

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

1H12  
Revision 8  
VERTOL  
(H21B, H-21C) 42A,  
42B  
44A, 44B  
15 May 1971

HELICOPTER SPECIFICATION NO. 1H12

Type Certificate Holder                      The Boeing Company  
Vertol Division  
Boeing Center  
P.O. Box 16858  
Philadelphia, Pennsylvania 19142

I - Model 42A, 42B, 17-21 PLCH, Approved April 10, 1957; Model 44A, 44B, 17-21 PLCH, Approved February 26, 1958.  
(See NOTE 7 for military versions and Items 207 and 208 for float gears)

The Model 44 series is similar to the Model 42 series except for rotor system, powerplant installation and minor structural changes.

Engine    Wright R1820-103 (See Item 101 for optional engines)

Fuel    100/130 minimum grade aviation gasoline

Engine limits                                    Low Ratio Supercharger

	MP			
	HP	RPM	IN HG	ALT.
Maximum Continuous	1275	2500	47.5	S.L.
Maximum Continuous	1275	2500	46.0	3300
Take-Off (five min)	1425	2700	52.5	S.L.
Take-Off (five min)	1425	2700	51.5	2300

(Straight line manifold pressure variation with altitude shown)

Rotor Limits                                    Maximum 330  
Minimum 237. See NOTE 3 for required placard.

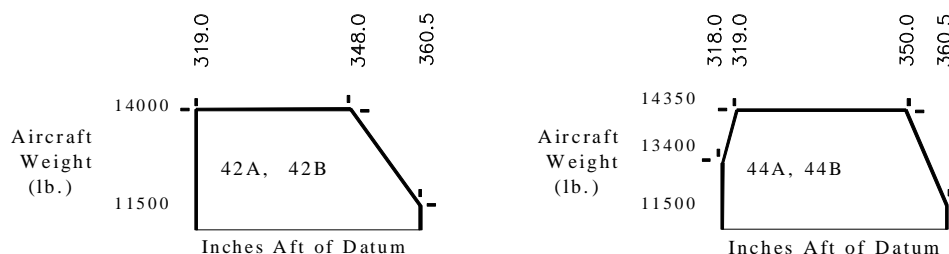
Airspeed limits                                Maximum never exceed speed  
Models 42A, 42B: 107 knots CAS (110 knots IAS)  
Models 44A, 44B: 108 knots CAS (110 knots IAS)

Center of Gravity                              See NOTE 3 for required placard.

Page No.	1	2	3	4	5
Rev No.	8	-	-	-	-

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C.G. range	Models 42A, 42B:	(319.0) to (348.0) at 14,000 lb. (319.0) to (360.5) at 11,500 lb. or less
	Models 44A, 44B:	(319.0) to (350.0) at 14,350 lb. (Forward C.G. limit (318.0) at 13,400 lb. or less (318.0) to (360.5) at 11,500 lb. or less (Straight line variation between points given.)



Empty Weight C.G. Range	None
Maximum weight	Models 42A, 42B: 14,000 lb. Models 44A, 44B: 14,350 lb. See NOTE 3 for restrictions above 8000 ft.
Number of Seats	17-21 Pilot and copilot (84.0) Passengers: 42A, 44A: See Item 402 42B, 44B: 1 at (121), 1 at (132), 2 at (170), 2 at (204), 2 at (238), 2 at (272), 2 at (306), 2 at (340), 1 at (353).
Maximum Baggage	800 lb. (432) (44B only). See NOTE 5 for cargo capacity.
Fuel capacity	300 gal. (See NOTE 6 for usable fuel)
Oil capacity	42A, 42B: 26 gal. (540) 44A, 42B: 13 gal. (540)
Rotor Blade Movements	For rigging information refer to Maintenance Manual.
Serial Nos. Eligible	1 and up
Required Equipment	In addition to the pertinent required basic equipment specified in (CAR 6, the following items of equipment must also be installed: 102, 103, 104, 105, 106, 107, 201(a), 202(a), 205(a), 206(a), 301(a), 302(a), 303, 401(a) for 42A and B, 401(b) for 44A and B.

#### Specifications Pertinent to All Models

Datum	100 Inches forward of forward rotor centerline
Leveling Means	Plumb bob from top of main cabin door frame (rear) to plate on door sill.
Certification Basis	Type Certificate No. 1H12 (CAR 6, January 15, 1951 and Amendments 6-1 through 6-7) The Model 44B is eligible for scheduled air carrier operation subject to the operations specifications.

Production basis                      None. Prior to original certification of each helicopter manufactured, a FAA representative must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data and a check of flight characteristics.

Equipment:

Engine and Engine Accessories - Fuel and Oil System

101. Engines

- (a) Wright 977C9HD1 (same limitations as for R1820-103)  
(Not eligible for high blower operation)
- (b) Wright 977C9HD2 (same limitations as for R1820-103)  
(Not eligible for high blower operation)
- (c) Wright 977C9HD3 (same limitations as for R1820-103)  
(Not eligible for high blower operation)

102. Starter Model AN4116R3B	28 lb.	(509)
103. Fuel pump, engine-driven, Model AN4101-1	2 lb.	(502)
104. Fuel pump, boost, Pesco BR5D	9 lb.	(391)
105. Oil cooler, engine, Harrison Radiator Model AP26AU24	24 lb.	(507)
106. Oil cooler, transmission, Harrison Radiator Model AP22AU11-04	19 lb.	(459)
107. Hydraulic pump, New York Airbrake Model 68261	8 lb.	(102)

Landing Gear

201. Two main wheel-brake assemblies, 24x7.7, Type VII		
(a) Goodyear                      49 lb.	(398)	
Wheel Assembly No. 531031		
Brake Assembly No. 9530721		
202. (a) Two main wheel 10-ply rating tires, 24x7.7, Type VII, with regular tubes	50 lb.	(398)
205. Nose wheel assembly, 7.50-10, Type III		
(a) Goodyear Wheel Assembly No. 530751M	9 lb.	(103)
206. (a) Nose wheel 6-ply rating tire, 7.50-10, Type III, with regular tubes	13 lb.	(103)
207. Salvage flotation gear installation in accordance with Vertol Dwg. No. 22L3438.		
Item 401(e) required for this installation (44 only).		
208. Fixed flotation gear installation in accordance with Vertol Dwg. No. 04L3100A.		
Item 401(f) or (k) required with this installation.	Use act. wt. change	

Electrical Equipment

301. Generator		
(a) 8 v, 400 amp. General Electric Type 121D882 Model 2CM76C4	61 lb.	(511)
302. Battery		
(a) 28V, 36 amp. hr. Model AN3150A	80 lb.	(365)
303. Two inverters		
(a) 250 V.A. AN3532-1	18 lb.	(427)
(b) 500 V.A. AN3535-1	24 lb.	(427)

## Interior Equipment

401. (a) CAA Approved Helicopter Flight Manual dated July 1, 1957. (This issue supersedes issued dated April 10, 1957) Required for Models 42A and B.  
 (b) CAA Approved Helicopter Flight Manual dated February 26, 1958 revised October 13, 1960. Required for Models 44A and B.  
 (c) Supplement No. 1 dated February 26, 1958, revised July 11, 1958 to CAA Approved Model 44 Helicopter Flight Manual. Contains operational information for Item 603.  
 (d) Supplement No. 2 dated February 26, 1958, revised July 11, 1958 to CAA Approved Model 44 Helicopter Flight Manual. Contains operational information for Item 604.  
 (e) Supplement No. 4 dated April 4, 1958 to CAA Approved Model 44 Helicopter Flight Manual. Required when Item 207 is installed.  
 (f) Supplement No. 3 dated April 25, 1958, revised May 2, 1958 to CAA Approved Model 44 Helicopter Flight Manual. Required when Item 208 is installed.  
 (g) Supplement No. 5 dated July 11, 1958, revised January 29, 1959 to CAA Approved Model 44 Helicopter Flight Manual. Contains operational information for Item 605.  
 (h) Supplement No. 6 dated December 5, 1958 to CAA Approved Model 44 Helicopter Flight Manual. Required when Item 606 is installed.  
 (i) Supplement No. 2 dated January 29, 1959 to CAA Approved Model 42 Helicopter Flight Manual. Required when Item 606 is installed.  
 (j) Supplement No. 7 dated June 9, 1960 revised August 31, 1960 to CAA Approved Model 44 Helicopter Flight Manual. Required when Item 607 is installed.  
 (k) Supplement No. 3 dated November 25, 1960 to CAA Approved Model 42 Helicopter Flight Manual. Required when Item 208 installed.

## 402. Bench seats installed in accordance with Vertol Dwg. No. 42E4020

(42A and 44A only)

(a) Two place seat	6 lb.	(170)
(b) Three place seat	9 lb.	(200)
(c) Three place seat	9 lb.	(220)
(d) Three place seat	9 lb.	(260)
(e) Three place seat	9 lb.	(279)
(f) Three place seat	9 lb.	(319)
(g) Two place seat	6 lb.	(352)

## Miscellaneous Equipment (not listed above)

601. Cargo sling installation (4500 lb.) in accordance with Vertol Dwg. No. 42E5501  
 See NOTE 4 for operating limitations. (Model 42A only)  
 602. Hoist installation in accordance with Vertol Dwg. No. 22E6030 (250 lb.), 22E6061 (400 lb.) or 22E6030 and 42E6078 (400 lb.)  
 See NOTE 4 for operating limitations. (Model 42A only)  
 603. Cargo sling installation (5000 lb.) in accordance with Vertol Dwg. No. 42E5501.  
 See NOTE 4 for operating limitations. (44A only)  
 604. Hoist installation (600 lb.) in accordance with Vertol Dwg. No. 08E6001. See NOTE 4 for operating limitations. (44A only)  
 605. Towing installation in accordance with Vertol Dwg. No. 04E7058 or 04E7059.  
 See NOTE 4 for operating limitations. (44 only)  
 606. Pitch Damper installation in accordance with Vertol Dwg. No. 04C1900. Item 401(h) or 401(i) required with this installation. Use actual weight change.  
 607. Three (3) Axis Stability Augmentation System installed in accordance with Vertol Dwg. 04C0001. Item 401(j) required with this installation. (44 only). Use actual weight change.

- NOTE 1. Current weight and balance report, including list of equipment included in certificated weight empty, and loading instructions must be in each helicopter at the time of original certification and at all times thereafter. When changes are made to the helicopter which affect weight and balances, refer to the Flight Manual for instructions.
- NOTE 2. Information essential to the proper maintenance of the helicopter including retirement time of critical components is contained in the maintenance manual provided with each helicopter. The values of retirement or service life cannot be increased without FAA engineering approval.
- NOTE 3. The following placards must be displayed in the instrument panel in full view of the pilot:
- (a) "This helicopter must be operated in compliance with the operating limitations specified in the CAA Approved Helicopter Flight Manual."
  - (b) "Never exceed speeds. Variation of V<sub>ne</sub> with altitude and rpm.

ALT	V <sub>ne</sub> IAS Knots		
	2500 rpm	2400 rpm	2300 rpm
S.L.	110	101	93
2000	97	89	81
4000	85	77	69
6000	73	65	-
8000	60	60	-
10,000	60	60	-

Maximum gross weight above 8000 ft. is 12,500 lbs."

- NOTE 4. The cargo sling (Items 601, 603), hoist (Items 602, 604) and towing installation (Item 605) are special purpose equipment and are to be operated in accordance with the limitations described in CAR 8. Information concerning the operating limitations is also contained in the Helicopter Flight Manual.
- NOTE 5. The cabin floor area is structurally satisfactory for a uniformly distributed loading of 130 psf. when used for cargo purposes.
- NOTE 6. Fuel and oil capacities as indicated are total capacities. The fuel tank capacity includes unusable fuel of 3.6 gal. which must be included in the empty weight.
- NOTE 7. Prior to civil certification of any military version of the Model 42 series information regarding eligibility and modifications to be accomplished should be obtained from Vertol.

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