

FEDERAL AVIATION AGENCY

H-2 Sheet 1 Revision 7 SIKORSKY S-51 (See NOTE 5 for Military versions) June 10, 1960
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HELICOPTER SPECIFICATION NO. H-2

Manufacturer Sikorsky Aircraft, Division of United Aircraft Corporation  
 Bridgeport 1, Connecticut

**I - Model S-51, 4 PCL-Am-H, Approved April 17, 1947**

Engine	Pratt and Whitney Wasp Jr. B-4 or Military R-985-AN-5	
Fuel	91 minimum octane aviation gasoline	
Engine limits	Maximum rpm 2300 (450 hp at 37.0 hg. at S.L.) (450 hp at 36.5 hg. at 2300 ft.) Minimum idle rpm 1000	
Rotor limits	Power off (rotor tach.)	Power on (engine tach.)
Operational engine	Maximum 245 Minimum 168	Maximum 2300 Minimum (S.L.) 2050 Minimum (3800 ft.) 2200 Minimum (15500 ft.) 2300 Minimum (S.L. to ceiling) (With item 1(b) only) 2100
Airspeed limits	Landplane: Never exceed 103 mph True Ind. Amphibian: Never exceed 85 mph True Ind.	
Altitude limits	Do not hover at zero airspeed between 10 and 400 ft. above ground surface.	
C.G. range	(139.0) to (142.8)	
Empty weight C.G. range	None	
Datum	144 in. forward of center line of main rotor (108 in. forward of weighing jig point at Sta. 108)	
Leveling means	Spirit levels on main transmission box.	
Maximum weight	5300 lbs. (With item 1a) 5500 lbs. (With item 1b)	
No. of seats	4 (Pilot at (47) and three passengers at (90)).	
Maximum baggage	145 lbs. (213)	
Fuel capacity	100 gal. (one 50 gal. tank (114), one 50 gal. tank (174))	
Oil capacity	8 gals. (187)	
Rotor blade movements	For rotor rigging information see Maintenance Manual and applicable Service Information circulars.	

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Serial Nos. eligible	5101 and up.
Required equipment	In addition to the pertinent required basic equipment specified in CAR 6, the following items of equipment must be installed: Landplane: Items 1, 2, 101, 102, 103, 104, 201, 202, 205, 206, 301, 302, 305, 306, 407, 601 and 602. Amphibian: Items 1, 2, 101, 102, 103, 104, 209, 301, 302, 305, 306, 407, 601 and 602.

### Specifications Pertinent to All Models

Certification basis	Type Certificate No. 2 (CAR 6)
Production basis	Production Certificate No. 105
Export eligibility	Eligible for export to all countries subject to the provisions of MOP 2-4.
Equipment:	A plus (+) or minus (-) sign preceding the weight of an item indicates net weight change when that item is installed.

#### Rotors and Rotor Equipment

1.	(a) Main rotor blades (3) Dwg. VS-05-05-1596	372 lbs.	(144)
	(b) Main rotor blades (3) Dwg. S-10-10-2065	372 lbs.	(144)
2.	(a) Tail rotor blades (3) Dwg. S-515008	49 lbs.	(490)
	(b) Tail rotor blades (2) Dwg. S-10-15-1000	42 lbs.	(490)

#### Engine and Engine Accessories - Fuel and Oil System

101.	Carburetor air heater	3 lbs.	(132)
102.	Starter (Direct electric) AAF Type J-1	19 lbs.	(139)
103.	Oil cooler and reg. valve-Air Research #17889	22 lbs.	(127)
104.	Transmission-main gear box S-535400-U	233 lbs.	(144)
105.	Carburetor air filter installation (S-10-05-1027 (Air-Maze R-81A)	6 lbs.	(112)

#### Landing Gear and Floats

201.	Two Main Wheel-brake assemblies, 7.50-10, Type III -		
	(a) Goodrich Model 752M Wheel Assembly #G-3-73-M-1. Brake Assembly #G-2-122.	25 lbs.	(180)
	(b) Goodrich Wheel Assembly #G-3-654-M-1 Brake Assembly #G-2-122	+3 lbs.	(180)
202.	Two main wheel 6 ply-rating tires, Type III, with tubes,		
	(a) 7.50-10	31 lbs.	(180)
	(b) 6.50-10	-3 lbs.	(180)
205.	(a) One Nose wheel, 6.00-6, Type III, Goodyear Model L6NBD, Assembly #511500-M-1	4 lbs.	(60)
206.	(a) One Nose Wheel, 4-ply-rating tire, 6.00-6, Type III, with tube.	9 lbs.	(60)
209.	Two amphibious floats		
	Sikorsky Dwgs. S-10-25-2540	603 lbs.	(133)
	Horizontal stabilizer Dwg. S-10-05-2032	7 lbs.	(490)

#### Electrical and Radio Equipment

301.	Voltage regulator-AAF Spec. 94-32276	3 lbs.	(183)
302.	Battery 24V, -17V, -17AH #AN 3151	48 lbs.	(190)
303.	Cabin light, AAF Type A-2	1 lb.	(97)
304.	Radio installation-Receiver Airadio Inc., #SU52C Transmitter Airadio Inc., #TRA-1C	3 lbs.	(18)
		8 lbs.	(102)
305.	Generator drive-Bendix Eclipse #1461-1	23 lbs.	(215)
306.	(a) Generator 28.5V, 50 amp.--AAF #M-3	20 lbs.	(220)
	(b) Generator 28.5V, 100 amp.--AAF #0-4	27 lbs.	(220)

## Interior Equipment

403.	Heating system (includes Stewart Warner #977A heater)	30 lbs.	(67)
404.	Upholstered passenger seat cushion	19 lbs.	(89)
405.	Co-pilots seat (replacing passenger seat)	-9 lbs.	(90)
406.	Co-pilots controls	10 lbs.	(70)
407.	CAA Approved Flight Manual, publication No. SA-4045-2 dated July 11, 1949, revised April 25, 1950. (When Item 614(a) is installed, Los Angeles Airways revision dated March 15, 1950, is required.)		

## Miscellaneous (not listed above)

601.	Airspeed indicator (10 to 150) Kolls #586 BK-0153	1 lb.	(20)
602.	Engine-rotor tachometer AAF Type E-17	2 lbs.	(20)
603.	Hydraulic hoist equipment: Installation Dwg. S-10-50-2030	75 lbs.	(96)
	Installation Dwg. S-10-50-2220	82 lbs.	(96)
604.	Litter capsules: (a) Installation Dwg. S-10-50-2050, Rev. C.	117 lbs.	(97)
	(b) Installation Dwg. S-10-50-2130-3, Rev. D. Item 615(a) mandatory with this installation	207 lbs.	(97)
605.	Vertical exhaust silencer Installation Dwg. S-10-05-1037, Rev. C.	23 lbs.	(144)
606.	Night flying equipment: (a) Sikorsky Dwg. S-10-01-1005 Two landing lights (Grimes AN3095-4) (not approved with Item 209 installed)	20 lbs.	(180)
	(b) Los Angeles Airways Dwg. A-1034, A-1035, A-1038, A-1036 Two landing lights (Grimes AN3095-2)	18 lbs.	(14)
	(c) Sikorsky Dwg. S-10-01-1040 Two landing lights (Grimes AN3095-8)	13 lbs.	(16)
607.	Insecticide spray equipment Installation Dwg. S-10-50-2066, Rev. E. Tanks, cradles and braces	102 lbs.	(135)
	Pumps, lines	73 lbs.	(139)
	Insecticide (max. quantity each tank)	400 lbs.	(133)
608.	Automatic trim device Control stick installation Dwg. S-10-40-3160	2 lbs.	(60)
	Bungee control actuator - Dwgs. S-10-40-3116 & S-10-40-3070		
	Spring control actuator - Dwg. S-10-40-3177		
609.	Horizontal exhaust silencer Installation Dwg. S-10-05-1031	29 lbs.	(168)
610.	Rotor flapping restrainer Installation Dwg. S-10-05-1074	43 lbs.	(144)
611.	Oil dilution system Installation Dwg. S-10-30-4000	2 lbs.	(151)
612.	Fuselage litter blisters Installation Dwg. S-10-20-2644		(Use actual weight)
613.	Hydraulic power control Installation Dwgs. S10-40-3271 and S10-40-3279		(Use actual weight)
614.	Instrument flying equipment (a) Instrument modification per Los Angeles Airways Dwgs. Nos. A-1104, A-1105A and A-1106		(Use actual weight change)
615.	Stabilizer (a) Installation Dwg. S10-40-3350 Revision D		(Use actual weight)
	(b) Installation Dwg. S10-40-3329		(Use actual weight)

- NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be in each helicopter at the time of original certification and at all times thereafter.
- NOTE 2. The following placards must be displayed.
- (a) In front of and in full view of the pilot;
- "This helicopter must be operated in compliance with sections I, II, III of the CAA Approved Flight Manual."
- "No acrobatic maneuvers approved."
- "Do not fly solo from rear seat."
- "Instrument flight prohibited." (When Item 614 is installed, this placard should be amended to read; "Instrument flight prohibited except as expressly approved by the Administrator. In all such cases Item 614 must be installed and the aircraft must be operated in compliance with a suitably revised CAA Approved Flight Manual.")
- "Warning - Light on 20 minutes fuel reserve each tank."
- "Warning - Trans oil Press."
- "Weight and Balance Placard." (Copy of placard as prepared for each helicopter and included in each Actual Weight and Balance Report must also be installed in aircraft.)
- "Reduce speed (Vne), above 3800 feet 3 mph per 1000 feet."
- "Protracted rearward flight prohibited." (Applicable only when Item 605 installed.)
- "Rearward flight with litter occupied prohibited." (Applicable only when Item 604 installed.)
- "During operation of the rescue hoist do not exceed airspeed of 50 mph or 300 lbs. hoist cable capacity." (Applicable only when Item 603 installed.)
- "Do not operate cabin heater and landing lights at the same time." (Applicable only when Items 606 and 306(a) are installed.)
- "Insecticides of a flash point lower than that of kerosene are prohibited." (Applicable only when Item 607 installed.)
- (b) On Litter Capsule:
- "Maximum capacity 200 lbs. per litter." (For loading instruction see Flight Manual.)
- (c) On Baggage Compartment:
- "Maximum capacity 145 lbs." (For loading instructions see Flight Manual.)
- NOTE 3. These helicopters to be serviced and maintained in accordance with the instructions given in the Sikorsky Aircraft Corp. Maintenance Manual for Model S-51 Helicopter, Publication No. SA-4045-1, and all applicable Service Circulars.
- NOTE 4. Information essential to the proper maintenance of the helicopter including retirement times of critical parts is included in the manufacturer's service instructions provided with each helicopter.
- NOTE 5. All military versions of the Model S-51 series are eligible for civil certification. Information regarding the modifications to be accomplished prior to civil certification should be obtained from Sikorsky Aircraft.

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