



WORKING PAPER

TENTH SESSION OF THE STATISTICS DIVISION

Montréal, 23 to 27 November 2009

Agenda Item 8: Civil aircraft on register and data collection on equipages and ground equipment

CIVIL AIRCRAFT ON REGISTER

(Presented by the Secretariat)

SUMMARY

In December 2006, the Council approved in principle the *Rules for the Provision of Pertinent Data Concerning Aircraft Registered in a State Pursuant to Article 21 of the Convention on International Civil Aviation*, thus establishing the conditions for a new database being developed in ICAO which would cover information of individual civil aircraft on register by their nationality and registration marks. This database could be used by ICAO to derive aggregate data on civil aircraft on register similar to those currently being collected through Form H. In view of this, the division is invited to consider the conditions under which the collection of civil aircraft on register data through form H might be discontinued.

Action by the division is in paragraph 4.

1. INTRODUCTION

1.1 The Digest of Statistics on Civil Aircraft on Register first appeared in 1961. These data are collected through the Air Transport Reporting Form H, which has remained unaltered since its first use (Appendix A). At inception, some 70 Contracting States participated in this data collection, but the number has decreased to little more than half that number over the last decade due to a large extent, to the difficulty some States with a large number of aircraft have in completing this form in its current format which requires differentiation of the reported data between commercial and other operators and which has to be filled manually by most Contracting States.

1.2 The sources of the data to be submitted on Form H are the national civil aircraft registers. The information contained in the Certificate of Registration is defined in Annex 7 — *Aircraft Nationality and Registration Marks*, to the Convention on International Civil Aviation (see Appendix B to this paper), though some States may maintain additional information. The main problem with Form H is the need to identify aircraft by commercial and other operators as this information is not required for registration of an aircraft.

1.3 The purpose of this paper is to review an alternative source of data to be developed in cooperation with an external entity which in the near future, (together with a comprehensive aircraft characteristics reference file maintained for the ISDB), would provide most of the information presented in Form H thus eliminating the need for States to continue to submit this Reporting Form as part of the ICAO Statistics Programme.

2. BACKGROUND

2.1 In March 2001, through an exchange of letters, ICAO entered into an arrangement with the International Register of Civil Aircraft (IRCA)¹ which already maintains a database containing approximately seventy per cent of aircraft registered in the world. Under this arrangement, IRCA committed to develop its system in order to meet ICAO needs and provide their data to all its Contracting States at no cost. IRCA also sells this information to parties other than ICAO Contracting States and provides royalties to ICAO. On its own part, ICAO has encouraged States to use this service (State letter EC 7/4.1-01/54 of 15 June 2001).

2.2 New data requirements

2.2.1 The President of the Council, during his opening address at the 169th Session of the Air Navigation Commission (April 2005), suggested that the Commission, with the support of the Secretariat, study Article 21 (*Report of registrations*) of the Convention on International Civil Aviation (see text in Appendix C) with a view to developing guidelines and procedures for States to follow which will further increase transparency in the interest of safety.

2.2.2 The President also cited the Report of the Panel of Experts to the Committee established pursuant to Resolution 1343 (2001), paragraph 19 concerning Liberia, which was submitted to the United Nations Security Council. In this report, the panel found “illegally registered aircraft an endemic problem” and recommended, *inter alia*, that ICAO Contracting States computerize their registration lists and centralize them on an ICAO website so that users could check the situation and status of each aircraft.

2.2.3 The establishment of a system that would provide direct access to pertinent aircraft registration data from States, pursuant to Article 21, would be consistent with Assembly Resolution A36-2 (*Unified strategy to resolve safety-related deficiencies*) in which the Assembly directs the Council to further develop practical means to facilitate the sharing of such safety information among Contracting States.

2.2.4 In December 2006, the Council approved in principle the *Rules for the Provision of Pertinent Data Concerning Aircraft Registered in a State Pursuant to Article 21 of the Convention on International Civil Aviation*, subject to a review prior to launching the new Web site to ensure that there are no conflicts between the Rules and the application as developed.

2.3 Implementation

2.3.1 In order to implement the new database the Secretariat examined various options, among them the possibility to cooperate with an external entity that already has an existing database containing similar information. It was noted that since 2001, ICAO has a cooperative agreement with IRCA. The latter already has an application to collect and restructure data from the national registers of individual

¹ Published by Bureau Veritas (France), the Civil Aviation Authority - CAA (United Kingdom) and the Ente Nazionale per l'Aviazione Civile – ENAC (Italy). The data published by IRCA are available at <http://www.aviation-register.com/english/>. ICAO Contracting States can request free access to this website by contacting Bureau Veritas.

States. Also, the IRCA database contains all the civil aircraft in a national register of a participating State, and does not limit their inclusion by size (or weight), propulsion or wing type.

2.3.2 In July 2006, IRCA agreed to expand the cooperation between the two organizations within the scope of the existing arrangement by developing the technology necessary to format the data it receives from States and provide this information (see Appendix D) to ICAO on a quarterly basis. The information would continue to be shared with all ICAO Contracting States free of charge, and could be accessed by them directly on an ICAO secure website. With regard to the sale of data to third parties by IRCA, this is, at present, subject to individual agreements between IRCA and the States concerned.

2.3.3 The new database being developed in ICAO to receive the data from IRCA and Contracting States which do not wish to report through IRCA is currently being tested and is expected to go into production by the end of 2009. This database is a Web based stand alone application that has been designed so that it can make use of the reference files from the Integrated Statistics Database (ISDB). Once the budgetary implications have been assessed and funding approved, work on integrating this stand alone application and the aircraft characteristics data in the ISDB can be initiated. At present the latter contains mainly the physical characteristics of commercial aircraft. In order to be able to recreate Form H data from the new database, ICAO will need to build-up an exhaustive file on aircraft characteristics covering **all** fixed- and rotary-wing civil aircraft included in the national registers.

2.3.4 Such integration will enable ICAO to extend the use of the data collected by incorporating such elements as number of engines, propulsion type, type of wing (fixed or rotary) and the operating weights associated with each aircraft type. Such data will enhance the use of the fleet data for other purposes such as aircraft accident analyses and for studies on the impact of aviation on the environment.

2.3.5 The aircraft data by tail number, as well as ownership and control information, will only be available to ICAO Contracting States, and for internal use by the ICAO Secretariat. However, summarised data, such as the one shown in Form H, would not be subject to confidentiality restrictions and could be made part of the information on civil aviation which ICAO presents on its public websites or through websites of its commercial partners. Although ICAO is not aware of who the users of such data may be, it is nonetheless generally acknowledged that no other organization, public or private², can provide a global view of the whole civil aviation fleet.

2.3.6 The new database would not only allow the Secretariat to present data similar to those collected through Form H but would also give the added flexibility of the ability to group the data by any weight breakpoints³. In order to avoid unnecessary duplication of effort by States, the division may wish to consider whether at some point in the near future ICAO should consider discontinuation of data collection on civil aircraft on register through Form H.

2.3.7 *Recommendation of the Fourteenth Meeting of the Statistics Panel (STAP/14-5).* The panel recommended that, in order for States to reach an informed decision, the Secretariat should undertake a data comparison between the two data series both in terms of data items and geographical coverage.

² Though there are a few commercially available civil aviation fleet databases, (Air Claims, OAG Aviation, ACAS to mention some), all of them only contain a subset of the whole such as, for example, fix-wing jet aircraft above a certain maximum take-off mass (MTOM).

³ for example, for the reporting of accidents, aircraft are grouped into those with a MTOM equal to or greater than 2 250 kg or 5 700 kg.

3. DATA COMPARISON

3.1 As reflected in Appendix A, Form H has two parts. Part I indicates in a summarised form the number of aircraft having certain characteristics in terms of wing and propulsion types, number of engine and maximum certificated take-off mass (MCTOM). Part II lists by type the number of aircraft above 9 000 kg of MCTOM in the register.

3.2 The data items by tail number to be shown in each record of the new ICAO database are shown in Appendix D. As the Appendix reflects, it does not contain any information on the aircraft characteristics except for its manufacturer, model and series. Hence, in order to recreate the information contained in Form H, the Secretariat will have to associate each aircraft name (manufacturer/model/series) with its physical characteristics which, in part, already exist in the ISDB aircraft reference file.

3.3 With regard to data coverage, Appendix E shows a comparison between the coverage currently being achieved through form H and the coverage of IRCA. The Appendix shows that, at present, while a few more States have reported to Form H, IRCA has a better coverage in terms of number of aircraft since some of the large countries available in IRCA do not report Form H to ICAO⁴. It should also be noted that since only about 19 States are common in both databases, at present a better overall representation could be obtained by using data from both sources.

3.4 However to ensure that both sets of information are compatible, there is a need to amend and simplify the reporting instructions in Form H. Simplification may also encourage more States to participate directly in the Form H data collection thus obviating the need to try to use data supplied through IRCA.

3.5 The current split of the fleet into commercial and other operators is a major issue for many States, and it is therefore proposed that only the totals in Part I (columns f and g) and Part II (column d) are collected. The reporting instructions should also be simplified by limiting the statistics to be reported to those civil aircraft on the national register holding a valid certificate of airworthiness at 31 December of the year being reported.

4. ACTION BY THE DIVISION

4.1 The division is invited to:

- a) agree that the reporting form as well as the related instructions should be simplified as shown in paragraph 3.5 above and Appendix F, with a view to encouraging States to report Civil Aircraft on Register through Form H.
- b) agree that where possible, ICAO should supplement the data it receives through form H by making use of the information from the new civil aircraft register data base implemented in ICAO pursuant Art. 21 of the Convention; and
- c) recommend that once the Secretariat has established that all the coverage for Form H can be achieved through the new data collection, the Council consider discontinuation of Form H.

⁴ For example, for a number of years now the United States has not reported Form H to ICAO because they are unable to split the fleet into commercial operators and others on the basis of the content of their database.

APPENDIX B

CERTIFICATE OF REGISTRATION

*	State <i>or</i> Common mark registering authority Ministry Department or Service	*
CERTIFICATE OF REGISTRATION		
1. Nationality or common mark and registration mark 	2. Manufacturer and manufacturer's designation of aircraft 	3. Aircraft serial no.
4. Name of owner 5. Address of owner		
6. It is hereby certified that the above described aircraft has been duly entered on the in accordance with the Convention on International Civil (name of register) Aviation dated 7 December 1944 and with the (†).....		
(Signature)		
Date of issue (†) Insert reference to applicable regulations.		
*		

* For use by the State of Registry or common mark registering authority.

APPENDIX C

**CONVENTION ON INTERNATIONAL CIVIL AVIATION
ARTICLE 21 — REPORT OF REGISTRATION**

Each contracting State undertakes to supply to any other contracting State or to the International Civil Aviation Organization, on demand, information concerning the registration and ownership of any particular aircraft registered in that State. In addition, each contracting State shall furnish reports to the International Civil Aviation Organization, under such regulations as the latter may prescribe, giving such pertinent data as can be made available concerning the ownership and control of aircraft registered in that State and habitually engaged in international air navigation. The data thus obtained by the International Civil Aviation Organization shall be made available by it on request to the other contracting States.

APPENDIX D

DATA FIELDS COVERED UNDER THE NEW DATABASE ON CIVIL AIRCRAFT ON REGISTER

Make
Model
Series
Manufacturer
Serial number
State
Nationality mark or common mark
Registration mark
Registering authority
Registering officer
Certificate number
Certificate issuance date
National regulation
Owner's name
Ownership start date
Ownership end date
Owner's address
Owner's State
Operator's name
Operator's address
Operator's State

APPENDIX E

DATA COMPARISON: FORM H VERSUS IRCA

The tables below compare the reported data for Form H for 2008, and the current data from IRCA available through their website (<http://www.aviation-register.com/>).

Table E1: Number of States by statistical region

Region	Form H (2008)	IRCA (current)	Number of common States
Europe	24	22	10
Africa	5	8	1
Middle East	1	4	0
Asia/Pacific	15	8	3
North America	1	2	1
Latin America/Caribbean	5	3	0
Total	51	47	15

Table E2: Number of aircraft*

Region	Form H (2008)	IRCA (current)
Europe	40 596	44 004
Africa	761	4 408
Middle East	32	278
Asia/Pacific	5 377	14 830
North America	25 556	354 498
Latin America/Caribbean	786	1 181
Total	73 108	419 199

Note: * Powered aircraft only, excluding motorised gliders, ultra lights, and gyrocopters

APPENDIX F

PROPOSED CHANGES TO THE REPORTING INSTRUCTIONS OF FORM H

STATISTICS TO BE REPORTED

Aircraft to be ~~included~~ in the statistics:

- a) **include** in the statistics all civil aircraft on the national register holding a valid certificate of airworthiness at 31 December of the year being reported; and
- b) exclude from the statistics all registered vehicles lighter than air, experimental aircraft, glides with auxiliary motors intended for sport or training purposes, ultra lights and gyrocopters ~~aircraft on the national register not holding a valid certificate of airworthiness at 31 December but where it is expected that the certificate will be revalidated within a reasonable period of time.~~

~~Aircraft to be excluded from the statistics:~~

- ~~a) all aircraft on the national register not holding a valid certificate of airworthiness at 31 December and not expected to have it revalidated; and~~
- ~~b) gliders with auxiliary motors intended for sport or training purposes.~~

— END —