



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

Flight Standardization Board Report

Revision: 2
Date: XX/XX/XXXX

Manufacturer Robinson Helicopter Company (RHC)

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
R00015LA	R66	Turbine, Police, Turbine Marine, E.N.G	Not Applicable

Approved by the Aircraft Evaluation Division
Federal Aviation Administration
Rotorcraft Branch
(AFS-140)
800 Independence Avenue S.W.
Washington, DC, 20591

Email: 9-AVS-AFS-100@faa.gov

TABLE OF CONTENTS

Section	Page
1. RECORD OF REVISIONS.....	3
2. INTRODUCTION.....	3
3. HIGHLIGHTS OF CHANGE	3
4. BACKGROUND	3
5. ACRONYMS.....	4
6. DEFINITIONS.....	5
7. PILOT TYPE RATING	6
8. RELATED AIRCRAFT	6
9. PILOT TRAINING.....	6
10. PILOT CHECKING.....	8
11. PILOT CURRENCY	8
12. OPERATIONAL SUITABILITY.....	9
13. MISCELLANEOUS	9
APPENDIX 1. DIFFERENCES LEGEND.....	10
APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE	12
APPENDIX 3. DIFFERENCES TABLES.....	13

1. RECORD OF REVISIONS

Revision Number	Section(s)	Date
Original	All	10/13/2010
1	All	12/17/2018
2	1, 3, 4.3, 5, 9.2, 10.4, Appendix 3	XX/XX/XXXX

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) Flight crewmember 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 flight crew member training, checking and currency.

3. HIGHLIGHTS OF CHANGE

The purpose of this revision is to add the Garmin GFC 600H Helicopter Flight Control System. This revision converts this document to the new Flight Standardization Board Report (FSBR) format and complies with Section 508. Change bars are not included in this document because the entire report is revised and updated.

4. BACKGROUND

- 4.1** The Rotorcraft and Powered Lift Branch formed an FSB to evaluate the R66, as defined in FAA Type Certificate Data Sheet (TCDS) No. R00015LA. The evaluation was conducted on 08/24/2010 through 08/27/2010 using the methods described in FAA Advisory Circular (AC) 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations, and FAA Order 8400.10, Volume 8, Chapter 3, Section 4. The FSB concluded that the R66 did not require specific training for unique flight characteristics and recommended that the R66 not be added to Title 14 of the Code of Federal Regulations (14 CFR) part 61, §61, Special Federal Aviation Regulation (SFAR) 73, Robinson R22/R44 Special Training and Experience Requirements.
- 4.2** On 12/17/2017, the Rotorcraft Branch formed another FSB team to reevaluate the R66, during the time of the R22 FSB, Revision 1, and the R44 FSB, Revision 2. The evaluation was conducted on 03/12/2018 through 03/16/2018 using the methods described in AC 120-53 and FAA Order 8900.1, Volume 8, Chapter 2, Section 5 for the

purpose of updating the FSB report (standardize formats) and to validate the Original FSB findings, since the R66 had a similar design (teetering cyclic) as the R22 and R44.

- 4.3** On 01/07/2025, the Rotorcraft Branch formed an FSB team to conduct an evaluation of a new flight control system installed in the R66. The FSB conducted flight evaluations of Garmin GFC 600H Flight Control System on February 25 and 26, 2025. This system adds a third servo to the flight control system, converting it to a 3-axis autopilot. It also added multiple functions beyond the capabilities of the HeliSAS flight control system.

4.4 Variation History.

R66 Turbine (Original R66): *Serial numbers: 0001 and subsequent. *Produced October 2010 thru present. Model R66 on TCDS. “Turbine” is a commercial/marketing term.

R66 Police Version (Mission-specific police equipment): *Serial numbers: Limited production. *Produced September 2012 thru present. Left front seat is police observer’s station. Left side cyclic may or may not be included depending on specific equipment configuration. Center rear seat is not installed (replaced with an equipment storage console). Model R66 on TCDS. “Police Version” is a commercial/marketing term.

R66 Turbine Marine (Float equipped R66): *Serial numbers: Subset of R66 Turbine. *Produced November 2014 thru present. Pop-out floats only (fixed floats not available). Model R66 on TCDS. “Turbine Marine” is a commercial/marketing term.

R66 E.N.G. Version (Electronic News Gathering Version): *Serial numbers: Limited production. *Produced July 2017 thru present. Mission-specific E.N.G. equipment. Center rear seat is not installed (replaced with an equipment console. Model R66 on TCDS. “E.N.G. Version” is a commercial/marketing term.

*Means approximate serial numbers and dates.

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- ACFT Aircraft
- AED Aircraft Evaluation Division
- AFM Airplane Flight Manual
- APP Approach
- AV Audiovisual Presentation
- CPT Cockpit Procedures Trainer
- FAA Federal Aviation Administration
- FFS Full Flight Simulator
- FMS Flight Management System
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report
- FSTD Flight Simulation Training Device
- FTD Flight Training Device

- HDG Heading
- HO Handout
- ICBI Interactive Computer-Based Instruction
- LVL Level
- MDR Master Differences Requirements
- MFF Mixed Fleet Flying
- NAS National Airspace System
- NAV Navigation
- PTT Part Task Trainers
- RHC Robinson Helicopter Company
- SFAR Special Federal Aviation Regulation
- SU Stand-Up Instruction
- TC Type Certificate
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet

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 flight crewmembers. 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 flight crewmember 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 flight crewmember 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 flight crewmember 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.** Not applicable.
- 7.2 Common Type Ratings.** Not applicable.
- 7.3 Military Equivalent Designations.** Not applicable.

8. RELATED AIRCRAFT

- 8.1 Related Aircraft on Different TCDS.** The R66 is related to the:

- Robinson R22.
- Robinson R44.

9. PILOT TRAINING

- 9.1 Airman Experience.** No specific previous pilot experience required.
- 9.2 Special Emphasis Areas.**
- 9.2.1** Pilots must receive special emphasis on the following areas during ground training:
- a) Removable flight controls. Pilots need to be trained on how to rotate the cyclic (wind up) after the dual controls are removed.
 - b) Garmin GFC-600H operation.

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

- a) Autopilot. Pilots must be trained on guarding the controls during all phases of flight, and cyclic positioning, when the removable controls are removed and the HDG, NAV or APP modes are selected.
- b) Familiarization with teetering cyclic. (See subparagraph 9.4 below).
- c) Operation of Garmin GFC-600H upper modes, cyclic feedback, tail rotor pedal feedback and use of the level (LVL) function.
- d) During hover, the pilot must be trained on how to operate the trim adjust in a manner that minimizes his attention away from outside visual references.
- e) Cyclic wind up procedures.

9.3 Specific Flight Characteristics. There are no specific flight characteristics.

9.4 Seat-Dependent Tasks.

9.4.1 There are no seat dependent tasks for pilots provided the pilot keeps the cyclic grip on or near his/her legs.

9.4.2 Instructors and check pilots must receive seat dependent training on cyclic up/down position (teetering cyclic) to simulate short/tall student instruction, if applicable.

9.5 Regulatory Training Requirements Which Are Not Applicable to the R66.

9.5.1 Aircraft used in 14 CFR part 135 operations.

- Ground Training. Part 135, §135.345(b)(6)(iv).
- Emergency Training. Part 135, §135.345(b)(6)(iv) and (d).

9.6 Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the R66 that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the R66 that require specific training equipment.

9.8 Differences Training Between Related Aircraft. Pilots must receive differences training for all R66 variations specified in Appendix 2, Master Differences Requirements (MDR).

9.9 Other Training Items. Instructor pilots and check pilots should be trained on the R66 published Robinson Helicopter Company (RHC) guidelines, if applicable.

10. PILOT CHECKING

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

10.2 Specific Flight Characteristics. There are no specific flight characteristics.

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

10.3.1 There are no seat dependent tasks provided the pilot keeps the cyclic grip on or near his/her leg.

10.3.2 Instructors and check pilots must be evaluated on cyclic up/down (teetering cyclic) positions to simulate short/tall student instruction/checking, if applicable.

10.4 Other Checking Items. Pilots need to be evaluated on how to perform the cyclic wind up procedure.

10.4.1 Instructors, check pilots, and examiners should be evaluated on the R66 published RHC maneuvers guidelines, if applicable.

10.4.2 Garmin GFC-600H operation.

- a) Guarding the controls during all phases of flight, and cyclic positioning, when the removable controls are removed and the HDG, NAV or APP modes are selected.
- b) Operation of Garmin GFC-600H upper modes, cyclic, tail rotor pedal feedback and use of the LVL function.
- c) During hover, operation of trim in a manner that minimizes attention away from outside visual references.
- d) Cyclic wind up procedure.

10.5 Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the R66 that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the R66 that require specific equipment.

10.7 Differences Checking Between Related Aircraft. Pilots must receive differences checking on the R66 variants as specified in Appendix 3, Differences Tables.

11. PILOT CURRENCY

There are no additional currency requirements for the R66 other than those already specified in 14 CFR parts 61, 121, 125, 133, and 135.

11.1 Differences Currency Between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The R66 is operationally suitable for operations under 14 CFR parts 91 and 135. The FSB determined operational compliance by conducting an evaluation of aircraft serial number 0373 on 03/12/2018 through 03/16/2018. The list of operating rules evaluated during the FSB is on file at the Rotorcraft Branch (AFS-140).

13. MISCELLANEOUS

None.

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

These are the minimum levels of training and checking required, derived from the highest level in the Differences Tables in Appendix 3. Differences levels are arranged as training/checking.

To Related Aircraft ↓	From Base Aircraft →	R66 Turbine	R66 Turbine Marine	E.N.G or Police Version
R66 Turbine		Not applicable	B/B	B/B
R66 Turbine Marine		B/B	Not applicable	B/B
E.N.G or Police Version		B/B	B/B	Not applicable

Variation(s) of the same aircraft type.

A variation of the aircraft type is an aircraft or a group of aircraft with the same type certificate (TC) as the base aircraft. A variation of the aircraft type has the same features as the base aircraft. If the variation(s) of the aircraft type has pertinent differences from the base aircraft, differences training are required. Pertinent differences are those that could affect flight safety. Typical pertinent differences are those related to configuration, handling qualities, performance, procedures, limitations, controls, instruments, indicators, system, equipment, options, or modifications.

APPENDIX 3. DIFFERENCES TABLES

This Design Differences Table are modifications by Robinson Helicopter Company (RHC) since 2010. It lists the minimum differences levels operators must use to conduct differences training and checking of flight crewmembers.

	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 22 Autoflight	Genesys HeliSAS autopilot.	No	Yes	*E	*E
	ATA 22 Autoflight	Garmin GFC-600H.	No	Yes	*E	*E
	ATA 34 Navigation	Garmin G500H Primary and Multifunction Flight Displays.	No	Yes	C	A
	ATA 34 Navigation	Garmin G500H TxI Display System with Garmin GTN 750.	No	Yes	C	A

*See subparagraphs 9.2 and 10.4.