

ICAO DATA+ is a new tool that presents in a dynamic and graphical environment the air transport statistic data collected from its 191 Member States.

DATAPLUS

NOTES ON THE DATA



DATA

ICAO started collecting statistics on civil aviation in 1947. Over time data series were modified, new ones were added and some were deleted according to the needs of States and the Organization. Data in electronic form did not become available till the 1970's.


The table below shows the reporting period for each data series and the first year of data which are available in ICAOdata+ for the seven apps concerned.

Data available in ICAODATA+		
Module	Reporting period	As from
Air carrier traffic	Monthly/Yearly	1980
Traffic by Flight Stage (TFS)	Yealy	1989
Air carrier finances	Yearly	1973
Airport traffic	Monthly/Yearly	1976
On-flight Origin and Destination (OFOD)	Quarterly	1982
Air carrier fleet and personnel	Yearly	1999

DATA (CONT)

Below is a partial view of the first screen for air carrier traffic. As indicated by the tab on the top, this view is for reported data. The numbers in the table show the overall totals for each column for the year 2012.

Note that the only selections made refer to period and flight. No selections are shown for State or air carriers. All apps in ICAOdata+ show reported data. Hence the need to be very careful when interpreting percentage changes between two or more time periods.



DATA+ AIR CARRIER TRAFFIC

Reported data
Monthly data
Traffic ranking
Traffic by Year
Year VS Previous year

Passengers
Payload
Operational Data

Year: 2012
Select Quarter
Select Month
Stage Type: International
Flight Type: Scheduled flight

Service: All Services
Select State
Select Territory
Select Air carrier
Reset

☒ State
☐ Territory
☒ Air carrier
☒ Flight type
☒ Stage type
☒ Year
Refresh

State	Air carrier	Flight type	Stage type	Year	Mth(s)	Passengers carried	Passenger-km performed (000)	Seat-km available (000)	Passenger load factor
ALBANIA	BELLE AIR	Scheduled flig	International f	2012	12	803,400	771,674	1,265,088	61.0%
ALGERIA	AIR ALGERIE	Scheduled flig	International f	2012	12	2,651,205	4,179,335	6,592,334	63.4%
ANGOLA	TAAG	Scheduled flig	International f	2012	12	557,856	2,731,942	4,245,518	64.3%
ARGENTINA	AEROLINEAS ARGEN	Scheduled flig	International f	2012	12	1,686,816	8,131,987	10,569,373	76.9%
ARGENTINA	AUSTRAL	Scheduled flig	International f	2012	12	378,420	327,263	485,378	67.4%
ARMENIA	ARMAVIA	Scheduled flig	International f	2012	12	364,728	674,028	1,042,835	64.6%
AUSTRALIA	QANTAS	Scheduled flig	International f	2012	12	5,626,797	48,225,954	59,774,061	80.7%
AUSTRALIA	VIRGIN AUSTRALIA	Scheduled flig	International f	2012	12	2,676,872	12,424,640	16,232,890	76.5%
AUSTRIA	AUSTRIAN AIRLINES	Scheduled flig	International f	2012	12	9,953,439	16,539,735	21,223,466	77.9%
AZERBAIJAN	AZALAVIA HAVA YO	Scheduled flig	International f	2012	12	1,075,008	2,102,649	3,315,461	63.4%
BAHRAIN	DHL INTERNATIONAL	Scheduled flig	International f	2012	12	0	0	0	0.0%
BAHRAIN	GULF AIR	Scheduled flig	International f	2012	12	5,236,056	10,833,478	14,541,612	74.5%
BAHRAIN	BAHRAIN AIR	Scheduled flig	International f	2012	1	637,284	368,000	657,027	56.0%

View 1 - 20 of 342

AIR CARRIER DATA

ICAO collects air carrier data using different reporting Forms. These data are often related and, for the data to be correct, these relationships have to be respected.

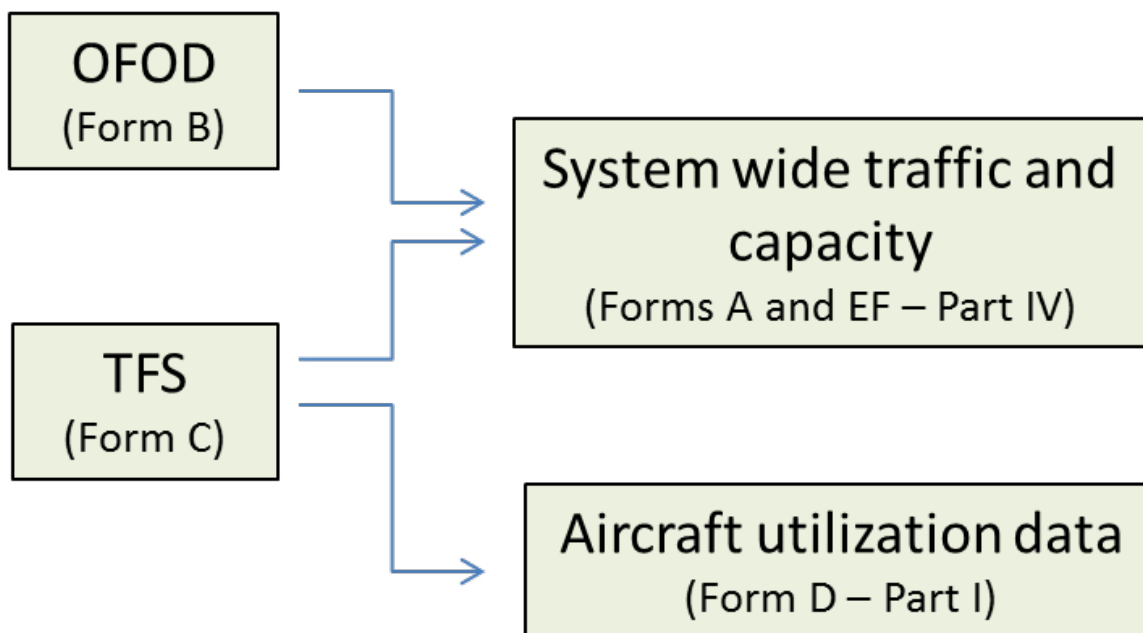
In this context it is important to note that the OFOD and TFS data (respectively known in ICAO as Reporting Forms B and C) contain the necessary information to derive all other traffic and capacity data which appears in other forms such as Form A – Air carrier traffic, Form D – Part I, Fleet and the traffic and capacity portion of Form EF – Finances (Part 4).

While the data relationship across the various reporting Forms applies to the whole traffic, ICAO collects Forms B and C only for international services, consequently the comparability with the other forms is limited to these operations

Air carrier traffic and capacity data

Source data

Derived data



ON-FLIGHT ORIGIN AND DESTINATION (OFOD)

ICAO collects on a quarterly basis on-flight origin and destination (OFOD) data for the international scheduled and, from 2012, non-scheduled operations of individual commercial air carriers.

The revenue traffic shown in OFOD is classified by city-pair taking as a basis the points of embarkation and disembarkation from a flight (i.e. the operation of an aircraft on a flight-stage or a number of flight-stages with an unchanging flight number) identified in the boarding pass issued and used, or the shipment document.

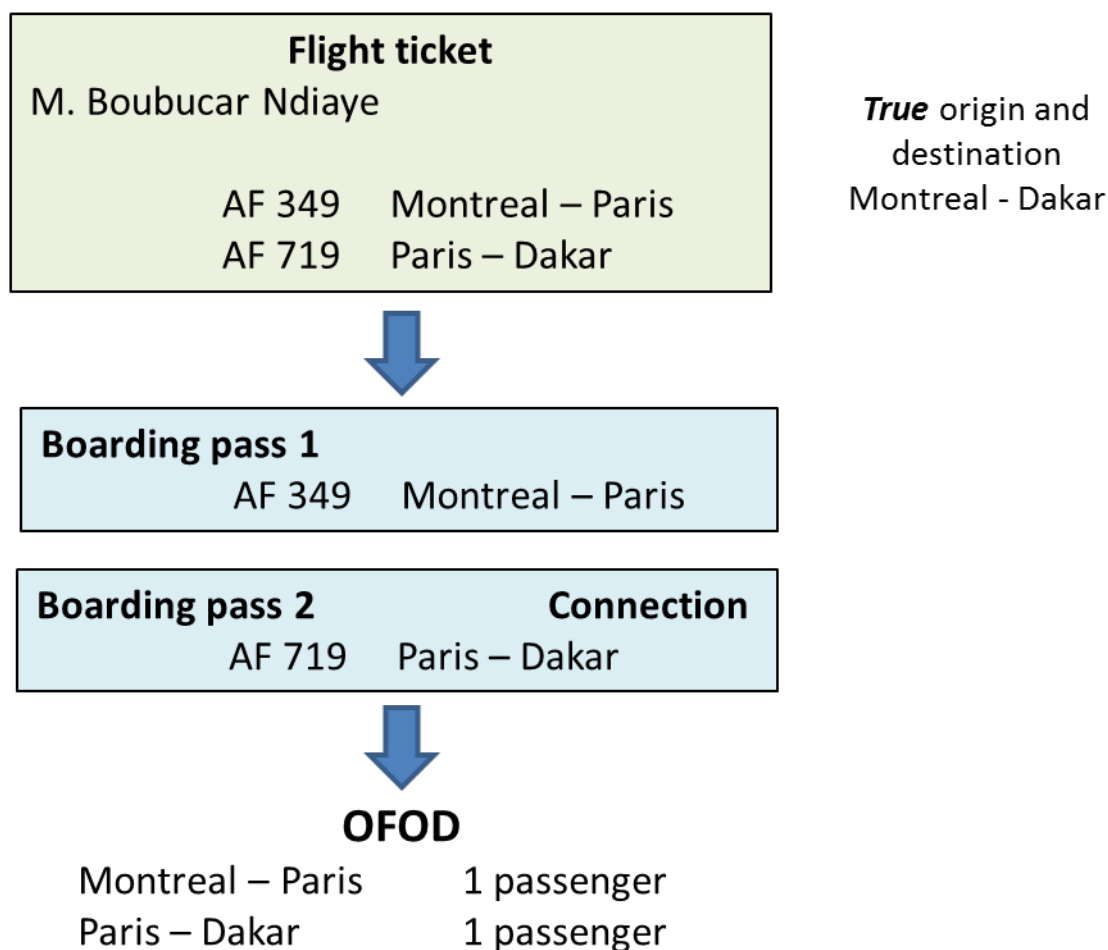
City-pair		Revenue traffic			Air carriers included
From	To	Passenger numbers	Freight (tonnes)	Mail (tonnes)	
a	b	c	d	e	f

COUNTING PASSENGERS

Air carrier passengers numbers carried are counted on the basis of the numbers reported in OFOD.

For statistical purposes, a passenger, who during his or her journey needs to transfer to another flight (i.e. a flight with a different flight number) to complete his or her trip becomes a new passenger with its own on-flight origin and destination. For example, a passenger travels from Montreal to Dakar. As there are no direct flights between these two cities, the passenger has to travel via Paris, where he/she changes flights. Hence, in the OFOD report this passenger will appear twice; once under Montreal – Paris, and a second time, as another completely unrelated passenger, under Paris – Dakar.

The true origin and destination of passengers can be obtained from large computer reservation systems (CRSs), such as Sabre and Amadeus, which contain all the necessary information for tracking the whole travel itinerary of a passenger and hence identify his/hers true origin and destination. (in the case of our passenger above, Montreal to Dakar).



TRAFFIC BY FLIGHT STAGE (TFS)

Traffic by flight stage (TFS) data for the international scheduled services of commercial air carriers is collected on an annual basis.

Revenue traffic data (passengers, freight and mail) reported for TFS represents the traffic on-board the aircraft on each flight stage (regardless of the on-flight origin and destination of the traffic). So, a passenger (or a tonne of freight and mail) flying between Montreal and Amman on a flight with routing Montreal-London-Amman will appear on two stages: once on the stage Montreal – London, and a second time on the stage London - Amman

Stations		Type of aircraft	Number of flights	Capacity available		Revenue traffic		
From	To			Passenger seats (number)	Total payload capacity (tonnes)	Passengers (number)	Freight (tonnes)	Mail (tonnes)
a	b	c	d	e	f	g	h	i

RELATIONSHIP BETWEEN OFOD AND TFS

The best way to illustrate the relationship between the data reported on each one of the two reporting Forms, OFOD and TFS, is through a simple example.

Let us assume that there is a flight PA 001 with the following itinerary:

New York (NYC) - Miami (MIA) - Lima (LIM) - Santiago de Chile (SCL)

where PA is a carrier with principal place of business in the United States. For the purpose of this exercise also assume no traffic restrictions apply. The flight is performed with a Boeing 767-200 with 216 seats and a total payload capacity of 31 tonnes.

(Please note that air carrier and flight data are fictitious).

Air carrier: PA (United States)

Flight data

Flight No.	Aircraft type	No. of seats	Total revenue payload (kg)	Itinerary
PA 001	Boeing 767 200	216	31 000	NYC – MIA – LIM - SCL

RELATIONSHIP BETWEEN OFOD AND TFS (CONT)

The OFOD traffic data for flight PA 001 shows that:

- 165 passengers boarded the aircraft in NYC: 110 with destination MIA, 20 with destination LIM and 35 with destination SCL
- 120 passengers boarded the aircraft in MIA: 40 with destination LIM and 80 with destination SCL
- 30 passengers boarded the aircraft in LIM with destination SCL

The table also shows the OFOD traffic for the freight carried on this flight

OFOD traffic data

Flight No.	Itinerary
PA 001	NYC - MIA - LIM - SCL

City-pair		Passenger numbers	Freight (tonnes)
From	To		
NYC	MIA	110	0
NYC	LIM	20	2
NYC	SCL	35	3
MIA	LIM	40	1
MIA	SCL	80	2
LIM	SCL	30	0

RELATIONSHIP BETWEEN OFOD AND TFS (CONT)

The table below shows for our example how the OFOD passenger traffic can be mapped into the TFS data. The TFS table shows the three flight stages of flight PA001. Under each flight stage heading one has to place the passengers numbers which are on board the aircraft during that flight stage.

Lets take all the passengers departing from NYC. All these passengers, adding up to 165, must appear on the flight stage NYC – MIA.

The next stage is MIA – LIM. The 110 passengers that were going from NYC to MIA are no longer there as they all disembarked in MIA. Those going from NYC to LIM and SCL are still on-board. In addition we now must include the passengers which boarded this flight in MIA also for LIM and SCL. Hence the number of passengers on this flight stage are 175.

Finally, for the last stage the number of passengers on board are 145.

Relationship between OFOD and TFS

Flight No.	Itinerary
PA 001	NYC - MIA - LIM - SCL

OFOD			TFS		
City-pair		Passenger numbers	Revenue passenger numbers		
From	To		NYC - MIA	MIA - LIM	LIM - SCL
NYC	MIA	110	110		
NYC	LIM	20	20	20	
NYC	SCL	35	35	35	35
MIA	LIM	40		40	
MIA	SCL	80		80	80
LIM	SCL	30			30
Totals		315	165	175	145

AIR CARRIER TRAFFIC

The table below shows what the data for flight PA001 would look like in the air carrier traffic app, which in ICAO is referred to as Form A.

The number of passengers and freight carried come from the OFOD data shown for flight PA001.

Now taking the TFS data for flight PA001 and adding the flight stage distance and the block hours one can complete the data required for the air carrier traffic app.

Using the same criteria and applying the appropriate passenger mass plus baggage (for this example 100kg), one can then complete the rest of the table.

The load factors are derived from the traffic data in the table.

Completing data for PA001

Stations		Type of aircraft	Number of flights	Capacity available		Revenue traffic		Stage length (km)	Block time (hrs)
From	To			Number of seats	Total payload (tonnes)	Passenger numbers	Freight (tonnes)		
JFK	MIA	Boeing 767 200	1	216	31	165	5	1754	3.0
MIA	LIM	Boeing 767 200	1	216	31	175	8	4198	5.5
LIM	SCL	Boeing 767 200	1	216	31	145	5	2453	3.5



Description	Units	International	Domestic
1. Aircraft kilometres	units	6651	1754
2. Aircraft departures	units	2	1
3. Aircraft hours	units	9	3
4. Passengers carried	units	205	165
5. Freight carried (tonnes)	units	8	5
6. Passenger-kilometres performed	000	1090	289
7. Seat-kilometres available	000	1437	379
8. Passenger load factor	%	75.9	76.3
9. Tonne-kilometres performed			
a) Passenger (inc baggage)	units	109034	28941
b) Freight	units	45849	8770
c) Mail	units	0	0
d) Total	units	154883	37711
10. Tonne-kilometres available	units	206181	54374
11. Weight load factor	%	75.1	69.4

SUMMARY

The relationship between OFOD, TFS and the air carrier traffic app (form A) can be summarised by the tables shown below.

Relationship between Forms B and A

Form B (OFOD)		Form A
By city-pair:		Total:
Passenger numbers (<u>P_n</u>)	$\sum (\text{Pn of Form B}) =$	Passengers carried
Freight (tonnes) (F)	$\sum (\text{F of Form B}) =$	Freight carried
Mail (tonnes)		

Relationship between Forms C and A

Form C (TFS)		Form A
By station pair:		Total:
	Calculated distance (km) by station pairs	
Number of flights by aircraft type (D)	$\sum (\text{D x km of Form C}) =$	Aircraft kilometres
	$\sum (\text{D of Form C}) =$	Number of departures
Passenger seats (S)	$\sum (\text{S x km of Form C}) =$	Seat-km available
Payload (Pd)	$\sum (\text{Pd x km of Form C}) =$	Tonne-km available
Passenger numbers (<u>P_n</u>)	$\sum (\text{Pn x km of Form C}) =$	Passenger-km performed
Freight (tonnes) (F)	$\sum (\text{F x km of Form C}) =$	Freight tonne-km performed
Mail (tonnes) (M)	$\sum (\text{M x km of Form C}) =$	Mail tonne-km performed

AIR CARRIER TRAFFIC APP

The air carrier traffic data are classified into international and domestic flight stages for:

- All services: i.e. covering passenger services (carrying passengers freight and mail) and all-freight services; and
- All-freight services, i.e. services operated by aircraft dedicated to the carriage of freight

In addition the revenue flights identified above are further subdivided into scheduled and non-scheduled revenue flights.

System wide commercial air carrier traffic data - Form A

Description	Unit	TOTAL ALL SERVICES (passenger, mail and freight including all-freight)		ALL-FREIGHT SERVICES ONLY (included in columns c and d data)	
		Classified by flight stage		Classified by flight stage	
		International	Domestic	International	Domestic
a	b	c	d	e	f
SCHEDULED REVENUE FLIGHTS					
1. Aircraft kilometres	000				
2. Aircraft departures	number				
3. Aircraft hours	number				
4. Passengers carried	number			--	--
5. Freight tonnes carried	number				
6. Passenger-kilometres performed	000			--	--
7. Seat-kilometres available	000			--	--
8. Passenger load factor	%			--	--
9. Tonne-kilometres performed					
a) passenger (incl. baggage)	000			--	--
b) freight (incl. express)	000				
c) mail	000				
d) total (9a to 9c)	000				
10. Tonne-kilometres available	000				
11. Weight load factor	%				
NON-SCHEDULED REVENUE FLIGHTS					
12. Aircraft kilometres	000				
13. Aircraft departures	number				
14. Aircraft hours	number				
15. Passengers carried	number			--	--
16. Freight tonnes carried	number				
17. Passenger-kilometres performed	000			--	--
18. Seat-kilometres available	000			--	--
19. Tonne-kilometres performed					
a) passenger (incl. baggage)	000			--	--
b) freight (incl. express)	000				
c) mail	000				
d) total (19a + 19c)	000				
20. Tonne-kilometres available	000				
NON REVENUE FLIGHTS					
21. Aircraft hours	number				

SOME DATA ISSUES

As a United Nations specialized agency ICAO members are States. Consequently statistics are primarily collected from a State point of view and are published under each State name. With globalization, some air carrier companies no longer serve as a flag carrier of a single State but may also own subsidiaries which are carriers of other States, for example, LAN Airlines.

This carrier started out as the national carrier of Chile. Today it has subsidiaries based in four other Latin American countries: Argentina, Colombia, Ecuador and Peru. For ICAO statistics each of these States has to submit the data for the LAN Airlines subsidiary based in their State, namely: LAN Argentina, LAN Colombia, LAN Ecuador and LAN Peru. Their traffic will then be shown under the appropriate State. Users should therefore be aware of this when comparing data published by ICAO and those presented by other entities as the latter may show consolidated traffic data for LAN Airlines as a single entity

Air carrier with subsidiaries in different States

LAN Airlines (part of the LANTAM Group)

Chile	LAN Chile
	LAN Cargo
	LAN Express
Argentina	LAN Argentina
Colombia	LAN Colombia
Ecuador	LAN Ecuador
Peru	LAN Peru

SOME DATA ISSUES (CONT)

Multinational carriers

In the past, needing to deal at a State level meant that traffic data for air carriers owned by a group of States, such as Gulf Air or SAS had to artificially be allocated to each of the countries which participated in the ownership of these carriers. This allocation was done on the basis of the shares each country owned of the multinational carrier concerned.

Gulf Air originally owned by Bahrain, Oman, Qatari, and the United Arab Emirates (collectively identified as the Gulf State) is now owned by a single State: Bahrain.

SAS has been reorganized into four companies under the SAS Group name, Three of them, SAS Sweden, SAS Denmark, and SAS Norway are each located in one of the three Scandinavian countries

Air carrier partially owned by two or more States

SAS Group	
Denmark	SAS Denmark
Norway	SAS Norway
Sweden	SAS Sweden
Scandinavia	SAS International

Where Scandinavia is the collective name for: Denmark + Norway + Sweden

AIR CARRIER FINANCES APP

In 1947, ICAO introduced a data collection on air carrier financial data which would offer the possibility to identify revenues and expenses and also allow them to be directly compared with the related traffic carried and capacity offered. The latter allows to calculate the corresponding operating revenue yields and unit costs which can be used to evaluate the performance of the carrier concerned over time and also compare its figures with those from other air carriers.

Commercial air carrier financial data are collected by ICAO through Reporting Form EF. The Form covers several financial statements as well as the traffic and capacity figures related to the financial data. These are:

- Part 1 – Profit and Loss statement; Part 2 – Balance sheet;
- Part 3 – Statement of retained earnings; and
- Part 4 – Revenue traffic and capacity statistics

PART 1 — PROFIT AND LOSS STATEMENT			
DESCRIPTION	AMOUNTS		
	SUB-ACCOUNTS	MAIN ACCOUNTS AND RESULTS	
1. Scheduled service (total)			
1.1 Passenger			
1.2 Excess baggage			
1.3 Freight (including express and diplomatic bags)			
1.4 Mail			
2. Non-scheduled operations (total)			
2.1 Passenger and excess baggage			
2.2 Freight (including express and diplomatic bags) and mail			
3. Other operating revenue (total)			
3.1 Incidental			
3.2 Miscellaneous			
4. TOTAL OPERATING REVENUE			
5. Flight operations			
5.1 Flight crew			
5.2 Aircraft fuel			
5.3 Flight equip			
5.4 Rental of eq			
5.5 Other equip			
6. Flight equipment			
7. Depreciation and			
7.1 Depreciation			
7.2 Amortization			
7.3 Depreciation			
7.4 Other			
8. User charges (to			
8.1 Landing and			
8.2 Air navigation			
9. Station expenses			
10. Passenger serv			
10.1 Cabin crew			
10.2 Other equip			
11. Ticketing, sales			
11.1 Commissions			
11.2 Other equip			
12. General and adm			
13. Other operating			
13.1 Incidental			
13.2 Miscellaneous			
14. TOTAL OPERATING EXPENSES			
15. OPERATING PROFIT (LOSS)			
16. Interest expense			
16.1 Interest on			
17. Capital gain (or l			
18. Payments from			
19. Affiliated comp			
20. Other non-oper			
21. NON-OPERATING REVENUE (EXPENSE)			
22. PROFIT (OR LOSS)			
23. Income taxes			
24. PROFIT (OR LOSS)			
25. Extraordinary item			
26. PROFIT (OR LOSS)			

PART 2 — BALANCE SHEET			
DESCRIPTION	AMOUNTS		
	SUB-ACCOUNTS	MAIN ACCOUNTS AND RESULTS	
1. Current assets (total)			
1.1 Cash, bank balances, and short-term investments			
1.2 Current accounts and notes receivable			
1.3 Other current assets			
2. Special funds (total)			
2.1 Investments in affiliated companies			
2.2 Equipment purchase funds			
2.3 Other special funds			
3. Operating property and equipment (total)			
3.1 Flight equipment — owned			
3.1.1 Lease — flight equipment — reserve for depreciation			
3.2 Ground property and equipment — owned			
3.2.1 Lease — ground property and equipment — reserve for depreciation			
3.3 Flight equipment under capital leases			
3.3.1 Lease — flight equipment — accumulated amortization			
3.4 Ground property and equipment under capital leases			
3.4.1 Lease — ground property and equipment — accumulated amortization			
3.5 Land			
4. Non-operating property and equipment (total)			
4.1 Non-operating property and equipment			
4.1.1 Lease			
5. Other assets			
5.1 Deferred			
5.2 Intangible			
5.3 Investment			
5.4 Other assets			
6. TOTAL ASSETS			
7. Current liabilities			
7.1 Accounts			
7.2 Air traffic			
7.3 Other current			
8. Non-current liabilities			
8.1 Long-term			
8.2 Long-term			
8.3 Advances			
8.4 Reserves			
8.5 Other non			
9. Deferred credit			
10. Stockholders'			
10.1 Capital			
10.2 Capital			
10.3 Retained			
11. TOTAL LIABILITIES			

PART 3 — STATEMENT OF RETAINED EARNINGS			
DESCRIPTION	AMOUNTS		
	SUB-ACCOUNTS	MAIN ACCOUNTS AND RESULTS	
1. Net balance of unappropriated retained earnings for previous years, as shown under item 5 of last year's statement of retained earnings			
2. Profit (or loss) after extraordinary items for this year (item 26 of Part 1)			
3. Adjustments (total)			
3.1 Transfer to reserves			
3.2			
3.3			
4. Appropriations			
5. Net result			

PART 4 — REVENUE TRAFFIC AND CAPACITY STATISTICS				
DESCRIPTION	UNIT	TOTAL ALL SERVICES		
		SCHEDULED FLIGHTS a	NON-SCHEDULED FLIGHTS b	OVERALL TOTALS a+b
1. Passenger-kilometres performed	000			
2. Seat-kilometres available	000			
3. Revenue tonne-kilometres performed	000			
3.1 Passenger (including baggage)	000			
3.2 Freight (including express)	000			
3.3 Mail	000			
3.4 Total (sum of items 3.1, 3.2 and 3.3)	000			
4. Tonne-kilometres available	000			

REMARKS for Part 4 (including a description of any unavoidable deviation(s) from the reporting instructions or differences from the data reported on Form A — Traffic — Commercial Air Carriers):

GROUP OF COMPANIES

If the air carrier is part of a group of companies encompassing other related activities, such as aircraft maintenance, catering, and/or reservation systems, only the activities pertaining to the air carrier as a provider of commercial air transport services should be covered in the Form EF.

However, in some cases some financial data, such as the balance sheet, cannot be reported separately for the air carrier entity alone. Consequently only the operating data (revenues and expenses) shown in the profit and loss statement (Part 1) refer to the air carrier activities. The non-operating items as well as the other financial data shown in the balance sheet (Part 2) and in the statement of retained earnings (Part 3) may be for the group as a whole.

Because of these issues, all of the graphical analysis shown in ICAOdata+ is limited to the cost and expenses shown in the Profit and Loss statement.

and their traffic is published under the name of the States concerned. The fourth one, Scandinavian International has remained a multinational entity and as such its traffic is reallocated to the three Scandinavian countries in the proportion of their shareholding in the company.



AIRPORT TRAFFIC APP

Airport traffic data only covers the main international airports in a State. However, as from 2012 they must also includes those international airports with a major domestic component.

Part I of the reporting form is shown below. The form has been split so that it can fit in the available space.

This is the only ICAO Form that was affected by the change in the definition of air transport activities adopted by ICAO in 2009.

As from 2012, air taxi and commercial business flights are included in each of the appropriate commercial air transport items (2 to 5) and shown separately under air transport commercial traffic (row 7). Until 2012 these flights were considered as part of General Aviation (GA) and thus shown under **All other movements**.

Airport traffic (Form I – Part I)

Description	Aircraft Movements Total	Passengers			
		Embarked	Disembarked	Total (Col.c+d)	Direct transit
a	b	c	d	e	f
A. Commercial air transport					
1. International scheduled					
2. International non-scheduled					
3. Total International(1+2)					
4. Domestic scheduled and non scheduled					
5. Total commercial air transport(1+2+4)					
6. All-freight/mail services					
7. Air taxi and commercial business flights					
B. All other movements					

[illegible]