INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASSEMBLY — 35TH SESSION

ECONOMIC COMMISSION

Agenda Item 30: Other air transport issues

REPORT BY THE COUNCIL ON THE INTEGRATED STATISTICAL DATABASE (ISDB)

SUMMARY

This paper reports on the status of implementation of the ICAO Integrated Statistical Database (ISDB) since 2001 and on the development of the Aviation Statistics Web site. A proposed amendment to the relevant section of Assembly Resolution A33-19 is shown in the Appendix.

Action by the Assembly is in paragraph 6.

REFERENCES

Doc 9703, *Report of the Ninth Session of the Statistics Division*
State letter EC 7/1.4-04/4 dated 27 February 2004

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1.   **INTRODUCTION**

1.1   Since the 33rd Session of the Assembly, ICAO has completed the development, testing and implementation of the new Integrated Statistical Database (ISDB). As of September 2002, the new system has been used to process, validate and disseminate the civil aviation statistics ICAO collects through its regular statistics programme. The purpose of this paper is to provide information on the new ISDB established by the Organization.

1.2   The new database is Web-enabled, and since January 2004 ICAO Contracting States, as well as regional civil aviation organizations such as the Arab Civil Aviation Commission (ACAC), the African Civil Aviation Commission (AFCAC), the European Civil Aviation Conference (ECAC) and the Latin American Civil Aviation Commission (LACAC), have been able to access the data in the ISDB on the ICAO Secure Net (icaosec.icao.int) through a standard Web browser. States were advised of the administrative procedures to register for access to the new system through State letter EC 7/1.4-04/4 dated 27 February 2004.

2.   **BACKGROUND**

2.1   The ICAO statistics programme was initiated in 1947. Since then changes have been made from time to time to the programme by adding, deleting or amending certain data series. Computerization of the statistics programme was carried out during the 1970s. The earliest data available in electronic form (air carrier traffic) cover the year 1968. Other electronic data series have more recent dates. At present, the statistics programme covers 10 data series (air carrier traffic, on-flight origin and destination (OFOD), traffic by flight stage (TFS), air carrier fleet and personnel, air carrier finances, airport traffic, airport finances, en-route facility traffic, en-route facility finances, and civil aircraft on register).

2.2   During the 1990s, the data for the statistics programme became fragmented into various types of data files and systems. For example, some data were processed using Excel, some using Fox-Pro, while one was still being processed in the mainframe. Although this had a limited impact on the production of individual digests, it created serious difficulties when trying to reply to enquiries (particularly where historical series were concerned) and carrying out data cross-checks among the various related programmes. In view of this situation, in 1999 it was decided that there was a need to bring all the data sets into a single integrated database.

2.3   Work on the analysis and design of the new system was initiated in May 2000. Following a report prepared by consultants, in December 2000 the Council approved the development, testing and implementation of the new database. Work on this second phase of the project was initiated in June 2001 and the new system was put into production in September 2002.

3.   **THE ISDB SYSTEM**

3.1   A main feature of the ISDB is the tracking system which follows each reporting form from the moment it is received by ICAO until it is finally loaded into the database. Hence, even though the data reception, data entry, analysis and validation appear as three distinct functions, these are intimately related to each other through the data tracking function. At the same time, it should be noted that the reference tables are an integral part of the verification of some of the identifiers (e.g. air carrier, State, currency, aircraft type, etc.) associated with the data during the data entry process.

3.2   Once the data have been entered and accepted by the system, they are placed in a temporary database where a number of quality control checks are carried out prior to finally loading the data into the ISDB. The new system performs checks within the same data set to see if they are within reasonable values. For example, using air traffic carrier data it calculates average aircraft speed, average stage length, average passenger weight, etc. It also compares data with previous submissions such as the previous month and/or previous year, as well as across data sets, such as between the air carrier traffic and the on-flight origin and destination figures to ensure that the data are homogeneous. Where the analyst notes deviations or "errors" detected by the system in the data submitted, States or other reporting entities will be asked to provide a clarification and, if necessary, resubmit amended data.

3.3   On the output side of the ISDB, the system has a data warehouse containing tables which make it easier for casual users to access the information and speed-up the query process. These tables are updated on a daily basis with new data which have been entered in the ISDB. At present the tables which form part of the data warehouse represent the main data series and, where necessary, they also include data that are cross-referenced to allow certain analysis to be carried out (e.g. the tables corresponding to the

financial data where possible also have the corresponding traffic data). More tables may be added on the basis of the type of queries which are most often addressed to the system.

3.4   Users from within ICAO can access the data warehouse using Oracle Discoverer which allows them to easily combine or disaggregate the data. External users have access to the data through pre-prepared reports where the user selects a few of the elements required (e.g. by selecting the time period, entity or geographical area, and one or more data parameters) to generate a report which can then be downloaded into a spreadsheet.

3.5   Data are entered into the ISDB as they are being received, validated by ICAO and thereafter become available on-line to be accessed by the users. Such a system greatly enhances the potential use of the statistical data collected by ICAO. Users no longer have to wait for the data to be published in a Statistical Digest to have access to it. As a consequence, this will reduce ICAO's need to print statistical publications thus cutting printing and shipping costs associated with this programme.

3.6   Timely access to data should also encourage States and reporting entities to submit their statistics in a more timely fashion. States which do not already have their own civil aviation statistical databases can now benefit from the ICAO system to access data pertaining to their own reporting entities. Regional civil aviation organizations can have access as well to the statistics for their reporting entities without the need to create a similar system for their Member States.

3.7   At present, access to the Aviation Statistics Web site is free of charge and limited to officials of national administrations of ICAO Contracting States and regional civil aviation organizations. Towards the end of 2004, ICAO will offer, to third party users, access to the database subject to payment. Eventually, third party users will purchase *ad hoc* reports on the Internet on a "self-service" basis, selecting the data they require, obtaining a price quotation for the selected items and paying for the individual selections.

4.   **CONCLUSION**

4.1   The ISDB represents a major effort by ICAO to provide Contracting States as well as the air transport industry at large with up-to-date and reliable worldwide civil aviation statistics. However, if States are to take advantage of the potential benefits which the new system offers they need to ensure that they file statistical reports in a timely manner in accordance with Articles 54 (i), 55 (c) and 67 of the *Convention on International Civil Aviation* (Doc 7300) and Appendix B of Assembly Resolution A33-19 — *Consolidated statement of continuing ICAO policies in the air transport field.* It is therefore proposed that the Assembly may wish to modify the text of Resolution A33-19 to bring the new ICAO database to the attention of States and to promote its use. The proposed revisions to the relevant parts of the Resolution (Appendix B, Statistics) are shown in the Appendix to this paper.

5.   **FINANCIAL IMPACT OF THE PROPOSED ACTION[1]**

5.1   Implementation of the ISDB will be undertaken within the resources available under Programme 3.7, Statistics, of the draft Programme Budget 2005-2007. This Programme has been reduced by one Professional post. Other staff reductions in the General Service category are likely to be implemented through attrition in the 2008-2010 triennium.

5.2   As a result of implementing the ISDB and making available the data collected through the ICAO Statistics Programme on-line via the Internet, it will no longer be necessary for the Organization to produce Digests of Statistics in hard copy form. There are expected to be significant savings in printing and shipping costs related to these publications. At present, these savings are not quantifiable.

5.3   Once implemented, on-line third party access to the ISDB is likely to bring additional revenues to the Organization during the new triennium, and beyond. At present, these revenues are not quantifiable.

6.   **ACTION BY THE ASSEMBLY**

6.1   The Assembly is invited to note this paper and review the text in the Appendix with a view to its adoption under Agenda Item 31.

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[1] This information is presented only to indicate the estimated financial impact of the proposed action. The funds allocated to this proposed action will depend upon the final form of the Programme Budget of the Organization for 2005-2006-2007 approved by the Assembly.

APPENDIX

**PROPOSED AMENDMENT TO APPENDIX B OF ASSEMBLY RESOLUTION A33-19:
CONSOLIDATED STATEMENT OF CONTINUING ICAO POLICIES
IN THE AIR TRANSPORT FIELD**

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APPENDIX B

Statistics

Whereas each Contracting State has undertaken that its international airlines shall file the statistics requested by the Council in accordance with Article 67 of the Convention;

Whereas the Council has also laid down requirements for statistics on domestic airline operations, international airports, and international route facilities, pursuant to Articles 54 and 55 of the Convention;

Whereas ICAO has developed an integrated statistical database in order to provide to Contracting States and other users an efficient online system for the validation, storage and retrieval of statistical data;

Whereas a number of Contracting States have still not filed, or have not filed completely, the statistics requested by the Council; and

Whereas cooperation amongst international organizations active in the area of collection and distribution of aviation statistics may enable reduction in the burden of filing statistics;

The Assembly:

1. *Urges* Contracting States to make every effort to provide the statistics required with the least possible delay and on time, and to submit them electronically whenever possible;

2. *Requests* the Council, calling on statistical and accounting experts as required, to examine the statistical problems of Contracting States and ICAO in order to meet more effectively the needs of the Organization and to improve the uniformity of the statistics, the completeness and timeliness of reporting by Contracting States, the form and content of analyses and publications, and the speed of dissemination by the Organization; and

3. *Requests* the Council to:

   a) continue to explore ways of closer co-operation with other international organizations active in the collection and distribution of aviation statistics; and

b) make arrangements, on an appropriate basis, for assistance to be given upon request to Contracting States by personnel of the Secretariat for the improvement of their civil aviation statistics and their statistical reporting to the Organization.

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