TYPE CERTIFICATE DATA SHEET

No. EASA.IM.R.116

For

Bell 427

Type Certificate Holder

Bell Textron Canada Ltd.

12 800 rue de l'Avenir
Mirabel, Québec
Canada

For Model: 427

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SECTION 1: 427

I. General

1.	Type/ Model/ Variant	
	1.1 Type	Bell 427
	1.2 Model	427
	1.3 Variant	- - -
2.	Airworthiness Category	Small Rotorcraft
3.	Manufacturer	Bell Textron Canada Ltd. 12 800 rue de l'Avenir Mirabel, Québec, Canada
4.	Type Certification Application Date to	TCCA: 31 May 1996 JAA: 6 September 1996
5.	State of Design Authority	Transport Canada Civil Aviation
6.	Type Certification Date by	TCCA: 19 November 1999 JAA: 22 October 2002 (validation recommendation)
7.	Type Certificate n°	TCCA: H-103
8.	Type Certificate Data Sheet n°	TCCA: H-103 JAA: JAA/27/02-004
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	31 May 1996
2.	Airworthiness Requirements	JAR 27, Issue, dated 6 September 1993; plus Amdt. 27/98/1, dated 16 February 1998; plus Paragraphs 27.1 and 27.2 of Amdt. 2, dated 1 May 2001; plus the following paragraphs of JAR 29, Issue 1 as listed in JAR 27 Appendix C: 29.861 (a), 29.901 (c), 29.903 (b)(c)&(e), 29.908 (a), 29.917 (b)&(c)(1), 29.927 (c)(1), 29.953 (a), 29.1027 (a), 29.1045, 29.1047 (a), 29.1181 (a), 29.1189 (c), 29.1191 (a)(1), 29.1193 (e), 29.1195 (a)&(d), 29.1197, 29.1199, 29.1201, 29.1305 (a)(6)&(b), 29.1309 (b)(2)(i)&(d), 29.1331 (b)
3.	Special Conditions	JAA Special Conditions: - HIRF; - Engine Limit Override; Note: TCCA Special Condition on 'Lightning Indirect Effects' has been considered equivalent to JAR 27.1309 (d) as complemented by JAA INT/POL/25/4.
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	- JAR 27.175 (c) 'Static Longitudinal Stability in Autorotation'; - JAR 27.307 (b)(5) 'Proof of Structure', JAR 27.723, 27.725, 27.727 'Landing Gear: Shock absorption tests,

		Limit drop test and reserve energy absorption test'; - JAR 27.963 (g) 'Fuel tanks: General'; - JAR 29.1181 (a)(6) 'Designated Fire Zones: Regions Included – for engine isolation only'.
7.	Requirements elected to comply	none
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	See TCDSN EASA.IM.R.116
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	Not required for rotorcraft which 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 Number: - 427-100-001, revision CY, or later approved revision for s/n 56001, and subsequent; - 427-100-002, revision AE, or later approved revision for s/n 58001, and subsequent; - 427-099-122, revision A – Model 427 Joint Aviation Authorities (JAA) approved Configuration Definition.
2.	Description	Main rotor: four MR blades Tail rotor: two TR blades Fuselage: composite and aluminium Landing gear: skid type Powerplant: two free turbine engines
3.	Equipment	As per compliance with certification basis and included in Type Design Definition Document
4.	Dimensions	
	4.1 Fuselage	Length: 12.99 m Width: 2.69 m Height: 3.23 m
	4.2 Main Rotor	Diameter: 11.28 m
	4.3 Tail Rotor	Diameter: 1.73 m
5.	Engine	
	5.1 Model	Pratt & Whitney Canada 2 x Model PW207D
	5.2 Type Certificate	TCCA TC/TCDS: E-23 JAA TCDS: JAA/E/95-010 EASA TC/TCDS: EASA.IM.E.017

5.3 Limitations

5.3.1 Installed Engine Limits

Rating		Max TQ [% (ft·lb)]	Max ITT [°C]	Max NG [% (rpm)]
AEO	Take-off 5 min	68.6 (481)	900	99.8 (57 900)
	Max continuous	68.6 (481)	850	97.2 (56 400)
OEI	30 sec	81.2 (569)	990	104.3 (60 500)
	2 min	81.2 (569)	950	102.2 (59 300)
	30 min	68.6 (481)	925	101.2 (58 700)
	Continuous	68.6 (481)	900	99.8 (57 900)

5.3.2 Transmission Torque Limits

Rating		Max TQ [%]
AEO	Take-off 5 min	100
	Max continuous	100
OEI	30 sec	81.2
	2 min	75.6
	Continuous	57.5

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel

Type	Specification	
Kerosene Jet A, A-1, JP8	Canada CGSB 3.23 3-GP-23	USA ASTM D1655 MIL-DTL-83133
Wide Cut Jet B JP4	 CGSB 3.22 CGSB 3.22	 ASTM D6615 MIL-DTL-5624
High Flash JP5	 3-GP-24	 MIL-DTL-5624

Note: Refer to approved RFM for fuel temperature limitations

6.2 Oil

For approved engine oil types, prohibition against mixing brands and for approved transmission and gearbox oil type refer to Maintenance Manual BHT-427-MM-01

6.3 Additives

Refer to approved RFM

7. Fluid capacities

7.1 Fuel

	Total usable [litres (US gal)]	Unusable [litres (US gal)]
Fuel tank	770 (203.5)	12.5 (3.3)

7.2 Oil

	Quantity [litres (Imp. quarts)]
Engine total (each)	5.1 (4.5)
Engine unusable (each)	1.1 (1) included in capacity 0.73 kg (1.6 lb) undrainable
Main gearbox	8.5 (7.5)
Tail rotor gearbox	0.31 (0.27)
Hydraulic fluid	1.59 (1.68)

8. Air Speed Limitations

V_{NE}: 140 KIAS
For further information refer to approved RFM.

9. Rotor Speed Limitations

Power On		
Condition	Nr [rpm]	[%]
Maximum	411	104
Minimum	391	99
Power Off		
Condition	Nr [rpm]	[%]
Maximum	423	107
Minimum	356	90

10. Maximum Operating Altitude and Temperature

10.1 Altitude

10 000 ft PA (3 048 m)

10.2 Temperature

-30°C (-22°F) to +42.2°C (108°F), or,
-30°C (-22°F) to +51.7°C (125°F).
See Notes 4 and 5

11. Operating Limitations

- VFR day and night
- Cat A (see Note 6)

12. Maximum Mass

12.1 Basic Aircraft

- 2 880 kg (6 350 lb) internal loading
- 2 948 kg (6 550 lb) external loading

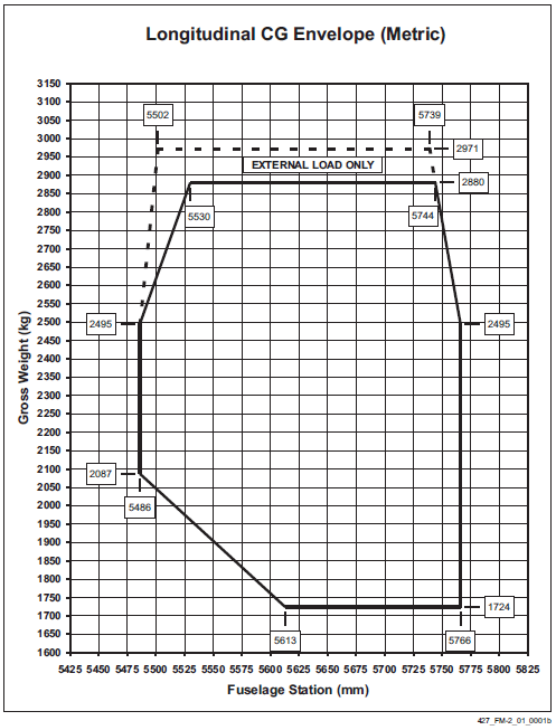
12.2 With kit 427-706-021 installed

- 2 971 kg (6 550 lb) internal loading
- 2 971 kg (6 550 lb) external loading

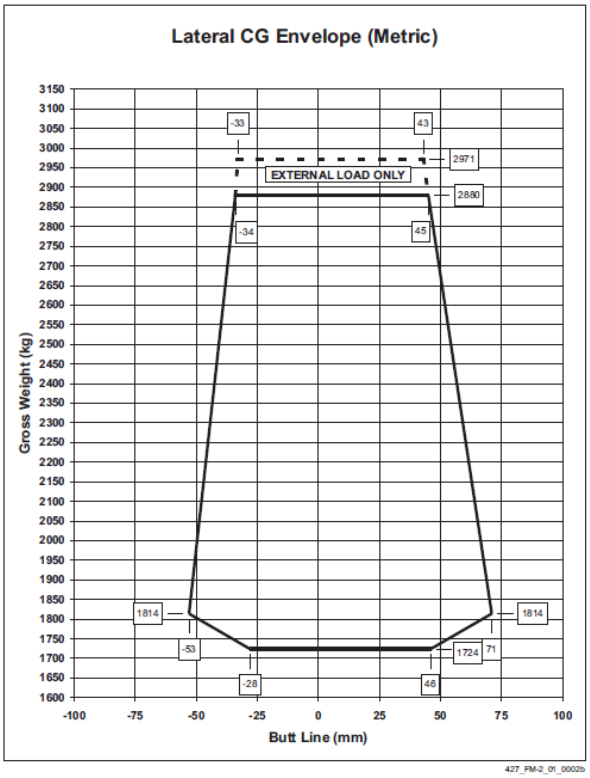
13. Centre of Gravity

13.1 Basic Aircraft

a) Longitudinal C.G. limits:

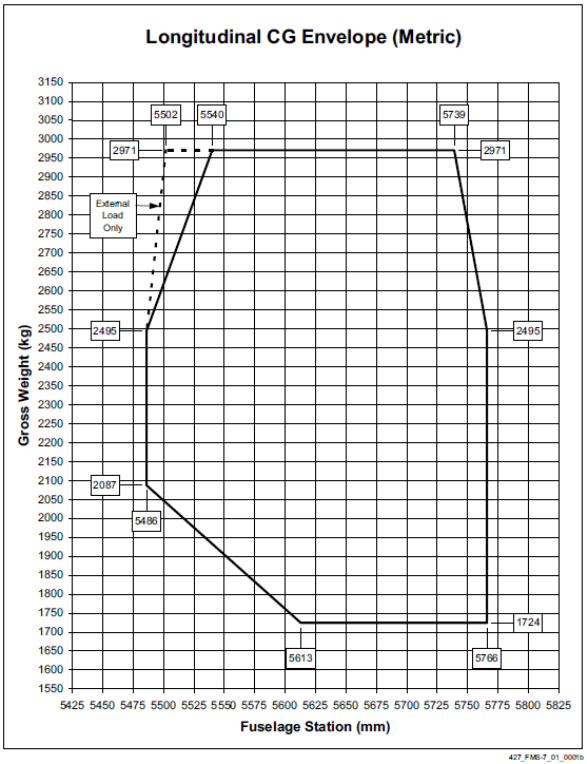


Lateral C.G. limits:

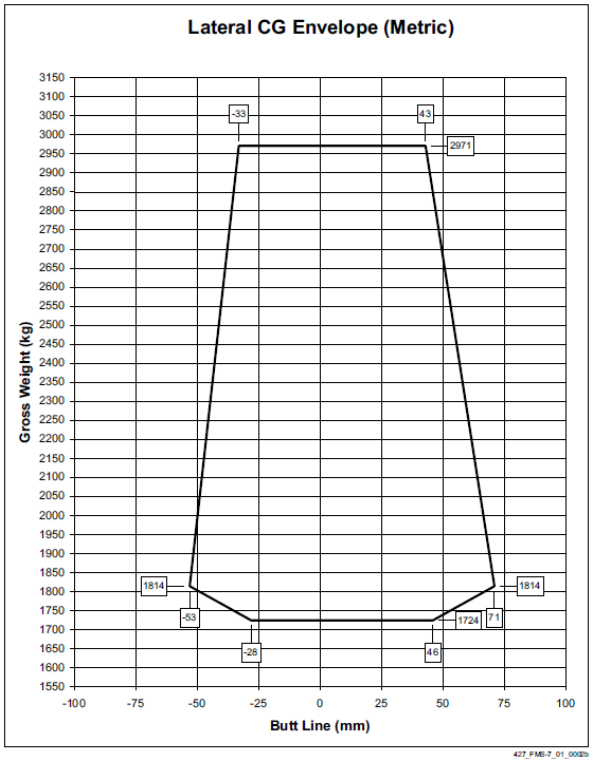


13.2 With kit 427-706-021 installed

a) Longitudinal C.G. limits:



Lateral C.G. limits:



14.	Datum	Longitudinal: The datum plane (STA 0) is located at 2 032 mm (80 in) forward of the nose of the helicopter. Lateral: fuselage median plane
15.	Levelling Means	Plumb line from underside of the engine pan through the access panel in the baggage compartment roof to the index plate on the floor of the baggage compartment.
16.	Minimum Flight Crew	1 (one)
17.	Maximum Passenger Seating Capacity	7 (seven)
18.	Passenger Emergency Exit	2, one on each side of the passenger cabin
19.	Maximum Baggage/ Cargo Loads	For loading schedule refer to approved RFM - max. cargo deck floor loading 422 kg/m² (86 lb/ft²) - max. allowable cargo mass 113 kg (250 lb)
20.	Rotor Blade Control Movement	For rigging information, refer to Maintenance Manual
21.	Auxiliary Power Unit (APU)	none
22.	Life-limited Parts	Refer to the Airworthiness Limitation Section (ALS, Chapter 4) of the Maintenance Manual BHT-427-MM-01

IV. Operating and Service Instructions

1.	Flight Manual	BHT-427-FM-02, revision 5, or later approved revision
2.	Maintenance Manual	BHT-427-MM-01 revision 2 or later accepted revision
3.	Structural Repair Manual	BHT-ALL-SRM - Structural Repair Manual
4.	Weight and Balance Manual	BHT-427-FM-02, revision 5, or later approved revision
5.	Illustrated Parts Catalogue	BHT-427-IPB Illustrated Parts Breakdown
6.	Miscellaneous Manuals	- BHT-ALL-SPM Standard Practices Manual - BHT-ELEC-SPM Electrical Standard Practices Manual - BHT-SPECTOOL-IPB Special Tools Illustrated Parts

		Breakdown - CSSD-PSE-87-001 Corrosion Control Guide - CSSD-PSE-90-001 Chafing Control Guide
7.	Service Letters and Service Bulletins	As published by Bell Helicopter Textron Canada, or Bell Textron Canada
8.	Required equipment	Refer to approved RFM and related supplements for approved mandatory and optional equipment.

V. Notes

1. Manufacturer's eligible serial numbers:
   - 56001, and subsequent;
   - 58001, and subsequent.
2. Based on the JAA validation recommendation, dated 22 October 2002, the TCDS JAA/27/02-004 was accepted by the Aviation Authorities of the following countries:

Austria	Czech Republic	Greece	Latvia	Slovakia
Belgium	Denmark	Hungary	Lithuania	Slovenia
Britain (UK)	Estonia	Iceland	Luxembourg	Sweden
Croatia	France	Ireland	Malta	Switzerland
Cyprus	Germany	Italy	Poland	

3. Model 427 helicopters with kit 427-706-021 (IGW to 6 550 lb) installed may be operated at a MTOM of 2 971 kg (6 550 lb). These helicopters must be operated in accordance with Flight Manual Supplement BHT-427-FMS-7. Maintenance instructions and life limited parts are listed in Maintenance Manual BHT-427-MMS-7.
4. Model 427 helicopters with kit 427-704-006 (IIDS Cooling Fans) and kit 427-704-010 (Oil Blower System Plenum Removal) and IIDS Data Acquisition Unit of part no. 427-375-001-105 or higher may be operated at the higher OAT limit of 51.7°C (125°F) in accordance with BHT-427-FMS-22 including Temporary Revision TR-1. Helicopters of s/n 56036 and subsequent and 58003 and subsequent have the intent of these kits incorporated during production.
5. Model 427 helicopters with kit 427-706-021 (IGW to 2 971 kg (6 550 lb)) and kit 427-704-006 (IIDS Cooling Fans) and kit 427-704-010 (Oil Blower System Plenum Removal) and IIDS Data Acquisition Unit of part no. 427-375-001-105 or higher may be operated at the higher OAT limit of 51.7°C (125°F) and at an MTOM of 2 971 kg (6 550 lb). These helicopters must be operated in accordance with Flight Manual Supplement BHT-427-FMS-23
   Helicopters of s/n 56036 and subsequent and 58003 and subsequent have the intent of the cooling modifications installed and helicopters of s/n 56043 and subsequent and 58003 and subsequent have the intent of the increased gross weight modifications installed during production and must be operated in accordance with Flight Manual Supplement BHT-427-FMS-23.
6. For Category A Operations, kit 427-706-025 must be installed and the helicopter must be configured as per BHT-427-FMS-23 (Increased Gross Mass to 2 971 kg (6 550 lb) and IIDS Cooling Fans) and operated as per BHT-427-FMS-5 (Category A Operations).
7. The following placard must be displayed in front of and in clear view of the pilot:
   "THIS HELICOPTER MUST BE OPERATED IN COMPLIANCE WITH
   OPERATING LIMITATIONS SPECIFIED IN THE APPROVED FLIGHT MANUAL".

* * *

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative
Amdt.	Amendment
C.G.	Centre of Gravity
Doc.	Document
FAA	Federal Aviation Administration
HIRF	High Intensity Radiated Fields
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
LH	Left Hand
MTOM.	Maximum Take-Off Mass
No.	Number
Nr	Rotor Speed
OAT	Outside Air Temperature
OEI	One Engine Inoperative
OSD	Operational Suitability Data
p/n	Part number
PA	Pressure altitude
RFM	Rotorcraft Flight Manual
RH	Right Hand
s/n	Serial number
STA	Station
TCCA	Transport Canada Civil Aviation
TQ	Torque
VFR	Visual Flight Rules
V_{NE}	Velocity Never Exceed

II. Type Certificate Holder Record.

Type Certificate Holder	**Period**
Bell Helicopter Textron Canada Ltd. 12 800 rue de l'Avenir Mirabel, Québec, Canada	from 19 November 1999
Bell Textron Canada Ltd. 12 800 rue de l'Avenir Mirabel, Québec, Canada	from 16 December 2019

III. Change Record

Issue	**Date**	**Changes**	**TC issue**
Issue 1	16 Dec 2019	Initial issue of EASA TCDS	Initial Issue, 16 December 2019

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