

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A13NM Revision 8 Bombardier DHC-8-100 Series DHC-8-200 Series DHC-8-300 Series June 26, 1998

TYPE CERTIFICATE DATA SHEET NO. A13NM

This data sheet which is a part of Type Certificate No. A13NM, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder	Bombardier Inc. Regional Aircraft 123 Garratt Boulevard Downsview, Ontario Canada M3k 1Y5
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1. DHC-8-100 Series (see Note 5)

Model -101 - Approved Dec. 11, 1984, by the FAA and Sept. 28, 1984, by the Canadian Department of Transport

Model -102 - Approved Aug. 7, 1986, by the FAA and June. 12, 1986, by the Canadian Department of Transport

Model -103 - Approved Nov. 30, 1988, by the FAA and July. 20, 1987, by the Canadian Department of Transport

Model -106 - Approved Dec. 10, 1993, by the FAA and Nov. 20, 1992, by the Canadian Department of Transport

Data Pertinent to all Models Except as Indicated

<u>Engines</u>	2-Pratt & Whitney Canada, Inc., PW120 or PW120A (-101)
	2-Pratt & Whitney Canada, Inc., PW120A or PW120 (-102)
	2-Pratt & Whitney Canada, Inc., PW121 (-103)
	2-Pratt & Whitney Canada, Inc., PW121 (-106)

<u>Fuel</u>	ASTM D1655 Jet A, Jet A1, Jet B and MIL-T-5624 JP-4 & JP-5 conforming to Pratt and Whitney Canada, Inc. Specification No. CPW 204
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<u>Oil</u>	Oils conforming to Pratt and Whitney Canada, Inc. Specification No. PWA 521 Type II (MIL-L-23699).
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<u>Engine Limits</u>	See AFM as listed under Approved Publications
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This revision adds Model DHC-8-201, DHC-8-202, and DHC-8-315.

Propeller and Propeller Limits

2-Hamilton Standard Model 14SF-7

Blade SFA13(-)0A

Diameter 3.96M (13 Ft)

Pitch settings at 0.75 radius:

Feather	77.5°
Flight fine	10.5°
Ground fine	-5.5°
Full reverse	-18.5°

Propeller (Np) -
Max ContinuousTakeoff
1200 r.p.m.

1200 r.p.m.

Airspeed Limits
(IAS)

			<u>Knots</u>	<u>m.p.h.</u>
V _{MO} (Maximum operating)	0 to 14000 ft		242	279
		15000 ft	239	275
		20000 ft	223	257
		25000 ft	207	238
V _{FE} (Flaps extended)	Flaps 5°		148	170
		Flaps 15°	148	170
		Flaps 35°	130	150
V _A (Maneuvering)		163	188	
V _{LO} (Landing gear operation)		158	182	
V _{LE} (Landing gear extended)		172	198	
V _B (Rough Air)		180	207	
Landing Gear Doors Open Operative Speed (Max. speed for operation following an alternate landing gear extension)		140	161	
V _{MCA} (Minimum control speed)	Flaps	5°	79	91
		15°	75	86

Maximum Weight
(Mass)

DHC-8-101	Take-off weight 14,970 kg (33,000 lb)
DHC-8-102	Take-off weight 15,650 kg (34,500 lb)
DHC-8-103	Take-off weight 15,650 kg (34,500 lb)
DHC-8-106	Take-off weight 16,466 kg (36,300 lb)

(For other weights see AFM as listed under Approved Publications)

CG Limits

See AFM as listed under Approved Publications

Maximum Baggage454 kg (1000 lb) (See Weight and *Balance* Manual for mixed passenger cargo configuration) 907 kg (2000 lb) with Mod 8/0063 or 8/0083

2. DHC-8-200 Series

Model -201 - Approved January 4, 1996, by the FAA and August 24, 1995, by the Canadian Department of Transport
 Model -202 - Approved April 19, 1995, by the FAA and March 9, 1995, by the Canadian Department of Transport

<u>Engines</u>	2-Pratt & Whitney Canada, Inc., PW123C (201) 2-Pratt & Whitney Canada, Inc., PW123D (202)			
<u>Fuel</u>	ASTM D1655 Jet A, Jet A1, Jet B and MIL-T-5624 JP-4 & JP-5 conforming to Pratt and Whitney Canada, Inc. Specification No. CPW 204			
<u>Oil</u>	Oils conforming to Pratt and Whitney Canada, Inc. Specification No. PWA 521 Type II (MIL-L-23699).			
<u>Engine Limits</u>	See AFM as listed under Approved Publications			
<u>Propeller and Propeller Limits</u>	2-Hamilton Standard Model 14SF-23 Blade SFA13(-)0A Diameter 3.96M (13 Ft) Pitch settings at 0.75 radius: Feather 77.5° Flight fine 10.5° Ground fine -5.5° Full reverse -18.5° Propeller (Np) - Takeoff 1200 r.p.m. Max Continuous 1200 r.p.m.			
<u>Airspeed Limits (IAS)</u>			<u>Knots</u>	<u>m.p.h.</u>
	V _{MO} (Maximum operating)	0 to 14000 ft	242	279
		15000 ft	239	275
		20000 ft	223	257
		25000 ft	207	238
	V _{FE} (Flaps extended)	Flaps 5°	148	170
		Flaps 15°	148	170
		Flaps 35°	130	150
	V _A (Maneuvering)		163	188
	V _{LO} (Landing gear operation)		158	182
	V _{LE} (Landing gear extended)		172	198
	V _B (Rough Air)		180	207
	Landing Gear Doors Open Operative Speed (Max. speed for operation following an alternate landing gear extension)		140	161
	V _{MCA} (Minimum control speed)Flaps	5°	79	91
		15°	75	86
<u>Maximum Weight (Mass)</u>	All Models, Take-off weight 16,466 kg (36,300 lb) (For other weights see AFM as listed under Approved Publications)			
<u>CG Limits</u>	See AFM as listed under Approved Publications			
<u>Maximum Baggage</u>	907 kg (2000 lb) (See Weight and Balance Manual for mixed passenger cargo configuration)			

3. DHC-8-300 Series

Model -301-	Approved June 8, 1989, by the FAA and Feb. 14, 1989, by the Canadian Department of Transport
Model -311-	Approved September 14, 1990, by the FAA and July 31, 1990, by the Canadian Department of Transport
Model -315-	Approved June 28, 1995, by the FAA and June 2, 1995, by the Canadian Department of Transport

Engines

2-Pratt & Whitney Canada, Inc., PW123 (-301 and -311)
 2-Pratt & Whitney Canada, Inc., PW123E (-315)

Fuel

ASTM D1655 Jet A, Jet A1, Jet B, and MIL-T-5624 JP-4 & JP-5 conforming to Pratt and Whitney Canada, Inc. Specification No. CPW 204

Oil

Oils conforming to Pratt and Whitney Canada, Inc. Specification No. PWA 521 Type II (MIL-L-23699).

Engine Limits

See AFM as listed under Approved Publications

Propeller and Propeller Limits

2-Hamilton Standard Model 14SF-15 or 14SF-23

Blade SFA13 (-)-0A
 Diameter 3.96M (13 Ft)

Pitch settings at 0.75 radius:

Feather	77.5°
Flight fine	11.5°
Ground fine	-7.5°
Full reverse	-18.5°

Propeller (Np) -	Takeoff	1200 r.p.m.
	Max Continuous	1200 r.p.m.

Airspeed Limits (IAS)

			<u>Knots</u>	<u>m.p.h.</u>
<u>V_{MO}</u> (Maximum operating)	0 to 17000 ft		243	280
	20000 ft		232	267
	25000 ft		214	246
<u>DHC-8-301</u>				
<u>V_{FE}</u> (Flaps extended)	Flaps 5°		160	184
	Flaps 10°		149	171
	Flaps 15°		149	171
	Flaps 35°		135	155
<u>V_A</u> (Maneuvering)			176	203
<u>V_{LO}</u> (Landing gear operation)			158	182
<u>V_{LE}</u> (Landing gear extended)			173	199
<u>V_B</u> (Rough Air)			188	216
Landing Gear Doors Open Operative Speed (Max. speed for operation following an alternate landing gear extension)			140	161
<u>V_{MCA}</u> (Minimum control speed)	Flaps 5°		83	96
	Flaps 15°		77	89

<u>DHC-8-311 and 315</u>		<u>Knots</u>	<u>m.p.h.</u>
V _{FE} (Flaps extended)	Flaps 5 ⁰	163	187
	Flaps 10 ⁰	154	177
	Flaps 15 ⁰	150	173
	Flaps 35 ⁰	138	159
V _A (Maneuvering)		177	204
V _{LO} (Landing gear operation)		163	187
V _{LE} (Landing gear extended)		173	199
V _B (Rough Air)		190	219
Landing Gear Doors Open Operative		140	161
Speed (Max. speed for operation following an alternate landing gear extension)			
V _{MCA} (Minimum control speed)	Flaps 15 ⁰	78	90
	Flaps 10 ⁰	80	92
	Flaps 5 ⁰	83	95
	Flaps 0 ⁰	95	109

Maximum Weight
(Mass)

DHC-8-301	Take-off weight 18,640 kg (41,100 lb)
DHC-8-311 and 315	Take-off weight 18,640 kg (41,100 lb) 19,000 kg (41,880 lb) (with CR803SO00001 incorporated) 19,500 kg (43,000 lb) (with CR803SO00002 incorporated)
(For other weights see AFM as listed under Approved Publications)	

CG Limits

See AFM as listed under Approved Publications

Maximum Baggage

1,130 kg (2500 lb) for standard baggage compartment (See Weight and Balance Manual for other configurations)

Cargo/Combi
(DHC-8-311)

All cargo, 20, 40 or 48 passenger configurations with a moveable passenger/cargo bulkhead located at station 197.0, 354.0, 515.0 or 579.0 respectively

DATA PERTINENT TO ALL MODELS EXCEPT AS INDICATED

Reference Datum

Plate located on centerline at Station 423.0 in. (1074.4 cm) on underside of fuselage.

Leveling Means

Plum bob and target in RH emergency exit opening.

Minimum Crew

2 (Pilot and Copilot)

Maximum
Occupants

Series 100 and 200

Not to exceed 44, including 2 pilots, 1 attendants and 1 check pilot (40 passengers when fitted with an approved interior)

Series 300

Not to exceed 61, including 2 pilots, 2 attendants and 1 check pilot (56 passengers when fitted with an approved interior)

<u>Flight Load Factors</u>	Flaps Up	+2.5g;	-1.0g.
	Flaps extended	+2.0g;	0.0g.

<u>Fuel Capacity</u>		<u>kg</u>	<u>lb</u>	<u>US Gal</u>	<u>Imp Gal</u>
	Usable	2575	5678	835	695
	Unusable	40	87	13	11
	Total	2615	5765	848	706

<u>Oil Capacity Per Engine</u>			<u>US Gal</u>	<u>Imp Gal</u>
	PW120/120A/121	Usable	1.0	0.83
		Total	4.7	3.9
	PW123/123B/123E	Usable	1.9	1.6
		Total	5.5	4.57

<u>Maximum Operating Altitude</u>	Take-off and landing	10,000 feet
	Enroute	25,000 feet

Outside Air Temperature Limits See AFM, as listed under Approved Publications

Control Surface See Maintenance Manual: Series 100 PSM 1-8-2
Series 200 PSM 1-82-2
Series 300 PSM 1-83-2

Import Eligibility A U.S. Airworthiness certificate may be issued on the basis of the Canadian Department of Transport "Certificate of Airworthiness for Export" signed by the Minister of Transport. This form must contain the following statement: "This certifies that the aircraft described above has been manufactured in conformity with the data forming the basis for the DOT Aircraft Type Approval No. A-142 as modified in accordance with the requirements for U.S. registered airplanes FAA Type Certificate No. A13NM defined in AEROC 8.1.AC.1."

Certification Basis Series 100, 200 and 300:
FAR Part 25 dated February 1, 1965 including Amendments 25-1 through 25-51; FAR 25.832, Amendment 25-56; FAR 36 dated December 1, 1969 including Amendments 36-1 through 36-12; SFAR 27 dated December 12, 1973 including Amendments 27-1 through 27-5.

Application for Type Certificate: March 31, 1980 (Series 100)

Series 200 Additional Requirements:
FAR Part 25, Amendments 25-52 through 25-66; FAR 25.963(e), Amendment 25-69; FAR 25.361, Amendment 25-72; FAR 25.729(e), Amendment 25-75; FAR Part 34 dated September 10, 1990 (Replaces SFAR 27); FAR Part 36, Amendments 36-1 through 36-20

With the following exceptions (*See Note 6*)
FAR 25.365(e), Amendment 25-54; FAR 25.561, Amendment 25-64;
FAR 25.562, Amendment 25-64; FAR 25.783, Amendment 25-54;
FAR 25.785, Amendment 25-64; FAR 25.904, Amendment 25-62;
FAR 25.1091(e), Amendment 25-57

Series 300 Additional Requirements:

All Models;
FAR 25.812, Amendment 25-58

DHC-8-301;
FAR 25.853, Amendment 25-59

DHC-8-311 and 315;
FAR 25.853, Amendment 25-66

DHC-8-315;
FAR Part 34 dated September 10, 1990 (Replaces SFAR 27); FAR Part 36,
Amendments 36-1 through 36-20

Series 100, 200 and 300Items of Equivalent Safety

1. Pilot compartment view FAR 25.773(b)(2).
2. Ditching emergency exits FAR 25.807(d)(2) Amdt. 25-55. (DHC-8-311 and 315 with CR803SO00001 or CR803SO00002 incorporated)
3. Cargo compartment classification FAR 25.857(b)&(d) Amdt. 25-60, for the 20, 40 & 48 passenger configurations. DHC-8-311 Flight Manual Suppl. 42, Iss. 3, Cargo Loading Manual PSM 1-83-8A, Suppl. 1, Iss. 3 and Weight & Balance Manual PSM 1-83-8C are required. (S/N 230 & 242)

Special Conditions

1. Automatic take-off power control system (ATPCS) (ref. FAA Special Conditions No. 25.-ANM-3).

Exemptions

1. FAR 25.571(e)(2) Propeller Debris (ref. FAA exemption No. NM-102)
2. FAR 25.807(c)(1) 40 passenger configuration Series 100 and 200 (ref. FAA exemption No. 4723 dated October 24, 1986)

Compliance with the following additional optional requirements has been established:

Ice Protection - FAR 25.1419

Compliance with FAR 25.801 has been established when the safety equipment requirements of FAR 25.1411 and the ditching equipment requirements of FAR 25.1415 are satisfied.

Serial Numbers EligibleSeries 100

Serial number 2 and subsequent

Series 200

Serial number 391 and subsequent

Series 300

Serial number 100 and subsequent

<u>Equipment</u>	The basic required equipment as prescribed in the applicable airworthiness requirements (See Certification Basis) must be installed in the aircraft.
<u>Approved Publications</u>	<p>Flight Manual</p> <p>Series 100: PSM 1-81-1A (Models 101, 102, 103 and 106)</p> <p>Series 200: PSM 1-82-1A (Model 201, 202)</p> <p>Series 300: PSM 1-83-1A (Models 301, 311 and 315)</p> <p>Airworthiness Limitations (Part 2) and MRB Report (Sections 2 and 3) of the Maintenance Program</p> <p>Series 100: PSM 1-8-7</p> <p>Series 200: PSM 1-82-7</p> <p>Series 300: PSM 1-83-7</p> <p>Definition Report AEROC 8.1.AC.1</p>
<u>Service Information</u>	Service Bulletins, structural repair manuals, and aircraft flight manuals which contain a statement that the document is Transport Canada approved or Transport Canada approved through the Manufacturers Design Approval Representative are accepted by the FAA and are considered FAA approved. These approvals pertain to the type design only.
<u>Life Limited Parts</u>	Components which are life limited are listed in the "Airworthiness Limitations" section of the Maintenance Program. (See Note 3).
Note 1.	<p><i>A current weight and balance report including list of equipment included in certificated empty weight, and loading instructions must be in each aircraft at the time of original certification and at all times there after except in the case of operators having an approved weight control system. The aircraft total system fuel must be included in the empty weight. System fuel is the amount of fuel required to fill the system plumbing and tanks to the undrainable level <u>plus</u> unusable fuel in the tanks established under FAR 25.959.</i></p> <p><i>The aircraft must be loaded so that the C.G. is within specified limits at all times, considering fuel loading and usage, gear retraction, and movement of crew and passengers from their assigned positions.</i></p>
Note 2.	<i>The aircraft must be operated in accordance with the FAA Approved Airplane Flight Manual.</i>
Note 3.	<i>Compliance with the frequencies for "Threshold" and "Repeat" inspection specified in the "Airworthiness Limitations", Volume 1, Part 2 of the Maintenance Program (PSM 1-8-7, PSM 1-82-7 and PSM 1-83-7) and MRB report Volume 1, Part 1 of the same document, are required to ensure continuing compliance with the type certification basis.</i>
Note 4.	<i>For mixed passenger/cargo configurations see weight and balance manual.</i>
Note 5.	<i>Modifications required to convert a Model DHC-8-101 to a 102, a 102 to a 103, a 102/103 to a 106, and a 311 to a 315 are identified in Bombardier Definition Report AEROC 8.1.AC.1 listed in Approved Publications.</i>
Note 6.	<i>The DHC-8 Series 200 was certificated as a derivative of the Series 100 aircraft. The applicable basis of certification is the same as the Series 100, but the manufacturer elected to demonstrate compliance with FAR Part 25, up to Amendment 25-66, less the exceptions shown under the Series 200 Certification Basis.</i>

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