

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

H3EA Revision 2 BOEING-VERTOL 114A (U.S. Army CH-47A)  08 September 2003
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TYPE CERTIFICATE DATA SHEET NO. H3EA

This data sheet which is a part of type certificate No. H3EA prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

**Type Certificate Holder**                      The Boeing Company  
 Integrated Defense Systems  
 U.s. Army Programs & Military Rotorcraft  
 Stewart Avenue & Industrial HWY.  
 Ridley Park, Pennsylvania 19078

**I - Model 114A (Restricted Category), approved July 30, 1968**

**Engine**    2 Lycoming T55-L-5, T55-L-7, or T55-L-7B

**Fuel**    AVJET (wide-cut), JPA (MIL-J-5624). (See Operators Manual for alternate fuels for T55-L-5 engine only).

Engine limits

Sea level static - Standard Day

	Shaft		Power	Gas	Power		Output	Torque
	L-5,	L-7/7B	Turbine	Producer	Turbine		at 230	230 Rotor
	hp		rpm	rpm	Inlet Temp		rpm	-(lb. ft.)
	L-5,	L-7/7B			L-5,	L-7/7B	L-5	L-7/7B
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Takeoff (Sea level static - standard only)	2200	2650	*	**	638°C	735°C	800	860***
Maximum continuous	1850	2200	*	**	602°C	635°C	680	780

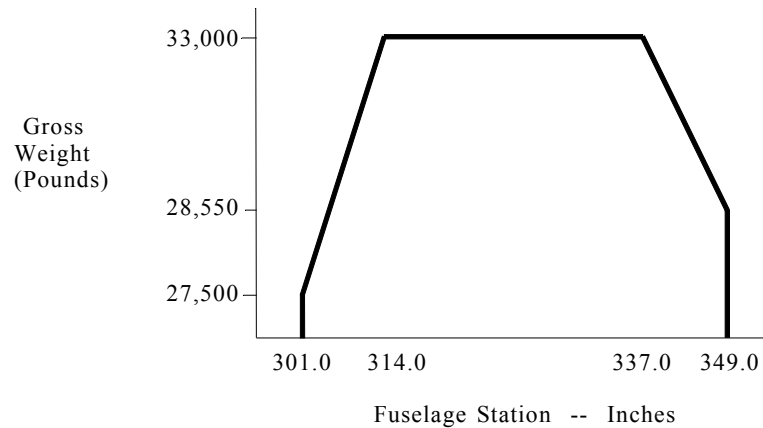
- \* A direct relationship to rotor r.p.m. exists. 230 rotor r.p.m. corresponds to 15,150 power turbine r.p.m. Power turbine tachometer not installed.
- \*\* Limit established for each engine - refer to engine acceptance test log.
- \*\*\* Transmission torque limit is reached before engine power limit.  
 Refer to pages 7-10 and 7-11 of the Operator's Manual, TM55-1520-209-10, for transient limits.

**Rotor Limits**                                      Power off    Power on  
 Minimum 204 r.p.m.                              Minimum 204 r.p.m.  
 Maximum 261 r.p.m.                              Maximum 230 r.p.m.

**Airspeed limits**                                      Never exceed 110 knots IAS. For increased airspeed limits at gross weights below 33000 lbs. refer to Operator's Manual TM55-1520-209-10.

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**C.G. Range** (+314.0) to (+337.0) at 33,000 lb.  
 (+303.5) to (+349.0) at 28,550 lb.  
 (+301.0) to (+349.0) at 27,500 lb. or less



**Datum** Fuselage Station 331.0

**Leveling means** Plumb bob from top of forward door coaming.

**Maximum weight** 33,000 lb.

**Minimum Crew** 2 (Pilot, copilot)

**Fuel capacity** 4095 lb. (+317.3) (non-self-sealing tanks)  
 4030 lb. (+317.3) (self-sealing tanks)  
 See Operator's Manual TT755-1520-209-10.

**Oil capacity** 5.9 gals. (+480.7), 3.3 gals. unusable  
 See NOTE 1 for data on system fuel and oil.

**Rotor blade and Control Movements** For rigging information, refer to Department of the Army Technical Manual TM55-1520-209-20, "Organizational Maintenance Manual, Army Models CH-47A and CH-47B helicopters," including changes Nos. 1 through 23 dated April 11, 1968.

**Other operating limitations** Department of the Army TM55-1520-209-10, "Operator's Manual Army Models CH-47A and CH-47B helicopters" dated April 1967 including changes Nos. 1 through 3.

Flight hours are counted from takeoff to landing.

The helicopters approved under this type certificate are done so under the concept of limited exposure associated with escape from inadvertent ice encounters, and are prohibited against flight into known icing. The helicopters must be re-evaluated if certification to the General Ice Protection Airworthiness Regulations is requested.

**Serial Nos. Eligible** Boeing Model 114A (CH-47A) Military Helicopters, serial numbers of which are contained in FAA approved Boeing Letter 8-7000-FAA-979, dated September 19, 2003 or later FAA approved revision.

<b>Certification basis</b>	<p>Federal Aviation Regulations FAR 21.25(a)(2) including amendment 21-1 through 21-13, effective November 1, 1967. Type Certificate No. H3EA issued July 30, 1968 for the special purposes of</p> <p>(1) External Cargo Operations under FAR 21.25(b)(7).</p> <p>Note: In accordance with FAR 36.1(a)(4), compliance with the noise requirements was not shown. Therefore aircraft certified under this type certificate are only eligible for external load operations excepted by FAR 36.1(a)(4) and defined under FAR 137.</p> <p>Any alteration to the helicopter for Special Purpose not identified above require further FAA approval and in addition may require noise and/or flight testing.</p> <p>General Note: Any subsequent modifications to the helicopters type certified under this Type Certificate are to have the certification basis for that modification established under 14 CFR 21.101 published June 7, 2000 which became effective June 10, 2003. Otherwise non-significant modifications are to meet the requirements of Civil Aeronautics Manual (CAM) 7, Amendment 7, dated May 3, 1962 and 14 CFR 29.1529, Instructions for Continued Airworthiness, Amendment 20, effective September 11, 1980.</p>
<b>Date of Application</b>	January 5, 1968
<b>Production basis</b>	None. No helicopter may be produced under this approval. (See Note 4). Prior to adding serial numbers to this Type Certificate, each candidate helicopter must undergo a conformity inspection. The conformity inspection will be conducted in accordance with a Type Inspection Authorization, Part 1, or request for conformity that will include as a minimum the inspections contained in the FAA Rotorcraft Directorate Restricted Category conformity document dated September 25, 2001.
<b>Equipment:</b>	the basic equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in or on each helicopter for certification. See NOTE 6.
<b>NOTE 1.</b>	A current weight and balance report containing a list of the 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. Refer to Department of the Army Technical Manual TM55-1520-209-10, "Operator's Manual, Army Models CH-47A and CH-47B helicopters" dated April 1967 and including changes Nos. 1 through 3.
<b>NOTE 2.</b>	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 91.39."
<b>NOTE 3.</b>	Service-life-limited components must be retired from service in accordance with the schedule of Chapter 3. Section IV of Department of the Army Technical Manual TM55-1520-209-20: Organizational Maintenance Manual, Army Models CH-47A and CH-47B Helicopters" including changes Nos. 1 through 23 dated April 11, 1968.
<b>NOTE 4:</b>	<p>In addition to the standard helicopter requirements, the following additional data and/or helicopter configuration requirements must be met for each individual Boeing Company, helicopter upon application for an original Special Airworthiness Certificate.</p> <p>(a) A completed Application for Airworthiness Certificate, FAA Form 8130-6 that has correctly identified the type certificate holder's helicopter and its intended special purpose(s).</p> <p>(b) Written confirmation from the certifying office that the affected serial number has been added to The Boeing Company's Type Certificate.</p> <p>(c) The application for airworthiness certification and the helicopter's registration certification match the information on The Boeing Company. data plate.</p>

- (d) The condition and limitations specified in The Boeing Company Type Certificate Data Sheet H3EA dated September 8, 2003, or later FAA approved revisions are met.
- (e) Each helicopter must be inspected by FAA representatives or authorized designees to determine the following:
  - (1) Conformance to the requirements of this Type Certificate Data Sheet.
  - (2) In a condition of safe operation.
- (f) The maintenance, overhaul and modification records of each helicopter must be reviewed for changes made by the military that may affect the airworthiness of the aircraft. Modifications and changes of equipment, which affect the safety or performance of the helicopter must be approved by FAA.

**NOTE 5.** These helicopters must be serviced and maintained in compliance with the following Department of the Army Technical Manuals:

TM55-1520-209-20 "Organizational Maintenance Manual, Army Models CH-47A and CH-47B Helicopters" including changes Nos. 1 through 23, dated April 11, 1968.

TM55-1520-209-35 "DS, GS, and Depot Maintenance Manual, Army Models CH-47A and CH-47B Helicopters" including changes Nos. 1 through 9, dated February 1, 1968.

TM55-1520-209-20 PMD "CH-47A and CH-47B Helicopters, Preventive Maintenance Daily Inspection Checklist" dated November 30, 1967.

TM55-1520-209-20 PMI "CH-47A and CH-47B Helicopters, Preventive Maintenance Intermediate Inspection Checklist," dated November 30, 1967.

TM55-1520-209-20 PMP "CH-47A and CH-47B Helicopters Preventive Maintenance Periodic Inspection Checklist," dated January 9, 1968.

**NOTE 6.** Modifications to these rotorcraft or special equipment will be necessary, reference FAR 21.25(a)(2), prior to civil airworthiness certification for the special purpose of carriage of external loads and for any other FAA approval special purpose operations.

**NOTE 7.** Prior to civil airworthiness certification compliance with the following Department of the Army Modification Work Orders must be accomplished:

MWO's: 55-1520-209-20/1	MWO's: 55-1520-209-30/4	MWO's: 55-1520-209-34/24
55-1520-209-20/24	55-1520-209-30/28	55-1520-209-34/51
55-1520-209-20/30	55-1520-209-30/29	55-1520-209-34/58
55-1520-209-20/31	55-1520-209-30/41	55-1520-209-34/59
55-1520-209-20/41	55-1520-209-30/48	55-1520-209-34/63
55-1520-209-20/57	55-1520-209-30/55	55-1520-209-34/71
MWO's: 55-1520-209-34/85	MWO's: 55-1520-209-34/107	MWO's: 55-1520-209-34/125
55-1520-209-34/92	55-1520-209-34/109	55-1520-209-34/130
55-1520-209-34/95	55-1520-209-34/111	55-1520-209-34/132
55-1520-209-34/104	55-1520-209-34/118	55-1520-209-34/135
55-1520-209-34/105	55-1520-209-34/124	55-1520-209-34/137

**NOTE 8.** The following kits must be installed prior to issuance of the original Airworthiness Certificate:  
Kits: 114DK007-1, 114DK205-1, 114E3030-43 and Inspection Kit: 114G5226-1.

**NOTE 9.** The following transmission configurations are required to be installed prior to issuance of the original Airworthiness Certificate: 114D1001-26, 114D2001-27, 114D5001-18 and 114D6001-18.

**NOTE 10.** The retirement times of critical parts are listed in the following table: (Reference TM55-1520-209-20).

<u>COMPONENT</u>	<u>PART NO.</u>	<u>HOURS</u>
Synchronizing Drive	114D3067-2	300
Shaft Adapters Fwd.	114D3067-4	1200
Forward Rotary Wing Blades	114R1002-27	3600
	114R1002-29	3600
	114R1002-31	3600
	114R1002-33	3600
	114R1002-35	3600
	114R1002-37	3600
Aft Rotary Wing Blades	114R1002-28	2400
	114R1002-30	2400
	114R1002-32	2400
	114R1002-34	2400
	114R1002-36	2400
	114R1002-38	2400
Forward and Aft Drive Shaft Collar Assy	114R3388-5	700
Forward and Aft Upper Drive Arm Assy	114R3414-1	700
	114R3414-4	700
	114R3414-5	700
Aft Vertical Drive Shaft Assy	114D3002-1 through -6	600
	Serial No. A-102 through A-114,	
	A-149 through A-151	
	A-154, A-155, M-103,	
	M-104, M-106 thru M-111, M-115	
	M-117 through M-119	
	M-121	
	M-124 through M-130	
	M-132	
	M-134	
	M-135	
	M-137 through M-143	
	M-145 through M-160	
	M-163 through M-165	
	M-167 through M-174	
	M-179, M-180, M-185	
	M-187, M-188, M-190	
	through M-194	
	M-197, M-198, M-200	
	M-201, M-203 through	
	M-205, M-210, M-213,	
	M-214, M-217, M-221,	
	M-224, M-225 through	
M-227, M-234, M-236,		

<u>COMPONENT</u>	<u>PART NO.</u>	<u>HOURS</u>
Aft Vertical Drive Shaft Assy	M-255 through M-258 M-274	
Aft Vertical Drive Shaft Assy	114D3002-1 through -6 Serial No. A-118, M-162, M-166, M-176, M-182, M-183, M-189, M-209, M-218, M-222, M-223, M-228, M-230 through -232, M-235, M-237, M-238, M-240, M-242, M-246, M-251, through M-253	800
Aft Vertical Drive Shaft Assy	114D3002-1 through -6 Serial No. A-115 through A-117	1000
Aft Vertical Drive Shaft Assy	114D3002-1 through -6 Serial No. A-119 thru A-148, A-152, A-153, A-156 thru A-189 A-191 and subsequent "A" shaft assy's M-177, M-178, M-184, M-186, M-195, M-196, M-199, M-202, M-206, thru M-208, M-211, M-212, M-215, M-216, M-219, M-220, M-229, M-233, M-239, M-243 thru M-245, M-247 thru M-250, M-254, M-259, thru M-273, M-275 thru M-278, M-280, M-282 thru M-290, M-292 and subsequent "M" shaft assy's.	1000
Bolt	NAS 1308-50DW	600
*Blade Lag Damper Assy	114HS6800-1	

\*Periodic inspection of this unit is required in accordance with Item 6.7 Page 16 of TM55-1520-209- 20 PMI.

**NOTE 11** This helicopter is prohibited from carrying cargo for compensation or hire. Carriage of cargo is limited to such cargo that is incidental to the helicopter owners/operator's business, which is other than air transportation.

**NOTE 12:** A restricted category helicopter may not be operated in a foreign country without the express written approval of that country.

**NOTE 13:** This helicopter has not been shown to meet the requirements of the applicable comprehensive and detailed Airworthiness Code as provided by Annex 8, to the Convention of the International Civil Aviation Organization.

**NOTE 14:** Helicopters that do not have documentation showing they were surplus from an Armed Force of the United States are not eligible for certification under this type certificate. Engines and appliances that do not have documentation showing they were surplus from an Armed Force of the United States are not eligible for installation on a helicopter under this type certificate. Helicopter(s), engine(s), and appliances that have records indicating time-in-service by a foreign military or a foreign government will be presumed to be ineligible for certification or installation under this type certificate. This presumption may be overcome by the applicant substantiating to the satisfaction of the FAA through documentation, tests, computations, evaluations, analysis or other means or methods that the helicopter, engines or appliance during its time-in-service by the foreign military or foreign government, was maintained to an extent and in a manner equal to that of an Armed Forces of the United States.

**NOTE 15:** No person may be carried in this helicopter during flight unless that person is essential to the purpose of flight.

**NOTE 16:** Any alteration to the type design of this aircraft may require Instructions for Continued Airworthiness. If so, these instructions must be submitted and accepted by the FAA Fort Worth Aircraft Evaluation Group (FTW-AEG), prior to approval for return to service.

**NOTE 17:** Carriage of hazardous materials is prohibited unless compliance is shown with applicable regulations in Code of Federal Regulations Title 49, Part 175.

**NOTE 18:** For mailing and correspondence purposes use the following address:

The Boeing Company,  
Integrated Defense Systems,  
U.S. Army Programs & Military Rotorcraft  
P.O. Box 16858  
Philadelphia, PA 19078.

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