

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

H14NM Revision 1 BLUE BIRD  CH-54B  September 8, 1994
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TYPE CERTIFICATE DATA SHEET NO. H14NM

This data sheet, which is part of Type Certificate No. H14NM, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the Airworthiness Requirements of the Federal Aviation Regulations.

Holder of Type Certificate: Blue Bird Helicopter  
P.O. Box 14  
Cougar, Washington 98616

1. Model CH-54B (Restricted Category) approved September 15, 1993 (see Note 5).

Engines 2 Pratt & Whitney JFTD12A-5A (T73-P-700), with Hamilton Standard Fuel Control JFC56-6

Fuel Aviation Kerosene JP-4 or JP-5 (conforming to Pratt & Whitney Specification No. 522).

Engine Limits Sea Level Static, Standard Day Conditions

	<u>Shaft HP</u>	<u>Power Turbine R.P.M.</u>	<u>Gas Gen. R.P.M.</u>	<u>Power Turbine Inlet Temp. (T<sub>5</sub>)</u>
Takeoff (5 min.)	4800	9,450 (105% N <sub>2</sub> )	16,700 (104% N <sub>1</sub> )	720°C
One engine inoperative (30 min.)	4800	9,450 (105% N <sub>2</sub> )	16,700 (104% N <sub>1</sub> )	720°C
Maximum continuous	4420	9,450 (105% N <sub>2</sub> )	16,700 (104% N <sub>1</sub> )	675°C
Allowable maximum overspeed	--	10,260 (114% N <sub>2</sub> )	16,700 (104% N <sub>1</sub> )	675°C
Acceleration limit (2 min.)	--	--	--	720°C
Starting limit (2 min.)	--	--	--	525°C

Takeoff and maximum continuous horsepower ratings are normally obtained at a power turbine speed of 9,000 r.p.m. (100% N<sub>2</sub>).

Total power for two-engine operation is limited to 7880 s. hp. (82% torque) for takeoff and 6530 s. hp. (68% torque) maximum continuous.

Rotor Limits

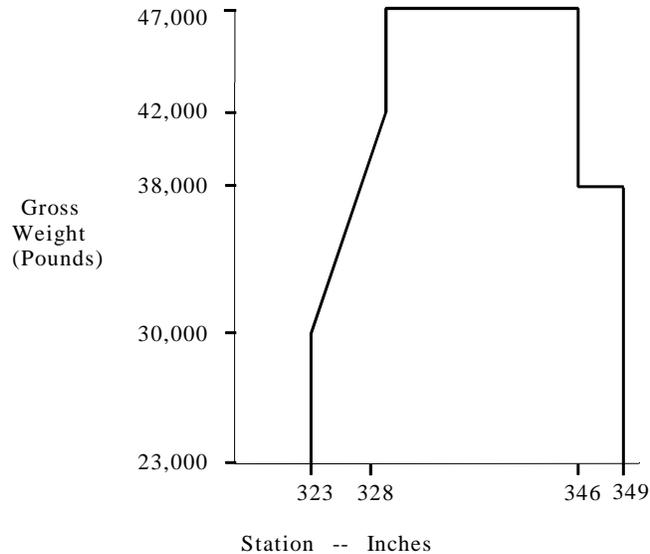
	<u>Power Off</u>	<u>Power On</u>
Maximum	204 r.p.m. (110% N <sub>r</sub> )*	193 r.p.m. (104% N <sub>r</sub> )**
Minimum	176 r.p.m. ( 95% N <sub>r</sub> )*	185 r.p.m. (100% N <sub>r</sub> )**

\*During autorotation, do not operate below 95% or above 110% N<sub>r</sub>. Minimum N<sub>r</sub>, down to 86%, is permitted momentarily during single-engine landing maneuvers.

\*\*When operating with power on, do not operate continuously below or above 100% N<sub>r</sub> even though the normal operating range is 100% to 104% N<sub>r</sub>. During takeoff and landing, a rotor rpm range of 100% to 104% N<sub>r</sub> is permissible to reduce rotor induced airframe vibrations. This increased speed range is not to be used in any of the remaining flight regimes.

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Airspeed Limits	$V_{ne}$ (never exceed) 120 m.p.h. (104 knots) at 47,000 lbs. gross weight. For airspeed limits at lower gross weights and variation of $V_{ne}$ with altitude refer to Rotorcraft Flight Manual.
C.G. Range	(+323.0) to (+349.0) at 23,000 lbs. (+323.0) to (+349.0) at 30,000 lbs. (+326.4) to (+349.0) at 38,000 lbs. (+326.4) to (+346.0) at 38,000 lbs. (+328.0) to (+346.0) at 42,000 lbs. (+328.0) to (+346.0) at 47,000 lbs. Straight line variation between points given.



Empty Weight C.G. Range	None
Datum	336 inches forward of main rotor centroid.
Leveling Means	Plumb line from top level plate inside cockpit aft door.
Maximum Weight	47,000 lbs.
Minimum Crew	Pilot and Co-Pilot
No. Seats	5. 2 at (+94.0), 1 at (+108.5), 1 at (+127.0), 1 at (+130.0).
Maximum Baggage	500 lbs. at (+124.0) - two baggage compartments with a maximum allowable load of 250 lbs. each compartment, and 500 lbs. at (+147); maximum allowable floor loading of 300 psf, all three compartments. See NOTE 5 for cargo carriage.
Fuel Capacity	1351 gal.; 454 gal. at (+280.8), 454 gal. at (+397.3), 443 gal. at (+461.3).
Oil Capacity	3.2 gal. at (+234.0); 2 tanks 1.6 gallon each
Rotor Blade and Control Movements	For rigging information, refer to Maintenance Manual, see Note 8.
Other Operating Limitations.	See NOTE 4.
Serial Nos. Eligible	69-18467, 69-18470, and 69-18484, only

Certification Basis	FAR 21.25(a)(2) and (b) effective February 1, 1965, including amendments 21-1 through 21-42 and ASW-110 Memorandum dated September 8, 1993. Type Certificate No. H14NM issued November 1, 1993, for the special purpose of carriage of external loads in accordance with FAR 133. Date of application for Type Certificate: November 30, 1992.
Production Basis	None. Prior to certification of each aircraft, an FAA representative must perform a detailed inspection for workmanship, materials, and conformity with approved technical data, and will verify that a maintenance flight test has been completed for each aircraft by qualified maintenance personnel in accordance with the Department of the Army Technical Manual TM 1520-217-MFT-2 change 1, dated July 19, 1985.
Equipment	Equipment necessary for the particular special purpose operation must be installed (see NOTE 5).

NOTE 1. A current weight and balance report including a list of equipment included in the certificated empty weight, and loading instructions when necessary, must be in each helicopter at the time of original airworthiness certification and at all times thereafter. The certified empty weight and corresponding C.G. locations must include undrainable oil of 5 lbs. (+234.0) and unusable fuel of 26 lbs.; 10 lbs. at (+290.0), 9 lbs. at (+370.0), 7 lbs. at (+461.0).

NOTE 2. The following placard must be prominently displayed in the cockpit in full view of the pilots:

"THIS ROTORCRAFT MUST BE OPERATED IN ACCORDANCE WITH THE RESTRICTED CATEGORY OPERATING LIMITATIONS OF FAR 91.313."

NOTE 3. The Maximum Allowable Operating Time (MAOT) schedule for Service Life Limited Part overhaul and retirement intervals are specified in Chapter 1, Section VI of Technical Manual No. TM 55-1520-217-23-2-1, "Aviation Unit and Intermediate Maintenance Manual CH-54B Helicopter," with Changes 1 through 16, dated September 21, 1987. In addition to the above listed MAOT schedule, the following MAOT apply:

Lower Hub Plate 65103-11009-103	15,575 hrs.
Hub Plate Upper 65103-11310-041	21,675 hrs.
Vertical Hinge Pin 65103-11022-105, -106	37,425 hrs.
Bracket Damper 65103-11032-042	20,875 hrs.

NOTE 4. These helicopters must be operated in accordance with a Flight Manual comprised of the following:

- (1) Department of the Army Technical Manual No. TM 55-1520-217-10-2, "Operator's Manual, Army Model CH-54B Helicopters," with Changes 1 through 5, revised September 25, 1986.
- (2) Department of the Army Technical Manual No. TM 55-1520-217-CL-1, "Operator's & Crewmember's Checklist, Army Model CH-54B Helicopters, Pilot's Checklist," dated June 2, 1985.

VFR Restricted Category operations only.

NOTE 5. Provisions for the carriage of external loads are available in the form of structural hard points on the fuselage and main landing gear; single point hoist. Information concerning the operating limitations with this equipment is contained in the Flight Manual. The installation of a Department of the Army cargo pod will require further FAA approval.

- NOTE 6. Prior to civil airworthiness certification, those Department of the Army Modification Work Orders (MWO's) and Technical Bulletins (TB's) listed in reports below, must be incorporated on those aircraft.
- Blue Bird Report No. 1, dated September 14, 1994, Serial Number 69-18467 and 69-18470
  - Blue Bird Report No. 2, dated July 1, 1994, Serial Number 69-18484
- NOTE 7. Prior to civil airworthiness certification compliance with the following must be accomplished:
- Federal Aviation Administration (FAA) Airworthiness Directives (AD's) No. where applicable:
- |          |  |
|----------|--|
| 75-11-11 | Gear box shaft and gear assembly   |
| 76-06-01 | Hydraulic pumps  |
| 77-20-01 | Main transmission plates   |
| 90-26-12 | Main rotor blades (Apply the BIM inspection procedures of AD 90-26-12 to all main rotor blades, regardless of part number installed on these CH-54B rotorcraft). |
- Department of the Army Safety of Flight (SOF) messages No.:
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|-------------|---|
| CH-54-82-01 | MIL-H-5606 Hyd. fluid in lieu of MIL-H-83282                                    |
| CH-54-82-02 | One-time visual insp. torque arm on M/L/G struts                                |
| CH-54-82-03 | One-time insp. of main gear box support fittings                                |
| CH-54-82-04 | One-time insp. T/R pitch link rod ends  |
| CH-54-83-01 | Insp. of I/G/B support fitting assy.  |
| CH-54-83-02 | Insp. of T/G/B mounting lugs  |
| CH-54-84-01 | One-time & repetitive insp. M/R/B   |
| CH-54-84-02 | One-time insp. for defective MS21251 brass turnbuckle                           |
| CH-54-85-01 | One-time insp. of T/R servo links   |
| CH-54-85-02 | Insp. of M/R/B  |
| CH-54-85-03 | One-time insp. for correct installation of MGB Chip Detector/<br>Strainer Assy. |
| CH-54-86-02 | Insp. of upper link P/N 65104-11036   |
| CH-54-86-03 | Insp. of pressure switch  |
| CH-54-90-01 | One-time insp. of AN-320-6 nuts   |
- NOTE 8. These helicopters must be serviced and maintained in compliance with the following Department of the Army Technical Manuals (TM's):
- TM 55-1520-217-23-2-1, "Aviation Unit and Intermediate Maintenance Manual," dated April 8, 1977, with Changes 1 through 16, revised September 21, 1987.
  - TM 55-1520-217-23-2-2, "Aviation Unit and Intermediate Maintenance Manual," dated April 8, 1977, with Changes 1 through 6, revised October 13, 1987.
  - TM 55-1520-217-23-2-3, "Aviation Unit and Intermediate Maintenance Manual," dated April 8, 1977, with Changes 1 through 8, revised September 21, 1987.
  - TM 55-1520-217-23P-1, "Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List," dated November 14, 1979, no changes.
  - TM 55-1520-217-23P-2, "Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List," dated November 14, 1979, with Change 1, revised September 25, 1981.
  - TM 55-1520-217-23P-3, "Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List," dated November 14, 1979, no changes.
  - TM 55-1520-217-23P-4, "Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List," dated November 14, 1979, no changes.
  - TM 55-2835-208-23P, "Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List Gas Turbine Engine," (Auxiliary Power Unit APU), dated June 18, 1987, with changes 1 and 2, revised April 30, 1992.
  - TM 55-2835-2-3-24, "Maintenance Manual Auxiliary Power Plant," dated July 1971, no changes.
  - TM 55-2840-230-24, "Maintenance Manual for T73-P-1 and T73-P-700 Turbo Shaft Engines," dated September 1, 1977, with changes 1 through 6, revised February 23, 1984.
  - TM 55-2840-230-23P, "Aviation Unit & Intermediate Maintenance Repair parts and Special Tools List for T-73-P-1 and T-73-P-700 Series Engines," dated November 30, 1977, no changes.

- TM 11-1520-217-20-2, "Electronic Equipment Configuration Army Model CH-54B Helicopter," dated January 1970, with changes 1 through 5, revised June 1975.
- TM 55-1520-217-10-2, "Operators Manual Army Model CH-54B Helicopter," dated April 15, 1977, with changes 1 through 5, revised September 25, 1986.
- TM 55-1520-217-CL-2, "Operators and Crew Members Checklist CH-54B Helicopter," dated June 2, 1985, no changes.
- TM 55-1520-217-MFT-2, "Maintenance Test Flight Manual CH-54B Helicopter," dated June 7, 1985, with change 1, revised July 19, 1985.
- TM 55-1520-217-PMD, "CH-54A and CH-54B Aircraft Prevention Maintenance Daily," dated July 10, 1984, with change 1, revised November 1, 1985.
- TM 55-1520-217-PM, "Phase Maintenance Check List" dated December 19, 1985, with changes 1 and 2, revised September 14, 1987.

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