carried and growth rates for each of the route groups concerned are illustrated in **Table 1**.

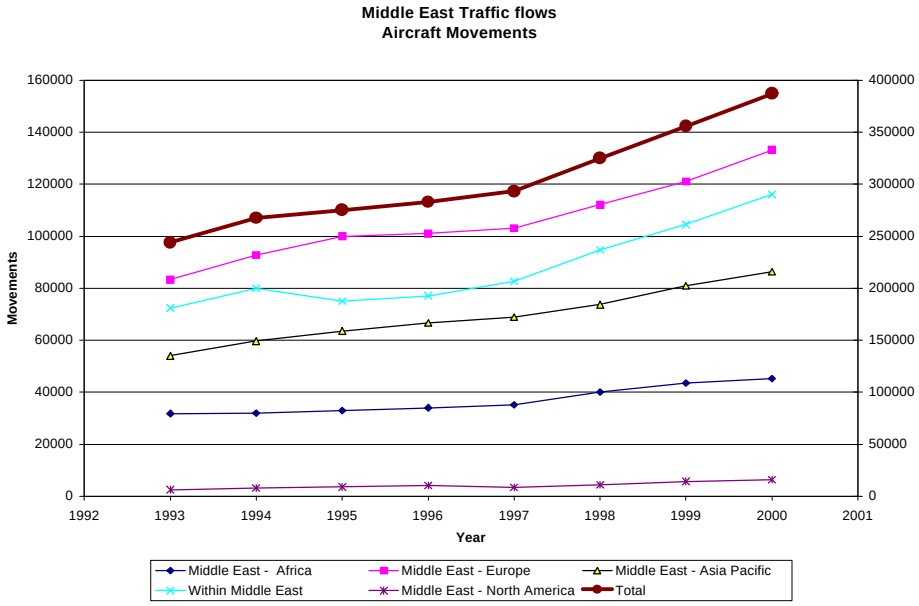
TABLE 1
Traffic By Major Flows - 1993 -1999

	1993	1994	1995	1996	1997	1998	1999	Average Annual Growth (1993-99) (%)
AFR-MEA	3,192	3,412	3,419	3,703	3,955	4113	4179	
Growth (%)		6.9	0.2	8.3	6.8	4.0	1.6	4.6
ASIA-MEA	5,339	6,369	7,561	8,180	8,786	9181	9870	
Growth (%)		19.3	18.7	8.2	7.4	4.5	7.5	10.8
EUR-MEA	8,300	8,342	8,959	9,917	10,542	11490	12008	
Growth (%)		0.5	7.4	10.7	6.3	9.0	4.5	6.3
INTRA MEA	1,873	2,600	3,036	3,413	3,952	5190	5304	
Growth (%)		38.8	16.8	12.4	15.8	31.3	2.2	18.9
NAM-MEA	1,300		1,398	1,318	1,362	1040	1081	
Growth (%)				-5.7	3.3	-23.6	3.9	-3.0
TOTAL	20,004	20,723	24,373	26,532	28,597	31014	32442	
Growth (%)		3.6	17.6	8.9	7.8	8.5	4.6	8.4

4.2.2 In 1999, the highest passenger share occurred in the Middle East-Europe route group, followed by Middle East-Asia, Intra Middle East, Middle East-Africa, and Middle East-North America route groups.

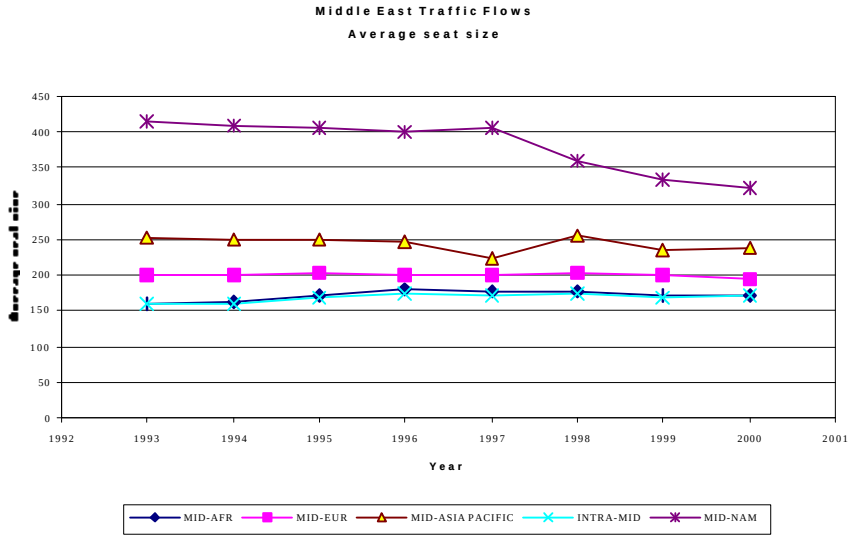
4.3 Historical Movements Traffic on Major Identified Route Groups

The graph below illustrates the trend in aircraft movements on the major route groups from 1993 to 2000 (using OAG data). The graph shows a similar growth pattern for the three major route-groups: Middle East - Europe, Within the Middle East and Middle East - Asia Pacific. From 1993 to 2000, movements on these route groups grew at average rates of 6.1%, 6.7% and 6.5% respectively.



4.4 **Historical Average Aircraft Seat Size on Major Identified Route Groups**

The average aircraft seat size had slightly decreased (less than 1%) on the Middle East - Europe and Middle East -Asia Pacific route groups during the 1993-2000 period. It had increased by 1% on the Middle East - Africa and Intra-Middle East route groups and decreased by around 4% on the Middle East - North America route group.



4.5 Historical Load Factor on Major Identified Route Groups

Load Factor grew by around 1% on the Middle East - Europe and Intra-Middle East route groups and fell by around 1% on the Middle East-North America route group. It was almost unchanged on the other two route-groups.

4.6 Regional Economic Trends

Middle East

4.6.1 The economic trends and prospects for the Middle East region have been discussed under paragraphs 3.1.1 and 3.1.2.

Asia/Pacific

4.6.2 Following a strong and rapid recovery from the recent regional crisis, growth in the majority of developing countries of Asia weakened towards the end of 2000 and in early 2001 as a result of higher oil prices, slowdown in the U.S. economy, the downturn of the global economic cycle and, in the case of some countries, the lagging pace of corporate and financial restructuring. Also, the Japanese economy which showed improvement in its performance in 2000 has been experiencing a setback to its recovery in the early months of 2001. Although the setback reflects the slowdown in other parts of the world, it also results from continued weak consumer confidence and underlying structural weakness, especially in corporate and financial sectors.

4.6.3 In view of these developments, Asia/Pacific GDP expressed in real terms is projected to grow at 3.6 per cent in 2001and improve in 2002 and 2003, with expected growth rates of 4.0 and 4.3 per cent, respectively. For the 1999-2010 period, it is anticipated that the region s economy will experience an average growth rate of 2.2 per cent.

Europe

The beginning of the present decade witnessed a decline in the economic growth of the aggregate European economy due mainly to the serious decline in the Central and Eastern Europe and CIS economies. Despite a recovery in recent years, the aggregate GDP per capita for the whole region (including the CIS) declined by about 0.5 per cent during the 1989-1999 period.

The slowdown of growth in the Western European economies witnessed towards the end of 2000 is projected to continue in the first half of 2001. Central and Eastern European countries are expected to experience a sustained growth in 2001, although they will be vulnerable to the slowdown in Western Europe. The recent impressive improvement in the economic performance of the countries of the CIS is projected to moderate in 2001. The aggregate European economy is expected to grow at 2.8 per cent in 2001. It is projected to improve slightly in 2002 with the GDP growth of 2.9 per cent. For 2003 the economic growth of the region is forecast at 2.8 per cent. For the 1999-2010 period, it is expected that the region will experience an average annual growth rate of 1.5 per cent.

North America

4.6.4 During the 1989-1999 period, the North American economy grew at an average annual rate of 2.8 per cent and GDP per capita increased at 1.9 per cent. For the 1999-2010 period, it is foreseen that the region will experience an average annual growth rate of 3 per cent.

4.6.5 **Table 2** depicts the trends in the economic growth rates for the period 1993-1999.

TABLE 2

GDP GROWTHS OF RESPECTIVE REGIONS
(Per Cent)

	1993	1994	1995	1996	1997	1998	1999
NAM	3.0	3.6	2.0	2.6	3.8	4.2	4.2
EUR	-3.2	0.1	2.0	2.5	2.8	2.5	2.3
ASIA/PAC	3.7	4.3	5.0	3.3	2.1	-0.3	3.5
AFR	1.1	2.4	2.9	5.0	3.4	3.1	2.7
MEA	3.8	1.6	3.8	5.2	3.2	2.7	2.5

5. METHODOLOGY

5.1 The demand for air travel is primarily determined by economic developments, notably the growth of world and regional income levels as measured by the aggregate economic activities (GDP), demographic trends, and the cost of air travel measured by airline yields (gross passenger revenue per passenger kilometre flown). It is also assumed that the political and general economic climate are conducive to growth, however, no specific assumptions are made about possible political and economic scenarios beyond those implicit in the basic GDP growth rates forecast. World energy demand, supply, and prices are important to both economic progress and to the cost of air travel. It is assumed that during the forecast period there will be no major disruptions in the availability of fuel, or significant fluctuations in fuel costs for the airlines.

5.2 Econometric models were developed wherever possible to understand the cause and effect relationship between traffic and other causal factors. It was recognized, however, that even where models were developed, the forecasts should incorporate a significant element of judgement.

5.3 In route groups where consistent data were not available, forecasts were developed based on general assessments of traffic trends, economic and other relevant factors.

5.4 Forecasts of aircraft movements in a particular route-group can be derived from forecasts of passengers and assumptions about future trends in load factors and average aircraft size. The link between these variables is given by:

$$\text{Aircraft movements} = \frac{\text{passenger numbers}}{(\text{passenger/seats}) \,.\, (\text{seats/aircraft})}$$

$$= \frac{\text{passenger numbers}}{(\text{load factor}) \,.\, (\text{aircraft size})}$$

5.5 Judgements would be necessary about whether gradual improvements in load factors could be expected from marketing initiatives and yield programs. Assumptions were made about future trends in average aircraft size based on expectations about the types of aircraft that might be introduced to the route over the forecast period. Historical trends as well as data concerning aircraft orders were also factored into the development of future trends.

5.6 Having established the aircraft movement growth rates for each of the route-groups concerned, in the manner described above, aircraft movements forecasts for the year 2010 were estimated. These forecasts were developed for each of the major route groups concerned using the 2000 OAG (Official Airline Guide) data as the base year.

5.7 Aircraft movement forecasts were allocated to each of the city-pair within particular route groups, taking into account traffic service patterns, types of aircraft, demographics and other pertinent factors. The aggregate of all the traffic flow within the route group concerned was adjusted as necessary so that the aggregate of all intermediate traffic flows within the route group matches the average growth of the total flow.

5.7 Preliminary Passenger Traffic Forecasts

5.7.1 Based on the methodology described above, passenger traffic forecasts were developed for the major route groups concerned. The traffic to, from and within the Middle East region on the five major route groups concerned for the period 1999-2010 is expected to increase at an average annual rate of 6.8 per cent. The Intra-Middle East route group is expected to experience the highest average annual growth rate of 10 per cent per annum, followed by Asia/Pacific-Middle East, Europe-Middle East, Africa-Middle East and North America-Middle East route groups with growth rates of 7 per cent, 6 per cent, 4.2 per cent and 4 per cent respectively for the period concerned as illustrated in **Table 3**.

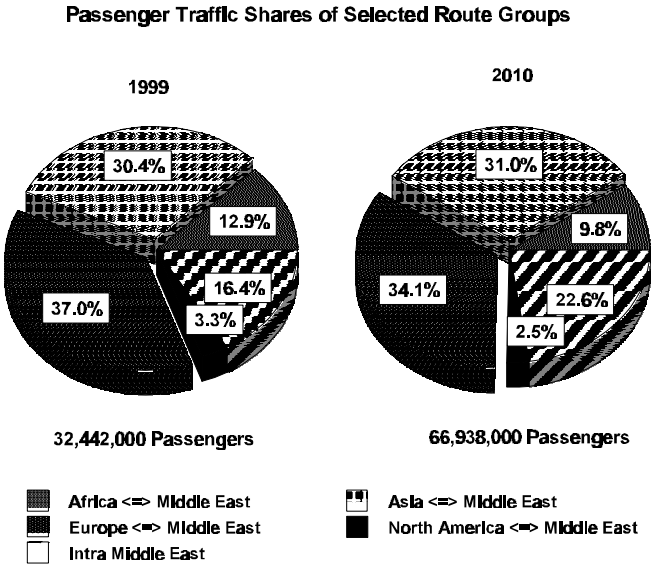
TABLE 3

PASSENGER FORECAST TO THE YEAR 2010

	1999	2000	2001	2002	2003	2005	2010	Average annual growth (%) 1998-2005
AFR-MEA	4,179	4,355	4,537	4,728	4,927	5,349	6,571	4.2
ASIA-MEA	9,870	10,561	11,300	12,091	12,938	14,812	20,775	7.0
EUR-MEA	12,008	12,728	13,492	14,302	15,160	17,034	22,795	6.0
INTRA MEA	5,304	5,834	6,418	7,060	7,766	9,396	15,133	10.0
NAM-MEA	1,081	1,124	1,169	1,216	1,265	1,368	1,664	4.0
TOTAL	32,442	34,603	36,917	39,396	42,054	47,959	66,938	6.8
Excl. NAM-MEA	31,361	33,478	35,748	38,180	40,790	46,591	65,273	6.9

5.7.2 These forecasts result in the change of the passenger traffic share for the year 2010 as depicted in **Figure 2**.

FIGURE 2



6. FORECASTS OF AIRCRAFT MOVEMENTS

6.1 Using the methodology described above, movement forecasts for the major route groups for the 2000-2010 are depicted in Table 6.

6.2 The historical trends in load factors and average seats for the route groups concerned as well as expectations of future load factors and trends in average seats are described in **Tables 4 and 5** respectively.

TABLE 4

LOAD FACTORS FORECASTS TO THE YEAR 2010

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010
AFR-MEA	57.5	56.4	57.2	58.9	58.9	59.5	58.5	59.1	59.7	60.3	60.9	62.1	65.3
ASIA-MEA	66.2	63.3	63.8	61.5	65.4	67.5	66.1	66.4	66.8	67.1	67.4	68.1	69.8
EUR-MEA	62.2	59.7	60	63.8	65.9	66.2	65.9	66.2	66.6	66.9	67.2	67.9	69.6
INTRA MEA	56.9	55.9	58.4	60.2	58.3	65.1	58.9	59.5	60.1	60.7	61.3	62.5	65.7
NAM-MEA	49.9	0	0	67	71.7	67.8	66.5	66.8	67.2	67.5	67.8	68.5	70.3

TABLE 5

AVERAGE AIRCRAFT SIZE FORECAST TO THE YEAR 2010

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2005	2010
AFR-MEA	161	162	171	179	177	176	170	171	171	171	171	171	171
ASIA-MEA	251	249	249	246	224	256	236	239	239	239	239	239	239
EUR-MEA	200	201	202	200	201	202	199	196	196	196	196	196	196
INTRA MEA	158	161	168	173	172	174	169	171	171	171	171	171	171
NAM-MEA	415	409	406	400	406	360	333	322	322	322	322	322	322

6.3 The estimated aircraft movement growth rates for the respective route groups are given in **Table 6**.

TABLE 6

AIRCRAFT MOVEMENTS FORECAST TO THE YEAR 2015

	2000 (000)	2010 (000)	Average Annual Growth (%)
			2000-2010
AFR-MEA	45.2	62.0	3.2
ASIA-MEA	86.3	162.0	6.5
EUR-MEA	133.2	227.5	5.5
INTRA MEA	116.0	228.2	7.0
NAM-MEA	6.3	9.3	4.0
Total	387.0	689.0	5.9

7. Aircraft movement forecasts for 2010-2015

7.1 The aircraft movement forecasts for the period 2010-2015 were developed assuming some maturity in growth for the route groups concerned. Consequently, the aircraft movement forecast growth rates are projected to be somewhat lower for the period 2010-2015 horizon. These aircraft movements forecasts are shown in **Table 7**.

TABLE 7

AIRCRAFT MOVEMENTS FORECAST TO THE YEAR 2015

	2000 (000)	2010 (000)	2015 (000)	Average Annual Growth (%)	
				2000-2010	2010-2015
AFR-MEA	45.2	62.0	70.8	3.2	2.7
ASIA-MEA	86.3	162.0	211.8	6.5	5.5
EUR-MEA	133.2	227.5	283.5	5.5	4.5
INTRA MEA	116.0	228.2	305.4	7.0	6.0
NAM-MEA	6.3	9.3	11.1	4.0	3.5
Total	387.0	689.0	882.6	5.9	5.1

7.2 Using the 2000 OAG Data as the base year, movement forecasts for the top 25 city-pairs for each of the regions for the years 2010 and 2015 are depicted. The forecasts for the rest of the city-pairs are aggregated into one figure, and included as others in each of the tables. The city-pairs are ranked by descending order based on 2000 departures. The movement forecasts for the city-pairs of the route groups concerned are given in **Tables 8 to 11**.

TABLE 8

BETWEEN MIDDLE EAST AND AFRICA
TOP 25 CITY PAIRS RANKED BY 2000 DEPARTURES

City Codes	City Pairs	2000 Departures	2010	2015
CAIJED	Cairo-Jeddah	4673	5866	6413
CAIKWI	Cairo-Kuwait	2094	2430	2554
CAIRUH	Cairo-Riyadh	1854	2590	2988
DXBNBO	Dubai-Nairobi	1775	2757	3354
BEYCAI	Beirut-Cairo	1774	2755	3352
CAIDXB	Cairo-Dubai	1586	1841	1935
AMMCAI	Amman-Cairo	1500	2016	2226
CAIDOH	Cairo-Doha	1347	1846	2109
CAITLV	Cairo-Tel Aviv	1077	1406	1567
JEDKRT	Jeddah-Khartoum	1047	1215	1277
AUHCAI	Abu Dhabi-Cairo	966	1403	1650
CAISAH	Cairo-Sanaa	858	1176	1343
CAIDMM	Cairo-Damman	840	1151	1315
ALYJED	Alexandria-Jeddah	834	1235	1431
CAIDAM	Cairo-Damascus	764	978	1080
BAHCAI	Bahrain-Cairo	756	1119	1297
CMNJED	Casablanca-Jeddah	733	1138	1385
ADDJED	Addis Ababa-Jeddah	726	976	1104
DXBJNB	Dubai-Johannesburg	720	1173	1462
ASMJED	Asmara-Jeddah	714	1163	1449
JEDJIB	Jeddah-Djibouti	629	977	1188
KWILXR	Kuwait-Luxor	596	899	1078
CAIGZA	Cairo-Gaza	580	795	908
KRTRUH	Khartoum-Riyadh	519	806	981
	TOTAL TOP 25	28962	39709	45446
	OTHER	16274	22275	25370
	TOTAL	45236	61984	70816

TABLE 9

BETWEEN MIDDLE EAST AND ASIA/PACIFIC
TOP 25 CITY PAIRS RANKED BY 2000 DEPARTURES

		2000	2010	2015
City Codes	City PairsDepartures			
DXBKHI	Dubai-Karachi	5297	9486	12107
BOMDXB	Bombay-Dubai	3197	4732	5621
BOMMCT	Bombay-Muscat	2132	3311	3838
DXBSIN	Dubai-Singapore	1888	3381	4315
CMBDXB	Colombo-Dubai	1481	1896	2093
BKKDXB	Bangkok-Dubai	1449	1855	2048
KHIMCT	Karachi-Muscat	1445	1850	2042
JEDKHI	Jeddah-Karachi	1398	1790	1976
DACDXB	Dhaka-Dubai	1337	2968	4066
AUHBOM	Abu Dhabi-Bombay	1317	1686	1861
AUHKHI	Abu Dhabi-Karachi	1214	1554	1716
DELDXB	Delhi-Dubai	1128	1591	1845
DXBPEW	Dubai-Peshawar	1107	3438	5537
BOMKWI	Bombay-Kuwait	1084	1529	1773
DXBLHE	Dubai-Lahore	1070	2775	4270
BOMRUH	Bombay-Riyadh	998	2473	3634
MAAMCT	Madras-Muscat	998	3100	4992
DXBMLE	Dubai-Male	994	3087	4972
DXBISB	Dubai-Islamabad	900	2555	3932
MCTTRV	Muscat-Trivandrum	897	1461	1778
BAHBOM	Bahrain-Bombay	883	2742	4417
DACRUH	Dhaka-Riyadh	855	2656	4277
BOMDMM	Bombay-Damman	840	1577	2061
DMMKHI	Damman-Karachi	823	1545	2019
BOMSHJ	Bombay-Sharjah	808	1665	2282
	TOTAL TOP 25	35540	66703	89470
	OTHER	50778	95328	122298
	TOTAL	86318	162031	211768

TABLE 10

BETWEEN MIDDLE EAST AND EUROPE
TOP 25 CITY PAIRS RANKED BY 2000 DEPARTURES

		2000	2010	2015
City Codes	City PairsDepartures			
DXBLHR	Dubai-London (LHR)	4812	7989	9956
ATHLCA	Athens-Larnaca	4146	6196	7183
ECNIST	Ercan-Istanbul	2652	4118	4891
BEYCDG	Beirut-Paris (CDG)	2232	4600	6303
LCALHR	Larnaca-London (LHR)	2190	2943	3330
CDGTLV	Paris (CDG)-Tel Aviv	2131	3471	4223
FRATLV	Frankfurt-Tel Aviv	2115	3285	3901
DXBFRA	Dubai-Frankfurt	2107	3335	4000
BAHLHR	Bahrain-London	2064	2642	2917
CDGDXB	Paris (CDG)-Dubai	2047	4219	5780
LHRTLV	London (LHR)-Tel Aviv	2013	2577	2845
TLVZRH	Tel Aviv-Zurich	1977	3220	3918
AUHLHR	Abu Dhabi-London	1921	4343	6235
ISTTLV	Istanbul-Tel Aviv	1817	3411	4458
MXPTLV	Milan-Tel Aviv	1794	4247	6240
FCOTLV	Rome-Tel Aviv	1728	2106	2269
SVOTLV	Moscow-Tel Aviv	1725	4084	6000
KWILHR	Kuwait-London (LHR)	1476	2292	2722
DXBIST	Dubai-Istanbul	1468	2756	3602
BEYLHR	Beirut-London	1428	3083	4324
AMSTLV	Amsterdam-Tel Aviv	1418	2612	3334
BRUTLV	Brussels-Tel Aviv	1360	2553	3337
BCNTLV	Barcelona-Tel Aviv	1173	2202	2878
JEDLHR	Jeddah-London (LHR)	1153	1707	1979
TLVVIE	Tel Aviv-Vienna	1141	1689	1958
	TOTAL TOP 25	50088	85681	108583
	OTHER	83094	141813	174916
	TOTAL	133182	227494	283499

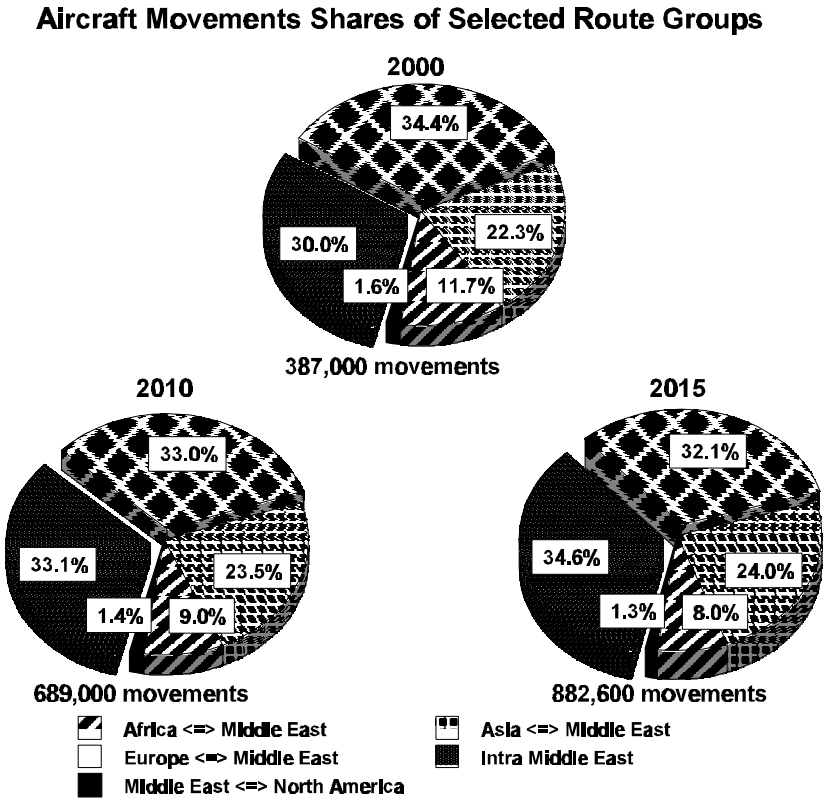
TABLE 11

INTRA MIDDLE EAST
TOP 25 CITY PAIRS RANKED BY 2000 DEPARTURES

City Codes	City PairsDepartures	2000	2010	2015
DXBMCT	Dubai-Muscat	9420	21103	30155
BAHDOH	Bahrain-Doha	6681	10475	12441
BAHDXB	Bahrain-Dubai	5922	13390	19222
DOHDXB	Doha-Dubai	5660	14027	21091
AUHDOH	Abu Dhabi-Doha	5156	8399	10218
AUHMCT	Abu Dhabi-Muscat	4884	10544	14789
DXBKWI	Dubai-Kuwait	4034	6891	8587
AUHBAH	Abu Dhabi-Bahrain	3720	4999	5520
DXBTHR	Dubai-Tehran	2890	7162	10769
BAHKWI	Bahrain-Kuwait	2502	3110	3434
LCATLV	Larnaca-Tel Aviv	1957	4850	7293
AMMBEY	Amman-Beirut	1827	4131	5930
BEYKWI	Beirut-Kuwait	1776	4016	5765
DAMKWI	Damascus-Kuwait	1446	2140	2481
DXBRUH	Dubai-Riyadh	1425	2434	3033
BEYDXB	Beirut-Dubai	1338	2758	3778
AMMDXB	Amman-Dubai	1327	2735	3747
AUHRUH	Abu Dhabi-Riyadh	1303	2946	4229
KWIRUH	Kuwait-Riyadh	1251	1525	1684
DOHKWI	Doha-Kuwait	1223	1810	2099
BEYJED	Beirut-Jeddah	1222	2763	3967
BAHMCT	Bahrain-Muscat	1221	1989	2420
AMMDOH	Amman-Doha	1197	2966	4461
BEYLCA	Beirut-Larnaca	1193	2038	2539
DOHMCT	Doha-Muscat	1178	1919	2335
	TOTAL TOP 25	71753	141119	191988
	OTHER	44273	87122	113450
	TOTAL	116026	228241	305438

6.5 The total aircraft movements to/from and within the Middle East region are estimated to increase from some 387 000 in 2000 to around 690 000 in 2010 at an average annual growth rate of 5.9 per cent. The resulting movements shares for the years 2000 and 2010 are depicted in **Figure 3**.

FIGURE 3



- END -