Worldwide Airfield Manual

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Coverage of Aerodromes

All known civil airports are included, but with the following provisos:

Civil airports with short runways (<1600m) and/or Military airports are not included, except in areas where airports are sparse. In the USA there are literally hundreds of airports with adequate length runways. To include every single one would make the maps less useful, so the criteria to include only US airports with customs, and/or with 24 hour opening. Again, in an area where these criteria are impossible to fulfil, any large airport would be used.

Current Amendment January 2012

1. Six new maps have been created as follows:
   i) The Gulf. The Middle East map was becoming increasingly cluttered around the Gulf Area, due to new airports and expansion of existing ones.
   ii) Morocco and Algeria (North). The North Africa Map was becoming increasingly cluttered due to the large number of suitable airports in Morocco reflecting is status as popular tourist destination.
   iii) China Central, China South East and Burma China South. The proliferation of new airports in China required the breaking up of the main China map into three parts.
   iv) Canada North – replaces Canada North East. It was felt that the present Canada North East map was not particularly useful, and that there was also a gap in the regular routings for Europe to Western Canada. This new map resolves these issues.
2. Due to the addition of new maps, there has been a comprehensive renumbering of the pages. Only maps 1-14 retain their existing page numbers.
3. The following airports have been added to the maps and tables
   OMAD, FNCT, FNXA, ZLZY, WADL, VYKU, ZBES, ZBNY, ZBCF, ZBSN, ZBUL, ZGCJ, ZGFS, ZGMX, ZGWZ, ZGZH, ZLJC, ZLGY, ZLHZ, ZLQY, ZLWW, ZPLC, ZPWS, ZSJU, ZSSH, ZULB, ZULP, ZUNP, ZUYI, ZWCM, ZWKC, ZWNL, ZWTP, ZYJX, ZYMH, ZLTS, ZGBS
4. There has been work undertaken on the African maps to verify runway width.
5. The border between Sudan (North) and South Sudan has been added.

Key to Maps

Aerodrome markers		Symbols within aerodrome markers	
○	Single Runway, Open 24 Hours	**3**	Airport with Cat 3 ILS available
◎	2 Non Independent Runways, Open 24 Hours	**2**	Airport with Cat 2 ILS available
◎	2 or more Independent Runways, Open 24 Hours	**1**	Airport with Cat 1 ILS available
○	Single Runway, Not Open 24 Hours	**V**	Airport with VOR Approach available
◎	2 Non Independent Runways, Not open 24 Hours	**N**	Airport with NDB Approach available
◎	2 or more Independent Runways, Not open 24 Hours	**L**	Airport with Localiser Approach available
⬡	Military Airport, Single Runway, Not open 24 Hrs	**R**	Airport with GLS* Approach available
⬡	Military Airport, Single Runway, Open 24 Hrs	**P**	Airport with PAR Approach available
⬡	Military Airport, 2 Non Independent Runways, Open 24 Hours	**D**	Airport with LDA Approach available
I	Airport with IGS* Approach available	*	See Key to Tables – Approach Facilities

Map Symbols not associated with Airports

12	Adjoining Page	o	En-Route Navigation Aid - VOR/DME or NDB
145	Minimum Safe Altitude	■	Town without major airport
25	Distance in nm between two airports	▌	Airway (Africa and Asia maps only)
△	Reporting Point		

Where ILS category for an aerodrome is given, ie Cat 1, 2 or 3, this is the category as promulgated by the relevant state authority. However, the usable category by specific aircraft types may be more restrictive. Consult aircraft performance manuals.

Airport Labels	
EICK CRK 114.60	ICAO Airport Code and airfield beacon
	Airline Specific
	Airline Specific
	Airline Specific
	Airline Specific
	Airline Specific
	Airline Specific
	Airline Specific
PACV**L** GCR 404	ICAO Airport Code. L signifies low strength runway, based on not able to support 767 at Max Ldg Wt.
PAKN**X** AKN 112.8	ICAO Airport Code. X signifies runway bearing strength not known.
USDP**D**	ICAO Airport Code. D signifies runway surface is dirt. Dirt runways should be assumed to be of low strength especially in temperatures above 0°C
LOWS**C**	ICAO Airport Code. C signifies that this is a Category C Airfield – see Airfield Categorisation below.
HAGO**N**	ICAO Airport Code. N signifies runway width is less than 45m. For actual width see table
CYJP**G** XYP 112.9	ICAO Airport Code. G signifies gravel runway. Gravel runways should be assumed to be of low strength.

Key to Tables

For each map, there will be a corresponding table given supplementary information on all the airports shown on the map.

Column Headers on Tables	
Fuel	Jet Fuel available
Cus	Customs facilities.
1W	One World Carrier serving this airport, if any (see table on right)
RF(F)	Rescue Fire-fighting Category
19	Airline Specific
20	Airline Specific
21	Airline Specific
747	Airline Specific
767	Airline Specific
77RR	Airline Specific
77GE	Airline Specific
773	Airline Specific
MLW	Maximum Landing Weights for 747, 767 and 777

One World Carrier Codes	
AA	American
BA	British Airways
CY	Cathay
dg	Dragonair (Cathay subsidiary)
IB	Iberia
Q	Quantas
F	Finnair
JL	JAL
LC	Lan Chile
MA	Malev
RJ	Royal Jordanian
Lg	Loganair
sa	Sun Air (Scandinavia)
cm	Comair
MX	Mexicana
KG	Kingfisher Airlines
AB	Air Berlin
S7	S7 Sibir Airlines

Approach Facilities (abbreviations used in tables)

C1-C3	Cat 1, 2 or 3 ILS
VOR-D	VOR-DME
VOR	VOR only
NDB-D	NDB-DME
NDB	NDB only
NDB-V	NDB-VOR
IGS	IGS Approach*
LBcn	Locator only

LDA	LDA Approach
N/A	Not Available
VOR-T	VOR-TACAN
NDB-BK	NDB breakcloud
BB-ILS	ILS Localiser Backbeam
GPS	GPS Approach
GLS	GLS approach*
C1 s/step	ILS Side Step

SAR	Surveillance Radar
PAR	Precision Appr
Visual	Visual only
LLZ-D	Localiser-DME
LLZ	Localiser only
VOR-BK	VOR breakcloud
RNAV	RNAV/GPS Final Approach

IGS: This is an ILS that terminates well before the runway, and requires some visual manoeuvring to complete a landing.
GLS: This is a GPS/VHF based precision approach, offering minima similar to the ILS. The VHF signal (transmitted from the airport) applies corrections to the GPS signals received by the aircraft. The resulting position data is displayed to the pilot as localiser and glideslope deviation.

Landing Performance Data – further information

Maximum Landing weights for the three long haul types have been derived from PCN, LCN, ISWL etc. These are theoretical weights based on runway strength and then capped by the maximum operating weight of the heaviest variant. The actual operating weights may be lower. Where -1 is given for max landing weight, this indicates that runway bearing strength is unknown.

Rescue and Fire-Fighting Categories – data shown in tables

RFF categories use the ICAO numbering system 1-10, or the American system A-E. Where two numbers are given, the higher number corresponds to RFF available during the period of regular scheduled traffic, with the lower number in use at other times. For some Chinese airports where RFF is not known, the Aerodrome Reference Code has been given. For example, a reference code of 4C indicates the airfield has been designed for A320/B737 class aircraft.

Aerodrome Categorisation

For each airfield an operator uses, either as a destination or nominated as a suitable alternate, there is a regulatory requirement to carry out a risk assessment. The consequence of this is to categorise the airfield as A, B or C.

A Category A airfield satisfies all of the following requirements:

(a) An approved instrument approach procedure.
(b) At least on runway with no performance limited procedure for take-off and/or landing
(c) Published circling minima not higher than 1000ft
(d) Night operations capability

A Category B airfield is an airfield which does not satisfy all of the Category A airfield requirements, or which requires extra considerations such as:

(a) Non Standard Approach aids and / or approach patterns, or
(b) Unusual local weather conditions or
(c) Unusual characteristics or performance limitations, or
(d) Any other relevant considerations including obstructions, physical layout, lighting etc.

A Category C airfield requires additional considerations to a Category B aerodrome and is considered to pose certain problems for the approach and / or landing and / or take-off.

Airfield categorisation is authorised by the Chief pilot, or in his absence the fleet manager.

The current issue of the airfield maps highlights those airfields that have been classified as Category C by miscellaneous operators within Europe only. The list of Category C airfields is as follows:

BGBW	Narsarsuaq, Greenland
BIAR	Akureyri, Iceland
EGLC	London City, United Kingdom
ENTC	Tromso, Norway
LFKC	Calvi, France
LFKJ	Ajaccio, France
LFLB	Chambery, France
LGSM	Samos, Greece

LGSK	Skiathos, Greece
LOWI	Innsbruck, Austria
LOWK	Klagenfurt, Austria
LOWS	Salzburg, Austria
LPMA	Funchal, Madeira
LRBC	Bacau, Romania
LSGS	Sion, Switzerland
LYTV	Tivat, Serbia

Aerodrome Classification

What criteria is used to determine whether a particular airport is suitable for a given aircraft type?

What should be a simple question to resolve is in reality fairly complex given two governing bodies (ICAO and FAA) and a multitude of different criteria laid down for aircraft operations. The most useful measures are the Rescue Fire Fire-fighting category (RFF or ARFF) and the Aerodrome Code. Both these measures are derived from various aircraft dimensions and approach performance. The table below summarises all this information on *per aircraft* basis. If a particular aircraft is not listed, use the tables on the next page, in conjunction with aircraft dimensions, to obtain required codes.

DEFINITIONS and DERIVATIONS

RFF	ICAO Rescue Fire-Fighting Category: Determined by fuselage length and fuselage width. It is typical that operations to both destination and alternate airfields are still permitted when RFF is temporarily up to two states below that specified by aircraft certification. ie 787-800 normally requires RFF 9, however operations will still be permitted to airfields at RFF 7. Requirements for en-route alternates and ETOPs alternates will probably be even less restrictive.
ARFF	FAA Airfield Rescue Fire-Fighting Category: as for RFF but determined by fuselage length only.
Approach Category	FAA Standard, also adopted by ICAO. Letter A-D determined by Aircraft Final Approach Speed
Aerodrome Reference Code	Reference Code made up of a code number followed by a code letter (see below).
ICAO Code Number	Number between 1 and 4 determined by runway field length. Of little practical use for Commercial Jet operations as all runways ≥ 1800m are category 4.
ICAO Code Letter	Letter (A-F) determined by maximum allowable Wing Span and Main Gear Outer Track.
FAA Airplane Design Group	Number between I and VI dependent upon aircraft wing span. Equivalent to ICAO code letter.

Combined table of Approach Categories, Airport Reference Codes and ARFF/RFF by aircraft type

Type	Wing Span /m	Main Gear Track (Outer)/m	Fuselage Length /m	Fuselage Width /m	Approach Category	Aerodrome Ref. Code	RFF Category	
							ICAO	USA
A310	43.92	9.6	46.70	5.64	C	4D	7	C
A318	34.10	(7.59)	31.44	3.96	C	4C	6	B
A319	34.10	(7.59)	33.84	3.96	C	4C	6	B
A320	34.10	(7.59)	37.57	3.96	C	4C	6	B
A321-200	34.10	(7.59)	44.51	3.96	C	4C	7	C
A330-200	60.30	(10.69)	59.0	5.64	D	4E	7	C
A330-300	60.30	(10.69)	63.69	5.64	D	4E	8	D
A340-200/300	63.45	(10.69)	60.3/63.7	5.64	D	4E	8	E
A340-500/600	63.45	(10.69)	67.8/75.3	5.64	D	4E	9	E
A380	79.75	(14.34)	72.75	7.14	D	4F	10	E
B737-400	28.90	5.25	36.45	3.76	C	4C	6	B
B737-900	34.31	5.76	42.11	3.76	C	4C	7	C
B757-200	38.04	7.3	47.34	3.70	C	4D	7	C
B757-300	38.04	7.3	54.47	3.70	D	4D	8	D
B767-300	47.60	9.30 (10.90)	54.96	4.72	D	4D	8	D
B767-400	51.90	9.30 (10.90)	61.37	4.72	D	4D	9	E
B777-200/300	60.90/64.80	11.00 (13.00)	63.73/73.85	6.19	D	4E	9	E
B747-400	64.44	(12.7)	70.65	6.49	D	4E	9	E
B787-800/900	60.12/63.40	9.8 (11.86)	56.72/62.81	5.91	D	4E	8/9	D/E

Tables required to obtain Approach Categories, Aerodrome Code and (A)RFF

ICAO Aerodrome Code number and FAA Approach Categories by Approach Speed & Field Length			
Approach Speed /kt	FAA Approach Category	ICAO Aerodrome Code Number	ICAO Reference Field Length /m
<91	A	1	<800
91-120	B	2	800-1199
121-140	C	3	1200-1799
141-166	D	4	≥ 1800
>166	E		

ICAO Aerodrome Code letter and FAA Airplane Design Group by Wing Span & Gear Track			
Wing Span /m	Main Gear Track (outer edge) /m	FAA Airplane Design Group	ICAO Aerodrome Code Letter
<15.0	<4.5	I	A
15.0-23.9	4.5-5.9	II	B
24.0-35.9	6.0-8.9	III	C
36.0-51.9	9.0-13.9	IV	D
52.0-64.9	9.0-13.9	V	E
65.0-79.9	14.0-15.9	VI	F

ICAO RFF and FAA ARFF Categories by Fuselage Length and Fuselage Width (ICAO only)			
Fuselage Length /m	Fuselage width /m	ICAO RFF	USA ARFF
<9	≤2	1	A
9.0-11.9	≤2	2	A
12.0-17.9	≤3	3	A
18.0-24.9	≤4	4	A
24.0-27.9	≤4	5	A
28.0-38.9	≤5	6	B
39.0-48.9	≤5	7	C
49.0-60.9	≤7	8	D
61.0-75.9	≤7	9	E
76.0-90.0	≤8	10	E