ICAO Carbon Emissions Calculator Methodology

Version 8

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1 Introduction

This document presents a general methodology developed for estimating the amount of carbon emissions (CO_2) generated by a passenger in a flight, for use in carbon offsetting programmes.

It provides information on the methodological approach and details the assumptions underlying the generic factors employed by the ICAO Carbon Emissions calculator. The methodology is provided in an open source format facilitating individual air carriers that may wish to customize it with their own data.

The document includes a general description of the method adopted by ICAO in order to estimate the CO_2 emissions of a flight (Item 2); the detailed calculation process implemented by the ICAO Calculator (Item 3); a description and analysis of the data inputs used (Item 4); a demonstration of the data coverage and sensitivity (Items 5 and 6); and the steps needed to be taken by a company wishing to customize the calculator with its own data set (Item 7).

2 Methodological Approach

The ICAO methodology employs a distance-based approach to estimate an individual's aviation emissions using data currently available on a range of aircraft types. In order to implement this methodology, ICAO uses the best publicly available data regarding fuel consumption and it is committed to continuously monitor and seek improvements in the data used, in order to obtain better emissions estimation.

The ICAO methodology has been designed to require a minimum amount of input information from the user regarding the particulars of the flight concerned. It employs industry averages for the various factors which contribute to the calculation of the emissions associated with the individual passenger's air travel. As passengers' aviation emissions are affected by continuously changing variables specific to each flight, it is necessary to develop average factors to account for the effect of these flight parameters. While these factors cannot be captured on a flight-specific basis, this methodology considers them for the purpose of developing a more robust estimation of flight emissions and educating the public and the industry as to how these factors affect an individual passengers' emission intensity.

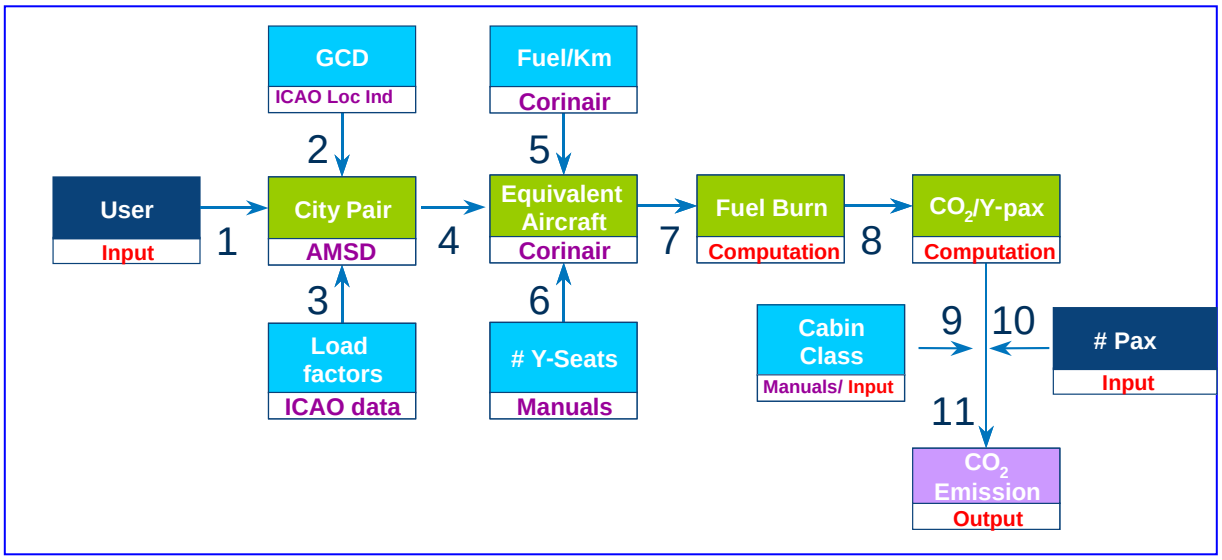
2.1 General Description of the Methodology

The ICAO Carbon Emission Calculator requires that the user input the airports of origin and destination for a direct through flight (i.e. a flight which does not have a change of the flight number). This is then compared with the published scheduled flights to obtain the aircraft types used to serve the two airports concerned and the number of departures per aircraft. Each aircraft is then mapped into one of the fifty equivalent aircraft types in order to calculate the fuel consumption for the trip based on the great circle distance between the airports involved in the journey. The passenger load factors, and passenger to cargo ratios, obtained from traffic and operational data collected by ICAO, are then applied to obtain the proportion of total fuel used which can be attributed to the passengers carried. The system then calculates the average fuel consumption for the

journey weighted by the frequency of departure of each equivalent aircraft type. This is then divided by the total number of economy class equivalent passengers, giving an average fuel burn per economy class passenger. The result is then multiplied by 3.16 in order to obtain the amount of CO_2 footprint attributed to each passenger travelling between those two airports.

3 Calculation Procedure

ICAO used this methodology to develop a Carbon Emissions Calculator using a database constructed from several data sources. From the diagram below, we identify the following information used as input to the calculator:



City Pair: Obtained from the airlines multilateral schedules database (AMSD). The flight schedule data are based on the latest available information and are updated annually.

GCD (Great Circle Distance): The distance between origin and destination airports is derived from latitude and longitude coordinates originally obtained from ICAO Location Indicators database.

Load Factors: The average generic factors considered for the purpose of this calculation are sourced from the Traffic by Flight Stage database (TFS) which collects air carrier city-pair specific traffic data by aircraft type produced on an annual basis, and domestic traffic and operational data, both collected by ICAO, as well as data based on the flight schedules published by the air carriers.

Fuel/Km: This information, per equivalent aircraft model, is obtained from the CORINAIR database, and expanded by ICAO to reflect the fuel consumption of regional jets.

Y-seats: This is the number of economy seats that can be fit inside the equivalent aircraft. ICAO made use of a standard cabin layout (in terms of location of galleys, toilets and exits) for each reference aircraft. This fixed space was then fitted with an all-economy seating using a pitch of about 31/32 inches (79/81 cm). This seating configuration was then compared with a mixed configuration involving business and/or first class row/seat combinations where, for the large wide bodied aircraft, business class seats have a 38 inch pitch, and those in first class have a 60 inch pitch. Examples of these layouts were obtained from the Manual on Airplane Characteristics for Airport Planning published on the Web by the aircraft manufacturers.

In simple terms, the general methodology used by the ICAO calculator can be described with the following steps, with references to the diagram above:

User input (1) – The user enters the origin and destination airports. The database is searched for all flights, direct or non-direct, serving that city-pair. However, the tool does not compute total emissions for journeys with different flight numbers (connecting flights). To do this, the user can choose to build a total by calculating each of the journey legs separately and adding them up.

Code share flights are treated as a single flight. This avoids a possible double counting of flight departures that would otherwise affect the calculations.

The origin and destination database includes individual routings for single flight numbers with multiple stops. Hence the passenger does not need to know, nor input the full itinerary of the flight.

Trip distance (2) – The ICAO Location Indicators database contains the longitude and latitude coordinates for the airports. From these coordinates the Great Circle Distance (GCD)[1] is then calculated and corrected by a factor depending on the distance between the two airports concerned (see section 4.2).

Traffic data (3) – A passenger load factor is assigned to the user-defined city-pair, based on the passenger load factor for the corresponding route groups. Load factor information is obtained from the database, based on 17 international route groups plus 5 domestic areas (see **Appendix A**).

Aircraft mapping (4) – From the scheduled flights database, the scheduled aircraft is identified and linked to the aircraft fuel consumption database EMEP/CORINAIR. When the scheduled aircraft is not in the database, the aircraft is mapped into one of the fifty equivalent aircraft types existing in the aircraft fuel consumption database. **Appendix B** provides details of how this mapping was done. This allows estimation of the total fuel use on each route serving the user-defined city-pair.

Fuel burn data (5) – The fuel burn to flight distance relationship is extrapolated from the Emissions Inventory Guidebook (EIG) prepared by EMEP/CORINAIR. The factors considered include passenger load factor, flight distance, the proportion of the overall payload represented by passenger traffic, cabin class flown, and type of equivalent aircraft

[1] The Great Circle Distance it is the shortest path between two points on the surface of a sphere

flown. The amount of fuel used on a route is the weighted average of total fuel burnt based on the frequencies of the scheduled aircraft types flown.

Economy Class (Y) seat capacity (6) – From cabin floor plans obtained from the "Manual on Airplane Characteristics for Airport Planning", which is developed by manufacturers to provide necessary data to airport operators and airlines for airport facilities planning, the maximum number of Y-seats that can be fitted per equivalent aircraft is determined. This "virtual" all economy configuration later allows the computation of cabin class factors (steps 9 & 10).

CO_2 per economy passenger (7 and 8) – Using the trip distance, equivalent aircraft fuel consumption, passenger to seat load factor and passenger to freight load factor for the route group, and the number of Y-seats, the methodology calculates the CO_2 associated to each passenger, as follows:

CO_2 per pax = 3.16 * (total fuel * pax-to-freight factor)/(number of y-seats * pax load factor)

Where:

Total fuel = The weighted average of the fuel used by all flights departed from the origin airport in order to reach the destination airport. The weighting factor is the ratio of number of departures for each equivalent aircraft type, to the total number of departures.

Pax-to-freight factor = is the ratio calculated from ICAO statistical database based on the number of passengers and the tonnage of mail and freight, transported in a given route group.

Number of Y-seats = the total number of economy equivalent seats available on all flights serving the given city pair.

Pax load factor = the ratio calculated from ICAO statistical database based on number of passengers transported and the number of seats available in a given route group.

3.16 = constant representing the number of tonnes of CO_2 produced by *burning* a tonne of aviation fuel.

Cabin class (9 and 10) – Depending on user selection, a multiplicative cabin class factor is applied to adjust the CO_2 per Y-passenger, on those routes where multiple class passenger services are available.

Passenger CO_2 output (11) – The estimated quantity for the carbon emission.

4 Data Sources

This methodology seeks to distribute the emissions between the passengers travelling in different cabin classes, and between passengers and cargo, in an equitable manner. This section details how the various contributing factors come together to accomplish this result.

4.1 Fuel Data

In keeping with the latest recommendations of the IPCC contained in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, a modified Tier 3A method is used which is based on actual movement data. The 2006 Guidelines suggest the EMEP/CORINAIR Emission Inventory Guidebook[2] (EIG) as the base of commercial aviation fuel burn and emission information. The Guidebook includes an accompanying workbook which details fuel burn and emissions associated with discrete mission distances for 44 equivalent aircraft types. CORINAIR fuel database uses modelled data derived from the aircraft performance model PIANO[3]. It uses equivalent aircraft types and, due to the age of the study, lacks fuel data for the more recent aircraft types and their derivatives.

In order to implement the methodology, the database used by ICAO takes the fuel burn to distance flown data provided by CORINAIR and extends some aircraft ranges by extrapolation using a linear regression. This approach was chosen since the fuel consumption curve approaches a linear relationship to distance when considering medium and long haul flights. ICAO also expanded the data by adding fuel burn information, provided by the manufacturers, for 6 regional jets.

While the main objective of CORINAIR is to support the development of National GHG Inventories, this methodology seeks to allocate a proportion of emissions associated with a given equivalent aircraft type operating between given city pairs to individual passengers. In this context, it is considered appropriate to use CORINAIR data as long as the CO_2 calculation is performed on an average fleet basis per city pair and not on an individual aircraft basis, and noting that in many cases the calculation is near ±10%. This variation in data is largely due to the aircraft models currently included in CORINAIR and mapping these aircraft to the actual operating aircraft models not included in CORINAIR[4].

While it is well known that most air carriers have detailed information in regards to their fuel consumption and fuel efficiency, this information is not publicly available. At present, it was not possible to identify any suitable public alternative data source, making CORINAIR the best publicly available data source for the purpose of the ICAO methodology.

The dataset obtained from the modified CORINAIR, listing the 50 equivalent aircraft data, is included in **Appendix C** of this document.

[2] EMEP/CORINAIR Emission Inventory Guidebook (http://reports.eea.europa.eu/EMEPCORINAIR4/en/page002.html)
[3] http://www.lissys.demon.co.uk/.
[4] For example, to model a B737, CORINAIR contains two choices of older models, the B737-100 and B737-400. For some city pairs this may adequately model the specific aircraft servicing the city pair. However, on other city pair routes that operate mainly newer more fuel-efficient B737 models (B737-600/700/800/900) CORINAIR would overestimate the fuel burn and CO2 production

4.2 Trip distance

The methodology proposes the use of the Great Circle Distance (GCD) between the input airports, in order to get the fuel used, and thus estimate the CO2 emissions.

GCD is by definition the shortest distance between two points on the surface of a sphere. This distance can be calculated by using the geographical coordinates of the two points concerned. The coordinates for the airports involved are obtained from the ICAO Location Indicators database. Once the GCD is calculated, it is then corrected by a factor depending on the distance between the two airports concerned.

The correction factor is needed in order to include the emissions of distance flown in excess of the GCD, stacking, traffic and weather-driven corrections. According to EIG, the actual distance flown compared with GCD that is given in the scheduled flights timetable may vary up to 11% in Europe (ANCAT/EC2 1998).

Stopovers, connecting flights and refuelling stops impact on the overall flight distance as they divert from the straight line representing the GCD. The implementation of the ICAO methodology, carried by ICAO to calculate the trip distance takes into account the additional mileage resulting from stopovers and refuelling stops associated with a sequence of flights identified by a single flight number. However, for a sequence of flights with different flight numbers (connecting flights) the trip distance is calculated separately for each individual flight segment.

The table below shows the GCD correction factor used.

GCD	Correction to GCD
Less than 550 Km	+ 50 Km
Between 550 Km and 5500 Km	+ 100 Km
Above 5500 Km	+ 125 Km

4.3 Aircraft type

The CO_2 emission is calculated from the fuel burned by the aircrafts serving a given route. The scheduled aircraft is identified from the scheduled flights database, and mapped into one of the fifty equivalent aircraft types existing in the aircraft fuel consumption database (**Appendix C** provides details of how this mapping was done). The aircraft types, that cannot be mapped, are excluded from the calculations. Leaving out aircraft types or variants that are not in the database would at present only have a minor influence on the final result.

4.4 Passenger Load Factors and Passenger to Cargo Factor

As this methodology is intended to assess the passenger's aviation emissions it is necessary to deduct the flight emissions associated with the freight and mail carried on the flight from the total. This calculation will be performed on a revenue mass basis using historic freight and mail numbers specific to the city-pair being considered.

The data are sourced from the ICAO TFS dataset which contains totals of number of seats and passengers, tonnes of freight, and tonnes of mail carried. In order to develop an average freight allocation an average passenger mass with baggage is assumed as 100 Kg, plus a 50 Kg add-on to account of the onboard equipment and infrastructure associated with passenger use (for example, the weight of seats, toilets, galleys and crew). The total mass is then established as:

[((No. Passengers*100Kg) + (No. of seats * 50 Kg))/1000] (tonnes) + Freight (tonnes) + Mail (tonnes)

Based on the historical traffic data it is then possible to establish the proportion of freight and mail mass in relation to the total mass calculated by the formula above. The resulting proportion is the fraction of the flight emissions for which the passengers should not be held accountable for. The TFS data is updated annually by ICAO for each one of the 17 international route groups (see **Appendix A**).

4.5 Cabin class

The cabin class correction factor is used only on equivalent aircraft types that support such differentiation, and on flights of more than 3,000 Km. It is based on the principle that premium seats occupy a larger space than that of an economy seat; therefore the same cabin configured with premium seat arrangements carries fewer passengers than an all-economy layout.

In order to define the cabin class correction factor, each representative aircraft has been assigned a standard all-economy class layout so that the reduced capacity resulting from the larger space occupied by premium seating and the associated increase in per-passenger emissions is accounted for. This cabin class correction factor is based on the principle that premium seats occupy a larger footprint than that of an economy seat; therefore the same cabin configured with premium seat arrangements carries fewer passengers than an all-economy layout. While it is not possible to account for all possible configurations of a given aircraft the cabin class correction factor serves to educate the user as to the environmental effect of their travel decisions. For this reason generic cabin class factors have been estimated.

The methodology employs a simplified approach by using two cabin class factors (“economy” and “premium”) when allocating emissions to passengers, with a ratio of 1:2.

5 Discussion of Sensitivities

In any modelling exercise the desire for accuracy is moderated by the level of complexity the analyst is willing to accommodate. In the case of the ICAO methodology, an attempt has been made to account for the principal factors which define an individual’s aviation carbon emission footprint while assessing each at a level which recognizes the inherent uncertainty underlying many of the assumptions embedded in this approach.

Great Circle Distance – while it is understood that air travel does not occur in a straight line between two points, actual flown distance to be collected from the air carriers, or

from a more accurate trip distance database showed to be not feasible for the time being.

Representative Aircraft – as aircraft typically share similar performance characteristics, if designed for similar operation, the adoption of a representative aircraft approach is both necessary and reasonable given the level of detail available. It is recognized that the CORINAIR data lacks representation for several aircraft types. It is also recognized that there are considerable differences in fuel consumption between aircraft belonging to the same aircraft type variant, dependent on many factors such as age and airline specific configuration, including engines. However, at present, it was not possible to identify any suitable public alternative data source making CORINAIR the best publicly available data source for the purpose of the ICAO methodology.

Cabin Class Factor – this recognizes that several seat configurations can be offered, and the different classes of service among air carriers. The ICAO Carbon Emissions calculator does not use a specific aircraft configuration; instead, it uses the equivalent aircraft approach that represents the actual equipment in use. Due to the general nature of this methodology, it was decided to use a simplified approach, restricting the cabin classes to two: one representing the economy class, and the other representing the premium classes (premium-economy, business, and first).

Passenger Load Factor – average passenger load factors are calculated on a route group basis for international flights and on a regional basis for domestic flights. The data are obtained from the reported data sent by States to ICAO, and it tends to change with every annual update.

Passenger to Cargo Factor – average cargo factors on passenger aircraft are calculated on a route group basis for international flights and on a regional basis for domestic flights. The data is obtained from the reported data sent by States to ICAO, and it tends to change with every annual update.

Fuel consumption per aircraft type – throughout the design of this tool, the intention was to default to the best publicly available information. While it is well known that most air carriers have detailed information in regards to their fuel consumption and fuel efficiency, this information is not publicly available. At present, it was not possible to identify any suitable public alternative data source making CORINAIR the best publicly available data source for the purpose of the ICAO methodology.

6 Maintenance Requirements of the ICAO Methodology

In order to support the continued improvement and adoption of the ICAO methodology various data components will require a regular update by ICAO and be provided to users seeking to implement the ICAO methodology. These include:

ICAO traffic data – to be analyzed and updated on an annual basis.

Air carriers scheduled data – In order to calculate the composite city emissions city-pairs data are to be updated on an annual basis to reflect the schedules operated by the air carriers during the period.

Generic Aircraft Mapping – To account for changes in the equipment operating in the industry ICAO will complete a review of the aircraft types listed in the scheduled flights database and the TFS and publish a reference document showing the corresponding mapping to representative aircraft type for all in service aircraft type.

Aircraft Fuel consumption – In order to keep up to date information about new aircrafts types and technology improvements adopted by the industry, ICAO will update the fuel per kilometre information for the several aircraft equivalent models, as soon as new information is made available by aircraft manufacturers and air carriers.

7 Options for Carrier Specific Accuracy Improvements

As ICAO recognizes the additional benefits, which more detailed air carrier specific data can provide, the ICAO methodology is intended to be open source for carriers that are considering their own offset programmes and able to receive enhancements to the quality of data employed for the calculations. Possible carrier specific improvements include:

Fuel Burn – Given the air carriers flight planning requirements in terms of efficiency and safety it is anticipated that air carriers will be interested in employing more robust data to the fuel consumed on their operated flights.

Cargo Carried – An air carrier may use its own cargo factor so long as the level of aggregation is provided in accompanying documentation.

Passenger Load Factor – An air carrier may use their own passenger load factor so long as the level of aggregation is clear in accompanying documentation.

Aircraft Configuration – On account of the generic nature of this methodology an air carrier may wish to implement fleet specific data on the aircraft operated in its service.

Appendix A

Factors per Route Group

Version 7 data are based on traffic during calendar year 2012.

Route Groups		Pax Load Factors		Pax to Freight Factors	
		Wide Body	**Narrow Body**	**Wide Body**	**Narrow Body**
1	Between North America and Central America/Caribbean (NC)	82.7%	79.3%	89.5%	99.3%
2	Between and within Central America and the Caribbean (LC)	65.5%	75.3%	89.9%	94.9%
3	Between Bermuda, Canada, Mexico and the United States (LNM)	81.8%	76.0%	90.3%	99.6%
4	Between North Am/Central Am/Caribbean & South America (NCS)	82.0%	75.6%	83.4%	98.2%
5	Local South America (LS)	76.9%	75.8%	82.8%	98.3%
6	Local Europe (LE)	72.9%	75.3%	87.4%	98.1%
7	Local Middle East (LM)	74.8%	67.3%	81.8%	97.7%
8	Local Africa (LA)	64.5%	69.6%	79.4%	95.8%
9	Between Europe and Middle East (EM)	73.4%	73.0%	72.9%	98.3%
10	Between Europe /Middle East and Africa	76.7%	76.2%	78.8%	99.1%
11	North Atlantic	81.7%	81.8%	79.3%	98.1%
12	Mid Atlantic	82.6%	78.5%	83.8%	97.5%
13	South Atlantic	83.6%	N/A	84.2%	N/A
14	Local Asia	73.6%	71.5%	81.9%	96.7%
15	Between Europe/Middle East/Africa and Asia	79.2%	74.3%	74.3%	97.3%
16	North & Mid Pacific	83.2%	N/A	84.2%	N/A
17	South Pacific	82.7%	75.6%	89.9%	91.7%

Appendix B - Equivalent Aircraft Mapping (based on aircraft currently flown)

AIRCRAFT	EQVT
100	100
141	146
142	146
143	146
146	146
310	310
313	310
318	320
319	320
320	320
321	320
32S	320
330	330
332	330
333	330
340	340
342	340
343	340
345	340
346	340
380	ND
717	100
721	727
722	727
727	727
72A	727
72M	727
72S	727
732	732
733	734
734	734
735	734
736	734
737	732
738	734
739	734
73A	732
73C	734
73G	734
73H	734
73J	734

AIRCRAFT	EQVT
73M	732
73Q	734
73S	732
73W	734
741	747
742	747
743	747
744	744
747	747
74D	747
74E	744
74L	747
74M	747
752	757
753	757
757	757
75W	757
762	767
763	767
764	767
767	767
772	777
773	777
777	777
77L	777
77W	777
A28	AN6
A40	F50
AB3	767
AB4	767
AB6	767
ACD	ND
AGH	ND
AN4	AN6
AN6	AN6
AR1	146
AR7	146
AR8	146
ARJ	146
AT3	AT4

AIRCRAFT	EQVT
AT4	AT4
AT5	AT4
AT7	AT7
ATP	DH8
ATR	AT4
B11	B11
B350	B350
BE1	BES
BE2	ND
BE20	BE20
BE9	F406
BEC	ND
BEH	BES
BES	BES
BET	BE20
BH2	ND
BNI	ND
BNT	ND
CNA	ND
CNC	CNC
CR1	CR2
CR2	CR2
CR7	CR7
CR9	CR9
CRA	CR7
CRJ	CR2
CS2	SC7
CS5	DH8
CV5	AN6
D10	D10
D1C	D10
D28	SWM
D38	D38
D93	DC9
D95	DC9
D9S	DC9
DC9	DC9
DH1	DH8
DH2	DH8
DH3	DH8

AIRCRAFT	EQVT
DH4	DH8
DH7	DH7
DH8	DH8
DHB	CNC
DHC	ND
DHL	DHO
DHO	DHO
DHP	ND
DHS	ND
DHT	SC7
E70	CR9
E75	CR9
E90	100
E95	100
EM2	J41
EMB	EMB
EMJ	CR9
ER3	CR2
ER4	CR2
ERD	CR2
ERJ	CR2
F24	B11
F27	F27
F28	F28
F406	F406
F50	F50
F70	CR9
FK7	F27
FRJ	CR2
GRS	SWM
HS7	F27
I14	S20
IL8	LOF
ILW	747
J31	J31
J32	J31
J41	J41
JST	J31

AIRCRAFT	EQVT
L10	D10
L11	D10
L15	D10
L4T	EMB
LOF	LOF
LOH	LOH
M11	D10
M80	M80
M81	M80
M82	M80
M83	M80
M87	M80
M88	M80
M90	M80
ND	ND
ND2	SH3
NDE	ND
PA2	ND
PAG	ND
PL2	DHO
PN6	BE20
S20	S20
S61	ND
S76	ND
SC7	SC7
SF3	SF3
SH3	SH3
SH6	SH6
SWM	SWM
T20	757
TU3	F28
TU5	727
YK2	DC9
YK4	CR9
YN2	SC7
YN7	AN6
YS1	AN6

Appendix C

Modified CORINAIR fuel consumption table (regional jets added)

Eqvt Aircraft Code	Flight Distance(nm)															
	125	250	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500
310	2810.56	3899.47	5990.37	8081.27	10172.16	14532.58	18981.64	23699.35	28675.28	33763.82						
320	1644.39	2497.29	3660.61	4705.01	6027.23	8332.01	10865.90	13441.26								
330	4093.66	5862.43	8615.45	11359.97	14121.50	19790.45	25634.21	31714.79	38043.52	44311.94	51005.69					
340	3832.91	5669.09	8482.38	11310.86	14201.21	20133.18	26279.80	32695.54	39114.82	45873.85	52895.18	60079.36	67669.69	75568.29	83691.99	
B11	1393.85	2082.41	3110.10	4194.78	5279.46	7641.61	10160.03									
146	1245.09	1860.53	3124.55	4374.54	5652.57	8270.11										
727	2716.78	3754.67	5660.16	7493.22	9471.16	13544.24	17872.26	22238.06								
732	1799.99	2495.27	3727.09	4949.72	6190.73	8721.79	11438.03									
734	1603.13	2267.96	3612.83	4960.32	6302.56	9187.67	12167.63									
747	6564.83	9419.78	14308.04	19196.29	24084.55	34170.53	44418.98	55255.17	66562.31	77909.24	90362.10	103265.90	116703.31	130411.02		
744	6330.86	9058.26	13404.56	17750.86	22097.16	30921.57	40266.67	49480.22	59576.88	69888.28	80789.24	91986.50	103611.40	115553.02	128170.81	141254.25
767	3030.31	4305.22	6485.18	8665.13	10845.09	15408.59	20086.57	24804.39	29909.40	35239.06	40630.93	46313.67	52208.00			
757	2422.90	3410.18	5070.35	6724.43	8390.71	11845.75	15407.03	19025.89								
777	4819.58	7035.14	10130.36	13226.45	16363.80	22576.41	29225.68	36026.67	43143.25	50294.63	57904.29	65763.50	73655.15	82067.40	90693.23	
DC9	1743.86	2477.97	3815.30	5067.12	6489.97	9354.91	12353.90									
D10	4727.67	6804.37	10487.46	14170.55	17853.63	25476.23	33218.58	41492.33	50361.34	59452.39	69037.90	79034.06	89397.99			
F28	1357.45	1889.25	2984.46	3985.73	5174.88	7318.91										
100	1467.59	2078.75	3212.39	4285.75	5479.66	7796.27										
M80	2102.90	3110.99	4563.92	5913.09	7469.77	10523.32	13738.70									
SWM	147.20	246.10	444.00	641.90	839.80											
SC7	188.00	361.50	706.50	1048.20	1385.40											
SH6	285.00	465.30	826.10	1187.00	1548.30											
SH3	247.90	408.50	730.00	1051.60	1373.40											
SF3	259.60	428.90	767.80	1107.30	1447.40	2130.50										
S20	476.10	814.10	1490.10	2166.20	2842.30	4194.50										
F406	113.40	186.30	332.10	477.90	623.60	914.40										
LOF	943.70	1598.40	2907.80	4217.10	5526.40	8144.40	10761.10	13375.10	15982.30	18570.50	21061.40					
LOH	1101.00	1960.70	3680.50	5400.60	7121.00	10563.00	14006.60	17452.20	20900.20	24351.00	27805.30					
F50	427.80	681.60	1189.50	1697.90	2206.80	3226.30										
F27	374.60	606.80	1070.80	1534.40	1997.60	2921.80	3841.50									
EMB	154.20	273.60	512.10	750.20												
D38	308.10	480.20	824.40	1168.60	1512.80	2201.40										
DHO	100.70	173.40	318.80	464.10	609.40	899.60										
DH7	385.30	629.90	1119.30	1608.60	2097.80	3075.80										
DH8	625.20	1006.60	1769.60	2532.70	3295.70	4821.80	6348.10									
CNC	92.50	163.90	306.80	449.70	592.60	887.90	1174.90									
B350	167.00	269.40	474.20	679.20	884.30	1294.80	1706.10									
BE20	150.50	241.30	423.00	604.90	787.10	1152.60										
BES	186.00	296.40	517.40	738.80	960.60	1406.30	1856.00									
J41	228.20	398.50	739.00	1079.60	1420.30											
J31	174.50	290.30	522.00	754.10	986.50											
AT7	351.60	567.30	998.60	1429.70	1860.70	2721.80	3581.30	4438.20								
AT4	333.60	528.90	919.30	1309.60	1699.80	2479.60	3258.10									
AN6	488.10	818.40	1479.30	2140.80	2803.00	4130.20	5461.90									
CR2	665.00	961.20	1513.60	2073.80	2643.10	3807.00	5014.50									
CR7	929.00	1323.60	2021.70	2736.50	3482.70	5063.00	6681.90									
CR9	1022.90	1444.20	2206.30	3007.80	3824.20	5485.80	7201.20									
ERJ	572.56	879.35	1422.60	1985.52	2561.00	3751.37										
E70	775.24	1201.12	1962.02	2728.27	3513.90	5164.07	6863.00									
E90	959.77	1496.48	2429.10	3373.64	4328.37	6340.90	8438.00									

Appendix D

Airport codes mapped to City codes

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
AAA	AAA	AFA	AFA	AMV	AMV	ATL	ATL
AAE	AAE	AFL	AFL	ANC	ANC	ATM	ATM
AAL	AAL	AFZ	AFZ	ANE	ANE	ATQ	ATQ
AAN	AAN	AGA	AGA	ANF	ANF	ATW	ATW
AAQ	AAQ	AGB	MUC	ANI	ANI	ATY	ATY
AAR	AAR	AGF	AGF	ANM	ANM	ATZ	ATZ
AAT	AAT	AGH	AGH	ANR	ANR	AUA	AUA
AAX	AAX	AGP	AGP	ANS	ANS	AUC	AUC
ABA	ABA	AGR	AGR	ANU	ANU	AUH	AUH
ABB	ABB	AGS	AGS	ANV	ANV	AUQ	AUQ
ABD	ABD	AGT	AGT	ANX	ANX	AUR	AUR
ABE	ABE	AGU	AGU	AOE	ESK	AUS	AUS
ABI	ABI	AGX	AGX	AOG	AOG	AUX	AUX
ABJ	ABJ	AHB	AHB	AOI	AOI	AUY	AUY
ABL	ABL	AHE	AHE	AOJ	AOJ	AVA	AVA
ABQ	ABQ	AHO	AHO	AOK	AOK	AVL	AVL
ABR	ABR	AHU	AHU	AOR	AOR	AVN	AVN
ABS	ABS	AIA	AIA	AOU	AOU	AVP	AVP
ABT	ABT	AIN	AIN	APC	APC	AVV	AVV
ABU	ABU	AIT	AIT	APK	APK	AWD	AWD
ABV	ABV	AIU	AIU	APL	APL	AWZ	AWZ
ABX	ABX	AJA	AJA	APN	APN	AXA	AXA
ABY	ABY	AJF	AJF	APO	APO	AXD	AXD
ABZ	ABZ	AJI	AJI	APW	APW	AXF	AXF
ACA	ACA	AJK	AJK	AQG	AQG	AXM	AXM
ACC	ACC	AJL	AJL	AQI	AQI	AXP	AXP
ACE	ACE	AJN	AJN	AQJ	AQJ	AXR	AXR
ACH	ACH	AJR	AJR	AQP	AQP	AXT	AXT
ACK	ACK	AJU	AJU	ARA	ARA	AXU	AXU
ACR	ACR	AJY	AJY	ARC	ARC	AYP	AYP
ACT	ACT	AKF	AKF	ARD	ARD	AYQ	AYQ
ACV	ACV	AKJ	AKJ	ARH	ARH	AYT	AYT
ACX	ACX	AKL	AKL	ARI	ARI	AZD	AZD
ACY	AIY	AKN	AKN	ARK	ARK	AZN	AZN
ACZ	ACZ	AKP	AKP	ARM	ARM	AZO	AZO
ADA	ADA	AKU	AKU	ARN	STO	AZR	AZR
ADB	IZM	AKV	AKV	ART	ART	AZS	AZS
ADD	ADD	AKX	AKX	ARU	ARU	BAH	BAH
ADE	ADE	AKY	AKY	ARW	ARW	BAL	BAL
ADF	ADF	ALA	ALA	ASB	ASB	BAQ	BAQ
ADH	ADH	ALB	ALB	ASE	ASE	BAS	BAS
ADJ	AMM	ALC	ALC	ASF	ASF	BAV	BAV
ADK	ADK	ALF	ALF	ASJ	ASJ	BAX	BAX
ADL	ADL	ALG	ALG	ASM	ASM	BAY	BAY
ADQ	ADQ	ALH	ALH	ASO	ASO	BBA	BBA
ADU	ADU	ALO	ALO	ASP	ASP	BBI	BBI
ADV	ADV	ALS	ALS	ASR	ASR	BBK	BBK
ADZ	ADZ	ALW	ALW	ASU	ASU	BBN	BBN
AEB	AEB	AMA	AMA	ASV	ASV	BBO	BBO
AEP	BUE	AMD	AMD	ASW	ASW	BCD	BCD
AER	AER	AMH	AMH	ATA	ATA	BCI	BCI
AES	AES	AMM	AMM	ATC	ATC	BCM	BCM
AET	AET	AMQ	AMQ	ATH	ATH	BCN	BCN
AEY	AEY	AMS	AMS	ATK	ATK	BCV	BCV

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
BDA	BDA	BIM	BIM	BOC	BOC	BTT	BTT
BDB	BDB	BIN	BIN	BOD	BOD	BTU	BTU
BDH	BDH	BIO	BIO	BOG	BOG	BTV	BTV
BDJ	BDJ	BIQ	BIQ	BOH	BOH	BUA	BUA
BDL	HFD	BIR	BIR	BOI	BOI	BUD	BUD
BDO	BDO	BIS	BIS	BOJ	BOJ	BUF	BUF
BDP	BDP	BJA	BJA	BOM	BOM	BUL	BUL
BDQ	BDQ	BJB	BJB	BON	BON	BUN	BUN
BDS	BDS	BJF	BJF	BOO	BOO	BUQ	BUQ
BDU	BDU	BJI	BJI	BOS	BOS	BUR	BUR
BEB	BEB	BJL	BJL	BOY	BOY	BUS	BUS
BEG	BEG	BJM	BJM	BPE	BPE	BUW	BUW
BEJ	BEJ	BJR	BJR	BPL	BPL	BUX	BUX
BEL	BEL	BJT	BJT	BPM	BPM	BUZ	BUZ
BEM	BEM	BJV	BJV	BPN	BPN	BVA	BVA
BEN	BEN	BJW	BJW	BPS	BPS	BVB	BVB
BES	BES	BJX	BJX	BPT	BPT	BVC	BVC
BET	BET	BJZ	BJZ	BPX	BPX	BVE	BVE
BEW	BEW	BKC	BKC	BQA	BQA	BVG	BVG
BEY	BEY	BKG	BKG	BQB	BQB	BVH	BVH
BFC	BFC	BKI	BKI	BQJ	BQJ	BVV	BVV
BFF	BFF	BKK	BKK	BQK	SSI	BWA	BWA
BFI	SEA	BKM	BKM	BQN	BQN	BWE	BWE
BFJ	BFJ	BKO	BKO	BQS	BQS	BWI	WAS
BFL	BFL	BKQ	BKQ	BQT	BQT	BWK	BWK
BFN	BFN	BKS	BKS	BRA	BRA	BWN	BWN
BFS	BFS	BKW	BKW	BRC	BRC	BWT	BWT
BFV	BFV	BKY	BKY	BRD	BRD	BWX	BWX
BGA	BGA	BKZ	BKZ	BRE	BRE	BXB	BXB
BGF	BGF	BLA	BLA	BRI	BRI	BXR	BXR
BGG	BGG	BLE	BLE	BRL	BRL	BXU	BXU
BGI	BGI	BLI	BLI	BRM	BRM	BYC	BYC
BGM	BGM	BLJ	BLJ	BRN	BRN	BYK	BYK
BGN	BGN	BLL	BLL	BRO	BRO	BYO	BYO
BGO	BGO	BLQ	BLQ	BRQ	BRQ	BYP	BYP
BGR	BGR	BLR	BLR	BRR	BRR	BZE	BZE
BGW	BGW	BLV	BLV	BRS	BRS	BZG	BZG
BGY	MIL	BLZ	BLZ	BRU	BRU	BZN	BZN
BHB	BHB	BMA	STO	BRW	BRW	BZO	BZO
BHD	BFS	BMB	BMB	BSA	BSA	BZR	BZR
BHE	BHE	BME	BME	BSB	BSB	BZV	BZV
BHH	BHH	BMG	BMG	BSC	BSC	CAB	CAB
BHI	BHI	BMI	BMI	BSD	BSD	CAC	CAC
BHJ	BHJ	BMO	BMO	BSG	BSG	CAE	CAE
BHK	BHK	BMU	BMU	BSK	BSK	CAG	CAG
BHM	BHM	BMV	BMV	BSL	BSL	CAH	CAH
BHO	BHO	BMW	BMW	BSO	BSO	CAI	CAI
BHQ	BHQ	BNA	BNA	BSR	BSR	CAK	CAK
BHR	BHR	BNC	BNC	BST	BST	CAL	CAL
BHS	BHS	BND	BND	BSX	BSX	CAN	CAN
BHU	BHU	BNE	BNE	BTC	BTC	CAP	CAP
BHV	BHV	BNI	BNI	BTH	BTH	CAW	CAW
BHX	BHX	BNK	BNK	BTI	BTI	CAY	CAY
BHY	BHY	BNN	BNN	BTJ	BTJ	CBB	CBB
BIA	BIA	BNS	BNS	BTK	BTK	CBH	CBH
BIF	BIF	BNX	BNX	BTM	BTM	CBO	CBO
BIK	BIK	BNY	BNY	BTR	BTR	CBQ	CBQ
BIL	BIL	BOB	BOB	BTS	BTS	CBR	CBR

Airport Code	City Code
CBT	CBT
CCC	CCC
CCF	CCF
CCJ	CCJ
CCK	CCK
CCM	CCM
CCN	CCN
CCP	CCP
CCS	CCS
CCU	CCU
CCV	CCV
CDB	CDB
CDC	CDC
CDG	PAR
CDR	CDR
CDV	CDV
CEB	CEB
CEC	CEC
CED	CED
CEE	CEE
CEG	CEG
CEI	CEI
CEK	CEK
CEN	CEN
CEZ	CEZ
CFB	CFB
CFC	CFC
CFE	CFE
CFG	CFG
CFK	CFK
CFN	CFN
CFR	CFR
CFS	CFS
CFU	CFU
CGA	CGA
CGB	CGB
CGD	CGD
CGH	SAO
CGK	JKT
CGM	CGM
CGN	CGN
CGO	CGO
CGP	CGP
CGQ	CGQ
CGR	CGR
CGY	CGY
CHA	CHA
CHC	CHC
CHG	CHG
CHO	CHO
CHQ	CHQ
CHS	CHS
CHT	CHT
CHX	CHX
CHY	CHY
CIA	ROM
CID	CID
CIF	CIF

Airport Code	City Code
CIH	CIH
CIJ	CIJ
CIT	CIT
CIU	SSM
CIX	CIX
CIY	CIY
CIZ	CIZ
CJA	CJA
CJB	CJB
CJC	CJC
CJF	CJF
CJJ	CJJ
CJL	CJL
CJM	CJM
CJS	CJS
CJU	CJU
CKB	CKB
CKG	CKG
CKH	CKH
CKS	CKS
CKY	CKY
CKZ	CKZ
CLD	CLD
CLE	CLE
CLJ	CLJ
CLL	CLL
CLO	CLO
CLQ	CLQ
CLT	CLT
CLV	CLV
CLY	CLY
CMB	CMB
CME	CME
CMF	CMF
CMG	CMG
CMH	CMH
CMI	CMI
CMN	CAS
CMU	CMU
CMW	CMW
CMX	CMX
CND	CND
CNF	BHZ
CNJ	CNJ
CNM	CNM
CNP	CNP
CNQ	CNQ
CNS	CNS
CNX	CNX
CNY	CNY
COD	COD
COK	COK
COO	COO
COQ	COQ
COR	COR
COS	COS
COU	COU
CPC	CPC

Airport Code	City Code
CPD	CPD
CPE	CPE
CPH	CPH
CPO	CPO
CPR	CPR
CPT	CPT
CPV	CPV
CRA	CRA
CRD	CRD
CRI	CRI
CRK	NCP
CRL	BRU
CRM	CRM
CRP	CRP
CRV	CRV
CRW	CRW
CSG	CSG
CSH	CSH
CSX	CSX
CSY	CSY
CTA	CTA
CTC	CTC
CTG	CTG
CTL	CTL
CTM	CTM
CTN	CTN
CTS	SPK
CTU	CTU
CUC	CUC
CUE	CUE
CUF	CUF
CUK	CUK
CUL	CUL
CUM	CUM
CUN	CUN
CUR	CUR
CUU	CUU
CUZ	CUZ
CVG	CVG
CVM	CVM
CVN	CVN
CVQ	CVQ
CVT	CVT
CVU	CVU
CWA	AUW
CWB	CWB
CWL	CWL
CXB	CXB
CXI	CXI
CXJ	CXJ
CXR	CXR
CYB	CYB
CYD	CYD
CYO	CYO
CYP	CYP
CYS	CYS
CYX	CYX
CYZ	CYZ

Airport Code	City Code
CZE	CZE
CZH	CZH
CZL	CZL
CZM	CZM
CZS	CZS
CZU	CZU
CZX	CZX
DAB	DAB
DAC	DAC
DAD	DAD
DAL	DFW
DAM	DAM
DAR	DAR
DAT	DAT
DAU	DAU
DAV	DAV
DAX	DAX
DAY	DAY
DBA	DBA
DBO	DBO
DBQ	DBQ
DBV	DBV
DCA	WAS
DCM	DCM
DCY	DCY
DDC	DDC
DDG	DDG
DEA	DEA
DEB	DEB
DEC	DEC
DED	DED
DEE	DEE
DEF	DEF
DEL	DEL
DEN	DEN
DFW	DFW
DGA	DGA
DGO	DGO
DGT	DGT
DHI	DHI
DHM	DHM
DHN	DHN
DIB	DIB
DIE	DIE
DIG	DIG
DIK	DIK
DIL	DIL
DIN	DIN
DIO	DIO
DIR	DIR
DIS	DIS
DIU	DIU
DIW	DIW
DIY	DIY
DJB	DJB
DJE	DJE
DJG	DJG
DJJ	DJJ

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
DKR	DKR	DWC	DWC	ENE	ENE	FEC	FEC
DLA	DLA	DWD	DWD	ENH	ENH	FEG	FEG
DLC	DLC	DWO	DWO	ENU	ENU	FEN	FEN
DLE	DLE	DXB	DXB	ENY	ENY	FEZ	FEZ
DLG	DLG	DXE	DXE	EOH	MDE	FGI	APW
DLH	DLH	DYG	DYG	EPR	EPR	FGU	FGU
DLI	DLI	DYR	DYR	EQS	EQS	FHZ	FHZ
DLM	DLM	DYU	DYU	ERC	ERC	FIH	FIH
DLU	DLU	DZA	DZA	ERF	ERF	FKB	FKB
DLY	DLY	DZN	DZN	ERH	ERH	FKI	FKI
DLZ	DLZ	EAM	EAM	ERI	ERI	FKQ	FKQ
DMB	DMB	EAR	EAR	ERL	ERL	FKS	FKS
DME	MOW	EAS	EAS	ERM	ERM	FLA	FLA
DMK	BKK	EAT	EAT	ERN	ERN	FLG	FLG
DMM	DMM	EAU	EAU	ERS	WDH	FLL	FLL
DMU	DMU	EBA	EBA	ERZ	ERZ	FLN	FLN
DNA	OKA	EBB	EBB	ESB	ANK	FLO	FLO
DND	DND	EBD	EBD	ESC	ESC	FLR	FLR
DNH	DNH	EBH	EBH	ESD	ESD	FLS	FLS
DNK	DNK	EBJ	EBJ	ESL	ESL	FLW	FLW
DNR	DNR	EBL	EBL	ESM	ESM	FMA	FMA
DNZ	DNZ	EBU	EBU	ESU	ESU	FMI	FMI
DOB	DOB	ECN	ECN	ETH	ETH	FMM	FMM
DOH	DOH	ECP	ECP	ETR	ETR	FMN	FMN
DOK	DOK	EDF	ANC	ETZ	ETZ	FMO	FMO
DOL	DOL	EDI	EDI	EUG	EUG	FNA	FNA
DOM	DOM	EDL	EDL	EUN	EUN	FNC	FNC
DOU	DOU	EDO	EDO	EUX	EUX	FNI	FNI
DOY	DOY	EDR	EDR	EVE	EVE	FNJ	FNJ
DPL	DPL	EEK	EEK	EVG	EVG	FNT	FNT
DPO	DPO	EFL	EFL	EVN	EVN	FOC	FOC
DPS	DPS	EGC	EGC	EVV	EVV	FOD	FOD
DPT	DPT	EGE	EGE	EWN	EWN	FOE	TOP
DQA	DQA	EGM	EGM	EWR	NYC	FON	FON
DQM	DQM	EGN	EGN	EXT	EXT	FOR	FOR
DRG	DRG	EGO	EGO	EYK	EYK	FPO	FPO
DRK	DRK	EGS	EGS	EYP	EYP	FRA	FRA
DRO	DRO	EIN	EIN	EYW	EYW	FRD	FRD
DRS	DRS	EJA	EJA	EZE	BUE	FRE	FRE
DRV	DRV	EJH	EJH	EZS	EZS	FRO	FRO
DRW	DRW	EJN	EJN	EZV	EZV	FRS	FRS
DSA	DSA	EKO	EKO	FAC	FAC	FRU	FRU
DSE	DSE	EKS	EKS	FAE	FAE	FRW	FRW
DSI	DSI	ELC	ELC	FAH	FAH	FSC	FSC
DSK	DSK	ELD	ELD	FAI	FAI	FSD	FSD
DSM	DSM	ELF	ELF	FAO	FAO	FSM	FSM
DSN	DSN	ELG	ELG	FAR	FAR	FSP	FSP
DTB	DTB	ELH	ELH	FAT	FAT	FSZ	FSZ
DTM	DTM	ELI	ELI	FAV	FAV	FTA	FTA
DTW	DTT	ELM	ELM	FAY	FAY	FTE	FTE
DUB	DUB	ELP	ELP	FBD	FBD	FTU	FTU
DUD	DUD	ELQ	ELQ	FBE	FBE	FUE	FUE
DUJ	DUJ	ELS	ELS	FBM	FBM	FUG	FUG
DUR	DUR	ELU	ELU	FCA	FCA	FUJ	FUJ
DUS	DUS	EMA	EMA	FCO	ROM	FUK	FUK
DUT	DUT	EMD	EMD	FDE	FDE	FUN	FUN
DVL	DVL	EML	EML	FDF	FDF	FUO	FUO
DVO	DVO	ENA	ENA	FDH	FDH	FUT	FUT

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
FVM	FVM	GLN	GLN	GUR	GUR	HHH	HHH
FWA	FWA	GLO	GLO	GUW	GUW	HHN	HHN
FYJ	FYJ	GLT	GLT	GVA	GVA	HHQ	HHQ
FYU	FYU	GLV	GLV	GVR	GVR	HHR	HHR
GAE	GAE	GLX	GLX	GWD	GWD	HHZ	HHZ
GAF	GAF	GMA	GMA	GWL	GWL	HIA	HIA
GAJ	GAJ	GMB	GMB	GWT	GWT	HIB	HIB
GAL	GAL	GME	GME	GXF	GXF	HID	HID
GAM	GAM	GMO	GMO	GXH	GXH	HIJ	HIJ
GAN	GAN	GMP	SEL	GYA	GYA	HIN	HIN
GAU	GAU	GMR	GMR	GYD	BAK	HIR	HIR
GAY	GAY	GMZ	GMZ	GYE	GYE	HJJ	HJJ
GBB	GBB	GNA	GNA	GYG	GYG	HJR	HJR
GBD	GBD	GNB	GNB	GYL	GYL	HKD	HKD
GBE	GBE	GND	GND	GYN	GYN	HKG	HKG
GBT	GBT	GNS	GNS	GYS	GYS	HKK	HKK
GCC	GCC	GNV	GNV	GZO	GZO	HKN	HKN
GCH	GCH	GOA	GOA	GZP	AYT	HKT	HKT
GCI	GCI	GOB	GOB	GZT	GZT	HLA	HLA
GCK	GCK	GOH	GOH	HAA	HAA	HLD	HLD
GCM	GCM	GOI	GOI	HAC	HAC	HLH	HLH
GDE	GDE	GOJ	GOJ	HAD	HAD	HLN	HLN
GDL	GDL	GOM	GOM	HAH	YVA	HLP	JKT
GDN	GDN	GOP	GOP	HAJ	HAJ	HLZ	HLZ
GDQ	GDQ	GOQ	GOQ	HAK	HAK	HMA	HMA
GDT	GDT	GOT	GOT	HAM	HAM	HMB	HMB
GDX	GDX	GOU	GOU	HAN	HAN	HME	HME
GDZ	GDZ	GOV	GOV	HAQ	HAQ	HMI	HMI
GEA	NOU	GPA	GPA	HAS	HAS	HMO	HMO
GEG	GEG	GPI	GPI	HAU	HAU	HMV	HMV
GEL	GEL	GPS	GPS	HAV	HAV	HNA	HNA
GEO	GEO	GPT	GPT	HBA	HBA	HND	TYO
GES	GES	GRB	GRB	HBE	HBE	HNH	HNH
GET	GET	GRI	GRI	HBX	HBX	HNL	HNL
GEV	GEV	GRJ	GRJ	HCJ	HCJ	HNS	HNS
GFF	GFF	GRK	GRK	HCR	HCR	HNY	HNY
GFK	GFK	GRO	GRO	HDF	HDF	HOB	HOB
GFN	GFN	GRQ	GRQ	HDG	HDG	HOD	HOD
GGG	GGG	GRR	GRR	HDM	HDM	HOF	HOF
GGM	GGM	GRU	SAO	HDN	HDN	HOG	HOG
GGT	GGT	GRV	GRV	HDS	HDS	HOI	HOI
GHA	GHA	GRW	GRW	HDY	HDY	HOM	HOM
GHB	GHB	GRX	GRX	HEA	HEA	HON	HON
GIB	GIB	GRZ	GRZ	HEH	HEH	HOR	HOR
GIG	RIO	GSE	GOT	HEK	HEK	HOT	HOT
GIL	GIL	GSM	GSM	HEL	HEL	HOU	HOU
GIS	GIS	GSO	GSO	HER	HER	HOV	HOV
GIU	GIU	GSP	GSP	HET	HET	HOX	HOX
GIZ	GIZ	GST	GST	HFE	HFE	HPB	HPB
GJA	GJA	GTE	GTE	HFS	HFS	HPG	HPG
GJL	GJL	GTF	GTF	HFT	HFT	HPH	HPH
GJT	GJT	GTO	GTO	HGA	HGA	HPN	HPN
GKA	GKA	GTP	GTP	HGD	HGD	HRB	HRB
GKK	GKK	GTR	UBS	HGH	HGH	HRE	HRE
GLA	GLA	GTS	GTS	HGN	HGN	HRG	HRG
GLF	GLF	GUA	GUA	HGO	HGO	HRI	HRI
GLH	GLH	GUC	GUC	HGR	HGR	HRK	HRK
GLK	GLK	GUM	GUM	HGU	HGU	HRL	HRL

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
HRO	HRO	IJK	IJK	IWD	IWD	JKR	JKR
HSG	HSG	IKA	THR	IWJ	IWJ	JLN	JLN
HSL	HSL	IKI	IKI	IWK	IWK	JLR	JLR
HSN	HSN	IKS	IKS	IWO	IWO	JMK	JMK
HSV	HSV	IKT	IKT	IXA	IXA	JMS	JMS
HTA	HTA	ILD	ILD	IXB	IXB	JMU	JMU
HTI	HTI	ILG	ILG	IXC	IXC	JNB	JNB
HTN	HTN	ILI	ILI	IXD	IXD	JNG	JNG
HTS	HTS	ILM	ILM	IXE	IXE	JNU	JNU
HUE	HUE	ILO	ILO	IXG	IXG	JNX	JNX
HUH	HUH	ILP	ILP	IXJ	IXJ	JNZ	JNZ
HUI	HUI	ILR	ILR	IXL	IXL	JOE	JOE
HUN	HUN	ILY	ILY	IXM	IXM	JOG	JOG
HUS	HUS	IMF	IMF	IXR	IXR	JOI	JOI
HUU	HUU	IMP	IMP	IXS	IXS	JOK	JOK
HUX	HUX	IMT	IMT	IXU	IXU	JOL	JOL
HUY	HUY	INB	INB	IXZ	IXZ	JOS	JOS
HUZ	HUZ	INC	INC	IZA	IZA	JPA	JPA
HVB	HVB	IND	IND	IZO	IZO	JPR	JPR
HVD	HVD	INH	INH	JAC	JAC	JQA	JQA
HVG	HVG	INL	INL	JAI	JAI	JRH	JRH
HVN	HVN	INN	INN	JAL	JAL	JRO	JRO
HWD	HWD	INU	INU	JAN	JAN	JSH	JSH
HXD	HXD	INV	INV	JAU	JAU	JSI	JSI
HYA	HYA	INZ	INZ	JAV	JAV	JSR	JSR
HYD	HYD	IOA	IOA	JAX	JAX	JST	JST
HYN	HYN	IOM	IOM	JBB	JBB	JSU	JSU
HYS	HYS	IOS	IOS	JBQ	JBQ	JSY	JSY
HZG	HZG	IPA	IPA	JBR	JBR	JTC	JTC
HZH	HZH	IPC	IPC	JCB	JCB	JTR	JTR
IAA	IAA	IPH	IPH	JCK	JCK	JTY	JTY
IAD	WAS	IPL	IPL	JDH	JDH	JUB	JUB
IAG	IAG	IPN	IPN	JDO	JDO	JUH	JUH
IAH	HOU	IPT	IPT	JDZ	JDZ	JUJ	JUJ
IAM	IAM	IQN	IQN	JED	JED	JUL	JUL
IAN	IAN	IQQ	IQQ	JEG	JEG	JUV	JUV
IAO	IAO	IQT	IQT	JEK	JEK	JUZ	JUZ
IAS	IAS	IRA	IRA	JER	JER	JXA	JXA
IBA	IBA	IRJ	IRJ	JFK	NYC	JYV	JYV
IBE	IBE	IRM	IRM	JFR	JFR	JZH	JZH
IBR	IBR	IRP	IRP	JGA	JGA	KAA	KAA
IBZ	IBZ	ISA	ISA	JGD	JGD	KAB	KAB
ICI	ICI	ISB	ISB	JGN	JGN	KAD	KAD
ICN	SEL	ISC	ISC	JGS	JGS	KAJ	KAJ
ICT	ICT	ISE	ISE	JHB	JHB	KAL	KAL
IDA	IDA	ISG	ISG	JHG	JHG	KAN	KAN
IDR	IDR	ISN	ISN	JHS	JHS	KAO	KAO
IEV	IEV	ISP	ISP	JIB	JIB	KAT	KAT
IFJ	IFJ	IST	IST	JIC	JIC	KAW	KAW
IFN	IFN	ISU	ISU	JIJ	JIJ	KAZ	KAZ
IFO	IFO	ITB	ITB	JIK	JIK	KBC	KBC
IGA	IGA	ITH	ITH	JIM	JIM	KBL	KBL
IGD	IGD	ITM	OSA	JIQ	JIQ	KBP	IEV
IGM	IGM	ITO	ITO	JIU	JIU	KBR	KBR
IGR	IGR	IUE	IUE	JJN	JJN	KBU	KBU
IGT	IGT	IVC	IVC	JKG	JKG	KBV	KBV
IGU	IGU	IVL	IVL	JKH	JKH	KCA	KCA
IIL	IIL	IWA	IWA	JKL	JKL	KCH	KCH

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
KCK	KCK	KKA	KKA	KSJ	KSJ	LAI	LAI
KCM	KCM	KKC	KKC	KSM	KSM	LAN	LAN
KCT	KCT	KKE	KKE	KSN	KSN	LAO	LAO
KCZ	KCZ	KKJ	KKJ	KSO	KSO	LAP	LAP
KDH	KDH	KKN	KKN	KSQ	KSQ	LAQ	LAQ
KDI	KDI	KKR	KKR	KSU	KSU	LAR	LAR
KDL	KDL	KKX	KKX	KSY	KSY	LAS	LAS
KDM	KDM	KLG	KLG	KTA	KTA	LAU	LAU
KDO	KDO	KLO	KLO	KTD	KTD	LAW	LAW
KDU	KDU	KLR	KLR	KTE	KTE	LAX	LAX
KDV	KDV	KLU	KLU	KTG	KTG	LBA	LBA
KDY	KDY	KLV	KLV	KTL	KTL	LBB	LBB
KDZ	KDZ	KLW	KLW	KTM	KTM	LBC	LBC
KEF	REK	KLX	KLX	KTN	KTN	LBD	LBD
KEH	KEH	KMC	KMC	KTS	KTS	LBE	LBE
KEJ	KEJ	KMG	KMG	KTT	KTT	LBF	LBF
KEM	KEM	KMI	KMI	KTW	KTW	LBJ	LBJ
KEP	KEP	KMJ	KMJ	KUA	KUA	LBL	LBL
KER	KER	KMN	KMN	KUD	KUD	LBP	LBP
KET	KET	KMQ	KMQ	KUF	KUF	LBS	LBS
KEW	KEW	KMS	KMS	KUH	KUH	LBU	LBU
KFS	KFS	KMU	KMU	KUL	KUL	LBV	LBV
KGA	KGA	KMV	KMV	KUM	KUM	LCA	LCA
KGC	KGC	KND	KND	KUN	KUN	LCE	LCE
KGD	KGD	KNG	KNG	KUO	KUO	LCG	LCG
KGE	KGE	KNH	KNH	KUS	KUS	LCH	LCH
KGF	KGF	KNO	KNO	KUT	KUT	LCJ	LCJ
KGI	KGI	KNQ	KNQ	KUU	KUU	LCK	CMH
KGL	KGL	KNS	KNS	KUV	KUV	LCM	LCM
KGS	KGS	KNU	KNU	KVA	KVA	LCR	LCR
KGT	KGT	KNX	KNX	KVD	KVD	LCX	LCX
KGX	KGX	KOA	KOA	KVG	KVG	LCY	LON
KHD	KHD	KOE	KOE	KVK	KVK	LDB	LDB
KHE	KHE	KOI	KOI	KVL	KVL	LDE	LDE
KHG	KHG	KOJ	KOJ	KVX	KVX	LDH	LDH
KHH	KHH	KOK	KOK	KWA	KWA	LDS	LDS
KHI	KHI	KOO	KOO	KWE	KWE	LDU	LDU
KHM	KHM	KOP	KOP	KWI	KWI	LDY	LDY
KHN	KHN	KOS	KOS	KWJ	KWJ	LEA	LEA
KHS	KHS	KOT	KOT	KWL	KWL	LEC	LEC
KHT	KHT	KOV	KOV	KWM	KWM	LED	LED
KHV	KHV	KOW	KOW	KWN	KWN	LEI	LEI
KHY	KHY	KQT	KQT	KWZ	KWZ	LEJ	LEJ
KHZ	KHZ	KRF	KRF	KXF	KXF	LEN	LEN
KID	KID	KRK	KRK	KXK	KXK	LEQ	LEQ
KIE	KIE	KRL	KRL	KXU	KXU	LET	LET
KIF	KIF	KRN	KRN	KYA	KYA	LEX	LEX
KIH	KIH	KRO	KRO	KYP	KYP	LFM	LFM
KIJ	KIJ	KRP	KRP	KYU	KYU	LFT	LFT
KIM	KIM	KRR	KRR	KYZ	KYZ	LFW	LFW
KIN	KIN	KRS	KRS	KZI	KZI	LGA	NYC
KIR	KIR	KRT	KRT	KZN	KZN	LGB	LGB
KIS	KIS	KRY	KRY	KZO	KZO	LGG	LGG
KIT	KIT	KSA	KSA	KZR	KZR	LGI	LGI
KIV	KIV	KSC	KSC	KZS	KZS	LGK	LGK
KIX	OSA	KSD	KSD	LAD	LAD	LGL	LGL
KJA	KJA	KSF	KSF	LAE	LAE	LGP	LGP
KJH	KJH	KSH	KSH	LAF	LAF	LGQ	LGQ

Airport Code	City Code
LGW	LON
LHE	LHE
LHR	LON
LHW	LHW
LIF	LIF
LIG	LIG
LIH	LIH
LIL	LIL
LIM	LIM
LIN	MIL
LIQ	LIQ
LIR	LIR
LIS	LIS
LIT	LIT
LIW	LIW
LJG	LJG
LJU	LJU
LKA	LKA
LKB	LKB
LKE	SEA
LKG	LKG
LKH	LKH
LKL	LKL
LKN	LKN
LKO	LKO
LKY	LKY
LLA	LLA
LLB	LLB
LLF	LLF
LLI	LLI
LLK	LLK
LLV	LLV
LLW	LLW
LMC	LMC
LMM	LMM
LMN	LMN
LMP	LMP
LNB	LNB
LNE	LNE
LNJ	LNJ
LNK	LNK
LNV	LNV
LNY	LNY
LNZ	LNZ
LOD	LOD
LOE	LOE
LOH	LOH
LOK	LOK
LOO	LOO
LOP	LOP
LOS	LOS
LPA	LPA
LPB	LPB
LPD	LPD
LPF	LPF
LPI	LPI
LPK	LPK
LPL	LPL

Airport Code	City Code
LPM	LPM
LPP	LPP
LPQ	LPQ
LPS	LPS
LPT	LPT
LPY	LPY
LQM	LQM
LRD	LRD
LRE	LRE
LRH	LRH
LRM	LRM
LRR	LRR
LRS	LRS
LRT	LRT
LSA	LSA
LSC	LSC
LSE	LSE
LSH	LSH
LSI	SDZ
LSP	LSP
LST	LST
LSW	LSW
LSY	LSY
LTI	LTI
LTN	LON
LTO	LTO
LTT	LTT
LTX	LTX
LUD	LUD
LUG	LUG
LUH	LUH
LUK	CVG
LUM	LUM
LUN	LUN
LUO	LUO
LUQ	LUQ
LUR	LUR
LUV	LUV
LUW	LUW
LUX	LUX
LUZ	LUZ
LVI	LVI
LWB	LWB
LWN	LWN
LWO	LWO
LWS	LWS
LWY	LWY
LXA	LXA
LXG	LXG
LXR	LXR
LXS	LXS
LYA	LYA
LYB	LYB
LYC	LYC
LYG	LYG
LYH	LYH
LYI	LYI
LYP	LYP

Airport Code	City Code
LYR	LYR
LYS	LYS
LZC	LZC
LZH	LZH
LZO	LZO
LZR	LZR
LZY	LZY
MAA	MAA
MAB	MAB
MAD	MAD
MAF	MAF
MAG	MAG
MAH	MAH
MAJ	MAJ
MAM	MAM
MAN	MAN
MAO	MAO
MAQ	MAQ
MAR	MAR
MAS	MAS
MAU	MAU
MBA	MBA
MBE	MBE
MBI	MBI
MBJ	MBJ
MBL	MBL
MBS	MBS
MBT	MBT
MCE	MCE
MCG	MCG
MCI	MKC
MCK	MCK
MCO	ORL
MCP	MCP
MCT	MCT
MCV	MCV
MCW	MCW
MCX	MCX
MCY	MCY
MCZ	MCZ
MDC	MDC
MDE	MDE
MDG	MDG
MDK	MDK
MDL	MDL
MDQ	MDQ
MDT	HAR
MDU	MDU
MDW	CHI
MDZ	MDZ
MEA	MEA
MEB	MEL
MEC	MEC
MED	MED
MEE	MEE
MEG	MEG
MEH	MEH
MEI	MEI

Airport Code	City Code
MEL	MEL
MEM	MEM
MEQ	MEQ
MEX	MEX
MFE	MFE
MFM	MFM
MFR	MFR
MFU	MFU
MGA	MGA
MGB	MGB
MGF	MGF
MGH	MGH
MGM	MGM
MGQ	MGQ
MGS	MGS
MGT	MGT
MGW	MGW
MGZ	MGZ
MHC	MHC
MHD	MHD
MHG	MHG
MHH	MHH
MHK	MHK
MHQ	MHQ
MHT	MHT
MIA	MIA
MID	MID
MIG	MIG
MII	MII
MIM	MIM
MIR	MIR
MIS	MIS
MJD	MJD
MJF	MJF
MJI	MJI
MJM	MJM
MJN	MJN
MJT	MJT
MJU	MJU
MJV	MJV
MJZ	MJZ
MKC	MKC
MKE	MKE
MKG	MKG
MKK	MKK
MKL	MKL
MKM	MKM
MKP	MKP
MKQ	MKQ
MKW	MKW
MKY	MKY
MKZ	MKZ
MLA	MLA
MLB	MLB
MLE	MLE
MLG	MLG
MLH	MLH
MLI	MLI

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
MLM	MLM	MSP	MSP	NAN	NAN	NOP	NOP
MLN	MLN	MSQ	MSQ	NAO	NAO	NOS	NOS
MLO	MLO	MSR	MSR	NAP	NAP	NOU	NOU
MLU	MLU	MST	MST	NAQ	NAQ	NOV	NOV
MLX	MLX	MSU	MSU	NAS	NAS	NOZ	NOZ
MMB	MMB	MSY	MSY	NAT	NAT	NPE	NPE
MMD	MMD	MSZ	MSZ	NAU	NAU	NPL	NPL
MME	MME	MTJ	MTJ	NAV	NAV	NQN	NQN
MMH	MMH	MTR	MTR	NAW	NAW	NQU	NQU
MMJ	MMJ	MTT	MTT	NAY	BJS	NQX	EYW
MMK	MMK	MTV	MTV	NBC	NBC	NQY	NQY
MMO	MMO	MTY	MTY	NBE	NBE	NRA	NRA
MMU	MMU	MUA	MUA	NBO	NBO	NRE	NRE
MMX	MMA	MUB	MUB	NBS	NBS	NRK	NRK
MMY	MMY	MUC	MUC	NBX	NBX	NRN	NRN
MMZ	MMZ	MUK	MUK	NCE	NCE	NRT	TYO
MNA	MNA	MUN	MUN	NCJ	NCJ	NSH	NSH
MNC	MNC	MUR	MUR	NCL	NCL	NSI	YAO
MNG	MNG	MUW	MUW	NCN	NCN	NSK	NSK
MNL	MNL	MUX	MUX	NCU	NCU	NSN	NSN
MNU	MNU	MVB	MVB	NDB	NDB	NST	NST
MOB	MOB	MVD	MVD	NDG	NDG	NTD	NTD
MOC	MOC	MVP	MVP	NDJ	NDJ	NTE	NTE
MOF	MOF	MVR	MVR	NDR	NDR	NTG	NTG
MOG	MOG	MVT	MVT	NDU	NDU	NTL	NTL
MOI	MOI	MVY	MVY	NER	NER	NTQ	NTQ
MOL	MOL	MWF	MWF	NEV	NEV	NTX	NTX
MOQ	MOQ	MWX	MWX	NGB	NGB	NUE	NUE
MOT	MOT	MWZ	MWZ	NGE	NGE	NUI	NUI
MOU	MOU	MXH	MXH	NGK	NGK	NUK	NUK
MOV	MOV	MXL	MXL	NGO	NGO	NUL	NUL
MOZ	MOZ	MXP	MIL	NGQ	NGQ	NUS	NUS
MPA	MPA	MXS	MXS	NGS	NGS	NUU	NUU
MPH	MPH	MXV	MXV	NHV	NHV	NUX	NUX
MPL	MPL	MXX	MXX	NIF	NIF	NVA	NVA
MPM	MPM	MXZ	MXZ	NIM	NIM	NVI	NVI
MPN	MPN	MYA	MYA	NIU	NIU	NVK	NVK
MQF	MQF	MYD	MYD	NJC	NJC	NVT	NVT
MQJ	MQJ	MYF	SAN	NJF	NJF	NWI	NWI
MQL	MQL	MYG	MYG	NKC	NKC	NYA	NYA
MQM	MQM	MYJ	MYJ	NKG	NKG	NYI	NYI
MQN	MQN	MYR	MYR	NKM	NGO	NYM	NYM
MQP	NLP	MYT	MYT	NKT	NKT	NYO	STO
MQP	MQP	MYU	MYU	NLA	NLA	NYR	NYR
MQT	MQT	MYW	MYW	NLD	NLD	NYT	NYT
MQX	MQX	MYY	MYY	NLK	NLK	NYU	NYU
MRA	MRA	MZG	MZG	NLT	NLT	NYW	NYW
MRE	MRE	MZH	MZH	NMA	NMA	NZH	NZH
MRS	MRS	MZL	MZL	NME	NME	OAG	OAG
MRU	MRU	MZO	MZO	NNB	NNB	OAI	OAI
MRV	MRV	MZR	MZR	NNG	NNG	OAJ	OAJ
MRY	MRY	MZT	MZT	NNM	NNM	OAK	OAK
MRZ	MRZ	MZV	MZV	NNT	NNT	OAL	OAL
MSA	MSA	MZW	MZW	NNX	NNX	OAS	OAS
MSJ	MSJ	NAG	NAG	NNY	NNY	OAX	OAX
MSL	MSL	NAH	NAH	NOB	NOB	OBO	OBO
MSN	MSN	NAJ	NAJ	NOC	NOC	OBU	OBU
MSO	MSO	NAL	NAL	NOJ	NOJ	OCC	OCC

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
OCM	OCM	OSR	OSR	PEK	BJS	PLW	PLW
ODN	ODN	OSS	OSS	PEM	PEM	PLX	PLX
ODO	ODO	OST	OST	PEN	PEN	PLZ	PLZ
ODS	ODS	OSW	OSW	PER	PER	PMC	PMC
ODY	ODY	OSY	OSY	PES	PES	PMF	PMF
OER	OER	OTD	OTD	PET	PET	PMI	PMI
OGD	OGD	OTH	OTH	PEU	PEU	PMO	PMO
OGG	OGG	OTI	OTI	PEW	PEW	PMR	PMR
OGL	OGL	OTP	BUH	PEZ	PEZ	PMV	PMV
OGN	OGN	OTZ	OTZ	PFB	PFB	PMW	PMW
OGX	OGX	OUA	OUA	PFO	PFO	PMY	PMY
OGZ	OGZ	OUD	OUD	PFQ	PFQ	PMZ	PMZ
OHD	OHD	OUL	OUL	PGA	PGA	PNA	PNA
OHE	OHE	OUZ	OUZ	PGD	PGD	PND	PND
OHH	OHH	OVB	OVB	PGF	PGF	PNH	PNH
OHS	OHS	OVD	OVD	PGK	PGK	PNI	PNI
OIM	OIM	OVS	OVS	PGV	PGV	PNK	PNK
OIT	OIT	OWB	OWB	PGX	PGX	PNL	PNL
OKA	OKA	OXB	OXB	PHB	PHB	PNP	PNP
OKC	OKC	OZC	OZC	PHC	PHC	PNQ	PNQ
OKE	OKE	OZG	OZG	PHE	PHE	PNR	PNR
OKI	OKI	OZH	OZH	PHF	PHF	PNS	PNS
OKJ	OKJ	OZZ	OZZ	PHL	PHL	PNZ	PNZ
OKL	OKL	PAC	PTY	PHO	PHO	POA	POA
OLB	OLB	PAD	PAD	PHS	PHS	POG	POG
OLL	OLL	PAG	PAG	PHW	PHW	POI	POI
OLP	OLP	PAH	PAH	PHX	PHX	POJ	POJ
OLZ	OLZ	PAP	PAP	PIA	PIA	POL	POL
OMA	OMA	PAS	PAS	PIB	LUL	POM	POM
OMD	OMD	PAT	PAT	PIE	PIE	POP	POP
OME	OME	PAV	PAV	PIH	PIH	POR	POR
OMH	OMH	PAZ	PAZ	PIK	GLA	POS	POS
OMR	OMR	PBC	PBC	PIN	PIN	POZ	POZ
OMS	OMS	PBD	PBD	PIR	PIR	PPB	PPB
OND	OND	PBG	PBG	PIS	PIS	PPG	PPG
ONJ	ONJ	PBH	PBH	PIT	PIT	PPN	PPN
ONK	ONK	PBI	PBI	PIU	PIU	PPP	PPP
ONL	ONL	PBJ	PBJ	PIX	PIX	PPQ	PPQ
ONS	ONS	PBL	PBL	PIZ	PIZ	PPS	PPS
ONT	ONT	PBM	PBM	PJA	PJA	PPT	PPT
OOK	OOK	PBO	PBO	PJG	PJG	PQC	PQC
OOL	OOL	PBU	PBU	PJM	PJM	PQI	PQI
OPO	OPO	PBZ	PBZ	PKB	PKB	PQQ	PQQ
OPS	OPS	PCL	PCL	PKC	PKC	PQS	PQS
ORB	ORB	PCR	PCR	PKE	PKE	PRA	PRA
ORD	CHI	PDA	PDA	PKN	PKN	PRC	PRC
ORF	ORF	PDG	PDG	PKP	PKP	PRG	PRG
ORH	ORH	PDK	ATL	PKR	PKR	PRH	PRH
ORK	ORK	PDL	PDL	PKU	PKU	PRI	PRI
ORN	ORN	PDP	PDP	PKY	PKY	PRN	PRN
ORU	ORU	PDS	PDS	PKZ	PKZ	PSA	PSA
ORV	ORV	PDT	PDT	PLJ	PLJ	PSC	PSC
ORY	PAR	PDV	PDV	PLM	PLM	PSE	PSE
ORZ	ORZ	PDX	PDX	PLN	PLN	PSG	PSG
OSD	OSD	PED	PED	PLO	PLO	PSJ	PSJ
OSI	OSI	PEE	PEE	PLQ	PLQ	PSM	PSM
OSL	OSL	PEG	PEG	PLS	PLS	PSO	PSO
OSM	OSM	PEI	PEI	PLU	BHZ	PSP	PSP

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
PSR	PSR	RBA	RBA	RMP	RMP	SAN	SAN
PSS	PSS	RBQ	RBQ	RMQ	RMQ	SAP	SAP
PSU	PSU	RBR	RBR	RMS	RMS	SAT	SAT
PSZ	PSZ	RBV	RBV	RMT	RMT	SAV	SAV
PTG	PTG	RBY	RBY	RNA	RNA	SAW	SAW
PTH	PTH	RCB	RCB	RNB	RNB	SBA	SBA
PTJ	PTJ	RCH	RCH	RNJ	RNJ	SBH	SBH
PTP	PTP	RCM	RCM	RNL	RNL	SBN	SBN
PTY	PTY	RCY	RCY	RNN	RNN	SBP	CSL
PUB	PUB	RDB	RDB	RNO	RNO	SBW	SBW
PUE	PUE	RDD	RDD	RNS	RNS	SBY	SBY
PUF	PUF	RDM	RDM	ROA	ROA	SBZ	SBZ
PUG	PUG	RDU	RDU	ROB	MLW	SCC	SCC
PUJ	PUJ	RDZ	RDZ	ROC	ROC	SCE	SCE
PUK	PUK	REA	REA	ROI	ROI	SCK	SCK
PUM	PUM	REC	REC	ROK	ROK	SCL	SCL
PUQ	PUQ	REG	REG	ROO	ROO	SCM	SCM
PUS	PUS	REL	REL	ROP	ROP	SCN	SCN
PUU	PUU	REN	REN	ROR	ROR	SCO	SCO
PUW	PUW	REP	REP	ROS	ROS	SCQ	SCQ
PUY	PUY	RES	RES	ROT	ROT	SCT	SCT
PVA	PVA	RET	RET	ROV	ROV	SCU	SCU
PVD	PVD	REU	REU	ROW	ROW	SCW	SCW
PVG	SHA	REX	REX	RPR	RPR	SCY	SCY
PVH	PVH	RFD	RFD	RRG	RRG	SCZ	SCZ
PVK	PVK	RFP	RFP	RRR	RRR	SDD	SDD
PVL	PVL	RGA	RGA	RRS	RRS	SDE	SDE
PVR	PVR	RGI	RGI	RSA	RSA	SDF	SDF
PVU	PVU	RGK	RGK	RSD	RSD	SDJ	SDJ
PWM	PWM	RGL	RGL	RST	RST	SDK	SDK
PWQ	PWQ	RGN	RGN	RSU	RSU	SDL	SDL
PXM	PXM	RGS	RGS	RSW	FMY	SDN	SDN
PXO	PXO	RHD	RHD	RTA	RTA	SDP	SDP
PXU	PXU	RHI	RHI	RTB	RTB	SDQ	SDQ
PYH	PYH	RHO	RHO	RTI	RTI	SDR	SDR
PYJ	PYJ	RHT	RHT	RTM	RTM	SDU	RIO
PYY	PYY	RIA	RIA	RTW	RTW	SDV	TLV
PZB	PZB	RIB	RIB	RUA	RUA	SEA	SEA
PZH	PZH	RIC	RIC	RUH	RUH	SEB	SEB
PZI	PZI	RIG	RIG	RUN	RUN	SEK	SEK
PZO	PZO	RIS	RIS	RUP	RUP	SEN	SEN
PZU	PZU	RIW	RIW	RUR	RUR	SEU	SEU
QBC	QBC	RIX	RIX	RVD	RVD	SEZ	SEZ
QOW	QOW	RIY	RIY	RVE	RVE	SFA	SFA
QRO	QRO	RJA	RJA	RVK	RVK	SFB	SFB
QSC	QSC	RJH	RJH	RVN	RVN	SFD	SFD
QSF	QSF	RJK	RJK	RVT	RVT	SFG	SFG
QUO	QUO	RJL	RJL	RVV	RVV	SFH	SFH
RAB	RAB	RKA	RKA	RXS	RXS	SFJ	SFJ
RAE	RAE	RKS	RKS	RYG	RYG	SFL	SFL
RAH	RAH	RKV	REK	RYK	RYK	SFN	SFN
RAI	RAI	RKZ	RKZ	RYL	RYL	SFO	SFO
RAJ	RAJ	RLG	RLG	RZE	RZE	SFT	SFT
RAK	RAK	RLK	RLK	RZR	RZR	SGC	SGC
RAO	RAO	RLO	RLO	SAB	SAB	SGD	SGD
RAP	RAP	RMA	RMA	SAF	SAF	SGF	SGF
RAR	RAR	RMF	RMF	SAH	SAH	SGN	SGN
RAS	RAS	RMI	RMI	SAL	SAL	SGU	SGU

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
SGY	SGY	SLZ	SLZ	STL	STL	SZG	SZG
SHA	SHA	SMA	SMA	STM	STM	SZI	SZI
SHB	SHB	SMF	SAC	STN	LON	SZK	SZK
SHC	SHC	SMI	SMI	STR	STR	SZX	SZX
SHD	SHD	SMK	SMK	STS	STS	SZZ	SZZ
SHE	SHE	SML	SML	STT	STT	TAB	TAB
SHG	SHG	SMQ	SMQ	STV	STV	TAC	TAC
SHH	SHH	SMR	SMR	STW	STW	TAE	TAE
SHJ	SHJ	SMS	SMS	STX	STX	TAG	TAG
SHL	SHL	SMX	SMX	SUB	SUB	TAH	TAH
SHM	SHM	SNA	SNA	SUF	SUF	TAI	TAI
SHP	SHP	SNC	SNC	SUG	SUG	TAK	TAK
SHR	SHR	SNE	SNE	SUJ	SUJ	TAL	TAL
SHV	SHV	SNN	SNN	SUK	SUK	TAM	TAM
SHW	SHW	SNO	SNO	SUN	SUN	TAO	TAO
SHX	SHX	SNP	SNP	SUR	SUR	TAP	TAP
SIC	SIC	SNR	SNR	SUV	SUV	TAS	TAS
SID	SID	SNU	SNU	SUX	SUX	TAT	TAT
SIF	SIF	SNW	SNW	SUY	SUY	TAY	TAY
SIN	SIN	SOB	SOB	SVA	SVA	TBB	TBB
SIP	SIP	SOC	SOC	SVB	SVB	TBG	TBG
SIS	SIS	SOF	SOF	SVC	SVC	TBH	TBH
SIT	SIT	SOG	SOG	SVD	SVD	TBI	TBI
SJC	SJC	SOJ	SOJ	SVG	SVG	TBO	TBO
SJD	SJD	SOM	SOM	SVI	SVI	TBP	TBP
SJE	SJE	SON	SON	SVJ	SVJ	TBS	TBS
SJI	SJI	SOQ	SOQ	SVK	SVK	TBT	TBT
SJJ	SJJ	SOU	SOU	SVL	SVL	TBU	TBU
SJL	SJL	SOW	SOW	SVN	SVN	TBW	TBW
SJO	SJO	SPB	STT	SVO	MOW	TBZ	TBZ
SJP	SJP	SPC	SPC	SVP	SVP	TCB	TCB
SJT	SJT	SPD	SPD	SVQ	SVQ	TCD	TCD
SJU	SJU	SPI	SPI	SVU	SVU	TCG	TCG
SJW	SJW	SPN	SPN	SVX	SVX	TCL	TCL
SJZ	SJZ	SPP	SPP	SWA	SWA	TCO	TCO
SKB	SKB	SPR	SPR	SWF	SWF	TCP	TCP
SKD	SKD	SPS	SPS	SWJ	SWJ	TCQ	TCQ
SKE	SKE	SPU	SPU	SWO	SWO	TCR	TCR
SKG	SKG	SPY	SPY	SWQ	SWQ	TCZ	TCZ
SKK	SKK	SQD	SQD	SXB	SXB	TDD	TDD
SKN	SKN	SQG	SQG	SXF	BER	TDG	TDG
SKO	SKO	SRE	SRE	SXK	SXK	TDX	TDX
SKP	SKP	SRG	SRG	SXM	SXM	TEE	TEE
SKT	SKT	SRI	SRI	SXR	SXR	TEK	TEK
SKU	SKU	SRP	SRP	SXZ	SXZ	TEN	TEN
SKX	SKX	SRQ	SRQ	SYD	SYD	TEQ	TEQ
SKZ	SKZ	SRY	SRY	SYM	SYM	TER	TER
SLA	SLA	SRZ	SRZ	SYO	SYO	TET	TET
SLC	SLC	SSA	SSA	SYQ	SJO	TFF	TFF
SLH	SLH	SSB	STX	SYR	SYR	TFI	TFI
SLI	SLI	SSG	SSG	SYS	SYS	TFN	TCI
SLL	SLL	SSH	SSH	SYX	SYX	TFS	TCI
SLM	SLM	SSJ	SSJ	SYY	SYY	TGC	TGC
SLN	SLN	SSR	SSR	SYZ	SYZ	TGD	TGD
SLP	SLP	STC	STC	SZA	SZA	TGG	TGG
SLU	SLU	STD	STD	SZB	KUL	TGI	TGI
SLW	SLW	STG	STG	SZE	SZE	TGM	TGM
SLY	SLY	STI	STI	SZF	SZF	TGO	TGO

Airport Code	City Code
TGP	TGP
TGR	TGR
TGU	TGU
TGZ	TGZ
THD	THD
THE	THE
THL	THL
THN	THN
THQ	THQ
THR	THR
THS	THS
THU	THU
THX	THX
THZ	THZ
TIA	TIA
TID	TID
TIF	TIF
TIH	TIH
TII	TII
TIJ	TIJ
TIM	TIM
TIN	TIN
TIP	TIP
TIR	TIR
TIU	TIU
TIV	TIV
TIZ	TIZ
TJA	TJA
TJK	TJK
TJL	TJL
TJM	TJM
TJN	TJN
TJQ	TJQ
TJS	TJS
TJU	TJU
TKD	TKD
TKG	TKG
TKK	TKK
TKN	TKN
TKP	TKP
TKQ	TKQ
TKS	TKS
TKU	TKU
TKV	TKV
TKX	TKX
TLA	TLA
TLC	TLC
TLE	TLE
TLH	TLH
TLI	TLI
TLL	TLL
TLM	TLM
TLN	TLN
TLS	TLS
TLV	TLV
TMC	TMC
TME	TME
TMF	TMF

Airport Code	City Code
TMI	TMI
TMJ	TMJ
TMK	TMK
TML	TML
TMM	TMM
TMP	TMP
TMR	TMR
TMS	TMS
TMT	TMT
TMU	TMU
TMW	TMW
TMX	TMX
TNA	TNA
TNC	TNC
TNE	TNE
TNG	TNG
TNH	TNH
TNJ	TNJ
TNK	TNK
TNN	TNN
TNO	TNO
TNR	TNR
TNW	TNW
TOB	TOB
TOE	TOE
TOF	TOF
TOG	TOG
TOH	TOH
TOL	TOL
TOS	TOS
TOY	TOY
TPA	TPA
TPE	TPE
TPP	TPP
TPQ	TPQ
TPS	TPS
TQL	TQL
TRA	TRA
TRC	TRC
TRD	TRD
TRE	TRE
TRF	OSL
TRG	TRG
TRI	TRI
TRK	TRK
TRM	TRM
TRN	TRN
TRO	TRO
TRR	TRR
TRS	TRS
TRU	TRU
TRV	TRV
TRW	TRW
TRZ	TRZ
TSA	TPE
TSE	TSE
TSF	VCE
TSJ	TSJ

Airport Code	City Code
TSN	TSN
TSR	TSR
TST	TST
TSV	TSV
TTA	TTA
TTE	TTE
TTJ	TTJ
TTN	TTN
TTQ	TTQ
TTT	TTT
TTU	TTU
TUB	TUB
TUC	TUC
TUF	TUF
TUG	TUG
TUI	TUI
TUK	TUK
TUL	TUL
TUN	TUN
TUO	TUO
TUP	TUP
TUR	TUR
TUS	TUS
TUU	TUU
TVC	TVC
TVF	TVF
TVS	TVS
TVU	TVU
TVY	TVY
TWF	TWF
TWT	TWT
TWU	TWU
TXF	TXF
TXK	TXK
TXL	BER
TXN	TXN
TYF	TYF
TYL	TYL
TYN	TYN
TYR	TYR
TYS	TYS
TZA	BZE
TZL	TZL
TZX	TZX
UAH	UAH
UAK	UAK
UAP	UAP
UAQ	UAQ
UBA	UBA
UBJ	UBJ
UBP	UBP
UCT	UCT
UDI	UDI
UDJ	UDJ
UDR	UDR
UEL	UEL
UEO	UEO
UET	UET

Airport Code	City Code
UFA	UFA
UGC	UGC
UIB	UIB
UIH	UIH
UII	UII
UIO	UIO
UIP	UIP
UKA	UKA
UKB	UKB
UKG	UKG
UKK	UKK
UKX	UKX
ULB	ULB
ULD	ULD
ULG	ULG
ULH	ULH
ULK	ULK
ULN	ULN
ULO	ULO
ULV	ULV
ULZ	ULZ
UME	UME
UMS	UMS
UND	UND
UNG	UNG
UNK	UNK
UNN	UNN
UOA	UOA
UOX	UOX
UPG	UPG
UPN	UPN
URA	URA
URC	URC
URE	URE
URG	URG
URJ	URJ
URS	URS
URT	URT
URY	URY
USA	USA
USH	USH
USK	USK
USM	USM
USN	USN
USR	USR
UST	UST
USU	USU
UTH	UTH
UTN	UTN
UTP	UTP
UTT	UTT
UUD	UUD
UUS	UUS
UVE	UVE
UVF	SLU
UYL	UYL
UYN	UYN
UYU	UYU

Airport Code	City Code	Airport Code	City Code	Airport Code	City Code	Airport Code	City Code
UZR	UZR	VNO	VNO	WNH	WNH	YBC	YBC
VAA	VAA	VNS	VNS	WNN	WNN	YBG	YBG
VAI	VAI	VNX	VNX	WNP	WNP	YBK	YBK
VAK	VAK	VOG	VOG	WNZ	WNZ	YBL	YBL
VAL	VAL	VOL	VOL	WRE	WRE	YBP	YBP
VAM	VAM	VOZ	VOZ	WRG	WRG	YBR	YBR
VAN	VAN	VPE	VPE	WRL	WRL	YBX	YBX
VAO	VAO	VPS	VPS	WRN	WRN	YCB	YCB
VAR	VAR	VPY	VPY	WRO	WRO	YCD	YCD
VAS	VAS	VQS	VQS	WSZ	WSZ	YCG	YCG
VAW	VAW	VRA	VRA	WTB	WTB	YCK	YCK
VBA	VBA	VRC	VRC	WTK	WTK	YCL	YCL
VBP	VBP	VRN	VRN	WUA	WUA	YCO	YCO
VBV	VBV	VSA	VSA	WUH	WUH	YCS	YCS
VBY	VBY	VST	VST	WUS	WUS	YCU	YCU
VCA	VCA	VTE	VTE	WUX	WUX	YCY	YCY
VCE	VCE	VTZ	VTZ	WUZ	WUZ	YDF	YDF
VCL	VCL	VUP	VUP	WVB	WVB	YDP	YDP
VCP	SAO	VUS	VUS	WWI	WWI	YDQ	YDQ
VCS	VCS	VVC	VVC	WWK	WWK	YEG	YEA
VCT	VCT	VVI	SRZ	WWT	WWT	YEI	BTZ
VCV	VCV	VVO	VVO	WXN	WXN	YEK	YEK
VDA	VDA	VVZ	VVZ	WYA	WYA	YER	YER
VDB	VDB	VXC	VXC	WYS	WYS	YES	YES
VDC	VDC	VXE	VXE	XAP	XAP	YEV	YEV
VDE	VDE	VXO	VXO	XBE	XBE	YFA	YFA
VDH	VDH	VYI	VYI	XBJ	XBJ	YFB	YFB
VDM	VDM	WAA	WAA	XCH	XCH	YFC	YFC
VDS	VDS	WAE	WAE	XCR	XCR	YFH	YFH
VDZ	VDZ	WAG	WAG	XFN	XFN	YFJ	YFJ
VEE	VEE	WAT	WAT	XFW	XFW	YFO	YFO
VEL	VEL	WAW	WAW	XGR	XGR	YFS	YFS
VER	VER	WBB	WBB	XIC	XIC	YGH	YGH
VFA	VFA	WBM	WBM	XIL	XIL	YGJ	YGJ
VGA	VGA	WDH	WDH	XIY	SIA	YGK	YGK
VGO	VGO	WEF	WEF	XJD	XJD	YGL	YGL
VGZ	VGZ	WEH	WEH	XKH	XKH	YGP	YGP
VHC	VHC	WEI	WEI	XKS	XKS	YGR	YGR
VHM	VHM	WGA	WGA	XMH	XMH	YGT	YGT
VHV	VHV	WGP	WGP	XMN	XMN	YGV	YGV
VHZ	VHZ	WHK	WHK	XMS	XMS	YGW	YGW
VIE	VIE	WIC	WIC	XNA	FYV	YGX	YGX
VIG	VIG	WIL	NBO	XNN	XNN	YGZ	YGZ
VII	VII	WIN	WIN	XQP	XQP	YHD	YHD
VIL	VIL	WJR	WJR	XRY	XRY	YHI	YHI
VIR	VIR	WJU	WJU	XSB	XSB	YHK	YHK
VIS	VIS	WKJ	WKJ	XSC	XSC	YHM	YHM
VIX	VIX	WLE	WLE	XUZ	XUZ	YHO	YHO
VKG	VKG	WLG	WLG	YAA	YAA	YHP	YHP
VKO	MOW	WLH	WLH	YAB	YAB	YHR	YHR
VKT	VKT	WLK	WLK	YAC	YAC	YHU	YMQ
VLC	VLC	WLP	WLP	YAG	YAG	YHY	YHY
VLD	VLD	WLS	WLS	YAK	YAK	YHZ	YHZ
VLG	VLG	WMI	WMI	YAM	YAM	YIC	YIC
VLI	VLI	WMN	WMN	YAP	YAP	YIE	YIE
VLL	VLL	WMO	WMO	YAT	YAT	YIF	YIF
VLN	VLN	WMR	WMR	YAX	YAX	YIH	YIH
VLY	VLY	WMX	WMX	YAY	YAY	YIK	YIK

Airport Code	City Code
YIN	YIN
YIO	YIO
YIW	YIW
YJT	YJT
YKA	YKA
YKF	YKF
YKG	YKG
YKL	YKL
YKM	YKM
YKQ	YKQ
YKS	YKS
YKU	YKU
YLC	YLC
YLE	YLE
YLH	YLH
YLL	YLL
YLW	YLW
YMK	YMK
YMM	YMM
YMN	YMN
YMO	YMO
YMP	YMP
YMT	YMT
YMX	YMQ
YNA	YNA
YNB	YNB
YNC	YNC
YND	YND
YNG	YNG
YNJ	YNJ
YNO	YNO
YNP	YNP
YNS	YNS
YNT	YNT
YNY	YNY
YNZ	YNZ
YOJ	YOJ
YOL	YOL
YOP	YOP
YOW	YOW
YPC	YPC
YPH	YPH
YPJ	YPJ
YPL	YPL
YPM	YPM
YPO	YPO
YPR	YPR
YPW	YPW
YPX	YPX
YPY	YPY
YQB	YQB
YQC	YQC
YQD	YQD
YQF	YQF
YQG	YQG
YQK	YQK
YQL	YQL
YQM	YQM

Airport Code	City Code
YQQ	YQQ
YQR	YQR
YQT	YQT
YQU	YQU
YQX	YQX
YQY	YQY
YQZ	YQZ
YRA	YRA
YRB	YRB
YRG	YRG
YRL	YRL
YRT	YRT
YSB	YSB
YSG	YSG
YSJ	YSJ
YSK	YSK
YSM	YSM
YSO	YSO
YSY	YSY
YTE	YTE
YTG	YTG
YTH	YTH
YTL	YTL
YTM	YTM
YTQ	YTQ
YTS	YTS
YTY	YTY
YTZ	YTO
YUB	YUB
YUD	YUD
YUL	YMQ
YUM	YUM
YUS	YUS
YUT	YUT
YUX	YUX
YUY	YUY
YVB	YVB
YVM	YVM
YVO	YVO
YVP	YVP
YVQ	YVQ
YVR	YVR
YVZ	YVZ
YWB	YWB
YWG	YWG
YWH	YYJ
YWJ	YWJ
YWK	YWK
YWL	YWL
YWP	YWP
YXC	YXC
YXE	YXE
YXH	YXH
YXJ	YXJ
YXL	YXL
YXN	YXN
YXP	YXP
YXS	YXS

Airport Code	City Code
YXT	YXT
YXU	YXU
YXX	YXX
YXY	YXY
YYB	YYB
YYC	YYC
YYD	YYD
YYE	YYE
YYF	YYF
YYG	YYG
YYH	YYH
YYJ	YYJ
YYQ	YYQ
YYR	YYR
YYT	YYT
YYU	YYU
YYY	YYY
YYZ	YTO
YZF	YZF
YZG	YZG
YZP	YZP
YZR	YZR
YZS	YZS
YZT	YZT
YZV	YZV
YZY	YZY
YZZ	YZZ
ZAD	ZAD
ZAG	ZAG
ZAH	ZAH
ZAJ	ZAJ
ZAL	ZAL
ZAM	ZAM
ZAT	ZAT
ZAZ	ZAZ
ZBF	ZBF
ZBL	ZBL
ZBR	ZBR
ZCL	ZCL
ZCO	ZCO
ZDY	ZDY
ZEL	ZEL
ZEM	ZEM
ZFM	ZFM
ZFN	ZFN
ZGS	ZGS
ZGU	ZGU
ZHA	ZHA
ZHY	ZHY
ZIG	ZIG
ZIH	ZIH
ZIX	ZIX
ZKE	ZKE
ZKG	ZKG
ZKP	ZKP
ZLO	ZLO
ZLT	ZLT
ZLX	ZLX

Airport Code	City Code
ZMT	ZMT
ZNA	ZNA
ZND	ZND
ZNE	ZNE
ZNZ	ZNZ
ZOS	ZOS
ZPB	ZPB
ZQN	ZQN
ZQZ	ZQZ
ZRH	ZRH
ZRJ	ZRJ
ZSA	ZSA
ZSE	ZSE
ZSJ	ZSJ
ZTA	ZTA
ZTB	ZTB
ZTH	ZTH
ZUH	ZUH
ZUM	ZUM
ZVK	ZVK
ZYI	ZYI
ZYL	ZYL