U.S. Department of Transportation
Federal Aviation Administration
Washington, DC

Flight Standardization Board Report

Revision: 1
Date: XX/XX/XXXX

Manufacturer
Sikorsky Aircraft Corporation

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
R0012DE; R00021LA; R00020AT; R00020LA; R00023LA	UH-60A	Blackhawk	S-70
H2NE	S-70 (UH-60A, UH-60L)	Blackhawk	S-70
H3NE	S-70C	Blackhawk	S-70
H4NE	S-70C (M), (M1)	Blackhawk	S-70
H5NE	S-70A	Blackhawk	S-70
R00025LA	UH-60A, HH-60L	Blackhawk	S-70
R00019AT	UH-60A, EH-60A	Blackhawk	S-70

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1. RECORD OF REVISIONS

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Original	All	04/01/2022
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2. INTRODUCTION

The Aircraft Evaluation Division (AED) is responsible for working with aircraft manufacturers and modifiers, during the development and Federal Aviation Administration (FAA) certification of new and modified aircraft to determine:

1) The pilot type rating,
2) Flightcrew member training, checking, and currency requirements, and
3) Operational suitability.

This report lists those determinations for use by:

1) FAA employees who approve training programs,
2) FAA employees and designees who certify airmen, and
3) Aircraft operators and training providers, to assist them in developing their flightcrew member training, checking and currency.

3. HIGHLIGHTS OF CHANGE

The purpose of this revision is to remove the H-60 Type Certificate Data Sheet (TCDS) holders that were initially listed on this Flight Standardization Board Report (FSBR) but have since had their own H-60 FSBR published.

4. BACKGROUND

NOTE: The H-60A acronym used in this report encompasses the following models of Blackhawk helicopters (UH-60A; UH-60L; EH-60A; HH-60L; S-70; S-70A; and S-70C; and S-70C (M), (M1)).

The AED formed a Flight Standardization Board (FSB) that evaluated the H-60 models, all surplus military aircraft sold by the U.S. government to private operators. Some models were provided to other government agencies. The evaluation was conducted in January 2022 using the methods described in FAA Advisory Circular (AC) 120-53B Change 1, Guidance for Conducting and Use of Flight Standardization Board Evaluations. On October 16, 2020, FAA's General Counsel Office (AGC-300) issued a letter to the Aircraft Evaluation Division (AFS-100), addressing concerns regarding validity of the S-70 type rating being issued to pilots of the H-60 series aircraft. The letter led to convening a cross-functional workgroup with membership from AFS-100/200/800 to determine if the current S-70 Type Rating was indeed valid and if any immediate safety concerns existed concerning its issuance. The workgroup concluded that no immediate safety concerns exist with the S-70 Type Rating. However, the group also recommended that a full FSB be conducted in support of

standardization of the H-60 models. The AED started to convene an FSB for the H-60 immediately thereafter and, due to the unique circumstances of the FSB having to complete the functions of an Original Equipment Manufacturer (OEM), coordination was completed allowing the FSB to complete the process over a period of time between October 2020 and concluding with the FSB in January 2022. For the FSB to fulfill its responsibilities, specific activities are required. The AED requires certification-related training for four (4) FAA participants in a Sikorsky H-60A FSB. The training was accomplished by providing visual flight rules (VFR) and instrument flight rules (IFR) controlled simulator-based training combined with actual helicopter flight training. Differences training between the H-60A models was provided. The H-60A is certified as a two-person helicopter which requires a pilot and co-pilot. These aircraft are often involved in public aircraft operations (PAO) as defined in Title 49 of the United States Code (49 U.S.C.) §§ 40102(a)(41) and 40125. Some public use operators are operating these aircraft using a single pilot. The FSB does not recommend this practice due to inability of a single pilot to successfully and safely accomplish multiple Emergency Procedures (EP).

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- 49 U.S.C. Title 49 of the United States Code
- AC Advisory Circular
- ACFT Aircraft
- AED Aircraft Evaluation Division
- AEO All-Engines-Operating
- AFCS Automatic Flight Control System
- AGL Above Ground Level
- ATP Airline Transport Pilot
- AV Audiovisual Presentation
- CPT Cockpit Procedures Trainer
- CRM Crew Resource Management
- DEC Digital Electronic Control
- ECU Electronic Control Unit
- EDECU Enhanced Digital Engine Control Unit
- EP Emergency Procedures
- ERM Emergency Response Method
- FAA Federal Aviation Administration
- FFS Full Flight Simulator
- FPS Flight Path Stabilization
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report
- FSTD Flight Simulation Training Device
- FTD Flight Training Device
- HO Handout
- ICBI Interactive Computer-Based Instruction
- IFR Instrument Flight Rules

- MAN Manual Control
- MDR Master Differences Requirements
- MFD Multifunction Display
- MFF Mixed Fleet Flying
- NAS National Airspace System
- NR Rotor Revolutions Per Minute
- OEI One-Engine-Inoperative
- PAO Public Aircraft Operations
- PCL Power Control Lever
- PTS Practical Test Standards
- PTT Part Task Trainer
- RPMR Revolutions-Per-Minute Rotor
- SAS Stability Augmentation System
- SLEW Movement and Direction
- SU Stand-Up Instruction
- TC Type Certificate
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- U.S. United States
- VFR Visual Flight Rules

6. DEFINITIONS

These definitions are for the purposes of this report only.

6.1 Base Aircraft. An aircraft identified for use as a reference to compare differences with another aircraft.

6.2 Current. A crewmember meets all requirements to operate the aircraft under the applicable operating part.

6.3 Differences Tables. Describe the differences between a pair of related aircraft, and the minimum levels operators must use to conduct differences training and checking of flightcrew members. Differences levels range from A to E.

6.4 Master Differences Requirements (MDR). Specifies the minimum levels of training and checking required between a pair of related aircraft, derived from the highest level in the Differences Tables.

6.5 Mixed Fleet Flying (MFF). The operation of a base aircraft and one or more related aircraft for which credit may be taken for training, checking, and currency events.

6.6 Operational Evaluation. The AED process to determine pilot type rating, minimum flightcrew member training, checking and currency requirements, and unique or special airman certification requirements (e.g., specific flight characteristics, no-flap landing).

6.7 Operational Suitability. The AED determination that an aircraft or system may be used in the National Airspace System (NAS) and meets the applicable operational regulations (e.g., Title 14 of the Code of the Federal Regulations (14 CFR) parts 91, 121, 133, and 135).

6.8 Qualified. A flightcrew member holds the appropriate airman certificate and ratings as required by the applicable operating part.

6.9 Related Aircraft. Any two or more aircraft of the same make with either the same or different type certificates (TC) that have been demonstrated and determined by the Administrator to have commonality.

6.10 Seat-Dependent Tasks. Maneuvers or procedures using controls that are accessible or operable from only one flightcrew member seat.

6.11 Special Emphasis Area. A training requirement unique to the aircraft, based on a system, procedure, or maneuver, which requires additional highlighting during training. It may also require additional training time, specialized flight simulation training devices (FSTD) or training equipment.

6.12 Specific Flight Characteristics. A maneuver or procedure with unique handling or performance characteristics that the FSB has determined must be checked.

7. PILOT TYPE RATING

7.1 Type Rating. The UH-60A; EH-60A; HH-60L; S-70; S-70A; S-70C; S-70C (M), (M1) type rating designation is S-70.

a) The S-70M type rating does not apply.
b) Type rating checkrides conducted in H-60A aircraft not capable of conducting IFR flight must have a "VFR Only Limitation" placed on the airman's certificate.

7.2 Common Type Ratings. In accordance with the provisions of FAA Order 8900.1 and AC 120-53 (current edition), the S-70 and the S-70M are separate type ratings that have been determined to have commonality.

7.3 Military Equivalent Designations. Military aircraft that qualify for the S-70 type rating can be found at www.faa.gov under "Pilots and Airmen," "Airmen Certification," "Quick Links," "Pilot Certificate Aircraft Type Designations." This webpage is kept up-to-date and can be found at: https://registry.faa.gov/typeratings/.

8. RELATED AIRCRAFT

8.1 Related Aircraft on Same TCDS. The H-60A models are derivatives of the U.S. Army Model UH-60A; EH-60A; HH-60L; S-70; S-70A; and S-70C.

NOTE: The S-70M, derived from the U.S. Army Model UH-60M, requires a separate type rating.

8.2 Related Aircraft on Different TCDS. The H-60A is a derivative of various U.S. Army H-60 models described above. Specific Army models used for creating these derivatives are identified in the respective TCDS.

9. PILOT TRAINING

9.1 Airman Experience. There are no additional airman experience requirements for the H-60A other than those already specified in 14 CFR part 61.

9.2 Special Emphasis Areas.

9.2.1 Pilots must receive special emphasis on the following areas during initial and recurrent ground training:

a) Restricted Category Airworthiness Limitations.

b) Preflight performance planning relating to takeoff performance with all-engines-operating (AEO), one-engine-inoperative (OEI), and go-arounds from rejected landings.

c) Knowledge of the various engines that can be found on the H-60 along with the differences of each one and the ability to intermix them on the same aircraft.

d) EP knowledge.

e) Crew Resource Management (CRM).

NOTE: Paragraph 13.1.1 contains additional information on alternate EP.

9.2.2 Pilots must receive special emphasis on, and perform the following areas during initial and recurrent flight training:

a) Powerplant failure during takeoff, rejected takeoffs, and rejected landings.

b) Stabilator malfunctions.

c) Single-engine failures at altitude and in a hover.

d) Electronic Control Unit (ECU)/Digital Electronic Control (DEC)/Enhanced Digital Engine Control Unit (EDECU) Lockout.

e) Degraded Automatic Flight Control System (AFCS).

f) CRM.

NOTE: Paragraph 13.1.1 contains additional information on alternate EP.

9.3 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the Airline Transport Pilot (ATP) and Aircraft Type Rating Practical Test Standards (PTS) for Helicopter. There are no specific flight characteristics. See paragraph 13.1.1 for additional EP information.

9.4 Seat-Dependent Tasks. There are no seat-dependent tasks.

9.5 Regulatory Training Requirements Which Are Not Applicable to the S-70. None.

9.6 Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the H-60A that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the H-60A that require specific training equipment.

9.8 Differences Training Between Related Aircraft. There are no differences training required between the H-60A variants listed above.

10. PILOT CHECKING

10.1 Landing from a No-Flap or Nonstandard Flap Approach. Not applicable.

10.2 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the ATP and Aircraft Type Rating PTS for Helicopter. See paragraph 13.1.2 for EP checking procedures.

10.3 Seat-Dependent Tasks. There are no seat-dependent tasks.

10.4 Other Checking Items. Not applicable.

10.5 Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the H-60A that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the H-60A that require specific equipment.

10.7 Differences Checking Between Related Aircraft. There are no differences checking required between the H-60A variants listed above.

11. PILOT CURRENCY

There are no additional currency requirements for the H-60A other than those already specified in 14 CFR part 61.

11.1 Differences Currency Between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The H-60A is operationally suitable for operations under 14 CFR part 91. The FSB determined operational compliance by conducting an evaluation of a UH-60A aircraft serial number 79-23273 registered as N391SH, on 1/25/2022. The list of operating rules evaluated is on file at the AED Rotorcraft Branch.

13. MISCELLANEOUS

13.1 Safety Recommendations Procedures. The following procedures were used and validated during the FSB.

13.1.1 H-60A alternate EP training. Recommended by the Sikorsky Aircraft Corporation and validated by the FSB.

13.1.2 Any EP training conducted in the aircraft will be briefed by the trainer prior to the flight and all EPs will be clearly stated as "simulated." This supports the essential elements of crew coordination and the use of the Emergency Response Method (ERM).

13.2 Authorized Systems. EP training in the aircraft is limited to the following systems and restrictions. Only one system may be degraded or turned off at a time.

13.2.1 Stabilator Malfunctions. Stabilator malfunctions shall be limited to stabilator auto mode failures utilizing the Cyclic-Mounted Stabilator Slew Up Switch only. Use of the Manual Control (MAN) Movement and Direction (SLEW) switch located on the Stabilator Control Panel will not be used to simulate stabilator malfunctions. Simultaneously activating the cyclic mounted stabilator slew-up switch while pressing the Master Caution Press to "Reset" on the Master Warning Panel to disable the stabilator audio is prohibited. Simulated Stabilator Uncommanded Nose Down/Up Pitch Attitude change EP training will only be conducted in a simulator.

13.2.2 Single Engine Failures at Altitude and Hover. Power Control Lever (PCL) manipulation will only be conducted between the FLY and IDLE detents during simulated engine failures in flight or hover. At no time will a functioning engine be shut off during flight or hover.

13.2.3 At altitude, a hand shall be kept on the Engine PCL that has been retarded from the FLY detent to better ensure recovery if the opposite engine fails. The maximum altitude for simulated single engine failure at a hover will not exceed 20 feet above ground level (AGL).

13.2.4 ECU/DEC/EDECU Lockout. ECU/DEC/EDECU lockout will only be conducted during training with one engine in lockout at a time. At no time will revolutions-per-minute rotor (RPMR)/rotor revolutions per minute (NR)

be manually reduced below 100 percent while in flight or hover to simulate rotor droop.

13.2.5 Degraded AFCS. Degraded AFCS will be limited to manipulation of the AFCS only. Stability Augmentation System (SAS)/BOOST, TRIM, and Flight Path Stabilization (FPS) may be turned off together or separately.

13.2.6 Simulated EP in the aircraft will not be initiated or completed by pulling circuit breakers or by turning off batteries, generators, primary servos, or tail-rotor servos.

13.3 Forward Observer Seat. No forward observer seat was evaluated.

APPENDIX 1. DIFFERENCES LEGEND

Training Differences Legend

Differences Level	Type	Training Method Examples	Conditions
A	Self-Instruction	• Operating manual revision (handout (HO)) • Flightcrew operating bulletin (HO)	• Crew has already demonstrated understanding on base aircraft (e.g., updated version of engine). • Minor or no procedural changes required. • No safety impact if information is not reviewed or is forgotten (e.g., different engine vibration damping mount). • Once called to attention of crew, the difference is self-evident.
B	Aided Instruction	• Audiovisual presentation (AV) • Tutorial computer-based instruction (TCBI) • Stand-up instruction (SU)	• Systems are functionally similar. • Crew understanding required. • Issues need emphasis. • Standard methods of presentation required.
C	Systems Devices	• Interactive (full-task) computer-based instruction (ICBI) • Cockpit Procedures Trainers (CPT) • Part task trainers (PTT) • Level 4 or 5 flight training device (FTD 4-5)	• Training can only be accomplished through systems training devices. • Training objectives focus on mastering individual systems, procedures, or tasks versus highly integrated flight operations or “real-time” operations. • Training devices are required to assure attainment or retention of crew skills to accomplish more complex tasks usually related to aircraft systems.
D	Maneuvers Devices	• Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B)	• Training can only be accomplished in flight maneuver devices in a real-time environment. • Training requires mastery of interrelated skills versus individual skills. • Motion, visual, control-loading, and specific environmental conditions may be required.
E	Level C/D FFS or Aircraft	• Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT)	• Motion, visual, control-loading, audio, and specific environmental conditions are required. • Significant full-task differences that require a high-fidelity environment. • Usually correlates with significant differences in handling qualities.

Checking Differences Legend

Differences Level	Checking Method Examples	Conditions
A	None	None
B	• Oral or written exam • Tutorial computer-based instruction (TCBI) self-test	Individual systems or related groups of systems.
C	• Interactive (full-task) computer-based instruction (ICBI) • Cockpit Procedures Trainers (CPT) • Part task trainers (PTT) • Level 4 or 5 flight training device (FTD 4-5)	• Checking can only be accomplished using systems devices. • Checking objectives focus on mastering individual systems, procedures, or tasks.
D	• Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B)	• Checking can only be accomplished in flight maneuver devices in a real-time environment. • Checking requires mastery of interrelated skills versus individual skills. • Motion, visual, control-loading, and specific environmental conditions may be required.
E	• Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT)	Significant full-task differences that require a high-fidelity environment.

APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE

Not Applicable.

APPENDIX 3. DIFFERENCES TABLES

Not Applicable.