International Civil Aviation Organization
North American, Central American and Caribbean Office (NACC)
Tenth Meeting of Directors of Civil Aviation of the Central Caribbean (C/CAR/DCA/10)
Grand Cayman, Cayman Islands, 18 to 21 August 2009

Agenda Item 9: Air Transport Matters
9.4 ICAO Statistics Activities

SCOPE OF THE ICAO STATISTICS ACTIVITIES

(Presented by the Secretariat)

SUMMARY

The purpose of this paper is to provide a description of ICAO statistical activities carried out by the Economic Analyses and Databases (EAD) Section.

References:

- Doc 7300, *Convention on International Civil Aviation*,
- Report of the Fourteenth Meeting of the Statistics Panel
- Air Transport Reporting Forms

Strategic Objectives	This working paper is related to Strategic Objectives A, C and D.

1. BACKGROUND

1.1 The need for complete, comprehensive and reliable aviation statistics was recognized at the Chicago Convention in 1944 and Article 67[1] defines the ICAO mandate to collect data from each Contracting State. In parallel, Article 54 is asking the Council to request, collect, examine and publish information relating to the operation of international air services, while Article 55 is stipulating that the Council may conduct research into all aspects of air transport which are of international importance and communicate the results of its research to the Contracting States.

1.2 In addition to the frame settled by the Chicago Convention, the ICAO Statistics Programme is addressed in Appendix B of Assembly Resolution A36-15, Consolidated statement of continuing ICAO policies in the air transport field. More specifically, the Council is requested to, *inter alia*, examine on a regular basis the statistical data (referring to "statistics on airline operations") collected by ICAO in order to meet more effectively the needs of the Organization and its Contracting States and to establish the necessary metrics to monitor the performance of the Organization in meeting its Strategic Objectives, notably Efficiency and Environment.

[1] Each Contracting State undertakes that its international airlines shall, in accordance with requirements laid down by the Council, file with the Council traffic reports, cost statistics and financial statements showing among other things all receipts and the sources thereof.

2. COLLECTION AND DISSEMINATION OF STATISTICS

2.1 Administration and management of the programme

2.1.1 The regular Statistics Programme of ICAO is established and administered by the Council whose authority is required for any modification in the structure and content of the programme. Normally, modifications to the programme whether additions, deletions or other adjustments, are on a regular basis considered by the Council on the recommendation of its subsidiary body, the Air Transport Committee (ATC). The Committee makes its recommendations by taking into account the proposals of its two advisory bodies on statistical matters, the Statistics Division and the Statistics Panel.

2.1.2 All Contracting States are invited to participate in the Statistics Division which is convened to review and make recommendations on the entire Statistics Programme. The forthcoming Tenth Session of the Statistics Division (STA/10), to be held at ICAO Headquarters in Montréal from 23 to 27 November 2009, will carry out a comprehensive review of the current Statistics Programme in order to provide recommendations to the Council, by taking into account the conclusions of the Fourteenth Meeting of the Statistics Panel (STAP/14) convened in March 2009.

2.1.3 The Air Transport Bureau (ATB) is responsible for the management of the Statistics Programme, as well as for studying the needs of users and capabilities of providers to assist the Council in adjusting this programme as required by changing circumstances. This function involves the timely collection, processing, analysis, estimation, and dissemination of civil aviation data relating to commercial air carriers, airports and air navigation services, civil aircraft on register and aircraft accident rates.

2.2 Contents of the current Statistics Programme

2.2.1 Statistics of **commercial air carriers** (i.e., scheduled airlines and non-scheduled operators) are collected in a number of subject areas, the scope and frequency varying according to the size of the operator (in terms of traffic or fleet) and the types of services provided. The following data collected for commercial air carriers are available on-line:

Traffic: These statistics are collected in Form A on a monthly or annual basis, according to the size of the carrier, and they provide measures of aircraft activity, passenger, freight and mail traffic, for both scheduled and non-scheduled services of the airline.

Form A-S, similar in content to Form A, collects the total commercial air carrier traffic and capacity data produced by the air carriers of a State. The main purpose of Form A-S is to capture additional operational information for each State, in particular, those related to aircraft kilometres, departures and hours flown. Such data are important when assessing the needs for airspace, airport and air navigation systems and the rate of aircraft accidents.

Fleet and Personnel: Annual data collected in Form D cover the number, capacity and utilization for each type of aircraft in the airline's fleet and expenditures for personnel, by category.

Financial Data: The revenues and expenses of airlines and their assets and liabilities are reported annually in Form EF.

Traffic flow: Two series of traffic flow statistics are collected in respect of the international scheduled services of airlines, i.e., on-flight origin and destination (Form B) on a quarterly basis and traffic by flight stage (Form C) on an annual basis.

2.2.2 For **international airports**, selected by States in accordance with an established formula, monthly traffic statistics are collected in quarterly reports (Form I). Data collected through Form I is restricted to the main international airports of a State, and hence do not cover the over-all airport system of a State. Therefore, a summary traffic data for all the airports in a State are collected in Form I-S. In parallel, airport financial data (revenues, expenses and net capital investments) are reported in Form J.

2.2.3 The financial data relating to **air navigation services** (revenues, expenses and net capital investments) are collected annually in Form K. Corresponding traffic statistics (number of flights moving through a FIR/UIR) are collected in Form L.

2.2.4 Contracting States have been reporting the number of **civil aircraft on the national register** as of 31 December each year since 1961 in Form H.

2.2.5 It is noteworthy that since September 2002, ICAO implemented the Integrated Statistical Database (ISDB) system to collect, process and disseminate all the aviation statistics submitted by Contracting States through the ICAO Statistics Programme. As the new database is web-enabled, ICAO Contracting States and regional organizations are able to access the data therein via the Internet, through a standard browser.

3. COLLECTION OF NEW DATA: STAP/14 RECOMMENDATIONS

3.1 Having noted the level of implementation of STA/9 recommendations, the panel reviewed the Statistics Programme and acknowledged events both within the Organization and in the world at large, necessitating the review of the Organization's data requirements. The adjustments recommended by STAP/14 include improvements in the existing collection, analysis and dissemination of data through active participation of Contracting States, cooperation and coordination with other organizations, the adoption of new ICAO classifications and definitions, as well as new data collections.

3.2 Aircraft accidents and serious incidents

3.2.1 The panel reviewed the current practice adopted by the Organization in the collection of accidents and serious incidents data and the benefits that will flow from introducing a new Air Transport Reporting Form GS to collect data and recommended collection of such data on an annual basis.

3.3 Civilian licensed personnel data

3.3.1 As air traffic is growing, the demand is increasing for licensed personnel (pilots, maintenance personnel, engineers and air traffic controllers). It is essential to estimate current and future requirements for licensed personnel on active duty and corresponding training capacity in Contracting States in order to lay the groundwork for human resources development and planning, institutional capacity building as well as related funding and policy measures. The new data will give ICAO the ability to quantify the status as well as potential surplus or shortage of personnel and/or institutional capacities and to take adequate, timely measures to address these human resources and training issues on the one hand, to adverse effects of these shortcomings on the safety of airline operations on the other hand. A new form for data collection on licensed personnel and training capacity on an annual basis was recommended.

3.4 New ICAO database on aircraft movements

3.4.1 An implementation of a global database on aircraft movements across Flight Information Regions (FIRs) and Upper Flight Information Regions (UIRs) was proposed. It was noted that the availability of such a database was critical to various analyses needed in support of civil aviation infrastructure planning and policy advisory and that the establishment of such a database would enhance the contribution of the Statistics Programme to the Organization's ability to measure the achievement of its Strategic Objectives with regard to safety, environmental protection and efficiency. It was also noted that the implementation of the proposed database would require active support from Contracting States, ANSPs and their affiliates.

3.5 Fuel consumption by commercial air carriers

3.5.1 In view of the growing importance of aviation environmental protection issues, it appears that ICAO, Contracting States and other civil aviation stakeholders need time-series data on aviation fuel consumption in order to support the broad range of analyses requested. As ICAO plays a leading role in the aviation environmental protection, it is therefore imperative that the Organization maintains a reliable database on fuel consumption. These data are required to evaluate the effectiveness of the various measures introduced to improve aircraft technology, the efficiency of the different air traffic management (ATM) initiatives implemented, to monitor the environmental policies and to develop performance indicators to follow-up the progress towards the fuel efficiency goals settled.

4. ASSISTANCE TO CONTRACTING STATES

4.1 Several Statistics Divisions considered that benefits might be derived from short visits to States by experts in aviation statistics, who would study the local circumstances, determine necessary statistical functions and provide initial guidance to airlines, airports and government personnel in carrying out these functions. It was notably recognized that many States need manpower training and short-term expert assistance for the organization and development of their aviation statistics.

4.2 Statistical workshops are conducted by ICAO in different regions of the world and they constitute a continuous, systematic effort to improve the quality of aviation statistics. These informal workshops, normally scheduled at a rate of one a year, provide those responsible in administrations, airlines and airports for the preparation of statistics for ICAO, an opportunity to work out solutions to practical problems through pooling of experience and ideas.

4.3 In the most recent development, EAD implemented a short-term familiarization and training programme called on-the-job statistical training provided at ICAO Headquarters. Delegates from Brazil, Dominican Republic, Romania and a large number of African States have already used this opportunity which is open to all ICAO Contracting States.

5. STATISTICS, FORECAST AND ANALYSES RELATED TO THE CAR/SAM REGIONS

5.1 Traffic trends of the Latin America and Caribbean airlines

5.1.1 During the past decade (1998-2008), scheduled traffic of the Latin American and Caribbean region airlines, measured in terms of passenger–kilometres performed, grew at an average annual rate of about 3.4 per cent, compared to 5.0 per cent for the total world, reaching over 189 billion passenger-kms by 2008 (see **Appendix**). Traffic growth was volatile over this period. After experiencing declining growth rates in 2001 (1 per cent) and 2002 (3 per cent), the region's airlines air traffic recovered in 2004 when it posted a growth of 9.6 per cent. The momentum continued into the following year with a growth of 6.4 per cent in 2005. After another decline of 0.2 per cent in 2006, traffic bounced back in 2007 and 2008, supported by a better economic environment, and attained a growth rate of 9 per cent and 10 per cent respectively, during these two years.

5.2 Traffic trends of the Latin America and Caribbean airports

5.2.1 The picture in the Latin American and Caribbean region in airport traffic looked brighter than in most other regions in the year 2008, with positive growth higher than the world average. With the surge in GDP increases, decrease in poverty and booming commodity markets, airports in the Latin American and Caribbean region handled more passengers, while passengers and especially freight traffic in most of the other regions declined. Brazil, Mexico, Colombia and Argentina were the main contributors to the volume of airport traffic with 19 busiest airports out of 25 situated in these States (see **Appendix** to this Information Paper**)**.

5.3 Forecasts of the Latin America and Caribbean airlines

5.3.1 In 2009, 2010 and 2011, according to the latest ICAO medium-term forecasts, traffic growth is expected to grow at the rates of 5.3, 7.5 and 8 per cent, respectively. According to the long-term forecasts developed in 2006 for the world and the regions, the total scheduled traffic of the airlines registered in Latin America/Caribbean region is projected to grow at an annual average rate of 5 per cent until the year 2025, slightly above the world average projected growth of 4.6 per cent. Similarly, for the same period, the freight traffic of the region's airlines is projected to grow at an average annual rate of 4.9 per cent, compared to the world projected freight traffic growth of 6.6 per cent.

5.3.2 It should be noted that ICAO is already using the available FIRs data of some States to produce peak-periods profiles, in order to support planning and better management of FIR traffic. At the last CAR/SAM Traffic Forecasting Group (TFG) meeting, a sample of peak-periods' parameters was produced from the FIR data provided by COCESNA covering their Member States. These various analyses of yearly, daily and hourly FIR traffic are part of the CAR/SAM TFG report published in November 2008.

— — — — — — — —

APPENDIX

DEVELOPMENT OF TRAFFIC IN CAR/SAM REGIONS

FORECASTS OF SCHEDULED PASSENGER TRAFFIC TO THE YEAR 2025 FOR AIRLINES OF THE LATIN AMERICA/CARIBBEAN REGION

	Passenger-Kilometres (Billions)			**Average Annual Growth (Per Cent)**	
	Actual		Forecast	Actual	Forecast
	1985	2005	2025	1985-2005	2005-2025
International	36.5	95.1	260	4.9	5.2
Domestic	31.8	64.1	150	3.6	4.3
Total CAR/SAM	68.3	159.2	410	4.8	5.0
World	1 365.6	3 719.7	9 180	5.1	4.6

	Freight Tonne-Kilometres (Millions)			**Average Annual Growth (Per Cent)**	
	Actual		Forecast	Actual	Forecast
	1985	2005	2025	1985-2005	2005-2025
International	1 487	3 777	10 600	4.8	4.9
Domestic	618	790	1 400	1.2	2.9
Total CAR/SAM	2 105	4 567	12 000	3.9	4.9
World	38 813	142 579	510 000	6.6	6.6

PASSENGER TRAFFIC OF SCHEDULED AIRLINES
1998-2008

	Passenger-kilometres (millions)		Average Annual Growth (%)
	1998	**2008**	**1998-2008**
Latin America/Caribbean Airlines	135 221	189 664	3.4
International	82 224	105 886	2.6
Domestic	52 997	83 778	4.7
North America	1042 299	1385 766	2.9
International	310 325	453 701	3.9
Domestic	731 974	93 2065	2.4
World	2628 115	4282 869	5.0
International	1512 037	2639 088	5.7
Domestic	1116 078	164 3781	3.9

FREIGHT TRAFFIC OF SCHEDULED AIRLINES
1998-2008

	Freight tonne-kilometres (millions)		Average Annual Growth (%)
	1998	**2008**	**1998-2008**
Latin America/Caribbean Airlines	4 742	5 272	1.1
International	3 984	4 131	0.4
Domestic	758	1 141	4.2
North America	27 417	40 702	4.0
International	17 011	23 511	3.3
Domestic	10 406	17 191	5.1
World	101 818	156 309	4.4
International	87 051	130 886	4.2
Domestic	14 767	25 423	5.6

PASSENGER TRAFFIC THROUGH AIRPORTS

	Passengers (thousands) **2008**	**Growth** (%) **2007-2008**
Latin America/Caribbean Airports		
International	105 057	3.6
Total	334 560	2.0
North America		
International	197 336	2.1
Total	1 505 050	-2.9
World		
International	1 972 255	2.0
Total	4 649 241	-0.2

TOP 25 CAR/SAM AIRPORTS RANKED BY TOTAL PASSENGERS, 2008

	Country	City	Airport	Code	Passengers	Freight (tonnes)	Aircraft Movements
1	MEXICO	MEXICO CITY	BENITO JUAREZ INTL	MEX	26 210 217	382 461	366 561
2	BRAZIL	SAO PAULO	GUARULHOS INTL	GRU	20 997 813	475 209	194 184
3	BRAZIL	SAO PAULO	CONGONHAS	CGH	13 656 239	32 519	186 679
4	COLOMBIA	BOGOTA	EL DORADO	BOG	13 456 331	578 812	248 816
5	MEXICO	CANCUN	CANCUN INTL	CUN	12 786 423	16 496	121 397
6	BRAZIL	RIO DE JANEIRO	GALEAO - ANTONIO CARLOS JOBIM	GIG	11 052 911	118 753	130 597
7	BRAZIL	BRASILIA	PRES. JUSCELINO KUBITSCHEK	BSB	10 892 330	56 619	141 477
8	PUERTO RICO	SAN JUAN	LUIS MUÑOZ MARIN INTL	SJU	9 874 134	217 907	181 840
9	CHILE	SANTIAGO	ARTURO MERINO BENITEZ	SCL	9 005 199	298 249	101 103
10	VENEZUELA	CARACAS	SIMON BOLIVAR	CCS	8 680 000	88 000	143 800
11	PERU	LIMA	JORGE CHAVEZ INTL	LIM	8 301 907	239 112	98 733
12	ARGENTINA	BUENOS AIRES	MINISTRO PISTARINI	EZE	8 012 794	205 506	71 037
13	MEXICO	GUADALAJARA	MIGUEL HIDALGO	GDL	7 393 500	113 340	152 353
14	MEXICO	MONTERREY	GRAL.MARIANO ESCOBEDO	MTY	6 742 781	40 979	110 150
15	BRAZIL	SALVADOR	LUIS R. MAGALHAES	SSA	6 709 575	58 148	95 804
16	ARGENTINA	BUENOS AIRES	AEROPARQUE JORGE NEWBERY	AEP	5 687 221	14 690	85 793
17	BRAZIL	RECIFE	GUARARAPES INTL	REC	5 133 530	57 264	64 625
18	BRAZIL	PORTO ALEGRE	SALGADO FILHO	POA	5 118 833	31 601	72 445
19	BRAZIL	BELO HORIZONTE	TANCREDO NEVES INTL	CNF	5 036 700	21 608	59 544
20	BRAZIL	CURITIBA	CURITIBA	CWB	4 747 827	26 072	69 076
21	ECUADOR	QUITO	MARISCAL SUCRE	UIO	4 645 761	143 503	78 164
22	PANAMA	PANAMA CITY	TOCUMEN INTL	PTY	4 539 145	86 203	79 903
23	BRAZIL	CONFREZA	CONFREZA	CFO	4 340 129	25 602	55 491
24	MEXICO	TIJUANA	GEN. RODRIGUEZ	TIJ	4 000 988	15 166	55 105
25	BRAZIL	FORTALEZA	FORTALEZA	FOR	3 744 198	36 153	47 703

— END —