

	Gas Generator <u>Speed</u> 49,638 rpm (103.7%)	Measured Gas <u>Temperature</u> 782°C (1,440°F)
Maximum Continuous	Mast Torque <u>Meter</u> (100%) 13,205 ft. lb	Main Rotor <u>Mast Speed</u> 348 rpm (100%)
	Gas Generator <u>Speed</u> 49,159 rpm (102.7%)	Measured Gas <u>Temperature</u> 763°C (1,405°F)
One Engine Inoperative:		
2½ Min. Power	Engine Torque <u>Meter</u> (100%) 383 ft. lb	Output Shaft <u>Speed</u> 9,545 rpm (100%)
	Gas Generator <u>Speed</u> 50,548 rpm (105.6%)	Measured Gas <u>Temperature</u> 832°C (1,530°F)
30 Min. Power	Engine Torque <u>Meter</u> (96%) 369 ft. lb	Output Shaft <u>Speed</u> 9,545 rpm (100%)
	Gas Generator <u>Speed</u> 50,169 rpm (104.8%)	Measured Gas <u>Temperature</u> 796°C (1,464°F)
Maximum Continuous Power	Engine Torque <u>Meter</u> (87%) 335 ft. lb	Output Shaft <u>Speed</u> 9,545 rpm (100%)
	Gas Generator <u>Speed</u> 49,159 rpm (102.7%)	Measured Gas <u>Temperature</u> 763°C (1,405°F)

Takeoff and maximum 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.

Rotor Speed Limits	<u>Power Off</u>	<u>Power On</u>
	Maximum 364 rpm. (Tach reading 104%)	Maximum 348 rpm (Tach reading 100%)
	Minimum 313 rpm. (Tach reading 90%)	Minimum 338 rpm (Tach reading 97%)
	For Weights more than 2722 kg. (6000 lb.)	
	Maximum 296 rpm. (Tach reading 85%)	Maximum 338 rpm (Tach reading 97%)
For Weights less than 2722 kg. (6000 lb.)		
Transmission Torque Limits	Mast torque = 17897 Nm (13,205 ft. lbs.) at 348 rpm.	
Airspeed Limits (IAS)	V _{NE} (Never exceed) 150 knots Sea level to 3,000 feet density altitude (Hd). Decrease V _{NE} 3 knots per 1,000 feet Hd above 3,000 feet.	
		<u>Knots</u>
	V _{NE} (power off)	80
	V _{LO} (Landing Gear Operation)	120
	Maximum sideward/rearward flight	30
	Maximum Taxi Ground Speed	35
Center of Gravity (C.G.) Range	See FAA-approved Rotorcraft Flight Manual	
Empty Weight C.G. Range	See Maintenance Manual	
Datum	Station 0 (datum is located 241.3 cm (95 inches) forward of the fuselage nose or 230.38 cm (90.7 inches) forward of the radome nose).	
Leveling Means	Plumb line from right inside top of baggage compartment.	
Maximum Weights (See NOTE 1)	<u>kg</u>	<u>lb</u>
	Internal 3561	7850
	External 3674	8100
Minimum Crew	1 pilot (right seat) 1 pilot	VFR operations IFR operations when modified in accordance with BHT-222-FMS-17
Number of Seats	10 (includes pilot)	
Maximum Baggage	226.8 kg (500 lbs)	

Fuel Capacity	S/N 47006 to 47023																																			
		<u>Litres</u>	<u>Imp. Gals</u>	<u>U.S. Gals</u>																																
	Usable	670.7	147.6	177.2																																
	Unusable	33.3	7.3	8.8																																
	S/N 47006 to 47023 when modified per Technical Bulletin 222-80-1, and S/N 47024 to 47089																																			
	709.8	156.2	187.5																																	
	8.7	1.9	2.3																																	
Oil Capacity	Usable	3.78	0.83	1.0																																
	Total	14.1	3.1	3.7																																
Maximum Operating Altitude	20,000 feet pressure altitude 10,500 feet density altitude for takeoff, landing, and in-ground-effect maneuvers																																			
Rotor Blade & Control Movement	For rigging information, refer to the appropriate Model 222 Series Maintenance Manual.																																			
Manufacturer's Serial Numbers	S/N 47006 to 47089																																			
Import Requirements	See NOTE 6																																			
Certification Basis	<p>FAR part 29 dated February 1, 1965, (Transport Category A & B) Amdt 29-1 through 29-9, Amdt 29-11. FAR 29.997 of Amdt 29-10 and FAR 29.927 (b) (2) of Amdt 29.17. Special conditions No. 29-87-SW-7. Ditching FAR 29.801 of Amdt 29-12. External cargo FAR 29.25(c) and 29.865 of Amdt 29-12. FAR 29.1557.c and FAR 29.1555.c of Amdt 29-12. Height velocity requirements of Amdt. 29-12, Section 29.1, 29.79 29.1517 and 29.1587. IFR requirements dated August 12, 1976. FAA issued Exemption No. 2789. FAR 29.811 (h)(l). Exemption No. 4395 FAR 29.855 (a) and portions of 29.855 (d).</p> <p>Equivalent Safety Findings:</p> <table border="0"> <tr> <td style="width: 5%;">1.</td> <td style="width: 75%;">Power Turbine Common Control</td> <td style="width: 20%;">FAR 29.903 (b)</td> </tr> <tr> <td>2.</td> <td>Fuel Pressure Switch</td> <td>FAR 29.1305(b)(2)</td> </tr> <tr> <td>3.</td> <td>Fireproof Oil System</td> <td>FAR 29.1189</td> </tr> <tr> <td>4.</td> <td>Crash Resistant Fuel Cell</td> <td>FAR 29.963(b) & 29.965</td> </tr> <tr> <td>5.</td> <td>Crew Door Switch</td> <td>FAR 29.783(e)</td> </tr> <tr> <td>6.</td> <td>Unsafe Rotor and Engine Out Warning Indicator</td> <td>FAR 29.33(b), 29.1357(e) & Special Flight Condition No. 2</td> </tr> <tr> <td>7.</td> <td>Aft Window Exit Size</td> <td>FAR 29.807 (a)(4)</td> </tr> <tr> <td>8.</td> <td>Main Door Window Exit Size for Ditching</td> <td>FAR 29.807(d)(1)</td> </tr> <tr> <td>9.</td> <td>Hoist Manual Release</td> <td>FAR 29.865(b)(2)</td> </tr> <tr> <td>10.</td> <td>Baggage Compartment Liner</td> <td>FAR 29.855(a)</td> </tr> <tr> <td>11.</td> <td>Main Gear Drop Test for 3561 kg (7850 lbs) GW</td> <td>FAR 29.725, 29.727</td> </tr> </table>			1.	Power Turbine Common Control	FAR 29.903 (b)	2.	Fuel Pressure Switch	FAR 29.1305(b)(2)	3.	Fireproof Oil System	FAR 29.1189	4.	Crash Resistant Fuel Cell	FAR 29.963(b) & 29.965	5.	Crew Door Switch	FAR 29.783(e)	6.	Unsafe Rotor and Engine Out Warning Indicator	FAR 29.33(b), 29.1357(e) & Special Flight Condition No. 2	7.	Aft Window Exit Size	FAR 29.807 (a)(4)	8.	Main Door Window Exit Size for Ditching	FAR 29.807(d)(1)	9.	Hoist Manual Release	FAR 29.865(b)(2)	10.	Baggage Compartment Liner	FAR 29.855(a)	11.	Main Gear Drop Test for 3561 kg (7850 lbs) GW	FAR 29.725, 29.727
1.	Power Turbine Common Control	FAR 29.903 (b)																																		
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11.	Main Gear Drop Test for 3561 kg (7850 lbs) GW	FAR 29.725, 29.727																																		
Production Basis	Model 222 helicopters, Serial Numbers 47006 to 47089 were manufactured by Bell Helicopter Textron, Fort Worth, Texas under FAA Type Certificate H9SW.																																			

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.

- (1) Batteries: Marathon 206-075-742-105
EPI 18137 (222-375-049-101), or GE 43B010RB03,
SAFT 1756.
- (2) Passenger shoulder harness.
- (3) Canadian Kit, Modification 222-899-021 for Canadian Registered helicopters only.

Service Information FAA-approved Rotorcraft Flight Manual BHT-222-FM-1 S/N 47006 to 47080 and BHT-222-FM-2 S/N 47081 to 47089 February 28, 1992, or later FAA-approved revision.

MODEL 222B AND MODEL 222U (TRANSPORT CATEGORY A AND B), APPROVED 19 SEPTEMBER 1983

(DATA IS PERTINENT TO BOTH MODELS EXCEPT AS INDICATED)

Engines 2 Avco Lycoming LTS 101 750C-1

Fuel	SPECIFICATION		
	<u>TYPE</u>	<u>CANADA</u>	<u>USA</u>
Kerosene	JET A, A-1	CGSB 3.23	ASTM D1655
	JP8	3-GP-23	MIL-T-83133
Wide Cut	JETB	CGSB 3.22	ASTM D1655
	JP4	CGSB 3.22	MIL-T-5624
High Flash	JP5	3-GP-24	MIL-T-5624

See FAA-approved Rotorcraft Flight Manual for temperature limitations.

Fuel Additives: See NOTE 4.

Engine Limits (See NOTE 5) All Engines Operating:

Takeoff (5 Min.)	Mast Torque <u>Meter</u> (100%) 13,960 ft. lb	Main Rotor <u>Mast Speed</u> 348 rpm. (100%)
	Gas Generator <u>Speed</u> 49,830 rpm (104.1%)	Measured Gas <u>Temperature</u> 786°C (1,447°F)

Maximum Continuous	Mast Torque <u>Meter</u> (94.6%) 13,960 ft. lb	Main Rotor <u>Mast Speed</u> 348 rpm (100%)
	Gas Generator <u>Speed</u> 49,255 rpm (102.9%)	Measured Gas <u>Temperature</u> 765°C (1,410°F)

One Engine Inoperative:

2½ Min. Power	Engine Torque <u>Meter</u> (100%) 404 ft. lb	Output Shaft <u>Speed</u> 9,545 rpm (100%)
	Gas Generator <u>Speed</u> 50,787 rpm (106.1%)	Measured Gas <u>Temperature</u> 822°C (1,512°F)

30 Min. Power	Engine Torque <u>Meter</u> (97.3%) 393 ft. lb	Output Shaft <u>Speed</u> 9,545 rpm (100%)
	Gas Generator <u>Speed</u> 50,165 rpm (104.8%)	Measured Gas <u>Temperature</u> 800°C (1,472°F)

Maximum Continuous Power	Engine Torque <u>Meter</u> (86.4%) 349 ft. lb	Output Shaft <u>Speed</u> 9,545 rpm (100%)
	Gas Generator <u>Speed</u> 49,255 rpm (102.9%)	Measured Gas <u>Temperature</u> 765°C (1,410°F)

Measured Gas Temperature (MGT) Transient Limits

Start:	900°C
12 second Transient:	832°C

Rotor Speed Limits

<u>Power Off</u>	<u>RPM</u>	<u>%</u>
Min. Transient	285	82
Min. (Less than 2722 kg (6000 lb))	296	85
Min. (2722 kg (6000 lb) or over)	313	90
Maximum	362	104
Max. Transient	372	107
<u>Power On</u>		
Min. Transient	313	90
Min. Continuous	338	97

	Max. Continuous	348	100
	Max. Transient	357	102.5
	Max. Overspeed (Mast Torque 50% or lower-5 minute limit)	358	103
Transmission Torque Limits	13,960 ft.-lbs. at 348 rpm		
Airspeed Limits (IAS)	The following limits pertain to models 222B and 222U: V _{NE} (Never exceed) 150 knots, sea level to 3000 ft. Hd. Decrease V _{NE} for ambient conditions in accordance with airspeed limitation placard.		
			<u>Knots</u>
	V _{NE} power off		80
	V _{NE} single engine		100
	Maximum sideward and rearward flight		30
	The following limits pertain to model 222B only:		
	V _{LE} (Landing gear extended)		140
	V _{LO} (Landing gear operation)		120
	Maximum Taxi Ground Speed		35
Center of Gravity (C.G.) Range	See FAA-approved Rotorcraft Flight Manual		
Empty Weight C.G. Range	See Maintenance Manual.		
Datum	Station 0 (datum is located 241.3 cm (95 inches) forward of the fuselage nose or 230.38 cm (90.7 inches) forward of the radome nose).		
Leveling Means	Plumb line from right inside top of baggage compartment.		
Maximum Weights (See NOTE 1)		<u>kg</u>	<u>lbs</u>
	Internal	3742	8250
	External	3810	8400
Minimum Crew	1 pilot (right seat)		
Number of Seats	10 (includes pilot)		
Maximum Baggage	226.8 kg (500 lbs)		
Fuel Capacity	Model 222B	<u>Litres</u>	<u>U.S. gal</u>
	Usable	709.8	187.5
	Model 222U		
	Usable	935.4	247.1
Engine Oil Capacity (per engine)	Usable	<u>Litres</u>	<u>U.S. gal</u>
		14.1	3.7
Maximum Operating Altitude	20,000 feet pressure altitude for VFR operations 15,000 feet pressure altitude for IFR operations 14,000 feet density altitude for takeoff, landing, and in-ground-effect maneuvers		

Rotor Blade & Control Movement	For rigging information, refer to the appropriate Model 222 Series Maintenance Manual.																																							
Manufacturer's Serial Numbers	Model 222B Serial Number 47131 to 47156 Model 222U Serial Number 47501 to 47574																																							
Import Requirements	See NOTE 6																																							
Certification Basis	<p><u>Model 222B & Model 222U</u>: FAR Part 29 dated February 1, 1965, (Transport Category A & B) Amdt 29-1 through 29-9. Amdt 29-11. FAR 29.997 of Amdt 29-10 and FAR 29.927(b)(2) of Amdt 29-17. Ditching FAR 29.801 of Amdt 29-12. External cargo FAR 29.25(c) and 29.865 of Amdt 29-12. FAR 29.1557(c) and FAR 29.1555(c) of Amdt 29-12. Height velocity requirements of Amdt. 29-21, Section 29.1, 29.79, 29.1517 and 29.1587. IFR requirements dated December 15, 1978. FAA issued Exemption No. 2789. FAR 29.811(h)(1) and Exemption No. 4395. FAR 29.855(a) and portions of 29.855(d).</p> <p>Equivalent Safety Findings:</p> <table border="0"> <tr> <td style="padding-right: 20px;">1.</td> <td style="padding-right: 20px;">Power Turbine Common Control</td> <td>FAR 29.903 (b)</td> </tr> <tr> <td>2.</td> <td>Fuel Pressure Switch</td> <td>FAR 29.1305(b)(2)</td> </tr> <tr> <td>3.</td> <td>Fireproof Oil System</td> <td>FAR 29.1189</td> </tr> <tr> <td>4.</td> <td>Crash Resistant Fuel Cell</td> <td>FAR 29.963(b) & 29.965</td> </tr> <tr> <td>5.</td> <td>Crew Door Switch</td> <td>FAR 29.783(e)</td> </tr> <tr> <td>6.</td> <td>Unsafe Rotor and Engine Out Warning Indicator</td> <td>FAR 29.33(b), 29.1309(d), 29.1357(e) & Special Flight Condition No. 2</td> </tr> <tr> <td>7.</td> <td>Aft Window Exit Size</td> <td>FAR 29.807 (a)(4)</td> </tr> <tr> <td>8.</td> <td>Main Door Window Exit Size for Ditching</td> <td>FAR 29.807(d)(1)</td> </tr> <tr> <td>9.</td> <td>Hoist Manual Release</td> <td>FAR 29.865(b)(2)</td> </tr> <tr> <td>10.</td> <td>Baggage Compartment Liner</td> <td>FAR 29.855(a)</td> </tr> <tr> <td>11.</td> <td>Landing Gear Drop Test</td> <td>FAR 29.307(b)(5), 29.723, 29.725 & 29.727 (Model 222U)</td> </tr> <tr> <td>12.</td> <td>Limitations Placard</td> <td>FAR 29.1559 (Model 222U)</td> </tr> <tr> <td>13.</td> <td>IFR Dihedral Stability</td> <td>IFR Criteria Paragraph 4(a) (Model 222U)</td> </tr> </table>	1.	Power Turbine Common Control	FAR 29.903 (b)	2.	Fuel Pressure Switch	FAR 29.1305(b)(2)	3.	Fireproof Oil System	FAR 29.1189	4.	Crash Resistant Fuel Cell	FAR 29.963(b) & 29.965	5.	Crew Door Switch	FAR 29.783(e)	6.	Unsafe Rotor and Engine Out Warning Indicator	FAR 29.33(b), 29.1309(d), 29.1357(e) & Special Flight Condition No. 2	7.	Aft Window Exit Size	FAR 29.807 (a)(4)	8.	Main Door Window Exit Size for Ditching	FAR 29.807(d)(1)	9.	Hoist Manual Release	FAR 29.865(b)(2)	10.	Baggage Compartment Liner	FAR 29.855(a)	11.	Landing Gear Drop Test	FAR 29.307(b)(5), 29.723, 29.725 & 29.727 (Model 222U)	12.	Limitations Placard	FAR 29.1559 (Model 222U)	13.	IFR Dihedral Stability	IFR Criteria Paragraph 4(a) (Model 222U)
1.	Power Turbine Common Control	FAR 29.903 (b)																																						
2.	Fuel Pressure Switch	FAR 29.1305(b)(2)																																						
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13.	IFR Dihedral Stability	IFR Criteria Paragraph 4(a) (Model 222U)																																						
Production Basis	Model 222B helicopters, serial numbers 47131 to 47156, and Model 222U helicopters, serial numbers 47501 to 47574 were manufactured by Bell Helicopter Textron, Fort Worth, Texas under FAA Type Certificate H9SW.																																							
Equipment	<p>The basic required equipment as prescribed in the applicable Airworthiness requirements (see Certification Basis) must be installed in the aircraft. In addition the following equipment is required:</p> <table border="0"> <tr> <td style="padding-right: 20px;">1)</td> <td style="padding-right: 20px;">Batteries:</td> <td>Model 222B: GE 43B010RB03. Model 222U: Marathon 30703-001</td> </tr> <tr> <td>2)</td> <td>Airspeed indicator:</td> <td>Model 222B: S/N 47131 and Sub: P/N 222-375-027-107. Model 222U: S/N 47501 and Sub: P/N 222-375-027-107</td> </tr> </table>	1)	Batteries:	Model 222B: GE 43B010RB03. Model 222U: Marathon 30703-001	2)	Airspeed indicator:	Model 222B: S/N 47131 and Sub: P/N 222-375-027-107. Model 222U: S/N 47501 and Sub: P/N 222-375-027-107																																	
1)	Batteries:	Model 222B: GE 43B010RB03. Model 222U: Marathon 30703-001																																						
2)	Airspeed indicator:	Model 222B: S/N 47131 and Sub: P/N 222-375-027-107. Model 222U: S/N 47501 and Sub: P/N 222-375-027-107																																						
Service Information	FAA-approved Rotorcraft Flight Manual BHT-222B-FM-1 and BHT-222U-FM-1, 28 February 1992, or later FAA-approved revision.																																							

MODEL 230 (TRANSPORT CATEGORY A AND B), APPROVED MARCH 12, 1992

Engines 2 Allison 250C30G/2

Fuel

<u>TYPE</u>	<u>SPECIFICATION</u>	
	<u>CANADA</u>	<u>USA</u>
Kerosene JET A, A-1 JP8	CGSB 3.23 3-GP-23	ASTM D1655 MIL-T-83133
Wide Cut JETB JP4	CGSB 3.22 CGSB 3.22	ASTM D1655 MIL-T-5624
High Flash JP5	3-GP-24	MIL-T-5624

See FAA-approved Rotorcraft Flight Manual for temperature limitations.

Fuel Additives: See NOTE 7.

Engine Limits
(See NOTE 5)

All Engines Operating:

Take off (5 Min.)	Mast Torque <u>Meter</u> (100%) 925 SHP	Main Rotor <u>Mast Speed</u> 348 rpm (100%)
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	Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 767.8°C (1,414°F)
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Maximum Continuous	Mast Torque <u>Meter</u> (94.6%) 875 SHP	Main Rotor <u>Mast Speed</u> 348 rpm (100%)
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	Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 715.6°C (1,320°F)
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One Engine Inoperative:

2½ Min. Power	Engine Torque <u>Meter</u> (100%) 734 SHP	Output Shaft <u>Speed</u> 9,545 rpm (100%)
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	Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 825.6°C (1,518°F)
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	30 Min. Power	Engine Torque <u>Meter</u> (97.3%) 714 SHP	Output Shaft <u>Speed</u> 9,545 rpm (100%)
		Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 797.8°C (1,468°F)
	Maximum Continuous	Engine Torque <u>Power</u> (86.4%) 676 SHP	Output Shaft <u>Meter Speed</u> 9,545 rpm (100%)
		Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 767.8°C (1,414°F)
Rotor Speed Limits	<u>Power Off</u>	<u>RPM</u>	<u>%</u>
	Min. Transient	285	82
	Min. (Less than 2722 kg (6000 lb))	296	85
	Min. (2722 kg (6000 lb) or over)	313	90
	Maximum	362	104
	Max. Transient	372	107
	<u>Power On</u>		
	Min. Transient	313	90
	Min. Continuous	338	97
	Max. Continuous	348	101
Transmission Torque Limits	925 SHP at 348 rpm		
Airspeed Limits (IAS)	V _{NE} (Never exceed) 150 knots, sea level to 3000 ft. Hd. Decrease V _{NE} for ambient conditions in accordance with airspeed limitation placard.		
			<u>Knots</u>
	V _{NE} power off		80
	V _{NE} single engine		100
	Maximum sideward and rearward flight		30
Center of Gravity (C.G.) Range	See FAA-approved Rotorcraft Flight Manual		
Empty Weight C.G. Range	See Maintenance Manual.		
Datum	Station 0 (datum is located 241.3 cm (95 inches) forward of the fuselage nose or 230.38 cm (90.7 inches) forward of the radome nose).		
Leveling Means	Plumb line from right inside top of baggage compartment.		
Maximum Weight (See NOTE 1)		<u>kg</u>	<u>lb</u>
	Internal	3810	8400
	External	3810	8400

Minimum Crew	1 pilot (right seat)		
Number of Seats	10 (includes pilot)		
Maximum Baggage	226.8 kg (500 lbs)		
Fuel Capacity	Wheel LG	<u>Litres</u>	<u>U.S. Gals</u>
	usable	709.8	187.5
	Skid LG		
	usable	935.4	247.1
Engine Oil Tank Capacity (Per Engine)		<u>Litres</u>	<u>U.S. gal</u>
	Total	6.1	1.61
	Usable	1.9	0.50
Maximum Operating Altitude	20,000 feet pressure altitude for VFR operations 15,000 feet pressure altitude for IFR operations 14,000 feet density altitude for takeoff, landing, and in-ground-effect maneuvers		
Rotor Blade & Control Movement	For rigging information, refer to the Model 230 Maintenance Manual.		
Serial Numbers Eligible	Serial number 23001 and subsequent		
Import Requirements	See NOTE 6		
Certification Basis	FAR Part 29 dated February 1, 1965, (Transport Category A & B) amendment 29-1 through 29-9 plus the following:		
	Amendment 29-10	29.997	
	Amendment 29-11	29.1401	
	Amendment 29-12	29.25 (c), 29.801, 29.865, 29.1555 (c) and 29.1557 (c).	
	Amendment 29-17	29.927 (b) (2)	
	IFR requirements dated December 15, 1978		
	FAA exemption no. 2789, FAR 29.811 (h) (l) and FAA exemption no. 4395, FAR 29.855 (a) and portions of 29.855 (d). FAA Exemptions 2789 and 4395 pertained to the model 222 series helicopters; however, these exemptions have been found to be applicable to the model 230.		
	The following selected additional sections of FAR 29 up to and including amendment 29-26:		
	Amendment 29-26:		
	29.1, 29.21, 29.25, 29.27, 29.29, 29.31, 29.33, 29.45, 29.51, 29.53, 29.59, 29.63, 29.65, 29.67, 29.71, 29.73, 29.75, 29.77, 29.79, 29.141, 29.143, 29.151, 29.161, 29.171, 29.173, 29.175, 29.231, 29.235, 29.251, 29.301, 29.303, 29.305, 29.309, 29.321, 29.337, 29.339, 29.341, 29.351, 29.361, except (a) (4), 29.411, 29.471, 29.473, 29.475, 29.477, 29.479, 29.481, 29.483, 29.485, 29.493, 29.501, 29.547, 29.549, 29.561, 29.563, 29.571, 29.601, 29.603, 29.607, 29.609, 29.611, 29.613, 29.619, 29.621, 29.623, 29.625, 29.629, 29.683, 29.723, 29.725, 29.727, 29.731, 29.735, 29.771, 29.773, 29.775, 29.785, 29.831, 29.861, 29.863, 29.873, 29.901, 29.903, 29.907, 29.908, 29.917, 29.931, 29.939, 29.951, 29.955, 29.961, 29.993,		

29.995, 29.997, 29.1011, 29.1013, 29.1015, 29.1017, 29.1019, 29.1021, 29.1023, 29.1027, 29.1041, 29.1043, 29.1045, 29.1047, 29.1049, 29.1091, 29.1093, 29.1103, 29.1105, 29.1121, 29.1123, 29.1141, 29.1143, 29.1145, 29.1163, 29.1165, 29.1181, 29.1183, 29.1185, 29.1187, 29.1189, 29.1191, 29.1193, 29.1194, 29.1195, 29.1197, 29.1199, 29.1201, 29.1203, 29.1301, 29.1303, 29.1305, 29.1307, 29.1321, 29.1322, 29.1327, 29.1331, 29.1333, 29.1337, 29.1359, 29.1363, 29.1381, 29.1401, 29.1431, 29.1461, 29.1501, 29.1503, 29.1505, 29.1517, 29.1519, 29.1521, 29.1527, 29.1541, 29.1543, 29.1549, 29.1551, 29.1555, 29.1557, 29.1559, 29.1581, 29.1583, 29.1585, 29.1587.

Appendix B.

The Noise Standards of FAR Part 36 and ICAO Annex 16, Chapter 8, Rev. 17 November 1988, published in 2nd Edition of 1988 Vol. 1.

Equivalent Safety Findings:

1.	92/01	Engines: Category A Engine Isolation	FAR 29.903(b)
2.	92/02	Powerplants Instruments	FAR 29.1305(b)(2)
3.	92/03	Fuel Tanks	FAR 29.963(b) & 29.965
4.	92/04	Doors	FAR 29.783(e)
5.	92/05	Emergency Exit Marking	FAR 29.811(d)
6.	92/06	Passenger Emergency Exits	FAR 29.807(d)(1)
7.	92/07	External Load Attaching Means	FAR 29.865(b)(2)
8.	92/08	Landing Gear, Limit Drop Test and Reserve Energy Absorption Drop Test	FAR 29.725 & 29.727
9.	92/09	Proof of Structure, Landing Gear Limit Drop Test & Reserve Energy Absorption Drop Test	FAR 29.307(b), 29.723, 29.725, 29.727
10.	92/10	Airworthiness Criteria for Helicopter - Instrument Flight - Static Lateral - Directional Stability	FAR 29 Appendix B, V
11.	92/11	Cargo and Baggage Compartments	FAR 29.855(a)

Production Basis None. For import requirements see NOTE 6

Equipment The basic required equipment as prescribed in the applicable Airworthiness requirements (see Certification Basis) must be installed in the aircraft.

Service Information FAA-approved Rotorcraft Flight Manual BHT-230-FM-1, dated 12 March 1992 or later FAA-approved revision

IV. MODEL 430 (TRANSPORT CATEGORY B), APPROVED FEBRUARY 23, 1996

Engines (See NOTE 8) 2 Allison 250-C40B with Chandler Evans EMC-35A (FADEC) fuel control system

Fuel

<u>TYPE</u>	<u>SPECIFICATION</u>	
	<u>CANADA</u>	<u>USA</u>
Kerosene JET A, A-1 JP8	CGSB 3.23 3-GP-23	ASTM D1655 MIL-T-83133
Wide Cut JETB JP4	CGSB 3.22 CGSB 3.22	ASTM D1655 MIL-T-5624
High Flash JP5	3-GP-24	MIL-T-5624

Emergency fuel: MIL-G-5572, all grade, maximum of six hours operation per O/H period

Fuel Additives: See NOTE 7.

Engine Limits

All Engines Operating:

Take off (5 Min.)	Mast Torque <u>Meter</u> (100%) 1045 SHP	Main Rotor <u>Mast Speed</u> 348 rpm (100%)
	Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 779.4°C (1,435°F)
Maximum Continuous	Mast Torque <u>Meter</u> (94.6%) 875 SHP	Main Rotor <u>Mast Speed</u> 348 rpm (100%)
	Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 726.7°C (1,340°F)

One Engine Inoperative:

2 Min. Power	Engine Torque <u>Meter</u> (105.3%) 811 SHP	Output Shaft <u>Speed</u> 9,598 rpm (100%)
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		Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 827.2°C (1,521°F)
	30 Sec. Power	Engine Torque <u>Meter</u> (109.6%) 844 SHP	Output Shaft <u>Speed</u> 9,598 rpm (100%)
		Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 871.1°C (1,600°F)
	30 Min. Power	Engine Torque <u>Meter</u> (92.8%) 715 SHP	Output Shaft <u>Speed</u> 9,598 rpm (100%)
		Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 797.8°C (1,468°F)
	Maximum Continuous	Engine Torque <u>Power</u> (92.8%) 715 SHP	Output Shaft <u>Meter Speed</u> 9,598 rpm (100%)
		Gas Generator <u>Speed</u> 53,550 rpm (105%)	Measured Gas <u>Temperature</u> 779.4°C (1,435°F)
Rotor Speed Limits	<u>Power Off</u>	<u>%</u>	
	Minimum Transient	86	
	Transient Operation	86 to 90	
	Continuous Operation	91 to 105	
	Maximum Transient	106	
	<u>Power On</u>		
	Minimum Transient	90	
	Maximum Continuous	100	
	Maximum Ground Operation	102	
	Maximum Transient	106	
Transmission Torque Limits	1045 SHP at 348 rpm		
Airspeed Limits (IAS)	V _{NE} (Never exceed) 150 knots. Decrease V _{NE} for ambient conditions in accordance with airspeed limitation placard.		
		<u>Knots</u>	
	V _{NE} power off	80	
	V _{NE} single engine	100	
	Maximum sideward and rearward flight	35	

Center of Gravity (C.G.) Range	See FAA-approved Rotorcraft Flight Manual		
Empty Weight C.G. Range	See Maintenance Manual		
Datum	Station 0 (datum is located 241.3 cm (95 inches) forward of the fuselage nose or 230.38 cm (90.7 inches) forward of the radome nose).		
Leveling Means	Plumb line from right inside top of baggage compartment.		
Maximum Weight (See NOTE 1)		<u>kg</u>	<u>lb</u>
	Internal	4082	9000
	External	4218	9300
Minimum Crew	1 pilot (right seat)	VFR operations	
	2 pilots	IFR operations	
Number of Seats	10 (includes pilot(s))		
Maximum Baggage	226.8 kg (500 lbs)		
Fuel Capacity	<u>Wheel LG</u>	<u>Litres</u>	<u>U.S. Gals</u>
	usable	709.8	187.5
	<u>Skid LG</u>		
	usable	935.4	247.1
Engine Oil Tank Capacity (Per Engine)		<u>Litres</u>	<u>U.S. gal</u>
	Total	6.1	1.61
	Useable	1.9	0.50
Maximum Operating Altitude	20,000 feet pressure altitude VFR operations 15,000 feet pressure altitude for IFR operations 14,000 feet density altitude for takeoff, landing, and in-ground-effect maneuvers		
Rotor Blade & Control Movement	For rigging information, refer to the Model 430 Maintenance Manual.		
Serial Numbers Eligible	Serial number 49001 and subsequent		
Import Requirements	See NOTE 6		
Certification Basis	a) FAR Part 29 dated February 1, 1965, (Transport Category B) amendment 29-1 through 29-32 and 34 except for: The following paragraphs of FAR Part 29 at amendment 29-9: 29.497, 29.519, 29.521, 29.561, (a), (b) and (d), 29.671, 29.729, 29.783, 29.805, 29.807, 29.811, 29.853, 29.855, 29.865, 29.963, 29.967, 29.969, 29.971, 29.975, 29.977, 29.979, 29.991, 29.999, 29.1001, 29.1309 The following paragraphs of FAR Part 29 at amendment 29-12: 29.787 and 29.865; The following paragraph of FAR Part 29 at amendment 29-13: 29.927;		

The following paragraph of FAR Part 29 at amendment 29-24:

29.1309 applicable to new systems introduced as model 430 design changes (FADEC, IDS, AFCS and EFIS) from the 230; and

The following paragraph of FAR Part 29 at amendment 29-26:
29.563 and 29.785

b) FAR Part 36 dated June 1, 1974 amendments 36-1 through 36-18 (Canadian Airworthiness Manual Chapter 516 Change 2 dated November 1, 1991 - Noise Requirements).

c) Additional compliance with FAR Part 29 at amendment 29-12 is shown for paragraph 29.801 Ditching, when the required safety equipment and ditching equipment is installed.

d) Transport Canada Special Conditions:

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

e) Findings of Equivalent Safety:

FAR 29.963(b) and 965	Crash Resistant Fuel Cell
FAR 29.783(e)	Crew Door Switch
FAR 29.811(d)	Size of Emergency Exit Signs
FAR 29.807(d)(1)	Passenger Emergency Exits (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), 723,.725,727	Proof of Structure, Landing Gear Limit Drop Test and Reserve Energy Absorption Drop Test (Skid Gear Only)

f) FAA exemption no. 2789, FAR 29.811 (h) (l) and FAA exemption no. 4395, FAR 29.855 (a) and portions of 29.855 (d). FAA Exemptions 2789 and 4395 pertained to the model 222 series helicopters; however, these exemptions have been found to be applicable to the model 430.

Production Basis	None. For import requirements see NOTE 6
Equipment	The basic required equipment as prescribed in the applicable Airworthiness requirements (see Certification Basis) must be installed in the aircraft.
Service Information	FAA-approved Rotorcraft Flight Manual BHT-430-FM-1, dated February 23, 1996 or later FAA-approved revision.

DATA PERTINENT TO ALL MODELS EXCEPT AS INDICATED

The original Bell Model 222 was approved by Transport Canada under ATA H88, dated May 24, 1983, on the Basis of FAA TC H9SW. The original Bell Models 222B and 222U were approved by Transport Canada under ATA H88 dated September 19, 1983 on the basis of FAA TC H9SW.

Effective February 28, 1992, design responsibility for all Models 222, 222B, and 222U helicopters was transferred from Bell Helicopter Textron, Fort Worth, Texas, and FAA to Bell Helicopter Textron Canada, Mirabel, Quebec, and Transport Canada.

The following FAA Airworthiness Directives apply at the time of design transfer:

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

NOTES

NOTE 1

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.

NOTE 2

For a complete listing of required placards, see the applicable FAA-approved Rotorcraft Flight Manual

NOTE 3

The retirement times of certain parts and inspection requirements are listed in Airworthiness Limitations, Chapter 4 of the Model 222, or Model 222B, or Model 222U, or Model 230, and Model 430 Maintenance Manual (as appropriate). These values of retirement of service lives and inspection cannot be increased without the approval of Canadian DOT.

The retirement times of critical parts are listed in the following table. These imitations may not be changed without FAA engineering approval.

MODEL 222/222B (Refer to FAA-approved Chapter 4 of the Maintenance Manual, BHT-222/222B-MM-1, for airworthiness lives of components applicable to 222/222B)

MODEL 222U (Refer to FAA-approved Chapter 4 of the Maintenance Manual, BHT-222U-MM-1, for airworthiness lives of components applicable to 222U)

MODEL 230 (Refer to FAA-approved Chapter 4 of the Maintenance Manual, BHT-230-MM-1, for airworthiness lives of components applicable to 230)

MODEL 430 (Refer to FAA-approved Chapter 4 of the Maintenance Manual, BHT-430-MM-1, for airworthiness lives of components applicable to 430)

Bell Helicopter Textron Service Bulletins are approved by Transport Canada and include a statement to that effect. Such approval may be approved by FAA.

Any changes to the type design of this helicopter by means of a amended type certificate

(TC), supplemental type certificate (STC), or amended STC, requiring instructions for continued airworthiness (ICA's) must be submitted thru the project aircraft certification office (ACO) for review and acceptance by the Fort Worth -Aircraft Evaluation Group (FTW-AEG) Flight Standards District Office (FSDO) prior to the aircraft delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later as prescribed by Title 14 CFR 21.50. Type design changes by means of a field approval that require ICA's must have those ICA's reviewed by the field approving FSDO.

NOTE 4 For all operations below -29°C (-20°F) ambient temperature, all fuel used in Model 222, 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.

NOTE 5 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.

NOTE 6 To be considered eligible for operation in the United States, each Aircraft manufactured under this Type Certificate must have a U. S. Airworthiness Certificate that may be issued on the basis of the Canadian Department of Transport Certificate of Airworthiness for Export signed by the Minister of Transport containing the following statement

"The rotorcraft covered by this certificate has been examined, tested, and found to comply with the type design approved under Type Certificate H9SW and to be in condition for safe operation".

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is 21.183(c) or 21.185(c).

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.21 exported from countries other than the country of manufacture (e.g., third party country) is FAR Sections 21.183(d) or 21.185(b).

NOTE 7 For all operations below +10°C (50°F) ambient temperature, all fuel used in Model 230 and 430 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. Blending this additive into the fuel and checking its concentration must be conducted in the manner prescribed by the Rotorcraft Flight Manual.

NOTE 8 The model 430 rotorcraft employs electronic engine controls, commonly named Full Authority Digital Engine Controls (FADEC) and is recognized to be more susceptible to Electromagnetic Interference (EMI) than rotorcraft that have only manual (non-electronic) controls. (EMI may be the result of radiated or conducted interference.) For this reason modifications that add or change systems that have the potential for EMI, must either be qualified to an FAA acceptable standard or tested at the time of installation for interference to the FADEC. This type of testing must employ the particular FADEC's diagnostic techniques and external diagnostic techniques. The test procedure must be FAA approved.