TYPE CERTIFICATE DATA SHEET

No. EASA.IM.R.114

for

Bell 222/230/430

Type Certificate Holder

Bell Textron Canada Ltd.

12 800 rue de l'Avenir
Mirabel, Québec
J7J 1R4, Canada

For Models: 222, 222B, 222U
230
430

TABLE OF CONTENTS

SECTION 1: 222

I. General

1.	Type/ Model/ Variant	
	1.1 Type	222
	1.2 Model	222
	1.3 Variant	- - -
2.	Airworthiness Category	Large Rotorcraft
3.	Manufacturer	Bell Textron Canada Ltd. 12 800 rue de l'Avenir Mirabel, Québec J7J 1R4, Canada
4.	Type Certification Application Date to	TCCA: not recorded LBA DE: not recorded AACR RO: 26 August 1996 CAA UK: not recorded DGAC FR: not recorded
5.	State of Design Authority	Transport Canada Civil Aviation (TCCA), Canada
6.	Type Certificate Date by	TCCA: 24 May 1983 (FAA H9SW: 16 August 1979) LBA DE: 30 June 1980 CAA UK: April 1981 AACR RO: 16 December 1996 DGAC FR: 21 November 2001
7.	Type Certificate n° by	TCCA: H-88 LBA DE: 3054 CAA UK: FR 12 AACR RO: ET-18/1996 DGAC FR: IM 225
8.	Type Certificate Data Sheet n° by	TCCA: H-88 LBA DE: 3054/RC CAA UK: FR 12 AACR RO: ET-18/1996 DGAC FR: IM 225
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	

- FAR Part 29, dated 1 February 1965, (Transport Category A & B), Amdt. 29-1 through 29-9 and Amdt. 29-11.
- FAR 29.997, Amdt. 29-10
- FAR 29.927(b)(2), Amdt. 29.17
- Ditching – FAR 29.801, Amdt. 29-12
- External cargo – FAR 29.25(c) and 29.865, Amdt. 29-12.
- FAR 29.1557(c) and FAR 29.1555(c), Amdt. 29-12.
- Height-velocity requirements of Amdt. 29-21, Section 29.1, 29.79, 29.1517 and 29.1587.

3.	Special Conditions	- No. 29-87-SW-7 (FAA) - IFR requirements, dated 12 August 1976 (FAA)

4.	Exemptions	- FAA Exemption No. 2789, FAR 29.811(h)(1) - FAA Exemption No. 4395, FAR 29.855(a) and portions of 29.855(d).
5.	Deviations	none

6. Equivalent Safety Findings

- Power Turbine Common Control FAR 29.903(b)
- Fuel Pressure Switch FAR 29.1305(b)(2)
- Fireproof Oil System FAR 29.1189
- Crash Resistant Fuel Cell FAR 29.963(b) & 29.965
- Crew Door Switch FAR 29.783(e)
- Unsafe Rotor and Engine Out Warning Indicator FAR 29.33(b), 29.1357(e) and Special Flight Condition No. 2
- Aft Window Exit Size FAR 29.807(a)(4)
- Main Door Window Exit Size for Ditching FAR 29.807(d)(1)
- Hoist Manual Release FAR 29.865(b)(2)
- Baggage Compartment Liner FAR 29.855(a)
- Main Gear Drop Test for 3 561 kg (7 850 lb) GW FAR 29.725, 29.727

7.	Requirements elected to comply	none
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	See TCDSN EASA.IM.R.114
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition	Bell Helicopter Textron top drawings 222-100-001 and 222-100-101
2.	Description	2-blade main/tail rotor, twin turbine engine with wheeled landing gear
3.	Equipment	Refer to Equipment list in approved Flight Manual
4.	Dimensions	
	4.1 Fuselage	Length: 12.35 m Width: 3.45 m Height: 3.37 m
	4.2 Main Rotor	Diameter: 12.12 m
	4.3 Tail Rotor	Diameter: 1.98 m
5.	Engine	
	5.1 Model	Honeywell International Inc. (former: Avco Lycoming) 2 x Model LTS 101-650C-2, or, 2 x Model LTS 101-650C-3, or, 2 x Model LTS 101-650C-3A
	5.2 Type Certificate	TCCA TC/TCDS n°: IE-4 FAA TC/TCDS n°: E5NE EASA TC/TCDS n°: EASA.IM.E.228

5.3 Limitations

5.3.1 Installed Engine Limits (see Note 10)

	Mast TQ Meter [%] ([ft lb])	MR Mast Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
TO (5 min)	100 (13 205)	100 (348)	103.7 (49 638)	782 (1 440)
MCP	100 (13 205)	100 (348)	102.7 (49 159)	763 (1 405)

	Engine TQ Meter [%] ([ft lb])	PWR Turbine Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
OEI (2½ min)	100 (383)	100 (9 545)	105.6 (50 548)	832 (1 530)
PWR (30 min)	96 (369)	100 (9 545)	104.8 (50 169)	796 (1 464)

TO and MCP continuous mast torque limits correspond to 875 shp at 348 rpm (9 545 rpm power turbine speed) at the mast but not more than 539 shp from each engine.
Values of torque, gas generator speed and measured gas temperature correspond to eligible engine operating limits and exceed the standard day, sea level rating.

5.3.2 Transmission Torque Limits — Torque = 17 897 Nm (13 200 ft lb) at 348 rpm

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Type	Specification	
	Canada	USA
Kerosene Jet A, A-1 JP8	CGSB 3.23, 3-GP-23	ASTM D1655, MIL-DTL-83133
Wide Cut Jet B JP4	CGSB 3.22, CGSP 3.22	ASTM D1655, MIL-DTL-5624
High Flash JP5	3-GP-24	MIL-DTL-5624

6.2 Oil — MIL-L-7808 or MIL-L-23699 (mixing of these oils is prohibited).
For temperature limitations see RFM listed in Approved Publications.

6.3 Additives — Fuel, see Note 3

7. Fluid capacities

7.1 Fuel — s/n 47006 to 47023:
Usable: 671 litres (177.2 US gal)
Unusable: 33.3 litres (8.8 US gal)
s/n 47006 to 47023, when modified per Technical Bulletin 222-80-1 and s/n 47024 to 47089:
Usable: 710 litres (187.5 US gal)
Unusable: 8.7 litres (2.3 US gal)

7.2 Oil — Usable: 1.90 litres (0.5 US gal)
Total: 6.44 litres (1.7 (US gal)

7.3 Coolant System Capacity — n/a

8. Air Speeds Limits

V_{NE}: 150 KIAS MSL to 3 000 ft DA
Decrease V_{NE} 3 KIAS per 1 000 ft Hd above 3 000 ft DA.
$V_{NE\ PWR\ Off}$: 80 KIAS
V_{LO}: 120 KIAS
Maximum Taxi Ground Speed: 35 KIAS

9. Rotor Speed Limits

Power on:

Maximum	100% Nr	(348 rpm)
Minimum	97% Nr	(338 rpm)

Power off:

Maximum	104% Nr	(362 rpm)
Minimum	90% Nr	(313 rpm)
	(for mass ≥ 2 722 kg (6 000 lb))	
Minimum	85% Nr	(296 rpm)
	(for mass < 2 722 kg (6 000 lb))	

Note: % Nr tach reading %

10. Maximum Operating Altitude and Temperature

10.1 Altitude: 20 000 ft (6 100 m) PA

10.2 Temperature: -40 °C (-40 °F) to +51.7 °C (+125 °F)
Refer to approved RFM for variation with altitude.

11. Operating Limitations

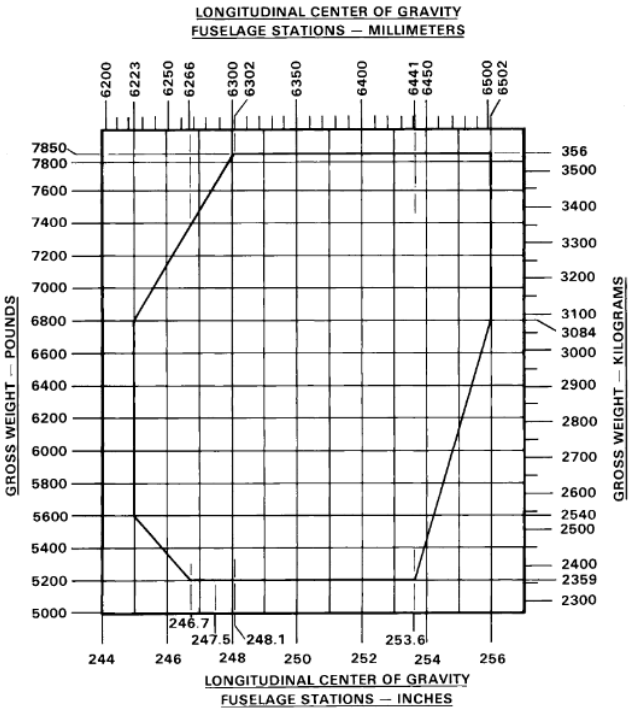
Day/Night VFR
IFR,
Category A and B
Non-Icing Conditions

12. Maximum Weight

3 561 kg (7 850 lb)
3 674 kg (8 100 lb) with external cargo

13. Centre of Gravity Range

Longitudinal:



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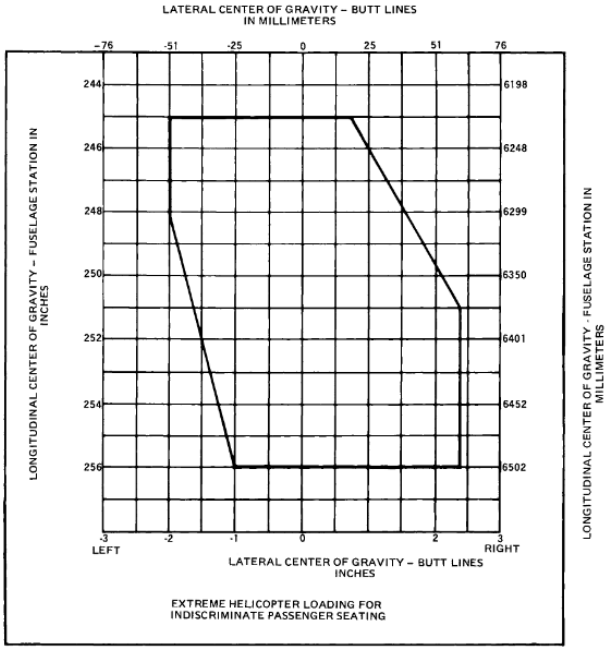

14.	Datum	The datum line (STA 0) is located at 2 303.8 mm (90.7 in) forward of the helicopter nose
15.	Levelling Means	Plumb line from right inside top of baggage compartment.
16.	Minimum Flight Crew	1 pilot
17.	Maximum Passenger Seating Capacity	9 passengers
18.	Passenger Emergency Exit	2, one on each side of the cabin
19.	Maximum Baggage/ Cargo Loads	227 kg (500 lb)
20.	Rotor Blade Control Movement	For rigging information refer to Maintenance Manual
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	See BHT-222/222B-MM-1, Chapter 4
23.	Wheels and Tyres	NLG: one 5.00-5 type III MLG: one per leg 18x5.5 type

IV. Operating and Service Instructions

1.	Flight Manual	s/n 47006 to 47080: BHT-222-FM-1, or later approved revision s/n 47081 to 47089: BHT-222-FM-2, 28 February 1992, or later approved revision.
2.	Maintenance Manual	BHT-222/222B-MM-1, -2
3.	Structural Repair Manual	BHT-ALL-SRM
4.	Weight and Balance Manual	see BHT-222/222B-MM-1, Chapter 08
5.	Illustrated Parts Catalogue	BHT-222-IPB
6.	Service Letters and Service Bulletins	As published by Bell Helicopters Textron, Bell Helicopter Textron Canada, or Bell Textron Canada
7.	Required Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification

Basis) must be installed in the helicopter for certification. In addition, the following items of equipment are required:

- Batteries: Marathon 206-075-742-105, EPI 18137 (222-375-049-101), or GE43B010RB03, SAFT 1756
- Passenger shoulder harness.
- Flight Manual as listed above

V. Notes (222 only)

1. Manufacturer's serial numbers:
   s/n 47006 to 47037, s/n 47039 to 47089
   are eligible.
2. Current weight and balance report including list of equipment included in the approved empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification.
3. For all operations below -29 °C (-20 °F) ambient temperature, all fuel used in Model 222 helicopters must contain Phillips PFA-55MB or MIL-L-27686 anti-icing additive in concentrations of not less than 0.035% nor more than 0.15% by volume. Blending this additive into the fuel and checking its concentration must be conducted in the manner prescribed by the Rotorcraft Flight Manual.
4. Avco Lycoming engines used in the Model 222 must incorporate a shim in the fuel control. Fuel Controls with the shim are identified by P/N 4-301-098-05. Engines used in the production configuration (s/n 47006 to 47089) must use this shim, or use selectively fitted governor reset spring in accordance with Avco Lycoming Service Bulletin LTS101C-73-0015.
5. Model 222 is eligible for IFR operations when the required IFR equipment (Reference kit 222-705-006) is installed and operative.
6. Model 222 helicopters, s/n 47006 to 47089 were manufactured by Bell Helicopter Textron, Fort Worth, Texas, under FAA Type Certificate H9SW.
7. Effective 28 February 1992, design responsibility for Model 222 helicopters is transferred from Bell Helicopter Textron, Fort Worth, Texas, and FAA to Bell Helicopter Textron Canada, Mirabel, Quebec, and Transport Canada.
8. The original Bell Model 222 was approved by Transport Canada under ATA H-88, dated 24 May 1983, on the Basis of FAA TC H9SW.
9. The following FAA airworthiness directives applied at the time of design transfer (see Note 6) and remain in effect unless subsequently superseded by a Canadian or EASA airworthiness directive.

for 222:	82-09-53	84-12-02	87-09-02 R2	88-02-03
	82-16-06	85-14-11	87-13-01	89-17-05
	83-02-51		87-15-07	89-25-04
	83-09-03		87-19-01	

10. Engine Gas Generator Control (N1 control) must be adjusted in accordance with the procedure outlined in the Maintenance Manual.

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SECTION 2: 222B, 222U

I. General

1.	Type/ Model/ Variant	
	1.1 Type	222
	1.2 Model	222B, 222U
	1.3 Variant	---
2.	Airworthiness Category	Large Rotorcraft
3.	Manufacturer	Bell Textron Canada Ltd. 12 800 rue de l'Avenir Mirabel, Québec J7J 1R4, Canada
4.	Type Certification Application Date to	TCCA: not recorded RLD NL: 19 December 1983 LBA DE: not recorded CAA UK: not recorded DGAC ES: not recorded DGAC FR: not recorded
5.	State of Design Authority	Transport Canada Civil Aviation (TCCA), Canada
6.	Type Certificate Date by	for 222B: TCCA: 19 September 1983 (FAA H9SW: 30 June 1982) LBA DE: 25 July 1990 CAA UK: 15 July 1993 DGAC FR: 21 November 2001 for 222U: TCCA: 19 September 1983 RLD NL: 3 October 1985 CAA UK: 15 October 1993 LBA DE: 10 August 1995 DGAC ES: 13 June 2001 DGAC FR: 21 November 2001
7.	Type Certificate n° by	TCCA: H-88 RLD NL: R-016-85 LBA DE: 3054 CAA UK: FR 12 DGAC ES: 253-I DGAC FR: IM 255
8.	Type Certificate Data Sheet n° by	TCCA: H-88 RLD NL: R-016-85 LBA DE: 3054/RC CAA UK: FR 12 DGAC ES: 253-I DGAC FR: IM 255
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet.

II. Certification Basis

1. Reference Date for determining the applicable requirements
   222B: not recorded
   222U: 13 October 1982

2. Airworthiness Requirements

   - FAR Part 29, dated 1 February 1965, (Transport Category A & B), Amdt. 29-1 through 29-9 and Amdt. 29-11.
   - FAR 29.997, Amdt. 29-10
   - FAR 29.927(b)(2), Amdt. 29.17
   - Ditching – FAR 29.801, Amdt. 29-12
   - External cargo – FAR 29.25(c) and 29.865, Amdt. 29-12.
   - FAR 29.1557(c) and FAR 29.1555(c), Amdt. 29-12.
   - Height-velocity requirements of Amdt. 29-21, Section 29.1, 29.79, 29.1517 and 29.1587.

3. Special Conditions
   No. 29-87-SW-7
   IFR requirements, dated 12 August 1976 (FAA)

4. Exemptions
   - FAA Exemption No. 2789, FAR 29.811(h)(1)
   - FAA Exemption No. 4395, FAR 29.855(a) and portions of 29.855(d).

5. Deviations
   none

6. Equivalent Safety Findings

   Models 222B and 222U:
   Power Turbine Common Control FAR 29.903(b);
   - Fuel Pressure Switch FAR 29.1305(b)(2);
   - Fireproof Oil System FAR 29.1189;
   - Crash Resistant Fuel Cell FAR 29.963(b) & 29.965;
   - Crew Door Switch FAR 29.783(e);
   - Unsafe Rotor and Engine Out Warning Indicator FAR 29.33(b), 29.1309(d), 29.1357(e) & Special Flight Condition No. 2;
   - Aft Window Exit Size FAR 29.807(a)(4);
   - Main Door Window Exit Size for Ditching FAR 29.807(d)(1);
   - Hoist Manual Release FAR 29.865(b)(2);
   - Baggage Compartment Liner FAR 29.855(a);

   Model 222U:
   - Landing Gear Drop Test FAR 29.307(b)(5), 29.723, 29.725, 29.727;
   - Limitations Placard FAR 29.1559;
   - IFR Dihedral Stability IFR Criteria Paragraph 4(a).

7. Requirements elected to comply
   none

8. Environmental Protection Requirements

   8.1 Noise Requirements
   See TCDSN EASA.IM.R.114

   8.2 Emission Requirements
   n/a

9. Operational Suitability Data (OSD)
   Not required for rotorcraft that are no longer in production.
   CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition
   Bell Helicopter Textron top drawings:
   for 222B: 222-100-001-105
   for 222U: 222-100-002-101

2. Description: 2-blade main/tail rotor, twin turbine engine
222B: wheeled landing gear
222U: skid landing gear

3. Equipment: Refer to Equipment list in approved Flight Manual

4. Dimensions

4.1 Fuselage
Length: 21.91 m
Width: 3.45 m
Height: 3.37 m (222B) 3.26 m (222U)

4.2 Main Rotor: Diameter: 12.80 m

4.3 Tail Rotor: Diameter: 2.10 m

5. Engine

5.1 Model: Honeywell International Inc. (former: Avco Lycoming)
2 x Model LTS 101-750C-1

5.2 Type Certificate
TCCA TC/TCDS n°: IE-4
FAA TC/TCDS n°: E5NE
EASA TC/TCDS n°: EASA.IM.E.228

5.3 Limitations

5.3.1 Installed Engine Limits (see Note 8)

	Mast TQ Meter [%] ([ft lb])	MR Mast Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
TO (5 min)	100 (13 960)	100 (348)	104.1 (49 830)	786 (1 447)
MCP	94.6 (13 960)	100 (348)	102.9 (49 255)	765 (1 410)
MGT Start transient	- - -	- - -	- - -	900 (1 652)
MGT transient 12 sec	- - -	- - -	- - -	832 (1 530)

	Engine TQ Meter [%] ([ft lb])	PWR Turbine Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
OEI (2½ min)	100 (404)	100 (9 545)	106.1 (50 787)	822 (1 512)
OEI (30 min)	97.3 (393)	100 (9 545)	104.8 (50 165)	800 (1 472)
OEI (continuous)	86.4 (349)	100 (9 545)	102.9 (49 255)	765 (1 410)

5.3.2 Transmission Torque Limits: Torque = 17 897 Nm (13 200 ft lb) at 348 rpm

6. Fluids (Fuel/ Oil/ Additives)

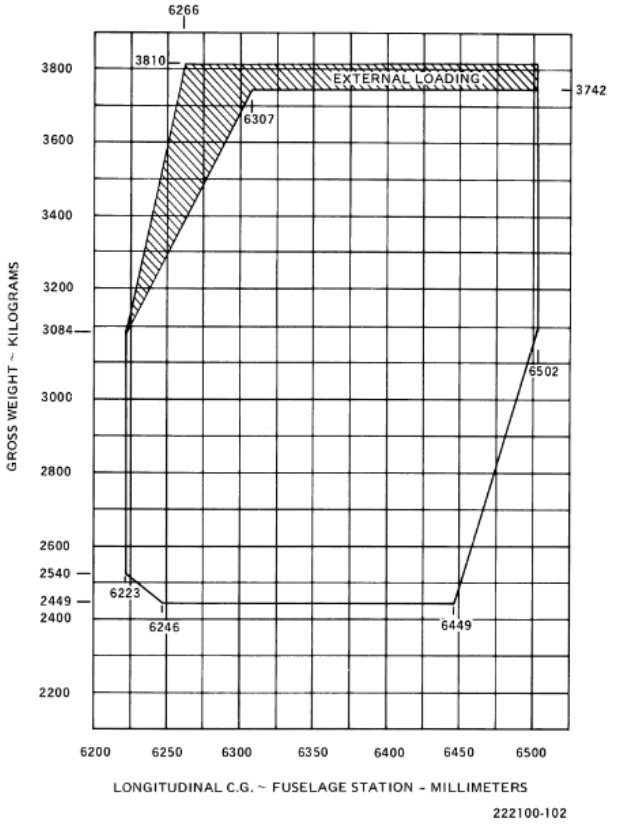
6.1 Fuel

Type	Specification	
	Canada	USA
Kerosene Jet A, A-1 JP8	CGSB 3.23, 3-GP-23	ASTM D1655, MIL-DTL-83133
Wide Cut Jet B JP4	CGSB 3.22, CGSP 3.22	ASTM D1655, MIL-DTL-5624
High Flash JP5	3-GP-24	MIL-DTL-5624

6.2 Oil	MIL-L-7808 or MIL-L-23699 (mixing of these oils is prohibited). For temperature limitations see RFM listed in Approved Publications.
6.3 Additives	Fuel, see Note 3
7. Fluid capacities	
7.1 Fuel	for 222B: Usable: 710 litres (187.5 US gal) for 222U: Usable: 935 litres (247.1 US gal)
7.2 Oil	Usable: 1.90 litres (0.5 US gal) Total: 6.44 litres (1.7 (US gal)
7.3 Coolant System Capacity	n/a
8. Air Speeds Limits	V_{NE}: 150 KIAS MSL to 3 000 ft DA Decrease V_{NE} for ambient conditions in accordance with airspeed limitation placard in the approved Flight Manual. $V_{NE\ PWR\ Off}$: 80 KIAS $V_{NE\ OEI}$: 100 KIAS $V_{NE\ side/rearward}$: 30 KIAS V_{LO}: 120 KIAS (222B only) V_{LE}: 140 KIAS (222B only) for 222B: max. Taxi Ground Speed: 35 KIAS
9. Rotor Speed Limits	Power on: Max. continuous 100% Nr (348 rpm) Max. transient 102.5% Nr (357 rpm) Max. overspeed (mast TQ 50%, or lower 5 min limit) 103% Nr (358 rpm) Min. continuous 97% Nr (338 rpm) Min. transient 90% Nr (313 rpm) Power off: Maximum 104% Nr (362 rpm) Max. transient 107% Nr (372 rpm) Min. ≥2 721 kg (6 000 lb) 90% Nr (313 rpm) Min. <2 721 kg (6 000 lb) 85% Nr (296 rpm) Min. transient 82% Nr (285 rpm) Note: % Nr tach reading %
10. Maximum Operating Altitude and Temperature	
10.1 Altitude	20 000 ft (6 100 m) PA
10.2 Temperature	-45 °C (-49 °F) to +51.7 °C (+125 °F) Refer to approved RFM for variation with altitude.
11. Operating Limitations	Day/Night VFR IFR Category A and B Non-Icing Conditions
12. Maximum Weight	3 742 kg (8 250 lb) 3 810 kg (8 400 lb) with external cargo

13. Centre of Gravity Range

Longitudinal:



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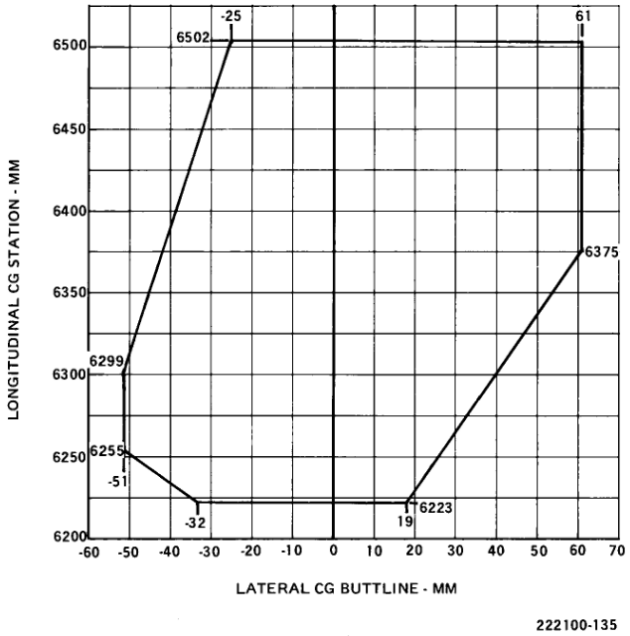


14. Datum — The datum line (STA 0) is located at 2 303.8 mm (90.7 in) forward of the helicopter nose

15. Levelling Means — Plumb line from right inside top of baggage compartment.

16. Minimum Flight Crew — 1 pilot

17. Maximum Passenger Seating Capacity — 9 passengers

18. Passenger Emergency Exit — 2, one on each side of the cabin

19. Maximum Baggage/ Cargo Loads	226.8 kg (500 lb) 480 kg/m² (100 lb/ft²)
20. Rotor Blade Control Movement	For rigging information refer to Maintenance Manual
21. Auxiliary Power Unit (APU)	n/a
22. Life-limited Parts	222B: BHT-222/222B-MM-1, Chapter 04 222U: BHT-222U-MM-1, Chapter 04
23. Wheels and Tyres	222U only: NLG: one 5.00-5 type III MLG: one per leg 18x5.5 type VII

IV. Operating and Service Instructions

1. Flight Manual	for 222B: BHT-222B-FM-1; for 222U: BHT-222U-FM-2; dated 28 February 1992, or later approved revision.
2. Maintenance Manual	for 222B: BHT-222/222B-MM-1, -2, for 222U: BHT-222U-MM-1, -2
3. Structural Repair Manual	BHT-ALL-SRM
4. Weight and Balance Manual	for 222B: BHT-222/222B-MM-1, Chapter 08, for 222U: BHT-222U-MM-1, Chapter 08
5. Illustrated Parts Catalogue	for 222B: BHT-222B-IPB, for 222U: BHT-222U-IPB
6. Service Letters and Service Bulletins	As published by Bell Helicopters Textron, Bell Helicopter Textron Canada, or Bell Textron Canada
7. Required Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the following items of equipment are required: - Flight Manual as listed above - Batteries: for 222B: GE 43B010RB03 for 222U: Marathon 30703-001. - Airspeed indicator: for 222B : s/n 47131 and up: P/N 222-375-027-107; for 222U: s/n 47501 and up: P/N 222-375-027-107.

V. Notes (222B and 222U only)

1. Manufacturer's serial numbers:
   for 222B: s/n 47131 to 47156
   for 222U: s/n 47501 to 47538, s/n 47540 to 47574
   are eligible.
2. Current weight and balance report including list of equipment included in the approved empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification.
3. For all operations below -29 °C (-20 °F) ambient temperature, all fuel used in Model 222B and Model 222U helicopters must contain Phillips PFA-55MB or MIL-L-27686 anti-icing additive in concentrations of not less than 0.035% nor more than 0.15% by volume. Blending this additive into the fuel and checking its concentration must be conducted in the manner prescribed by the Rotorcraft Flight Manual.
4. Models 222B and 222U are eligible for IFR operations when the required IFR equipment listed in the RFM are installed and operative.

V. Notes (222B and 222U only)

5. Effective 28 February 1992, design responsibility for Models 222B and 222U helicopters is transferred from Bell Helicopter Textron, Fort Worth, Texas, and FAA to Bell Helicopter Textron Canada, Mirabel, Quebec, and Transport Canada.
6. The original Bell Models 222B and 222U were approved by Transport Canada under ATA H-88 dated 19 September 1983 on the basis of FAA TC H9SW.
7. The following FAA airworthiness directives applied at the time of design transfer (see Note 6) and remain in effect unless subsequently superseded by a Canadian or EASA airworthiness directive.

for 222B:	83-02-15	- - -	- - -	89-25-04
for 222U:	85-14-11	87-13-01 87-15-06 87-15-07	88-02-03	89-17-05

8. Engine Gas Generator Control (N1 control) must be adjusted in accordance with the procedure outlined in the Maintenance Manual.
9. Model 222B helicopters, s/n 47131 to 47156, and Model 222U helicopters, s/n 47501 to 47574 were manufactured by Bell Helicopter Textron, Fort Worth, Texas.

* * *

SECTION 3: 230

I. General

1.	Type/ Model/ Variant	
	1.1 Type	230
	1.2 Model	230
	1.3 Variant	---
2.	Airworthiness Category	Large Rotorcraft
3.	Manufacturer	Bell Textron Canada Ltd. 12 800 rue de l'Avenir Mirabel, Québec J7J 1R4, Canada
4.	Type Certification Application Date to	TCCA: 27 September 1989 LBA DE: not recorded
5.	State of Design Authority	Transport Canada Civil Aviation (TCCA), Canada
6.	Type Certificate Date by	TCCA: 12 March 1992 LBA DE: 26 March 1993
7.	Type Certificate n° by	TCCA: H-88 LBA DE: 3054
8.	Type Certificate Data Sheet n° by	TCCA: H-88 LBA DE: 3054/RC
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	27 September 1989
2.	Airworthiness Requirements	

FAR Part 29 dated 1 February 1965, (Transport Category A & B) Amdt. 29-1 through 29-9, plus the following:

- Amdt. 29-10 – FAR 29.997;
- Amdt. 29-11 – all;
- Amdt. 29-12 – FAR 29.25(c), 29.801, 29.865, 29.1555(c) and 29.1557(c);
- Amdt. 29-17 – FAR 29.927(b)(2);
- Amdt. 29-26:

29.1	29.151	29.901	29.1021	29.1165	29.1337	Appendix B
29.21	29.161	29.903	29.1027	29.1182	29.1501	
29.25	29.173	29.908	29.1041	29.1183	29.1503	
29.29	29.175	29.917	29.1043	29.1189	29.1505	
29.33	29.361*)	29.931	29.1045	29.1193	29.1517	*) except (a)(4),
29.45	29.549	29.939	29.1047	29.1195	29.1521	
29.59	29.563	29.951	29.1091	29.1197	29.1527	
29.63	29.571	29.955	29.1093	29.1199	29.1549	
29.65	29.603	29.961	29.1103	29.1303	29.1555	
29.67	29.613	29.995	29.1105	29.1305	29.1557	
29.75	29.735	29.997	29.1121	29.1307	29.1559	
29.77	29.771	29.1011	29.1141	29.1321	29.1581	

29.79	29.773	29.1013	29.1143	29.1322	29.1583
29.141	29.785	29.1015	29.1145	29.1331	29.1585
29.143	29.863	29.1019	29.1163	29.1333	29.1587

3. Special Conditions — IFR requirements, dated 15 December 1978
4. Exemptions
   - FAA Exemption No. 2789, FAR 29.811(h)(1)
   - FAA Exemption No. 4395, FAR 29.855(a)
5. Deviations — none
6. Equivalent Safety Findings

92/01	Engines: Category A Engine Isolation	FAR 29.903(b)
92/02	Powerplant Instruments	FAR 29.1305(b)(2)
92/03	Fuel Tanks	FAR 29.963(b), 29.965
92/04	Doors	FAR 29.783(e)
92/05	Emergency Exit Markings	FAR 29.811(d)
92/06	Passenger Emergency Exits	FAR 29.807(d)(1)
92/07	External Load Attaching Means	FAR 29.865(b)(2)
92/08	Landing Gear Limit Drop Test and Reserve Energy Absorption Drop Test	FAR 29.725, 29.727
92/09	Proof of Structure, Landing Gear Limit Drop Test and Reserve Energy Absorption Test	FAR 29.307(b), 29.723, 29.725, 29.727
92/10	Airworthiness Criteria for Helicopter Instrument Flight – Static Lateral Directional Stability	FAR 29 Appendix B, V
92/11	Cargo and Baggage Compartments	FAR 29.855(a)

7. Requirements elected to comply — none
8. Environmental Protection Requirements
   - 8.1 Noise Requirements — See TCDSN EASA.IM.R.114
   - 8.2 Emission Requirements — n/a
9. Operational Suitability Data (OSD) — Not required for rotorcraft that are no longer in production.
   CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition — Bell Helicopter Textron top drawing 230-100-001, Revision AM, dated 19 August 1992, or subsequent revision
2. Description — 2-blade main/tail rotor, twin turbine engine with skid or optional wheeled landing gear
3. Equipment — Refer to Equipment list in approved Flight Manual
4. Dimensions
   - 4.1 Fuselage — Length: 12.96 m; Width: 3.56 m; Height: 3.43 m (wheels) 3.26 m (skids)
   - 4.2 Main Rotor — Diameter: 12.80 m
   - 4.3 Tail Rotor — Diameter: 2.10 m
5. Engine
   - 5.1 Model — Rolls-Royce Corporation (former: Allison)

2 x Model 250C30G/2

5.2 Type Certificate

TCCA TC/TCDS n°: IE-19
FAA TC/TCDS n°: E1GL
EASA TC/TCDS n°: EASA.IM.E.109

5.3 Limitations

5.3.1 Installed Engine Limits

	Mast TQ Meter [%] ([shp])	MR Mast Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
TO (5 min)	100 (925)	100 (348)	105 (53 550)	767.8 (1 414)
MCP	94.6 (875)	100 (348)	105 (53 550)	715.6 (1 320)

	Engine TQ Meter [%] ([shp])	PWR Turbine Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
OEI (2½ min)	100 (734)	100 (9 545)	105 (53 550)	825.6 (1 518)
OEI (30 min)	97.3 (714)	100 (9 545)	105 (53 550)	797.8 (1 468)
OEI (continuous)	86.4 (676)	100 (9 545)	105 (53 550)	767.8 (1 414)

5.3.2 Transmission Torque Limits

Torque = 18 927 Nm (13 960 ft lb) at 348 rpm

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Type	Specification	
	Canada	USA
Kerosene Jet A, A-1 JP8	CGSB 3.23, 3-GP-23	ASTM D1655, MIL-DTL-83133
Wide Cut Jet B JP4	CGSB 3.22, CGSP 3.22	ASTM D1655, MIL-DTL-5624
High Flash JP5	3-GP-24	MIL-DTL-5624

6.2 Oil

MIL-L-7808 or MIL-L-23699 (mixing of these oils is prohibited).
For temperature limitations see RFM listed in Approved Publications.

6.3 Additives

Fuel, see Note 3

7. Fluid capacities

7.1 Fuel

for wheel LDG gear:
Usable: 710 litres (187.5 US gal)
for skid LDG gear:
Usable: 935 litres (247.1 US gal)

7.2 Oil

Usable: 1.90 litres (0.5 US gal)
Total: 6.1 litres (1.61 (US gal)

7.3 Coolant System Capacity

n/a

8. Air Speeds Limits

V_{NE}: 150 KIAS MSL to 3 000 ft DA
Decrease V_{NE} for ambient conditions in accordance with airspeed limitation placard in the approved Flight Manual (See Section IV).
$V_{NE\ PWR\ Off}$: 80 KIAS
$V_{NE\ OEI}$: 100 KIAS
$V_{NE\ side/rearward}$: 30 KIAS
V_{LO}: 120 KIAS
V_{LE}: 140 KIAS
Max. Taxi Ground Speed: 35 KIAS (with wheels only)

9. Rotor Speed Limits

Power on:

Max. continuous	100%	Nr	(348 rpm)
Max. transient	102.5%	Nr	(357 rpm)
Max. overspeed (mast TQ 50%, or lower 5 min limit)			
	103%	Nr	(358 rpm)
Min. continuous	97%	Nr	(338 rpm)
Min. transient	90%	Nr	(313 rpm)

Power off:

Maximum	104%	Nr	(362 rpm)
Max. transient	107%	Nr	(372 rpm)
Min. <2 721 kg (6 000 lb)	85%	Nr	(296 rpm)
Min. ≥2 721 kg (6 000 lb)	90%	Nr	(313 rpm)
Min. transient	82%	Nr	(285 rpm)

Note: % Nr tach reading %

10. Maximum Operating Altitude and Temperature

10.1 Altitude

20 000 ft (6 100 m) PA

10.2 Temperature

-45 °C (-49 °F) to +51.7 °C (+125 °F)
Refer to approved RFM for variation with altitude.

11. Operating Limitations

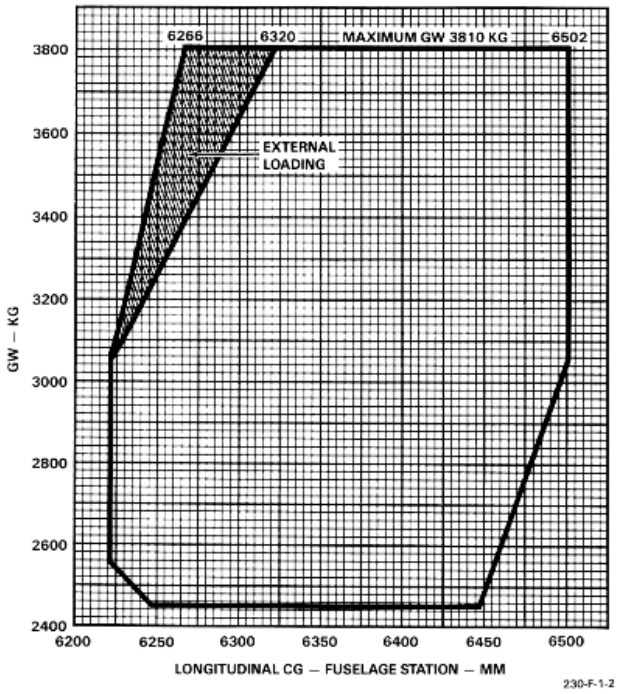
VFR day/night
IFR, see Note 2
Category A and B
non-icing conditions

12. Maximum Weight

3 810 kg (8 400 lb) with and without external cargo

13. Centre of Gravity Range

Longitudinal:



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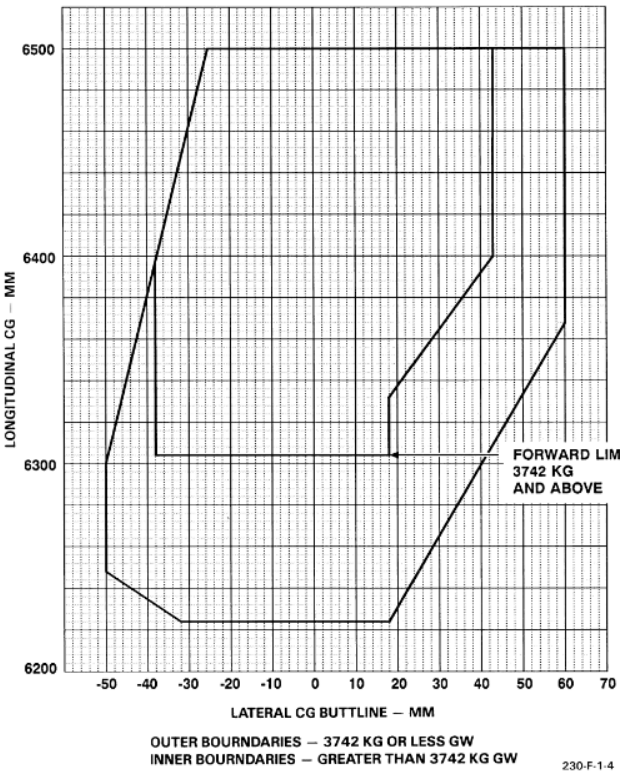


14. Datum — The datum line (STA 0) is located at 2 303.8 mm (90.7 in) forward of the helicopter nose

15. Levelling Means — Plumb line from right inside top of baggage compartment.

16. Minimum Flight Crew — 1 pilot

17. Maximum Passenger Seating Capacity — 9 passengers

18. Passenger Emergency Exit — 2, one on each side of the cabin

19.	Maximum Baggage/ Cargo Loads	226.8 kg (500 lb)
20.	Rotor Blade Control Movement	For rigging information refer to Maintenance Manual
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	BHT-230-MM-2, Chapter 04
23.	Wheels and Tyres	NLG: one 5.00-5 6TT MLG: one per leg 18x5.5 type 8

IV. Operating and Service Instructions

1.	Flight Manual	BHT-230-FM-1, dated 12 March 1992, or later approved revision
2.	Maintenance Manual	BHT-230-MM-1 through -13
3.	Structural Repair Manual	BHT-ALL-SRM
4.	Weight and Balance Manual	see BHT-230-MM-2, Chapter 08
5.	Illustrated Parts Catalogue	BHT-230-IPB-1 through -13
6.	Service Letters and Service Bulletins	As published by Bell Helicopter Textron Canada, or Bell Textron Canada
7.	Required Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the Flight Manual as listed in above.

V. Notes (230 only)

1. Manufacturer's serial numbers:
   s/n 23001 through 23038
   are eligible.
2. Current weight and balance report including list of equipment included in the approved empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification.
3. For all operations below 10°C (50°F) ambient temperature, all fuel used in Model 230 helicopters must contain Phillips PFA-55MB or MIL-L-27686 anti-icing additive in concentration of not less than 0.035% nor more than 0.15% by volume.
4. Models 230 are eligible for IFR operations when the required IFR equipment listed in the RFM is installed and operative.

* * *

SECTION 4: 430

I. General

1.	Type/ Model/ Variant	
	1.1 Type	430
	1.2 Model	430
	1.3 Variant	---
2.	Airworthiness Category	Large Rotorcraft
3.	Manufacturer	Bell Textron Canada Ltd. 12 800 rue de l'Avenir Mirabel, Québec J7J 1R4, Canada
4.	Type Certification Application Date to	TCCA: 20 May 1992 LBA DE: 1 August 1996 ENAC IT: 13 November 1996
5.	State of Design Authority	Transport Canada Civil Aviation (TCCA), Canada
6.	Type Certificate Date by	TCCA: 23 February 1996 (Cat A) 19 February 1999 (Cat B) ENAC IT: 9 July 1998 LBA DE: 22 August 2000
7.	Type Certificate n° by	TCCA: H-88 ENAC IT: SO/ A 359 LBA DE: 3054
8.	Type Certificate Data Sheet n° by	TCCA: H-88 ENAC IT: SO/ A 359 LBA DE: 3054/RC
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 2nd indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	20 May 1992
2.	Airworthiness Requirements	

FAR Part 29 dated 1 February 1965, (Transport Category A & B) Amdt. 29-1 through 29-39.
Except for the following paragraphs at Amdt. 29-9:

29.561(a)(b)(d)	29.783	29.855	29.967	29.975	29.999	29.1545
29.671	29.807	29.963	29.969	29.977	29.1309	
29.729	29.811	29.963	29.971	29.979	29.1325	
29.775	29.853	29.965	29.973	29.991	29.1413	

The following paragraphs of FAR Part 29 at:
- Amdt. 29-12: 29.787, 29.865;
- Amdt. 29-17: 29.927(a)(b) and (c);
- Amdt. 29-24: 29.1309 applicable to new systems introduced as model 430 design changes (FADEC, IIDS, AFCS and EFIS) from the 230; and 29.1325(c) and (f);
- Amdt. 29-26: 29.563, 29.785, 29.901;
- Amdt. 29-29: 29.561(c);
  Amdt. 29-31: 29.903

3. Special Conditions (TCCA)
   - SCA93-2 High Intensity Radiated Fields (HIRF), dated 4 January 1993;
   - SCA93-3 Lightning Protection, dated 4 January 1993;
   - SCA94-08 Software Aspects of Certification, dated 18 March 1994.

4. Exemptions
   - FAR 29.855(a),(d) Cargo and Baggage Compartment;
   - FAR 29.911(h)(1) Emergency Exit External Marking;
   - FAR 29.811(i) Emergency Exit Marking

5. Deviations

Compliance with the following paragraphs of FAR Part 29 is not shown:
- 29.952 new addition to FAR PART 29 at amendment 29-35;
- 29.562 new addition to FAR PART 29 at Amdt. 29-29;
- 29.812 new addition to FAR PART 29 at Amdt.29-24;
- 29.954 new addition to FAR PART 29 at Amdt.29-26; and,
- 29.1411 and 29.1415 must be complied with by the operator if ditching approval is required.

6. Equivalent Safety Findings

FAR 29.963(b), 29.965	Crash Resistant Fuel Cell
FAR 29.783(e)	Crew Door Switch
FAR 29.811(d)	Size of Emergency Exit Sign
FAR 29.807(d)(1)	Passenger Emergency Exit (Main Door Exit Size for Ditching)
FAR 29.865(b)(2)	External Load Attaching Means (Hoist Manual Release)
FAR 29.855(a)	Baggage and Cargo Compartment
FAR 29.307(b), 29.723, 29.725, 29.727	Proof of Structure, Landing Gear Limit Drop Test and Reserve Energy Absorption Drop Test (Skid Gear Only)

7. Requirements elected to comply: none

8. Environmental Protection Requirements

   8.1 Noise Requirements: See TCDSN EASA.IM.R.114

   8.2 Emission Requirements: n/a

9. Operational Suitability Data (OSD): Not required for rotorcraft that are no longer in production.
CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Bell Helicopter Textron top drawing 430-100-001 Revision BG, or subsequent revision

2. Description: 4-blade main rotor, 2-blade tail rotor, twin turbine engines with skid or optional wheel landing gear

3. Equipment: Refer to Equipment list in approved Flight Manual

4. Dimensions

   4.1 Fuselage: Length: 13.43 m; Width: 3.45 m; Height: 3.70 m (wheels) 4.00 m (skids)

   4.2 Main Rotor: Diameter: 12.80 m

   4.3 Tail Rotor: Diameter: 2.10 m

5. Engine

5.1 Model

Rolls-Royce Corporation (former: Allison)
2 x Model 250C40B with Chandler Evans EMC-35A (FADEC) fuel control system

5.2 Type Certificate

TCCA TC/TCDS n°: IE-19
FAA TC/TCDS n°: E1GL
EASA TC/TCDS n°: EASA.IM.E.109

5.3 Limitations

5.3.1 Installed Engine Limits

	Mast TQ Meter [%] ([shp])	MR Mast Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
TO (5 min)	100 (1 045)	100 (348)	105 (53 550)	779.4 (1 435)
MCP	94.6 (875)	100 (348)	105 (53 550)	726.7 (1 340)

	Engine TQ Meter [%] ([shp])	PWR Turbine Speed [%] ([rpm])	Gas Generator Speed [%] ([rpm])	Turbine Temperature [°C] ([°F])
OEI PWR (2 min)	105.3 (811)	100 (9 598)	105 (53 550)	827.2 (1 521)
OEI PWR (30 sec)	109.6 (844)	100 (9 598)	105 (53 550)	871.1 (1 600)
OEI PWR (30 min)	92.8 (715)	100 (9 598)	105 (53 550)	797.8 (1 468)
OEI MCP	92.8 (715)	100 (9 598)	105 (53 550)	779.4 (1 435)

5.3.2 Transmission Torque Limits

Torque = 21 444 Nm (15 816 ft lb) at 348 rpm

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Type	Specification	
	Canada	USA
Kerosene Jet A, A-1 JP8	CGSB 3.23, 3-GP-23	ASTM D1655, MIL-DTL-83133
Wide Cut Jet B JP4	CGSB 3.22, CGSP 3.22	ASTM D1655, MIL-DTL-5624
High Flash JP5	3-GP-24	MIL-DTL-5624

6.2 Oil

MIL-L-7808 or MIL-L-23699 (mixing of these oils is prohibited).
For temperature limitations see RFM listed in Approved Publications.

6.3 Additives

Fuel, see Note 3

7. Fluid capacities

7.1 Fuel

for wheel LDG gear:
Usable: 710 litres (187.5 US gal)
for skid LDG gear:
Usable: 935 litres (247.1 US gal)

7.2 Oil

Usable: 2.36 litres (0.625 US gal)
Total: 6.1 litres (1.61 (US gal)

7.3 Coolant System Capacity

n/a

8. Air Speeds Limits

V_{NE}: 150 KIAS MSL to 3 000 ft DA
Decrease V_{NE} for ambient conditions in accordance with airspeed limitation placard in the approved Flight Manual (see Section IV).
$V_{NE\ PWR\ Off}$: 80 KIAS
$V_{NE\ OEI}$: 100 KIAS

9. Rotor Speed Limits

Power on:

Maximum continuous	100%
Maximum transient	106%
Minimum transient	90%
Max. ground operation	102%

Power off:

Maximum transient	106%
Minimum transient	86%
Transient operation	86%-90%
Continuous operation	91%-105%

10. Maximum Operating Altitude and Temperature

10.1 Altitude

VFR: 20 000 ft (6 100 m) PA
IFR: 15 000 ft (4 572 m) PA

10.2 Temperature

-40 °C (-40 °F) to +51.7 °C (+125 °F)
Refer to approved RFM for variation with altitude.

11. Operating Limitations

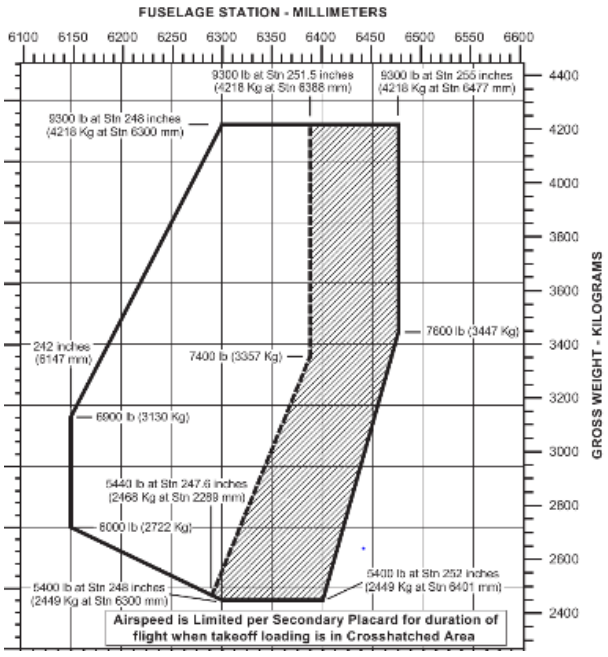
VFR day/night
IFR, see Note 4
Category A and B
non-icing conditions

12. Maximum Weight

4 218 kg (9 300 lb) with and without external cargo
4 082 kg (9 000 lb) for Cat A

13. Centre of Gravity Range

Longitudinal:



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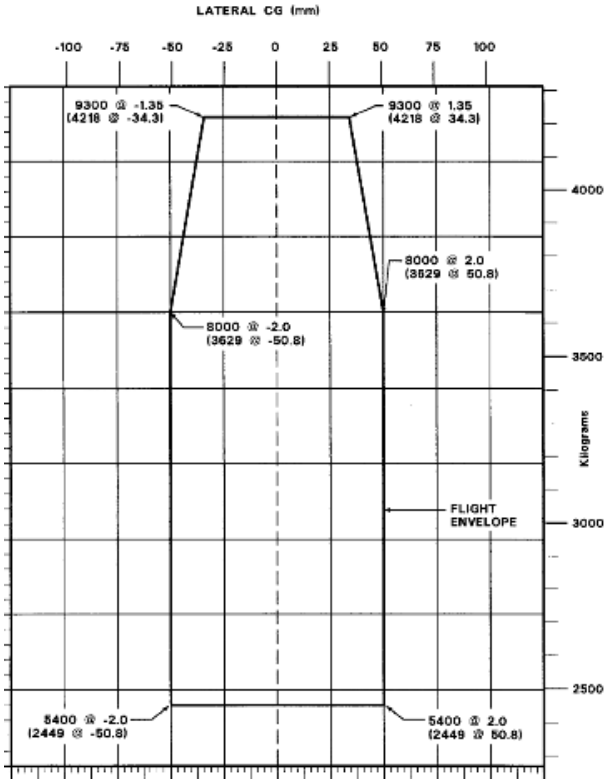

14.	Datum	The datum line (STA 0) is located at 1 846.6 mm (72.7 in) forward of the helicopter nose
15.	Levelling Means	Plumb line from right inside top of baggage compartment.
16.	Minimum Flight Crew	1 (pilot) Cat B, VFR and Cat A except for elevated helipad operation; 2 (pilots) IFR and Cat A elevated helipad operation. Refer to RFM BHT-430-FMS-02
17.	Maximum Passenger Seating Capacity	9 passengers 10 passengers (see Note 5)
18.	Passenger Emergency Exit	2, one on each side of the cabin
19.	Maximum Baggage/ Cargo Loads	226.8 kg (500 lb)
20.	Rotor Blade Control Movement	For rigging information refer to Maintenance Manual
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	BHT-430-MM-2 Chapter 04
23.	Wheels and Tyres	NLG: one 5.00x5, 6 ply, tube 5.00x5 MLG: one per leg 18x5.5 type 8

IV. Operating and Service Instructions

1.	Flight Manual	BHT-430-FM-1, dated 23 February 1996, or later approved revision. Flight Manual Supplement BHT-430-FMS-02, dated 19 February 1999, or later approved revision for Cat A Operations.
2.	Maintenance Manual	BHT-430-MM-1 through -13
3.	Structural Repair Manual	BHT-ALL-SRM
4.	Weight and Balance Manual	see BHT-430-MM-2, Chapter 08
5.	Illustrated Parts Catalogue	BHT-430-IPB-1 through -13
6.	Service Letters and Service Bulletins	As published by Bell Helicopter Textron Canada, or Bell Textron Canada
7.	Required Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the helicopter for certification. In addition, the Flight Manual as listed above.

V. Notes (430 only)

1. Manufacturer's serial numbers:
   s/n 49001 through 49014, s/n 49016 and subsequent
   are eligible.
2. Current weight and balance report including list of equipment included in the approved empty weight and loading instructions when necessary must be provided for each helicopter at the time of original certification.
3. For all operations below 10 °C (50 °F) ambient temperature, all fuel used in model 430 helicopters must contain Phillips PFA-55MB or MIL-L-27686 anti-icing additive in concentrations of not less than 0.035% or more than 0.15% by volume.
4. Models 430 are eligible for IFR operations when the required IFR equipment listed in the RFM is installed and operative.
5. The Model 430 is approved for maximum occupants of 11 (including crew), i.e. a maximum number of passengers of 10, when Bell kit 430-705-003 is installed and the aircraft is operated in accordance with Flight Manual Supplement BHT-430-FMS-28.

* * *

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

Amdt.	Amendment	OSD	Operational Suitability Data
C.G.	Centre of Gravity	P/N	Part Number
CR	(European) Commission Regulation	PA	Pressure Altitude
KIAS	Knots Indicated Air Speed	PWR	Power
LDG	Landing	RFM	Rotorcraft Flight Manual
Max.	Maximum	s/n	Serial Number
MCP	Maximum Continuous Power	shp	Shaft Horse Power
min	Minute	STA	Station
Min.	Minimum	TO	Take-Off
MSL	Mean Sea Level	TOP	Take-Off Power
Nr	Rotor Speed	TQ	Torque
OEI	One Engine Inoperative	V_{NE}	Never Exceed Speed

II. Type Certificate Holder Record

Type Certificate Holder	**Period**
Bell Helicopter Textron, Fort Worth, Texas, U.S.A.	From 16 August 1979 until 27 September 1992
Bell Helicopter Textron Canada Ltd., 12 800 rue de l'Avenir, Mirabel, Québec, J7J 1R4, Canada	until 15 December 2019
Bell Textron Canada Ltd., 12 800 rue de l'Avenir, Mirabel, Québec, J7J 1R4, Canada	from 16 December 2019

III. Change Record

Issue	**Date**	**Changes**	**TC issue**
Issue 1	16 Dec 2019	Initial issue of TC and TCDS in EASA format	16 December 2019

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