

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

4H10 REV 7 SIAM HILLER UH-12D (ARMY H-23D)  October 28, 2014
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**TYPE CERTIFICATION DATA SHEET NO. 4H10**

This data sheet which is a part of type certificate No. 4H10 prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Civil Air Regulations.

Type Certificate Holder: Siam Hiller Holdings, Inc.  
925 M. Street  
Firebaugh, California 93622-2234

Type Certification Ownership Record: Hiller Aircraft Corporation transferred to  
Fairchild Industries, Inc. on 10/2/1959

Fairchild Industries, Inc. transferred to  
Heli-Parts, Inc. on 12/28/1972

Heli-Parts, Inc. transferred to  
Hiller Aviation on 12/28/1972

Hiller Aviation transferred to  
Rogerson Aircraft Corporation on 6/26/1984

Rogerson Aircraft Corporation transferred to  
Hiller Helicopters, a wholly owned subsidiary of  
Rogerson Aircraft Corporation on 6/29/1984

Hiller Helicopters, a wholly owned subsidiary of  
Rogerson Aircraft Corporation transferred to  
Rogerson Hiller Corporation on 11/14/1985

Rogerson Hiller Corporation transferred to  
Siam Hiller Holdings, Inc. on 7/14/1994

**1. MODEL UH-12D (Army H-23D), UTILITY CATEGORY, APPROVED DECEMBER 23, 1957**

Engine	Lycoming VO-435-A1C
Fuel	80/87 Min. grade aviation gasoline
Engine limits for all operations	Maximum RPM 3200 (250 HP)

	<u>Power Off (Rotor Tach)</u>	<u>Power on (Engine Tach.)</u>
Rotor limits and engine operating speeds	Maximum 395 Minimum 314	Maximum 3200 RPM Minimum (S.L. to 6000 ft.) 2900 RPM (Above 6000 ft., increase minimum RPM by 33 RPM for each additional 1000 ft. of altitude).
Airspeed limits	<u>Configuration</u>	<u>V<sub>NE</sub> (Never Exceed) IAS</u>
	Skid Gear	83 Knots
	Skid and Litters	66 Knots
	Note: The above airspeeds apply from S.L. to 2000 ft. Decrease V <sub>ne</sub> 2.0 knots per 1000 ft. of altitude above 2000 ft. For limits with other accessories, see FAA approved Rotorcraft Flight Manual.	
Altitude limits	Avoid operation areas as shown in approved Flight Manual.	
C.G. range	Configuration	
	Skid Gear	(79.5) to (84.8)
	Skid & Litters	(79.5) to (84.8)
	For range with other accessories see FAA Approved Rotorcraft Flight Manual	
Empty weight C.G. range	None	
Datum	107.25 in. fwd. of tail boom-fuselage upper mounting face.	
Leveling means	Top face of flanges under seat	
Maximum weight	2750 LBS.	
Number of seats	3 (53)	
Maximum Baggage	None	
Fuel capacity	Main tank 46 gals. (82.9) (45.8 usable)	
Oil capacity	2.3 gals (94)	
Rotor blade movements	(Measured with respect to the mast) (NOTE: When the mast is vertical, the helicopter is 1° nose up)	
Main blades:		
Collective pitch	Low setting +1.0°, Total travel 10.5° (Measured at Retention Plate) (Low setting is determined as the lowest which will preclude overspeeding in autorotation)	
Teetering	Control rotor ±12°, Main rotor ± 9°	
Wobble plate:		
Lateral	±7.7° to ±8.3°	
Longitudinal	Fwd. 8.0° to 8.5°, Aft. 9.0° to 9.2°	
Control blades:		
Neutral	+9° incidence (Rotor hub and wobble plate perpendicular to mast)	
Anti-torque rotor blades:		
Flapping	+17° to -17°	
Collective pitch	+15° to -3°	
Horizontal stabilizer setting	Configuration	(with Helicopter level)
	Skid Gear	0°
	Skid and Litters	0°

(For setting with other accessories installed, see FAA approved Rotorcraft Flight Manual)

Mfr's. Serial Nos. eligible UH-12D: None. H-23D: 938 through 1034 and 1046 through 1438 except 942 and 954. In order for individual Model H-23D helicopters procured under military cognizance and not having been issued a Form ACA-970, "Conformity Certificate - Military Aircraft," to be eligible for airworthiness certification as a Model UH-12D, it must be determined in each case that the helicopter conforms to the type design. The manufacturer's serial number should be used in each case.

Required equipment In addition to the pertinent required basic equipment specified in CAR 6, the following items of equipment must be installed: 1, 2, 3, 4, 6, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 205, 206, 301, 302, 303, 304, 309, 405, 602.

#### Specifications Pertinent to All Models

Certification basis Type Certificate No. 4H10 (CAR 6 as amended August 25, 1955)

Production basis Production Certificate No. 423WE, Spare Parts Only

Equipment:

#### Rotors and Rotor Equipment

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|----|--|----------|-------|
| 1. | 2 main rotor blades<br>(a) Parsons Dwg. 2253-1101-02, (b) 2253-1101-03, (c) 2253-1101-04 | 158 lbs. | (84)  |
| 2. | 2 control blades<br>(a) Hiller Dwg. 36123  | 33lbs.   | (84)  |
| 3. | 2 tail rotor blades<br>(a) Hiller Dwg. 55073   | 6 lbs.   | (328) |
| 4. | Collective pitch ballast system<br>(a) Hiller Dwg. 30026                                 | 5 lbs.   | (84)  |
| 5. | Dual control kit installation<br>(a) Hiller Dwg. 30020                                   | 13 lbs.  | (50)  |
| 6. | 2 Vibration absorbers<br>(a) Hiller Dwg. 33023-3   | 3 lbs.   | (73)  |
| 7. | 2 Control rotor spar fairings<br>(a) Hiller Dwg. 36003                                   | 2 lbs.   | (84)  |
| 8. | Rotor brake installation (Item 405 (b) required)<br>(a) Hiller Dwg. 22000                | 8 lbs.   | (74)  |

#### ENGINE AND ENGINE ACCESSORIES - FUEL AND OIL SYSTEMS

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|------|---|--------|-------|
| 101. | Oil cooler<br>(a) Harrison No. 8526134                      | 5 lbs. | (76)  |
| 102. | Engine air intake system<br>(a) Hiller Dwg. 76259 and 76190 | 3 lbs. | (102) |

103.	Fuel pump (a) Lear Romec RD7430-5A, RG15980E	1 lb.	(85)
104.	Auxiliary fuel pump (a) Lear Romec RG15150-B, or H	3 lbs.	(78)
105.	Fan, Hiller Dwg. 74150	3 lbs.	(78)
106.	Carburetor zone support bracket, Hiller Dwg. 75060	1 lb.	(97)
107.	Starter (a) AN4116R1A or equivalent	20 lbs.	(84)
108.	Unusable fuel (See Note 1 for definition)	1 lb.	(70)
109.	Trapped fuel (when drained in normal ground attitude from tank)	6 lbs.	(84)
110.	Trapped oil (when drained in normal ground attitude from tank)	4 lbs.	(94)
111.	2 Tachometer generators	3 lbs.	(78)

#### LANDING GEAR

205.	Skid type gear, less scuff plates, handling wheels and axles (a) Hiller Dwg. 32036	84 lbs.	(73)
206.	Tail skid, Hiller Dwg. 42202-7	1 lb.	(303)
207.	Skid gear scuff plates installation (a) Hiller Dwg. 43015 and 43016	4 lbs.	(44)
208.	Float gear installation (Item 405 (b) required) (a) Hiller Dwg. 44012	154 lbs.	(81)

#### ELECTRICAL EQUIPMENT

301.	Generator (a) Eclipse Pioneer 30B24-1-A or equivalent	14 lbs.	(85)
302.	Battery (a) Standard (AN-3151-2)	52 lbs.	(75)
303.	Voltage regulator, G.E. CR2795E-100AL	5 lbs.	(91)
304.	Generator cutout, Hartman No. A-718AP	3 lbs.	(82)
306.	Landing and navigation light kit (a) Hiller Dwg. 83217	2 lbs.	(45)
309.	Standard battery rack installation, Hiller Dwg. 61417, less battery	1 lb.	(75)
310.	Alternator (a) Jasco 7555-1-72 per Hiller Dwg. 83230 (alternate for Items 301(a), 303 and 304)	13 lbs.	(85)

#### Interior Equipment

405.	(a) Hiller Helicopter Model UH-12D FAA Approved Flight Manual dated December 23, 1957.		
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(b) Hiller Helicopter Model UH-12D FAA Approved Flight Manual Revision dated October 2, 1959 or subsequent FAA Approved Revisions. (Required with Items 8, 208, 605 and 608).

(c) Hiller Helicopter Model UH-12D FAA Approved Flight Manual Revision dated March 25, 1960 or subsequent FAA Approved Revisions. (Required with Items 609, 610 and 611).

Miscellaneous (not listed above)

601.	Cabin heater installation (a) Hiller Dwg. 88044	1 lb.	(63)
602.	Ballast bar (See loading instructions in Flight Manual regarding Ballast location and necessity for its use) (a) Hiller Dwg. 62244	9 lbs	
605.	Litter installation (2) Hiller Dwg. 96190 with skid gear (Item 606 must also be installed - installation of litters must be in pairs only on skid gear - right hand litter may be removed on float gear - right hand litter may be removed on float gear installation - Heater Installation, Hiller Dwg. 88018 is optional - Item 405 (b) required)	60 lbs.	(75)
606.	Litter shoulder harness (2), Hiller Dwg. 96191	6 lbs.	(68)
607.	Shoulder harness installation Hiller Dwg. 85053 or 85067. (If this item is removed, the seat back support cables are to be retained)	14 lbs.	(63)
608.	Cargo rack installation with skid gear & float gear (Item 405 (b) required) (a) Hiller Dwg. 98003	34 lbs.	(66)
609.	Rescue hoist installation - operation involving use of rescue hoist permitted in restricted category only (Item 405 (c) required) (a) Hiller Dwg. 96140	66 lbs.	(72)
610.	Cargo hook installation - operation with load on cargo hook permitted in restricted category only (Item 405 (c) required) (a) Hiller Dwg. 91012	9 lbs.	(73)
611.	Auxiliary fuel tank installation (Item 405 (c) required) (a) Hiller Dwg. 72025	48 lbs.	(85)

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 (except in the case of air carrier operators having an approved weight control system). Ballast, when necessary, must be carried in accordance with Loading Instructions in the Approved Flight Manual.

Fuel and oil capacities as indicated are total tank capacities over and above "Trapped Fuel and Oil." The fuel tank capacity includes "Unusable" fuel of 0.2 gallons, which cannot be used safely in all flight attitudes, and which must be included in the empty weight.

NOTE 2. The following placards must be installed so as to be in full view of the pilot :

- (a) Below airspeed indicator: "Decrease  $V_{ne}$  2.0 knots per 1000 feet of altitude above 2000 feet."
- (b) Below tachometer: "Above 6000 ft, see operating limitations."
- (c) On cabin heater outlet: "Use cabin heat in cruise and climb only."
- (d) On pilot's checklist:

- (1) If ash tray is not installed: "No smoking."
- (2) "This helicopter must be operated in compliance with the operating limitations in the FAA approved Rotorcraft Flight Manual."
- (3) "Instrument flight prohibited"
- (4) "No acrobatic maneuvers approved."
- (5) "Unsymmetrical loading must be to the left."
- (6) "Avoid protracted rearward flight."
- (7) "See Loading Instructions in Flight Manual."

(e) On removable ballast weight: "See Loading Instructions in Flight Manual for proper usage."

- NOTE 3. Information essential to the proper maintenance of the rotorcraft (helicopter) including retirement times of critical parts is included in the manufacturer's maintenance instructions provided with each rotorcraft. These values of retirement or service life cannot be increased without FAA Engineering approval.
- NOTE 4. These helicopters must be serviced and maintained in conformance with instructions given by Hiller Helicopters in the pertinent model inspection guide, repair handbook, and service and overhaul manuals.
- NOTE 5. Certain part numbers used on this model helicopter may be used on other model helicopters in which their use is life limited. These part numbers are listed in TCDS 4H11, H1WE, 4H10, 6H1, and 6H2 and FAA approved Hiller Instructions for Continued Airworthiness. If a full and complete service history from manufacture forward is not available that demonstrates these parts were used only on a model helicopter for which the part is not life limited then those parts shall be life limited to the lowest number of hours given in those TCDS's or ICAs. If a full and complete service history from the manufacturer forward is available, and any operating time has occurred in a life limited model helicopter, that part shall be considered life limited at the lowest life limit listed even if transferred and used on a helicopter model for which it is not life limited. Only those parts for which a full and complete service history from manufacture forward is available and which shows only operating time on a helicopter model for which it is not life limited are considered not life limited.

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