DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

H7SW
Revision 12
Scott's-Bell 47, Inc.
U.S. Army OH-13H
U.S. Army OH-13E
August 7, 2014

TYPE CERTIFICATE DATA SHEET NO. H7SW

This data sheet which is a part of aircraft type certificate No. H7SW 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	Scott's – Bell 47, Inc. 100 Minnesota Avenue Le Sueur, MN 56058
Type Certificate Holder Record	Texas Helicopter Co. Inc. transferred H7SW to Aerodyne Systems Engineering Ltd. on March 4, 1986 Aerodyne Systems Engineering Ltd. transferred H7SW to Gifton McCreary on July 27, 1987 Gifton McCreary transferred H7SW to Texas Helicopter Co. Inc. on August 11, 2004. Texas Helicopter Co. Inc. transferred H7SW to Scott's – Bell 47, Inc. on August 7, 2014.

I - U.S. Army Model OH-13E, 3 PCLH (Restricted Category), Approved May 3, 1976

See Note 3 for required modification to single-place configuration, Model M-74.

Engine	Franklin O-335-5D (6V-335-A).			
Fuel	91/96 minimum grade aviation gasoline.			
Engine limits	Maximum continuous rpm. 3200 (210 hp.)			
Rotor limits & Oper. engine limits	Power on (Engine Tach)		Power off (Rotor Tach)	
	Maximum	3200	Maximum	370
	Minimum	2900 (S.L.)	Minimum	322
Airspeed limits	V_{NE} (never exceed) 85 knots (98 mph) (CAS)			
C.G. Range	+83.0 to +87.9 aft of datum			
Empty weight c.g. range	See TM 55-1520-224-10, "Operators Manual", Chapter 7, Section II.			
Datum	87.0 inches forward of main rotor mast C_L.			
Maximum weight	2350 lbs.			
No. of seats	3 (Pilot and 2 passengers) (+55)			
Fuel Capacity	29 gal. (+109)			
Oil Capacity	2 gal. (+90)			
Rotor Blade and	(Tolerance, ± 1/2 degree). For rigging information, refer to TM 55-1520-224-20,			

Control Movements	Organizational Maintenance Manual, Army Model OH-13 helicopters dated October 1, 1969, updated to Change 4, Chapter 9, Section III.
Other operating limitations	Operators Manual (Model OH-13E, OH-13G, and OH-13H helicopters), "TM 55-1520-224-10, Basic October 1, 1969, updated to Change C-3, July 2, 1971, Chapter 7 and SEE Note 3 for special purpose modification.
Serial Nos. eligible	All U.S. Army serial numbers (TM 55-1520-224-20, Chapter 1, Section I) and 76-001 and subsequent

II - U.S. Army Model OH-13H, 3 PCLH (Restricted Category), Approved August 31, 1977

See Note 3 for modification to single-place configuration, M74A or M74L.

Engine	Lycoming O-435-23 (VO-435-A1C); See Note 7 for alternates.
Fuel	80 minimum grade aviation gasoline.
Engine Limits	Maximum (Sea Level) 26.8 in. Hg., 3200 r.p.m. (240 h.p.)
Rotor limits and operational engine speeds	Power Off (Rotor Tach.): Maximum 370, Minimum 322 Power On (Engine Tach.): Maximum 3200, Minimum 2900
Airspeed limits	VNE 87 knots S.L. to 3000 ft. Reduce V_{NE} 3 knots/1000 ft. above 3000 ft. (CAS)
C.G. range	(+82) to (+89) aft of datum
Empty weight c.g. range	See TM 55-1520-224-10, "Operators Manual," Chapter 12, Section III
Datum	87 inches forward of main rotor mast center line
Leveling means	Three levelings lugs lower left hand longeron and diagonal tube aft of mast and forward of aft cross tube.
Maximum weights	2450 lb. design weight 2750 lb. operating weight
No. of seats	3 (Pilot and 2 passengers)
Maximum baggage	See loading instructions in TM 55-1520-224-10 Chapter 7, Section II.
Fuel capacity	41 gal. (+89.95)
Oil capacity	2 gal (+111.5)
Rotor Blade and Control movements	For rigging information refer to TM 55-1520-224-20, Organizational Maintenance Manual Army Model OH-13 helicopters dated October 1, 1969, updated to Change 4, Chapter 9, Section III.
Other Operating limitations	Operators Manual (Model OH-13E, OH-13G, and OH-13H helicopters), "TM 55-1520-224-10, Basic October 1, 1969, updated to Change C-3 July 2, 1971, Chapter 7, and see Note 3 for special purpose modification.
Serial Nos. eligible	All U.S. Army serial numbers (TM 55-1520-224-20, Chapter I, Section I) and 77-007 subsequent.

INFORMATION COMMON TO ALL MODELS

Certification Basis	FAR 21.25(a)(2) (Special purpose modification ref. CAR Part 6 effective October 2, 1959), effective February 1, 1965. Type Certificate No. H7SW issued May 3, 1976, for the following special purposes: 1. Agricultural 2. Forest and Wildlife Conservation 3. Aerial Surveying 4. Patrolling 5. External Cargo (See Note 10) Date of Application: November 6, 1974.
Production Basis	None. No OH-13E and OH-13H helicopters may be produced. OH-13E helicopters modified to M74 helicopters and OH-13H helicopters modified to M74A or M74L helicopters may be produced in accordance with the type certificate. Prior to original airworthiness certification of each aircraft, an FAA representative must perform a detailed inspection for workmanship, materials, and conformity with approved technical data. A check of flight characteristics must be performed.
Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification except compass is optional for agricultural purposes. In addition, equipment or modification for the special purpose must be installed.

NOTE 1. Current weight and balance report, including list of equipment included in the certificated empty weight, and loading instructions, when necessary, must be provided for each aircraft at the time of original certification and at all times thereafter.

NOTE 2. All placards required in the approved helicopter flight manual must be installed in appropriate locations.

The following placard must be installed in full view of the pilot.

"This helicopter to be operated in compliance with the operating limitations specified in the FAA approved flight manual and restricted category operating limitations of FAR 91.39."

NOTE 3. Prior to the original airworthiness certification of the OH-13E or OH-13H helicopters, the following must be accomplished for the appropriate model:

Incorporate the single-place modifications described by FAA-approved Model M74 drawing list approved May 3, 1976, or later approved revisions; Model M74 and M74A drawing list approved August 19, 1977, or later approved revisions: or Model M74, M74A, and M74L drawing list approved June 10, 1981, or later approved revision. These lists also include data that require compliance with certain AD's and modifications based on military service experience. See Note 5 for the limitations applicable to the single-place modification Model OH-13E/M74. See Note 8 for Model OH-13H/M74A limitations. See Note 14 for the Model OH-13H/M74L limitations.

NOTE 4.

a. Information essential for proper maintenance of the helicopter is contained in Army Maintenance Manual TM 55-1520-244-35, dated October 1969, through Change C-3 and Organizational Maintenance Manual TM 55-1520-244-20, dated October 1969, through Change 4. In addition, essential information for proper maintenance of the Model OH-13E/M74, OH-13H/M74A, and OH-13H/M74L single-place helicopters is contained in the appropriate Texas Helicopter Company, Inc. Maintenance and Overhaul Manual.

b. Component overhaul intervals and replacement times shall be in accordance with the appropriate Department of the Army or Texas Helicopter Company, Inc. Maintenance and Overhaul Manual. The retirement times of certain parts are listed below and also appear in the appropriate maintenance manual. These values of retirement or service life cannot be increased without FAA Engineering Approval.

NOTE 4. (cont'd) Waivers should not be granted under FAR 91.39(d) when the optional retirement time has been exceeded for any of the following components.

Component	Part No.	Optional Retirement or Service Life Hours	Retirement or Service Life Hours OH-13E/M74; OH-13H/M74A	Retirement or Service Life Hours OH-13H/M74L
Main Rotor				
*Hub Yoke	47-120-177-1	---	3600	5000
Grip Assy	47-120-135-3, -5	2500	None Established	---
*Grip Assy	47-120-252-7 & -11	---	2500	5000
Blade Assy (metal)	47-110-250-13, -15, -17, & 19	---	3000	---
Blade Assy	47-110-250-21	---	---	5000
Gimbal Ring	47-120-014-17, -19, -21	1200	None Established	None Established
Gimbal Ring	47-120-014-23	4800	None Established	None Established
Pitch Horn	47-120-126-5	---	None Established	5000
Drag Brace	47-110-372-1	---	None Established	2500
TAIL ROTOR	47-642-102-	300	300 AD 80-10-4	---
T/R Blades	(All dash numbers)			
	47-642-117-1	---	2500	2500
Grip Retention Bolt	47-641-194-1	---	2500	
T/R Hub Yoke	47-641-057-1	1200	2500	---
T/R Hub Yoke	47-641-057-7, -9, or 47-641-104-5	---	2500	---
	(Except that -9 serial numbers listed below have life of N29-1246 thru -1266, N29-1298 thru –1452 N29-10453 thru -10488, N29-10501 thru –10525 SR29-50501 thru -50507, SR 29-50509 thru –50528 SR29-50530 thru -50533, SR 29-50535 thru –50537 SR29-50539 thru -50544, SR29-50546 thru –50554	---	400	---
T/R Yoke	47-641-126-5	---	2500	2500
Pitch Change Bearing	SIRP, 47-641-146 (R-4-AF4)	100	200	---
Pitch Change Bearing	47-641-131-1	---	600	600
Fan Belts	47-661-041-3, -5, -7	---	600	---
Fan Belts	47-661-041-9	---	900	900
Engine Mount	47-612-135-1 and 47-612-171-101		2400	---
	47-612-171-115 & -123	---	3000	3000

*5,000 hours when used exclusively with 47-110-250-21 blades, otherwise lower lives of 3600 hours for yoke and 2500 hours for grip apply.

NOTE 5. The following revised OH-13E conditions and limitations are applicable to the special purpose single-place modification, TEXAS HELICOPTER COMPANY, Inc., Model M-74, 1PCLH (Restricted Category) approved May 3, 1976.

Engine	Lycoming 0-435-23 (VO-435-A1C). See Note 7 for alternate engines. See Note 9 for optional high compression engines and limitations.
Fuel	80/87 Minimum grade aviation gasoline
Engine Limits	Maximum continuous 24.5 in. Hg., 3100 rpm (200 HP)

Rotor Limits	Power Off (Rotor Tach)		Power On (Engine Tach)	
	Maximum	370	Maximum	3200
	Minimum	322	Minimum	2900

NOTE 5. (Cont'd)

Airspeed Limits	V_{NE} (never exceed) 100 mph sea level to 1400 ft. Decrease V_{NE} 4.5 mph per 1000 feet above 1400 ft. (CAS)
C.G.	(-2.0) to (+2.9) Aft of datum
Empty weight C.G. range	None
Datum	2.0 inches forward of the main rotor mast centerline.
Leveling means	See Texas Helicopter Company, Inc. Maintenance and Overhaul Manual.
Maximum weight	2450 lb.
No. of seats	1 (Pilot) (-30)
Maximum baggage	None
Fuel Capacity	29 gals. (+24) (includes 1 gal. unusable)
Rotor Blade and Control Movement	Refer to Texas Helicopter Company, Inc. Maintenance and Overhaul Manual.
Other operational Limitations	FAA approved helicopter flight manual for TEXAS HELICOPTER, Model OH-13E/M74 dated April 27, 1976, for day VFR only and Supplement dated May 6, 1976, for night VFR Operation.
Serial Nos. Eligible	All U.S. Army serial numbers and TEXAS HELICOPTER COMPANY, Inc. 76-001 and subsequent.

NOTE 6. The helicopter must be operated in accordance with FAR 91.39, and agricultural operations must be conducted under FAR Part 137.

NOTE 7. The following Lycoming engines are equivalent to the VO-435-A1C and may be used as alternates.

a. VO-435-A1A
b. VO-435-A1B
c. VO-435-A1D
d. VO-435-A1E
e. VO-435-A1F

NOTE 8. The following revised OH-13H conditions and limitations are applicable to the special purpose single-place modification, TEXAS HELIOCPTER COMPANY, INC., Model M-74A, 1PCLH (Restricted Category) approved August 31, 1977.

Engine	Lycoming 0-435-23 (VO-435-A1C) See Note 7 for alternate engines. See Note 9 for optional high compression engines and limitations.
Fuel	80/87 Minimum grade aviation gasoline.
Engine Limits	Maximum continuous 25.7 in. Hg., 3200 rpm (220 HP) Takeoff 27.5 in. hg., 3200 rpm (240 HP)

Rotor Limits	Power Off (Rotor Tach)		Power On (Engine Tach)	
	Maximum	370	Maximum	3200
	Minimum	322	Minimum	2900

Airspeed Limits	V_{NE} (never exceed) 100 mph sea level to 1400 ft. Decrease V_{NE} 4.5 mph per 1000 feet above 1400 ft. (CAS)

NOTE 8. (Cont'd)

C.G.	(-2.0) to +2.9) Aft of datum
Empty weight C.G. range	None
Datum	2.0 inches forward of the main rotor mast centerline.
Leveling means	See Texas Helicopter Company, Inc. Maintenance and Overhaul Manual.
Maximum weight	2750 lb.
No. of Seats	1 (Pilot) (-30)
Maximum baggage	None
Fuel Capacity	29 gals. (+24) (includes 1 gal. unusable)
Rotor blade and Control Movement	Refer to Texas Helicopter Company, Inc. Maintenance and Overhaul Manual.
Other operational Limitations	FAA approved helicopter flight manual for TEXAS HELICOPTER Model OH-13H/M74A dated August 19, 1977, for day VFR only and Supplement dated August 19, 1977, for night VFR operation. Flight Manual Revision No. 2 dated April 25, 1978, for 2750 lbs. gross weight.
Serial Nos. Eligible	All U.S. Army serial numbers and TEXAS HELICOPTER COMPANY, Inc., 77-007 and subsequent.

NOTE 9. Lycoming VO-435-A1E or VO-435-A1F engines modified per STC SE2500SW may be installed in accordance with M74 and M74A Drawing No. M74 Revision E. 100/130 minimum grade aviation gasoline is required. OH-13E/M74 Flight Manual Revision 5 or later revision required and OH-13H/M74A Flight Manual Revision 1 or later revision required for the respective model helicopter. These flight manuals contain approved placards and placard locations associated with installation of these engines.

NOTE 10. External cargo hook kit 74-706-660 and cargo racks 74-700-201 approved. See RFM supplement dated April 25, 1978, for cargo hook and supplement dated April 26, 1978, for cargo racks for OH-13E/M74 and OH-13H/M74A. See RFM supplements dated June 10, 1981, for cargo hook and cargo rocks for OH-13H/M74L.

NOTE 11. Parts not eligible for use.

NOTE 12. Service Instruction No. SI-002 contains approved information to convert an M74 configuration to an M74A configuration.

NOTE 13. Texas Helicopter Service Instruction S.I. 003 contains approved information to install the Bell Model 47 improved tail rotor blades noted in AD 80-10-4, paragraph (c).

NOTE 14. The following revised conditions and limitations are applicable to the special purpose single-place modification, TEXAS HELIOCPTER COMPANY, INC., Model M-74L, (Restricted Category) approved June 10, 1981.

Engine — Lycoming VO-435-A1E or VO-435-A1F modified per STC SE2500SW and installed in accordance with M74 & M74A drawing No. M74 Revision E or later revision.

Fuel — 100/130 Minimum grade aviation gasoline.

NOTE 14. (Cont'd)

Engine Limits

Manifold Pressure for 220 H.P. @ 3200 RPM

Press. Alt. Ft.	Carburetor Air Temp. °C.				
	-25	-5	+15	+35	+45
0	22.7	23.4	24.1	24.8	25.1
2000	22.4	23.1	23.8	24.5	24.8
4000	22.1	22.8	23.5	F.T.	F.T.
6000	21.8	F.T.	F.T.	F.T.	F.T.
	Take-off Power-2 Min. Limit 240 H.P. 3200 RPM				
0	23.0	24.9	25.8	26.7	27.2

F.T. Equals Full Throttle

Rotor Limits & Operational Engine Limits	Power Off (Rotor Tach)		Power On (Engine Tach)	
	Maximum	370	Maximum	3200
	Minimum	333	Minimum	3000

Airspeed Limits — V_{NE} (never exceed) 100 mph (87 knots) sea level to 1400 ft. Decrease V_{NE} 4.5 mph (4 knots) per 1000 feet above 1400 ft. (CAS)

C.G. — (-2.0) to (+2.9) Aft of datum

Empty weight C.G. range — None

Datum — 2.0 inches forward of the main rotor mast centerline.

Leveling means — See Texas Helicopter Company, Inc. Maintenance and Overhaul Manual.

Maximum weight — 2850 lb.

No. of Seats — 1 (Pilot) (-30)

Maximum baggage — None

Fuel Capacity	29 gals. (+24) (includes 1 gal. unusable)
Rotor Blade and Control Movement	Refer to Texas Helicopter Company, Inc. Maintenance and Overhaul Manual.
Other Operational Limitations	FAA approved helicopter flight manual for TEXAS HELIOCPTER COMPANY, INC. Model OH-13H/M74L dated June 10, 1981, for day VFR and Supplement dated June 10, 1981, for night VFR operation.
Serial Nos. Eligible	All U.S. Army OH-13H serial numbers and TEXAS HELIOCPTER COMPANY, INC. serial number 77-007 and subsequent.

NOTE 15. TEXAS HELICOPTER COMPANY, INC. Service Instruction No. SI-006 contains approved information to convert an M74A configuration to an M74L configuration.

NOTE 16. TEXAS HELICOPTER COMPANY, INC. Service Instruction No. SI-007 contains approved information for an optional modification to the M74 by relocating the battery forward in a revised instrument pedestal.

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