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# TYPE CERTIFICATE DATA SHEET

No. EASA.IM.R.520

**for**  
505

**Type Certificate Holder**  
Bell Textron Canada Ltd.

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

For Model: 505



**TABLE OF CONTENTS**

**SECTION 1: 505** ..... **3**

**I. General** ..... **3**

**II. Certification Basis** ..... **3**

**III. Technical Characteristics and Operational Limitations** ..... **4**

**IV. Operating and Service Instructions** ..... **6**

**V. Notes** ..... **6**

**SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)** ..... **7**

**I. OSD Certification Basis** ..... **7**

**II. OSD Elements** ..... **7**

**SECTION: ADMINISTRATIVE** ..... **8**

**I. Acronyms and Abbreviations** ..... **8**

**II. Type Certificate Holder Record** ..... **8**

**III. Change Record** ..... **8**



## SECTION 1: 505

### I. General

1. Type/ Model/ Variant	
1.1 Type	505
1.2 Model	505
1.3 Variant	- - -
2. Airworthiness Category	Small 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: 10 September 2013 to EASA: 17 November 2014
5. State of Design Authority	Transport Canada
6. Type Certificate Date by TCCA	19 December 2016
7. Type Certificate n° by TCCA	H-112
8. Type Certificate Data Sheet n°	H-112
9. EASA Type Certification Date	10 November 2017

### II. Certification Basis

1. Reference Date for determining the applicable requirements	10 September 2013
2. Airworthiness Requirements	CS-27 Amdt. 3, dated 11 December 2012
3. Special Conditions	- JAA INT/POL 27/29/1 Issue 3 HIRF Protection - TCCA SCA 2015-09 Rechargeable Lithium Batteries - Automatic Speech Recognition (ASR)
4. Exemptions	none
5. Deviations	none
6. Equivalent Safety Findings	- TCCA AWM Chapter 527, sections 527.307 (b)(5), 527.723, 527.725 and 527.727 - Landing Gear Limit Drop Test - CS 27.921 Non-guarded Rotor Brake control - CS 27.995 (d) Fuel Shut off Valve - TCCA AWM 527.1545 (b)(2) - Airspeed Indicator Markings of $V_{NE}$ (autorotation) - TCCA AWM 527.49(a), 527.51(a), 527.75(a)(1), 527.141(b), 527.143(a), 527.143 (c)(2), 527.143(d), 527.695(a), 527.1581, 527.1587(a)(2)(i), 527.1587(a)(2)(ii) - High Altitude Controllability
7. Requirements elected to comply	none
8. Environmental Protection Requirements	
8.1 Noise Requirements	See TCDSN EASA.IM.R.520
8.2 Emission Requirements	CS-34, Amdt. 1, dated 29 January 2013
9. Operational Suitability Data (OSD)	see SECTION 2 below



III. Technical Characteristics and Operational Limitations

1. Type Design Definition SLS-100-003-001 revision C, or later approved revision
2. Description
  - Main rotor: Semi rigid teetering type, 2 all metal blades
  - Tail rotor: Semi rigid teetering type, 2 all metal blades
  - Fuselage: Metallic primary structure with composite side panels and aft fuselage skins
  - Landing gear: Conventional skids
  - Powerplant: Single turboshaft powered, FADEC
  - Avionics: Integrated glass flight deck
3. Equipment Basic equipment must be installed and operational prior to registration of the helicopter.
4. Dimensions
  - 4.1 Fuselage
    - Length: 10.53 m
    - Width hull: 1.52 m
    - Height: 3.10 m
  - 4.2 Main Rotor Diameter: 11.28 m
  - 4.3 Tail Rotor Diameter: 1.65 m
5. Engine
  - 5.1 Model Safran Helicopter Engines  
1 x Model Arrius 2R
  - 5.2 Type Certificate EASA TC/TCDS n°: EASA.E.031
  - 5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Torque limits [% (lb·ft)]	Gas generator speed [% (rpm)]	Turbine TOT [°C]
TOP (5 min)	100 (442.5)	101.29 (54 817)	853
MCP	92 (405.6)	99.80 (54 011)	817

Note: Output shaft speed limit is 104 % (5 834 rpm)

5.3.2 Other Engine and Transmission Torque Limits

	Torque limits [%]
TKOF	100 %
MCP	90 %
Transient	105 %

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 D1655 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 types refer to Maintenance Manual BHT-505-MM
- 6.3 Additives Refer to approved RFM
7. Fluid capacities
- 7.1 Fuel Fuel tank capacity: Refer to approved RFM  
Usable fuel: Refer to approved RFM
- 7.2 Oil Refer to approved RFM
- 7.3 Coolant System Capacity n/a
8. Air Speed Limitations  $V_{NE}$ : 135 KIAS  
For further information refer to approved RFM.
9. Rotor Speed Limitations  
Nominal rotor rpm is 104 % (383 rpm)  
Power on:  
Maximum 107 % (394 rpm)  
Minimum 97 % (357 rpm)  
Power off:  
Maximum 115 % (422 rpm)  
Minimum 90 % (331 rpm)
10. Maximum Operating Altitude and Temperature
- 10.1 Altitude 20 000 ft (6 096 m) PA
- 10.2 Temperature -40°C to 50°C (-40°F to 122°F)  
For variation of temperature limitation with altitude refer to approved RFM.
11. Operating Limitations VFR day and night
12. Maximum Mass 1 669 kg (3 680 lb) internal loading  
2 030 kg (4 475 lb) external loading
13. Centre of Gravity Range Refer to approved RFM (see Note 3)
14. Datum  
Longitudinal:  
the datum plane (STA 0) is located at 960 mm (37.8 in) forward of the nose of the helicopter.  
Lateral: fuselage median plane.
15. Levelling Means Protractor or level placed on the crew or passenger floor or seat rails, both longitudinally and laterally
16. Minimum Flight Crew 1 pilot
17. Maximum Passenger Seating Capacity 4
18. Passenger Emergency Exit 1 on each side of the passenger cabin
19. Maximum Baggage/ Cargo Loads  
Cabin cargo loading: 269 kg/m<sup>2</sup> (55 lb/ft<sup>2</sup>)  
Cabin cargo mass: 129 kg (425 lb)  
Baggage compartment loading: 244 kg/m<sup>2</sup> (50 lb/ft<sup>2</sup>)  
Baggage compartment mass: 113 kg (250 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 approved ALS Section in Chapter 04 of the Maintenance Planning Information BHT-505-MPI, Issue 3, dated 18 May 2017, or later -approved revisions



#### IV. Operating and Service Instructions

1. Flight Manual  
Bell Rotorcraft Flight Manual:
  - for s/n 65011 to s/n 65300 (excluding s/n 65170):  
BHT-505-FM-1, dated 27 August 2017,  
or later approved revisions
  - for s/n 65170, s/n 65301, and subsequent:  
BHT-505-FM-2, dated 30 October 2019,  
or later approved revisionsfor all s/n:  
BHT-505-FMS-EASA, dated 4 October 2020,  
or later approved revisions
2. Maintenance Manual
  - Maintenance Planning Information BHT-505-MPI
  - Maintenance Manual BHT-505-MM
  - Engine documents as per Engine TCDS EASA.E.031
3. Structural Repair Manual  
Structural Repair Manual BHT-ALL-SRM
4. Weight and Balance Manual  
Refer to Maintenance Manual BHT-505-MM
5. Illustrated Parts Catalogue  
Illustrated Parts Catalogue BHT-505-IPC
6. Miscellaneous Manuals
  - Wiring Diagram Manual BHT-505-WDM
  - Component Maintenance Manual - Vendor Data BHT-505-CMM-V
  - Fault Isolation Manual BHT-505-FIM
7. Service Letters and Service Bulletins  
As published by Bell Helicopter Textron Canada,  
or Bell Textron Canada
8. Required Equipment  
Refer to approved Rotorcraft Flight Manual and related  
supplements for other approved mandatory and optional  
equipment and Master Minimum Equipment List.

#### V. Notes

1. Manufacturer's eligible serial numbers: s/n 65011, and subsequent.
2. All placards listed in the approved Rotorcraft Flight Manual must be installed in the specified locations.
3. The current weight and balance report, including list of equipment included in approved empty weight and load instructions, when necessary, must be in each rotorcraft at the time of original certification.



## SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Union Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

### I. OSD Certification Basis

- I.1 Reference Date for determining the applicable OSD requirements  
10 September 2013
- I.2 MMEL - Certification Basis  
Special Condition SC-CS-GEN-MMEL-H Initial Issue
- I.3 Flight Crew Data - Certification Basis  
CS-FCD Initial Issue
- I.4 SIM Data - Certification Basis  
*reserved*
- I.5 Maintenance Certifying Staff Data - Certification Basis  
*reserved*

### II. OSD Elements

- II.1 MMEL  
EASA MMEL Bell 505, BHT-505-EASA-MMEL Revision -,  
EASA-approved on 10 November 2017, or subsequent approved revisions
- II.2 Flight Crew Data  
EASA Operational Suitability Data (OSD), Flight Crew Data, Bell 505, BHT-505-EASA-FCD Revision -,  
EASA approved on 10 November 2017, or subsequent approved revisions
- II.3 SIM Data  
*reserved*
- II.4 Maintenance Certifying Staff Data  
*reserved*



**SECTION: ADMINISTRATIVE**

I. Acronyms and Abbreviations

Amdt.	Amendment	PA	Pressure Altitude
CR	(European) Commission Regulation	RFM	Rotorcraft Flight Manual
CRI	Certification Review Item	s/n	Serial Number
FCD	Flight Crew Data	SC	Special Condition
TCCA	Transport Canada	STA	Station
KIAS	Knots Indicated Air Speed	TOP	Take-Off Power
MCP	Maximum Continuous Power	TOT	Turbine Outlet Temperature
min	Minute	TKOF	Take-Off
MMEL	Master Minimum Equipment List	VFR	Visual Flight Rules
OSD	Operational Suitability Data	V <sub>NE</sub>	Never Exceed Speed

II. Type Certificate Holder Record

II.1 Type Certificate Holder	Period
Bell Helicopter Textron Canada Ltd. 12 800, rue de l'Avenir Mirabel, Québec J7J 1R4, Canada	From 10 November 2017
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	10 Nov 2017	Initial issue of EASA TCDS	Initial Issue, 10 November 2017
Issue 2	16 Dec 2019	Type Certificate Holder name change	Reissued, 16 December 2019
Issue 3	4 Nov 2020	- II.6.: ESF 'High Altitude Controllability' added - III.6.3: reference added - III.10.2: low temperature range extended - IV.1.: additional RFM added - III.22, IV.2.: editorial correction	---
Issue 4	23 Apr 2021	- III.12: maximum mass with external loading added	---

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