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AIRLINE TRANSPORT PILOT AND AIRCRAFT TYPE RATING

Practical Test Standards for

Rotorcraft Category

Helicopter Rating

November 2023

**FLIGHT STANDARDS SERVICE
Washington, DC 20591**

Foreword

FAA-S-8081-20A, Airline Transport Pilot and Aircraft Type Rating Practical Test Standards for Rotorcraft Category Helicopter Rating is published by the FAA to establish the standards for Airline Transport Pilot and Aircraft Type Rating practical tests for Helicopters.

FAA-S-8081-20A supersedes FAA-S-8081-20, Airline Transport Pilot and Aircraft Type Rating Practical Test Standards for Helicopter with Changes 1, 2, 3 and 4, dated August 1998.

Major Enhancements to FAA-S-8081-20A

- Updated References throughout
- Changed “cockpit” to “flight deck” throughout
- Introduction:
  - Updated “General Information” section
  - Updated listing of references
  - Updated AELS
  - Added Abbreviations/Acronyms

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Introduction

General Information

The FAA has developed this PTS to be used by evaluators when conducting Airline Transport Pilot (ATP) and Aircraft Type Rating Practical Tests for helicopters. Throughout this PTS the following titles will be referred to as an evaluator: ASI, pilot examiner (other than administrative pilot examiners), TCE, chief instructor, assistant chief instructor, check instructor of pilot school holding examining authority.Instructors are expected to use this PTS when preparing applicants for practical tests. Applicants should refer to these standards during their training.

Information considered directive in nature is described in this PTS in terms such as “shall” and “must” indicating the actions are mandatory. Guidance information is described in terms such as “should” and “may” indicating the actions are desirable or permissive but not mandatory.

This PTS is available for download, in PDF format, from www.faa.gov.

Comments regarding this publication should be emailed to acsptsinquiries@faa.gov.

PTS Concept

14 CFR part 61 specifies the areas in which knowledge and skills must be demonstrated by the applicant before the issuance of a certificate. The practical test standards contain the Areas of Operation and specific Tasks in which competency shall be demonstrated. The FAA will revise this PTS whenever it is determined that changes are needed in the interest of safety. Per 14 CFR part 61, section 61.43, adherence to the practical test standards is mandatory for the evaluation of pilot applicants.

For some aircraft types, provisions of FAA Flight Standardization Board (FSB) Reports may specify details as to how 14 CFR part 61 and this practical test standard apply to certain maneuvers, TASKS, procedures, or knowledge areas.

If a successful check is conducted under an operator’s approved training and checking program, it is considered to have met the flight proficiency requirements of 14 CFR part 61, section 61.157(f) for the issuance of an ATP certificate and an appropriate rating.

PTS Description

The Airline Transport Pilot and Aircraft Type Rating Practical Test Standards for Helicopter includes AREAS OF OPERATION and TASKS for the initial issuance of an ATP Certificate and for the addition of rotorcraft/helicopter category, class, and aircraft type ratings to that certificate.

The ground portion of the practical test allows the evaluator to determine whether the applicant is sufficiently prepared to advance to the flight portion of the practical test. The applicant must pass the ground portion of the practical test before beginning the flight portion. The oral questioning will continue throughout the entire practical test.

AREAS OF OPERATION are phases of the practical test arranged in a logical sequence within each standard. They begin with preflight preparation and end with postflight procedures. The evaluator may combine TASKS with similar objectives and conduct the practical test in any sequence that will result in a complete and efficient test.

TASKS are titles of knowledge areas, flight procedures, or maneuvers appropriate to an AREA OF OPERATION.

NOTE is used to emphasize special considerations required in the AREA OF OPERATION.

The Objective lists the important ELEMENTS that must be satisfactorily performed to demonstrate competency in a TASK. The Objective includes:

1. specifically what the applicant must be able to do;
2. the conditions under which the TASK is to be performed; and
3. the acceptable standards of performance.

The REFERENCE identifies the publication(s) that describe(s) the TASK. Descriptions of TASKS are not included in the practical test standards because this information can be found in the listed references, as amended. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications.

This practical test standard is based on the following references:

14 CFR part 1	Definitions and Abbreviations
14 CFR part 61	Certification: Pilots, Flight Instructors, and Ground Instructors
14 CFR part 91	General Operating and Flight Rules
AC 60-22	Aeronautical Decision Making
AC 60-28	FAA English Language Standards for an FAA Certificate Issued Under 14 CFR Parts 61, 63, 65, and 107
AC 120-51	Crew Resource Management Training
AC 120-54	Advanced Qualification Program
AC 120-62	Takeoff Safety Training Aid
AC 120-63	Helicopter Simulator Qualification
FSB Reports	Flight Standardization Board Reports
FAA-H-8083-3	Airplane Flying Handbook
FAA-H-8083-15	Instrument Flying Handbook
FAA-H-8083-21	Helicopter Flying Handbook
FAA-H-8083-28	Aviation Weather Handbook
AIM	Aeronautical Information Manual
RFM	Rotorcraft Flight Manual
Other	Chart Supplement
	Pilot's Operating Handbooks and Flight Manuals
	En Route Low and High Altitude Charts
	Profile Descent Charts
SID	Standard Instrument Departure
STAR	Standard Terminal Arrivals
FDC	National Flight Data Center
NOTAM	Notices to Air Missions
IAP	Instrument Approach Procedure Charts

NOTE: Users should reference the current edition of the reference documents listed above. The current edition of all FAA publications can be found at: www.faa.gov.

Abbreviations/Acronyms Used in this PTS

14 CFR	Title 14 of the Code of Federal Regulations
AC	Advisory Circular
ADM	Aeronautical Decision Making
AELS	Aviation English Language Standard
AGL	Above Ground Level
APU	Auxiliary Power Unit

ASI	Aviation Safety Inspector
ATC	Air Traffic Control
ATP	Airline Transport Pilot
CDI	Course Deviation Indicator
CFIT	Controlled Flight Into Terrain
CFR	Code of Federal Regulations
CRM	Crew Resource Management
DA	Decision Altitude
DH	Decision Height
DME	Distance Measuring Equipment
EFIS	Electronic Flight Instrument System
FAA	Federal Aviation Administration
FFS	Full Flight Simulator
FMS	Flight Management System
FSB	Flight Standards Board
FSO	Flight Standards Office
FSTD	Flight Simulation Training Device
FTN	FAA Tracking Number
GPS	Global Positioning System
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
INS	Inertial Navigation System
LDA	Localizer-Type Directional Aid
LOC	ILS Localizer
MDA	Minimum Descent Altitude
MEL	Minimum Equipment List
NDB	Nondirectional Beacon
NWS	National Weather Service
PDF	Portable Document Format
POH	Pilot's Operating Handbook
PTS	Practical Test Standards
RFM	Rotorcraft Flight Manual
RNAV	Area Navigation
RPM	Revolutions Per Minute
SID	Standard Instrument Departure
SOP	Standard Operating Procedure
SRM	Single-Pilot Resource Management
STAR	Standard Terminal Arrival Route
SUA	Special Use Airspace
TCE	Training Center Evaluator
TFR	Temporary Flight Restriction
VFR	Visual Flight Rules
VOR	Very High Frequency Omnidirectional Range

Use of the PTS

The FAA requires that all practical tests be conducted in accordance with the appropriate PTS. Applicants must be evaluated in all Tasks included in the Areas of Operation of the appropriate PTS unless otherwise noted.

This PTS is applicable to applicants who seek an ATP certificate with rotorcraft/helicopter category/class rating; the addition of a rotorcraft category, helicopter class, or aircraft type rating on a currently held ATP certificate; and to the applicant who holds a Private or Commercial Pilot Certificate (must have a proper category/class rating) and is seeking the addition of an aircraft type rating on that certificate.

In preparation for each practical test, evaluators must develop a written plan of action that includes the order and combination of TASKS to be demonstrated by the applicant in a manner that results in an efficient and valid test. Although TASKS with similar Objectives may be combined to conserve time, the Objectives of all TASKS must be demonstrated and evaluated at some time during the practical test. It is of utmost importance that the evaluator accurately evaluates the applicant's ability to perform safely as a pilot in the National Airspace System. The evaluator may simulate/act as ATC while conducting the practical test.

Special Emphasis Areas

Evaluators shall place special emphasis upon areas of aircraft operations considered critical to flight safety. Although these areas may not be specifically addressed under each TASK, they are essential to flight safety and will be critically evaluated during the practical test. In all instances, the applicant's actions will relate to the complete situation. The evaluator's role regarding ATC, CRM, and the duties and responsibilities of the evaluator through all phases of the practical test must be explained to and understood by the applicant, prior to the test.

1. Positive aircraft control;
2. Procedures for positive exchange of flight controls;
3. Collision avoidance;
4. Wake turbulence and low level wind shear avoidance;
5. Use of available automation;
6. Communication management;
7. ADM/CRM/SRM;
8. Runway incursion avoidance;
9. CFIT;
10. Aeronautical decision making/risk management;
11. Checklist usage;
12. Spatial disorientation;
13. TFR;
14. SUA;
15. Aviation security;
16. Wire strike avoidance; and
17. Other areas deemed appropriate to any phase of the practical test.

Practical Test Prerequisites: Airline Transport Pilot and Aircraft Type Rating

14 CFR part 61, section 61.39 and subpart G, provide practical test and certification prerequisites for airline transport pilots. 14 CFR part 61, section 61.63(d), provides requirements for additional aircraft ratings other than for ratings at the airline transport pilot certification level.

Aircraft Type Ratings Limited to VFR

Pilot applicants who wish to add a type rating, limited to VFR, to their certificate must take a practical test that includes the following items:

I. AREA OF OPERATION: PREFLIGHT PREPARATION.

   A. Equipment examination.
   B. Performance and limitations.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES.

A. Preflight inspection.
B. Powerplant start.
C. Taxiing.
D. Pretakeoff checks.

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE.

A. Normal and crosswind takeoff.
B. Powerplant failure during takeoff. (TASK C)
C. Rejected takeoff. (TASK D)

IV. AREA OF OPERATION: INFLIGHT MANEUVERS.

A. Steep turns.
B. Powerplant failure—multiengine helicopter.
C. Powerplant failure—single-engine helicopter.
D. Recovery from unusual attitudes.
E. Settling-with-power.

VI. AREA OF OPERATION: LANDINGS AND APPROACHES TO LANDINGS.

A. Normal and crosswind approaches and landings.
B. Approach and landing with simulated powerplant failure—multiengine helicopter.
C. Rejected landing.

VII. AREA OF OPERATION: NORMAL AND ABNORMAL PROCEDURES.

A. Normal and Abnormal Procedures

VIII. AREA OF OPERATION: EMERGENCY PROCEDURES.

A. Emergency Procedures

IX. AREA OF OPERATION: POSTFLIGHT PROCEDURES.

A. After-landing procedures.
B. Parking and securing.

Aircraft and Equipment Requirements for the Practical Test

14 CFR part 61, section 61.45, provides requirements for aircraft and equipment for the practical test.

NOTE: The practical test must be performed in actual or simulated instrument conditions, unless the practical test cannot be accomplished under instrument flight rules because the aircraft's type certificate makes the aircraft incapable of operating under instrument flight rules. (See section above titled *Aircraft Type Ratings Limited to VFR.)*

Use of FAA-Approved FFS or FSTD

In the AREA OF OPERATION labeled "PREFLIGHT PREPARATION," the TASKS are knowledge only. These TASKS do not require the use of an FFS, FSTD, or an aircraft to accomplish, but they may be used.

Each inflight maneuver or procedure must be performed by the applicant in an FFS, FSTD, or an aircraft. Appendix 1 of this practical test standard should be consulted to identify the maneuvers or procedures that may be accomplished in an FFS or an FSTD. The level of FFS or an FSTD required for each maneuver or procedure may also be found in appendix 1.

When accomplished in an aircraft, certain task elements may be accomplished through "simulated" actions in the interest of safety and practicality, but when accomplished in an FFS or an FSTD, these same actions would not be "simulated." For example, when in an aircraft, a simulated engine fire may be addressed by retarding the throttle to idle, simulating the shutdown of the engine, simulating the discharge of the fire suppression agent, and simulating the disconnection of associated electrics, hydraulics, pneumatics, etc. However, when the same emergency condition is addressed in an FSTD or an FFS, all TASK elements must be accomplished as would be expected under actual circumstances. Similarly, safety of flight precautions taken in the aircraft for the accomplishment of a specific maneuver or procedure (such as altitude in powerplant failure, setting maximum airspeed for a rejected takeoff) need not be taken when an FFS or an FSTD is used.

It is important to understand that whether accomplished in an FSS, FSTD, or the aircraft, all TASKS and TASK elements for each maneuver or procedure will have the same performance criteria applied for the determination of overall satisfactory performance.

Evaluator Responsibility

The evaluator must determine that the applicant meets AELS. An applicant for an FAA Certificate or rating must be able to communicate in English in a discernible and understandable manner with ATC, pilots, and others involved in preparing an aircraft for flight and operating an aircraft in flight. This communication may or may not involve radio communications. An applicant for an FAA Certificate issued in accordance with 14 CFR part 61 who cannot hear or speak due to a medical deficiency may be eligible for an FAA Certificate with specific operational limitations. For additional information, reference AC 60-28, FAA English Language Standard for an FAA Certificate Issued Under 14 CFR parts 61, 63, 65, and 107, as amended.

If the applicant's ability to meet the FAA AELS comes into question before starting the practical test, the evaluator will not begin the practical test. An evaluator who is not an ASI[1] will check the box, *Referred to FSO for Aviation English Language Standard Determination,* located on the bottom of page 2 of the applicant's Airman Certificate and/or Rating Application, FAA Form 8710-1, as applicable. The evaluator will refer the applicant to the appropriate FSO.

If the applicant's ability to meet the FAA AELS comes into question after the practical test begins, an evaluator who is not an ASI will discontinue the practical test and check the box, *Referred to FSO for Aviation English Language Standard Determination*, on the application. The evaluator will also issue a Notice of Disapproval, FAA form 8060-5 with the comment "Does Not Demonstrate FAA AELS" in addition to any unsatisfactory Task(s).

In either case, the evaluator must complete and submit the application file through normal application procedures and notify the appropriate FSO of the referral.

The evaluator who conducts the practical test is responsible for determining that the applicant meets the standards outlined in the Objective of each TASK within the AREAS OF OPERATION in the practical test standard.

When the evaluator determines that a TASK is incomplete, or the outcome uncertain, the evaluator may require the applicant to repeat that TASK, or portions of that TASK. This provision has been made in the

[1] ASIs may assess an applicant's English language proficiency in accordance with FAA Order 8900.1.

interest of fairness and does not mean that instruction or practice is permitted during the certification process. When practical, the remaining TASKS of the practical test phase should be completed before repeating the questionable TASK. If the second attempt to perform a questionable TASK is not clearly satisfactory, the evaluator shall consider it unsatisfactory.

Area of Operation I, Preflight Preparation, Task A; Equipment Examination, and Task B, Performance Limitations; must be closely coordinated and related to the flight portion of the practical test, but must not be given during the flight portion of the practical test. The equipment examination and performance and limitations must be administered prior (it may be the same day) to the flight portion of the practical test. The evaluator may accept written evidence of the equipment exam if the exam is approved by the Administrator and administered by an individual authorized by the Administrator. The evaluator shall use whatever means deemed suitable to determine that the applicant's equipment and performance/limitations knowledge meets the standard.

The remaining Areas of Operations contain TASKS which include both “knowledge” and “skill” Elements. The evaluator shall ask the applicant to perform the skill Elements. Knowledge Elements not evident in the demonstrated skills may be tested by questioning, at any time, during the flight event. Questioning in flight should be used judiciously so that safety is not jeopardized. An evaluator may defer questions until after the flight portion of the test is completed.

For aircraft requiring only one pilot, the evaluator may not assist the applicant in the management of the aircraft, radio communications, tuning and identifying navigational equipment, and using navigation charts. If the evaluator, other than an FAA Inspector, is qualified and current in the specific make and model aircraft that is certified for two or more crewmembers, he or she may occupy a duty position. If the evaluator occupies a duty position on an aircraft that requires two or more crewmembers, the evaluator must fulfill the duties of that position. Moreover, when occupying a required duty position, the evaluator shall perform crew resource management functions as briefed and requested by the applicant.

SAFETY OF FLIGHT shall be the prime consideration at all times. The evaluator, applicant, and crew shall be constantly alert for other traffic.

Satisfactory Performance

14 CFR part 61, section 61.43(a), describes the satisfactory completion of the practical test for a certificate or rating.

Unsatisfactory Performance

If, in the judgment of the evaluator, the applicant's performance of any TASK is unsatisfactory, the associated AREA OF OPERATION is failed, and therefore, the practical test is failed. 14 CFR part 61, section 61.43(c) – (f) provides additional unsatisfactory performance requirements and parameters.

Typical areas of unsatisfactory performance and grounds for disqualification are:

1. Any action or lack of action by the applicant that requires corrective intervention by the evaluator to maintain safe flight.
2. Failure to use proper and effective visual scanning techniques to clear the area before and while performing maneuvers.
3. Consistently exceeding tolerances stated in the Objectives.
4. Failure to take prompt corrective action when tolerances are exceeded.

When a notice of disapproval is issued, the evaluator will record the applicant's unsatisfactory performance in terms of Area of Operations and specific Task(s) not meeting the standard appropriate to the practical test conducted. The Area(s) of Operation/Task(s) not tested and the number of practical

test failures must also be recorded. If the applicant fails the practical test because of a special emphasis area, the Notice of Disapproval must indicate the associated Task (e.g., Area of Operation VIII, Settling-With-Power, failure to use proper collision avoidance procedures).

Evaluators shall not repeat TASKS that have been attempted and failed. The evaluator or applicant may discontinue the test at any time after the failure of a TASK which makes the applicant ineligible for the certificate or rating sought. The practical test will be continued only with the consent of the applicant. In such cases, it is usually better for the evaluator to continue with the practical test to complete the other TASKS. If the evaluator determines that the entire practical test must be repeated, the practical test should not be continued and should be terminated immediately. If the practical test is either continued or discontinued, the applicant is entitled to credit for those Areas of Operation that were passed subject to the requirements of 14 CFR part 61, section 61.43(f) if the remainder of the practical test is completed within 60 days of when the practical test was discontinued. However, during the retest and at the discretion of the evaluator, any AREA OF OPERATION may be reevaluated including those previously passed.

If the practical test must be terminated for unsatisfactory performance and there are other AREAS OF OPERATION which have not been tested or still need to be repeated, a notice of disapproval shall be issued listing the specific AREAS OF OPERATION which have not been successfully completed or tested. Reqardless of whether the remaining parts of the practical test are continued or not after a failure, a notice of disapproval must be issued.

Letter of Discontinuance

14 CFR 61.43(f) provides information on incomplete practical tests. When a practical test is discontinued for reasons other than unsatisfactory performance (e.g., equipment failure, weather, or illness), FAA Form 8710-1, Airman Certificate and/or Rating Application, and, if applicable, the AKTR, are to be returned to the applicant. The evaluator at that time prepares, signs, and issues a Letter of Discontinuance to the applicant. The Letter of Discontinuance should identify the Areas of Operation and their associated Tasks of the practical test that were successfully completed. The applicant should be advised that the Letter of Discontinuance must be presented to the evaluator when the practical test is resumed, and made part of the certification file.

Aeronautical Decision-Making, Risk Management, CRM, and SRM

Throughout the practical test, the evaluator must assess the applicant's ability to use sound aeronautical decision-making procedures in order to identify hazards and mitigate risk. The evaluator must accomplish this requirement by developing scenarios that incorporate and combine Tasks appropriate to assessing the applicant's risk management in making safe aeronautical decisions. For example, the evaluator may develop a scenario that incorporates weather decisions and performance planning.

In assessing the applicant's performance, the evaluator should take note of the applicant's use of CRM and, if appropriate, SRM. CRM/SRM is the set of competencies that includes situational awareness, communication skills, teamwork, task allocation, and decision-making within a comprehensive framework of SOP. SRM specifically refers to the management of all resources onboard the aircraft, as well as outside resources available to the single pilot.

Applicant's Use of Checklists

Throughout the practical test, the applicant is evaluated on the use of an appropriate checklist. Proper use is dependent on the specific TASK being evaluated. The situation may be such that the use of the checklist, while accomplishing elements of an Objective, would be either unsafe or impractical, especially in a single-pilot operation. In this case, a review of the checklist after the elements have been accomplished would be appropriate. The use of a checklist should also consider visual scanning and division of attention at all times.

Use of Distractions During Practical Tests

Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. To evaluate the pilot's ability to utilize proper control techniques while dividing attention both inside and outside the flight deck, the evaluator shall cause a realistic distraction during the flight portion of the practical test to evaluate the applicant's ability to divide attention while maintaining safe flight.

Applicant's Practical Test Checklist

Appointment with Evaluator

Evaluator's Name:_____

Location: _____

Date/Time: _____

Acceptable Aircraft

- ☐ Aircraft Documents:
  - ☐ Airworthiness Certificate
  - ☐ Registration Certificate
  - ☐ Operating Limitations
- ☐ Aircraft Maintenance Records:
  - ☐ Logbook Record of Airworthiness Inspections and AD Compliance
- ☐ Pilot's Operating Handbook
- ☐ FAA-Approved Rotorcraft Flight Manual
- ☐ FCC Station License (if applicable)

Personal Equipment

- ☐ View-Limiting Device
- ☐ Current Aeronautical Charts (printed or electronic)
- ☐ Computer and Plotter
- ☐ Flight Plan Form
- ☐ Flight Logs (printed or electronic)
- ☐ Current AIM, Chart Supplement, and Appropriate Publications

Personal Records

- ☐ Identification – Photo/Signature ID
- ☐ Pilot Certificate
- ☐ Current Medical Certificate or BasicMed qualification (if applicable)
- ☐ Completed FAA Form 8710-1, Airman Certificate and/or Rating Application with Instructor's Signature (if applicable) or completed IACRA form
- ☐ Applicant FTN if 8710-1 completed by IACRA
- ☐ AKTR (if applicable)
- ☐ Pilot Logbook with appropriate Instructor Endorsements
- ☐ FAA Form 8060-5, Notice of Disapproval Application (if applicable)
- ☐ Letter of Discontinuance Application (if applicable)
- ☐ Approved School Graduation Certificate (if applicable)
- ☐ Evaluator's Fee (if applicable)

Evaluator's Practical Test Checklist

Applicant's Name:_____

Location: _____

Date/Time: _____

I. Preflight Preparation

- ☐ **A.** Equipment Examination
- ☐ **B.** Performance and Limitations

II. Preflight Procedures

- ☐ **A.** Preflight Inspection
- ☐ **B.** Powerplant Start
- ☐ **C.** Taxiing
- ☐ **D.** Pretakeoff Checks

III. Takeoff and Departure Phase

- ☐ **A.** Normal and Crosswind Takeoff
- ☐ **B.** Instrument Takeoff
- ☐ **C.** Powerplant Failure During Takeoff
- ☐ **D**. Rejected Takeoff
- ☐ **E**. Instrument Departure

IV. Inflight Maneuvers

- ☐ **A.** Steep Turns
- ☐ **B.** Powerplant Failure—Multiengine Helicopter
- ☐ **C.** Powerplant Failure—Single-Engine Helicopter
- ☐ **D.** Recovery From Unusual Attitudes
- ☐ **E.** Settling-With-Power

V. Instrument Procedures

- ☐ **A.** Instrument Arrival
- ☐ **B**. Holding
- ☐ **C.** Precision Instrument Approaches
- ☐ **D**. Nonprecision Instrument Approaches
- ☐ **E.** Missed Approach

VI. Landings and Approaches to Landings

- ☐ **A.** Normal and Crosswind Approaches and Landings
- ☐ **B.** Approach and Landing with Simulated Powerplant Failure—Multiengine Helicopter
- ☐ **C.** Rejected Landing

VII. Normal and Abnormal Procedures

- ☐ **A. Normal and Abnormal Procedures**

VIII. Emergency Procedures

- ☐ **A.** Emergency Procedures

IX. Postflight Procedures

- ☐ **A. After-Landing Procedures**
- ☐ **B. Parking and Securing**

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: EQUIPMENT EXAMINATION

REFERENCES: POH, RFM, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge appropriate to the helicopter; its systems and components; its normal, abnormal, and emergency procedures; and uses the correct terminology with regard to the following items—

    a. landing gear—indicators, brakes, tires, nosewheel steering, skids, and shocks.
    b. powerplant—controls and indications, induction system, carburetor and fuel injection, exhaust and turbocharging, cooling, fire detection/protection, mounting points, turbine wheels, compressors, and other related components.
    c. fuel system—capacity; drains; pumps; controls; indicators; crossfeeding; transferring; jettison; fuel grade, color and additives; fueling and defueling procedures; and emergency substitutions, if applicable.
    d. oil system—capacity, grade, quantities, and indicators.
    e. hydraulic system—capacity, pumps, pressure, reservoirs, grade, and regulators.
    f. electrical system—alternators, generators, battery, circuit breakers and protection devices, controls, indicators, and external and auxiliary power sources and ratings.
    g. environmental systems—heating, cooling, ventilation, oxygen and pressurization, controls, indicators, and regulating devices.
    h. avionics and communications—autopilot; flight director; EFIS; Doppler Radar; FMS; INS; GPS; VOR, NDB, ILS, RNAV systems and components; indicating devices; transponder; and emergency locator transmitter.
    i. ice protection—anti-ice, deice, pitot-static system protection, windshield, airfoil surfaces, and rotor protection.
    j. crewmember and passenger equipment—oxygen system, survival gear, emergency exits, evacuation procedures and crew duties, and quick donning oxygen mask for crewmembers and passengers.
    k. main/tail rotor systems—transmissions, gear boxes, oil/fluid levels, tolerances, rotor brake if installed, and limitations.
    l. pitot-static system with associated instruments and the power source for the flight instruments.

2. Exhibits adequate knowledge of the contents of the POH or RFM with regard to the systems and components listed in paragraph 1 (above); the MEL, if appropriate; and the Operations Specifications, if applicable.

B. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: 14 CFR parts 1, 91; POH, RFM, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of performance and limitations, including a thorough knowledge of the adverse effects of exceeding any limitation.
2. Demonstrates proficient use of (as appropriate to the helicopter) performance charts, tables, graphs, or other data relating to items such as—

    a. takeoff performance—all engines, engine(s) inoperative.
    b. climb performance—all engines, engine(s) inoperative, and other engine malfunctions.
    c. service ceiling—all engines, engines(s) inoperative.
    d. cruise performance.
    e. fuel consumption, range, and endurance.
    f. descent performance.
    g. go-around from rejected landings.
    h. hovering in and out of ground effect.
    i. other performance data (appropriate to the helicopter).

3. Describes (as appropriate to the helicopter) the performance airspeeds used during specific phases of flight.
4. Describes the effects of meteorological conditions upon performance characteristics and correctly applies these factors to a specific chart, table, graph or other performance data.
5. Computes the center-of-gravity location for a specific load condition (as specified by the evaluator), including adding, removing, or shifting weight.
6. Determines if the computed center of gravity is within the forward, aft, and lateral (if applicable) center-of-gravity limits for takeoff and landing.
7. Demonstrates good planning and knowledge of procedures in applying operational factors affecting helicopter performance.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

NOTE: The testing of Task A must occur prior to all other portions of the preflight procedures area of operation, and must be completed prior to the flight portion of the practical test. A part 142 training curriculum may use a pictorial aircraft preflight inspection program.

REFERENCES: 14 CFR part 91; POH, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the preflight inspection procedures, while explaining briefly—

    a. the purpose of inspecting the items which must be checked.
    b. how to detect possible defects.
    c. the corrective action to take.

2. Exhibits adequate knowledge of the operational status of the helicopter by locating and explaining the significance and importance of related helicopter documents such as—

    a. airworthiness and registration certificates.
    b. operating limitations, handbooks, and manuals.
    c. MEL (if appropriate).
    d. weight and balance data.
    e. maintenance requirements, tests, and appropriate records applicable to the proposed flight or operation; and maintenance that may be performed by the pilot or other designated crewmember.

3. Uses the approved checklist to systematically inspect the helicopter externally and internally.
4. Uses the challenge-and-response (or other approved) method with the other crewmember(s), where applicable, to accomplish the checklist procedures.
5. Verifies the helicopter is safe for flight by emphasizing (as appropriate to the helicopter) the need to look at and explain the purpose of inspecting items such as—

    a. powerplant, including controls and indicators.
    b. fuel quantity, grade, type, contamination safeguards, and servicing procedures.
    c. oil quantity, grade, and type.
    d. hydraulic fluid quantity, grade, type, and servicing procedures.
    e. oxygen quantity, pressures, servicing procedures, and associated systems and equipment for crew and passengers.
    f. skidtubes or landing gear, brakes, and steering system, where applicable.
    g. tires for condition, inflation, and correct mounting, where applicable.
    h. fire protection/detection systems for proper operation, servicing, pressures, and discharge indications.
    i. pneumatic system pressures and servicing.
    j. ground environmental systems for proper servicing and operation.
    k. APU for servicing and operation.
    l. flight control systems including trim, rotor blades, and associated components.
    m. main rotor and anti-torque systems.
    n. anti-ice, deice systems, servicing, and operation.

6. Coordinates with ground crew and ensures adequate clearance prior to moving any devices such as doors or hatches.
7. Complies with the provisions of the appropriate Operations Specifications, if applicable, as they pertain to the particular helicopter and operation.
8. Demonstrates proper operation and verification of all helicopter systems.
9. Notes any discrepancies, determines if the helicopter is airworthy and safe for flight, or takes the proper corrective action.
10. Checks the general area around the helicopter for hazards to the safety of the helicopter and personnel.

B. TASK: POWERPLANT START

REFERENCES: POH, RFM, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the correct powerplant start procedures including the use of an external power source, starting under various atmospheric conditions, normal and abnormal starting limitations, and the proper action required in the event of a malfunction.
2. Ensures the ground safety procedures are followed during the before-start, start, and after-start phases.
3. Ensures the use of appropriate ground crew personnel during the start procedures.
4. Performs all items of the start procedures by systematically following the approved checklist items for the before-start, start, and after-start phases.
5. Demonstrates sound judgment and operating practices in those instances where specific instructions or checklist items are not published.

C. TASK: TAXIING

REFERENCES: POH, RFM, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of safe and appropriate taxi procedures.
2. Demonstrates proficiency by maintaining correct and positive helicopter control such as hover height (when within 10 feet of the surface, maintains ±½ of the hover altitude; when above 10 feet, maintains ±5 feet of the hovering altitude), turns, and speed. This includes hovering taxi (maintains within 2 feet of desired track), air taxiing (maintains altitude within 10 feet of desired); and in helicopters with wheels, includes ground taxiing. In helicopters equipped with float devices, this includes water taxiing, approaching a buoy, and docking.
3. Maintains proper spacing on other aircraft and persons taking into consideration rotorwash and flying debris. Avoids conditions that may cause loss of tail rotor/antitorque effectiveness.
4. Accomplishes the applicable checklist items and performs recommended procedures.
5. Maintains desired and appropriate track and speed.
6. Complies with instructions issued by ATC (or the evaluator simulating ATC).
7. Observes runway hold lines, localizer and glide slope critical areas, and other surface control markings and lighting.
8. Maintains constant vigilance and control of the helicopter during taxi operation.

D. TASK: PRETAKEOFF CHECKS

REFERENCES: POH, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the pretakeoff checks by stating the reason for checking the items outlined on the approved checklist and explaining how to detect possible malfunctions.
2. Divides attention inside and outside cockpit.
3. Ensures that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the approved checklist.
4. Explains, as may be requested by the evaluator, any normal or abnormal system operating characteristic or limitation and the corrective action for a specific malfunction.
5. Determines if the helicopter is safe for the proposed flight or requires maintenance.
6. Determines the helicopter's takeoff performance, considering such factors as wind, density altitude, helicopter weight, temperature, pressure altitude, and departure route or routing.
7. Determines airspeeds/V-speeds and properly sets all instrument references, flight director and autopilot controls, and navigation and communications equipment.
8. Reviews procedures for emergency and abnormal situations which may be encountered during takeoff, and states the corrective action required of the pilot in command and other concerned crewmembers.
9. Obtains and correctly interprets the takeoff and departure clearance as issued by ATC.

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE

A. TASK: NORMAL AND CROSSWIND TAKEOFF

REFERENCES: POH, RFM, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the helicopter) airspeeds, configurations, and emergency/abnormal procedures. Performs all required pretakeoff checks as required by the appropriate checklist items.
2. Adjusts the powerplant controls as recommended by the FAA-approved guidance for the existing conditions.
3. Notes any obstructions or other hazards in the takeoff path.
4. Verifies and correctly applies the existing wind component to the takeoff performance.
5. Completes required checks prior to starting takeoff to verify the expected powerplant performance.
6. Aligns the helicopter on the runway centerline, or with the takeoff path.
7. Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway or intended flightpath, prior to initiating and during the takeoff.
8. Sets power smoothly and positively to a predetermined value.
9. Monitors powerplant controls, settings, and instruments during takeoff to ensure all predetermined parameters are met.
10. Accelerates through effective translational lift to normal climb speed.
11. Uses the applicable noise abatement and wake turbulence avoidance procedures, as required.
12. Accomplishes the appropriate checklist items.
13. Maintains the appropriate climb segment airspeed/V-speeds.
14. Maintains the desired heading within ±5° and the desired airspeed/V-speed within ±5 knots.

B. TASK: INSTRUMENT TAKEOFF

REFERENCES: POH, FAA-H-8083-15, RFM, AIM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of an instrument takeoff with instrument meteorological conditions simulated at or before reaching an altitude of 100 feet (30 meters) AGL. If accomplished in a flight simulator, visibility should be no greater than one-quarter (1/4) mile, or as specified by operator specifications.
2. Takes into account, prior to beginning the takeoff, operational factors which could affect the maneuver such as helicopter characteristics, takeoff path, surface conditions, wind, obstructions, and other related factors that could adversely affect safety.
3. Accomplishes the appropriate checklist items to ensure that the helicopter systems applicable to the instrument takeoff are operating properly.
4. Sets the applicable flight instruments to the desired setting prior to initiating the takeoff.
5. Transitions smoothly and accurately from visual meteorological conditions to actual or simulated instrument meteorological conditions.
6. Maintains the appropriate climb attitude.
7. Maintains desired heading within ±5° and desired airspeeds within ±5 knots.
8. Complies with ATC clearances and instructions issued by ATC (or the evaluator simulating ATC).

C. TASK: POWERPLANT FAILURE DURING TAKEOFF

REFERENCES: AC 120-62; POH, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the procedures used during powerplant failure on takeoff, the appropriate reference airspeeds, and the specific pilot actions required.
2. Takes into account, prior to beginning the takeoff, operational factors which could affect the maneuver such as helicopter characteristics, takeoff path, surface conditions, wind, obstructions, and other related factors that could adversely affect safety.
3. Maintains the helicopter aligned with the runway heading or takeoff path appropriate for climb performance and terrain clearance when powerplant failure occurs.
4. Single-Engine Helicopters: Establishes a power-off descent approximately straight-ahead, if the powerplant failure occurs after becoming airborne. The failure of the powerplant should be simulated during a normal takeoff (no lower than 500 feet or 150 meters AGL).
5. Multiengine Helicopters: Continues the takeoff if the powerplant failure occurs at a point where the helicopter can continue to a specified airspeed and altitude at the end of the runway commensurate with the helicopter's performance capabilities and operating limitations. The failure of one powerplant should be simulated during a normal takeoff:

    a. At an appropriate airspeed that will allow continued climb performance in forward flight; or
    b. At an appropriate airspeed that is 50 percent of normal cruise speed, if there is no published single-engine airspeed for that type helicopter.

6. Maintains (in a multiengine helicopter), after a simulated powerplant failure and after a climb has been established, the desired heading within ±5° and desired airspeed within ±5 knots.

D. TASK: REJECTED TAKEOFF

REFERENCES: AC 120-62; POH, FAA-H-8083-21, RFM.

Objective. To determine that the applicant understands when to reject or continue the takeoff and:

1. Exhibits adequate knowledge of the technique and procedure for accomplishing a rejected takeoff after powerplant/system(s) failure/warnings, including related safety factors.
2. Takes into account, prior to beginning the takeoff, operational factors which could affect the maneuver such as helicopter characteristics, takeoff path, surface conditions, wind, obstructions, and other related factors that could adversely affect safety.
3. Aligns the helicopter on the runway centerline or takeoff path.
4. Performs all required pretakeoff checks as required by the appropriate checklist items.
5. Increases power smoothly and positively, if appropriate to the helicopter, to a predetermined value based on existing conditions.
6. Maintains directional control on the runway heading or takeoff path.
7. Aborts the takeoff if, in a single-engine helicopter, the powerplant (or other) failure occurs prior to becoming airborne; or in a multiengine helicopter, the powerplant (or other) failure occurs at a point during the takeoff where the abort procedure can be initiated and the helicopter can be safely landed and stopped.
8. Reduces the power smoothly and promptly, if appropriate to the helicopter, when powerplant failure is simulated. In a wheeled helicopter, the failure will be simulated at a reasonable airspeed determined after giving due consideration to the helicopter's characteristics, Height Velocity Diagram, length of landing area, surface conditions, wind direction and velocity, and any other factors that may adversely affect safety.
9. Maintains positive control, and accomplishes the appropriate powerplant failure procedures as recommended by the appropriate checklist.

E. TASK: INSTRUMENT DEPARTURE

REFERENCES: POH, FAA-H-8083-15, RFM, AIM.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits adequate knowledge of SIDs, En Route Low and High Altitude Charts, STARs, and related pilot/controller responsibilities.
2. Uses the current and appropriate navigation publications for the proposed flight.
3. Selects and uses the appropriate communications frequencies, and selects and identifies the navigation aids associated with the proposed flight.
4. Performs the appropriate checklist items.
5. Establishes communications with ATC using proper phraseology.
6. Complies, in a timely manner, with all instructions and airspace restrictions.
7. Exhibits adequate knowledge of two-way radio communications failure procedures.
8. Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, clearance, or as directed by the evaluator.
9. Maintains the appropriate airspeed within ±10 knots, headings within ±10°, altitude within ±100 feet (30 meters); and accurately tracks a course, radial, or bearing.
10. Conducts the departure phase to a point where, in the opinion of the evaluator, the transition to the en route environment is complete.

IV. AREA OF OPERATION: INFLIGHT MANEUVERS

A. TASK: STEEP TURNS

REFERENCES: FSB Report; POH, FAA-H-8083-15, RFM.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits adequate knowledge of steep turns (if applicable to helicopter) and the factors associated with performance; and, if applicable, angle of bank, and pitch and power requirements.
2. Selects an altitude recommended by the manufacturer, training syllabus, or other training directive.
3. Establishes the recommended entry airspeed.
4. Rolls into a coordinated turn of 180° or 360° with a bank as appropriate, not to exceed 30°. Maintains the bank angle within ±5° while in smooth, stabilized flight.
5. Applies smooth coordinated pitch, bank, and power to maintain the specified altitude within ±100 feet (30 meters) and the desired airspeed within ±10 knots.
6. Rolls out of the turn (at approximately the same rate as used to roll into the turn) within ±10° of the entry or specified heading, stabilizes the helicopter in a straight-and-level attitude or, at the discretion of the evaluator, reverses the direction of turn and repeats the maneuver in the opposite direction.
7. Avoids any indication of abnormal flight attitude, or exceeding any structural, rotor, or operating limitation during any part of the maneuver.

B. TASK: POWERPLANT FAILURE—MULTIENGINE HELICOPTER

REFERENCES: POH, RFM, FAA-H-8083-21.

Note: Multiengine Considerations

During the required preflight briefing for practical tests conducted in a multiengine helicopter, the evaluator and applicant must discuss the methods for simulating powerplant(s) failure in accordance with the approved flight manual, or the aircraft manufacturer's recommended procedures including:

- Who will initiate the simulated powerplant failure;
- The technique used to simulate the powerplant failure; and
- Who will perform the power recovery procedure.

The evaluator must not simulate a powerplant(s) failure during takeoff until attaining an altitude of at least 400 feet (120 meters) AGL and a minimum safe speed in accordance with the approved flight manual, or the aircraft manufacturer's recommended procedures, if published.

Simulated power failure at altitude must be given over areas where actual touchdowns can safely be completed in the event of an actual powerplant failure.

When this TASK is accomplished in the helicopter, the engine failure and restart procedure shall be simulated. This TASK shall be performed by reducing the power to idle on the selected engine. This TASK must be initiated at an altitude from which a safe landing can be made in the event of actual engine problems.

Practical tests conducted in an FSTD can only be accomplished as part of an approved curriculum or training program. Any limitations on powerplant failure will be noted in that program. In addition, an evaluator may reference a helicopter’s Flight Standardization Board Report, which may include other safety related considerations for performing specific tasks.

When authorized and conducted in a flight simulator, shutdown may be performed in conjunction with any procedure or maneuver and at any location or altitude at the discretion of the evaluator.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the flight characteristics and controllability associated with maneuvering with powerplant(s) inoperative (as appropriate to the helicopter).
2. Sets powerplant controls, correctly identifies and verifies the inoperative powerplant(s) after the simulated failure.
3. Maintains positive helicopter control.
4. Determines the reason for the powerplant(s) failure.
5. Follows the prescribed helicopter checklist and verifies the procedures for securing the inoperative powerplant(s). Determines if a restart is a viable option.
6. Maintains the operating powerplant(s) within acceptable operating limits.
7. Maintains desired altitude within ±100 feet (30 meters), when a constant altitude is specified and is within the capability of the helicopter.
8. Maintains the desired airspeed within ±10 knots.
9. Maintains the desired heading within ±10° of the specified heading.
10. Demonstrates proper powerplant restart procedures in accordance with FAA-approved procedure/checklist or the manufacturer's recommended procedures and pertinent checklist items.

C. TASK: POWERPLANT FAILURE—SINGLE-ENGINE HELICOPTER

REFERENCES: POH, FAA-H-8083-21, RFM.

NOTE: Simulated power failure at altitude must be given over areas where actual touchdowns can safely be completed in the event of an actual powerplant failure.

NOTE: A simulated powerplant failure shall be given by the evaluator in a helicopter only when an actual touchdown can be safely completed should it become necessary and when an autorotative descent would not constitute a violation of the CFRs. The evaluator shall direct the applicant to terminate this TASK in a power recovery at an altitude high enough to assure that a safe touchdown could be accomplished in the event an actual powerplant failure should occur during recovery procedures.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the flight characteristics, approach and forced (emergency) landing procedures, and related procedures to use in the event of a powerplant failure (as appropriate to the helicopter).
2. Enters autorotation promptly when the evaluator simulates a powerplant failure by—

    a. lowering the collective as necessary to maintain rotor RPM within acceptable limits,
    b. establishing and maintaining the recommended autorotation airspeed within ±5 knots, and
    c. maintaining proper longitudinal trim.

3. Selects a suitable airport or landing area which is within the performance capability of the helicopter.
4. Establishes a proper flight pattern to the selected airport or landing area, taking into account altitude, wind, terrain, obstructions, and other pertinent operational factors. Avoids undershooting or overshooting the selected landing area.
5. Determines the cause for the simulated powerplant failure (if altitude permits) and if a restart is a viable option.
6. Performs the emergency memory checklist items appropriate to the helicopter.
7. Maintains positive helicopter control throughout the maneuver.
8. Uses helicopter configuration devices (such as landing gear) in a manner recommended by the manufacturer and/or approved by the FAA.
9. Terminates the autorotation by performing a power recovery, at a safe altitude or as briefed by the evaluator, prior to the flight.

D. TASK: RECOVERY FROM UNUSUAL ATTITUDES

NOTE: The evaluator shall conduct a briefing with the applicant regarding recovery techniques from unusual attitudes. The briefing must include the type of main rotor system applicable to the helicopter provided for the test and avoiding improper recovery techniques that may increase the level of risk for Low Gravity (Low G) and/or Mast Bumping. Any intervention by the evaluator to prevent the helicopter from exceeding any operating limitations, or entering an unsafe flight condition shall be disqualifying and the Task is unsatisfactory.

REFERENCES: POH, FAA-H-8083-15, RFM.

Objective. To determine that the applicant:

1. In simulated instrument conditions, exhibits adequate knowledge of recovery from unusual attitudes.
2. Recovers from both nose-high and nose-low unusual attitudes using proper pitch, bank, and power techniques.

E. TASK: SETTLING-WITH-POWER

REFERENCES: POH, FAA-H-8083-21, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the conditions which contribute to and may result in ‘‘settling-with-power.”
2. Describes the relationship of gross weight, RPM, and density altitude to the severity of the vertical rate of descent.
3. At an altitude above 1,500 feet (450 meters) AGL or as recommended by the manufacturer if it is higher, demonstrates entry into ‘‘settling-with-power” using the recommended procedures in the correct sequence.
4. Recovers immediately at the first indication of ‘‘settling-with-power” using the recommended procedures in the correct sequence and recovers no lower than 1,500 feet (450 meters) AGL.
5. Demonstrates smooth, positive helicopter control and prompt recovery techniques.

V. AREA OF OPERATION: INSTRUMENT PROCEDURES

NOTE: Briefings—

Each applicant must give a briefing before each takeoff/departure and approach/landing. If the operator, aircraft manufacturer, or training provider has not specified a briefing, the briefing must cover the items appropriate for the conditions, such as: departing/landing runway, departure/arrival procedure, instrument approach procedure, power settings, speeds, missed approach procedures, final approach fix, altitude at final approach fix, initial rate of descent, decision attitude (DA)/decision height (DH)/minimum descent altitude (MDA), time to missed approach, and expectations of the other crewmembers during the approach/landing when in a crew situation. If the applicant provides satisfactory initial takeoff/departure and approach/landing briefings, the evaluator may allow the applicant to brief only the changes, during the remainder of the test. For single-pilot operations, the applicant will verbalize the briefings.

NOTE: Use of Area Navigation (RNAV) or Required Navigation Performance (RNP) Navigation System

For practical tests conducted in an aircraft equipped with an installed, instrument flight rules (IFR)-approved RNAV or required navigational performance (RNP) system, or in a flight simulation training device (FSTD) equipped to replicate an installed, IFR-approved RNAV or RNP system, the applicant must demonstrate approach proficiency using that system. The applicant may use a suitable RNAV system on conventional procedures and routes as described in the Aeronautical Information Manual (AIM) to accomplish ACS tasks on conventional approach procedures, as appropriate.

A. TASK: INSTRUMENT ARRIVAL

REFERENCES: POH, RFM, AIM; En Route Low and High Altitude Charts, Profile Descent Charts, STARs, Instrument Approach Procedure Charts.

Objective. To determine that the applicant:

1. While in actual or simulated instrument conditions, exhibits adequate knowledge of En Route Low and High Altitude Charts, STARs, Instrument Approach Procedure Charts, and related pilot and controller responsibilities.
2. Uses the current and appropriate navigation publications for the proposed flight.
3. Selects and correctly identifies the appropriate navigation frequencies and facilities associated with the area arrival.
4. Performs the helicopter checklist items appropriate to the area arrival.
5. Establishes communications with ATC, using proper phraseology.
6. Complies, in a timely manner, with all ATC clearances, instructions, and restrictions.
7. Exhibits adequate knowledge of two-way communications failure procedures.
8. Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, ATC clearance, or as directed by the evaluator.
9. Adheres to airspeed restrictions and adjustments required by regulations, ATC, the RFM, or the evaluator.
10. Establishes, where appropriate, a rate of descent consistent with the helicopter operating characteristics and safety.
11. Maintains the appropriate airspeed/V-speed within ±10 knots; heading ±10°; altitude within ±100 feet (30 meters); and accurately tracks radials, courses, and bearings.
12. Complies with the provisions of the Profile Descent, STAR, and other arrival procedures, as appropriate.

B. TASK: HOLDING

REFERENCES: POH, RFM, AIM; En Route Low and High Altitude Charts, STARs, Instrument Approach Procedure Charts.

Objective. To determine that the applicant:

1. While in actual or simulated instrument conditions, exhibits adequate knowledge of holding procedures for standard and non-standard, published and non-published holding patterns. If appropriate, demonstrates adequate knowledge of holding endurance, including, but not necessarily limited to, fuel on board, fuel flow while holding, fuel required to alternate, etc.
2. Changes to the recommended holding airspeed appropriate for the helicopter and holding altitude, so as to cross the holding fix at or below maximum holding airspeed.
3. Recognizes arrival at the clearance limit or holding fix.
4. Remains within protected airspace.
5. Complies with ATC reporting requirements.
6. Uses the proper timing criteria required by the holding altitude and ATC or evaluator's instructions.
7. Complies with the holding pattern leg length when a DME distance is specified.
8. Arrives over the holding fix as close as possible to the “expect further clearance” time.
9. Maintains the appropriate airspeed/V-speed within ±10 knots, altitude within ±100 feet (30 meters); headings within ±10°; and accurately tracks radials, courses, and bearings.

C. TASK: PRECISION INSTRUMENT APPROACHES

REFERENCES: POH, FAA-H-8083-15, RFM, AIM; Instrument Approach Procedure Charts.

NOTE: The applicant must accomplish at least two precision approaches in simulated or actual instrument meteorological conditions to the decision altitude (DA) using aircraft navigational equipment for centerline and vertical guidance.

The applicant must fly at least one procedure without the use of an autopilot and the manually flown segment will begin no later than the Final Approach Fix (FAF). Manually flown precision approaches may use raw data displays or the flight director, at the discretion of the evaluator.

The applicant should perform one precision approach with reference to backup or partial panel instrumentation or navigation display, depending on the aircraft’s instrument avionics configuration, representing realistic failure mode(s) for the equipment used.

The applicant may fly at least one approach via the autopilot, if equipped, provided the DA/DH does not violate the authorized minimum altitude for autopilot operation.

Approved training programs that incorporate RNAV (RNP) procedures that require specialized advanced training and equipment, and prior FAA authorization, may utilize these special procedures in lieu of one of the required precision approach procedures.

The evaluator has the discretion to have the applicant perform a landing or missed approach at the completion of each precision approach.

NOTE: For a multiengine helicopter, at least one manually controlled precision approach must be accomplished with a simulated failure of one powerplant. The simulated powerplant failure should occur before initiating the final approach segment and must continue to touchdown or throughout the missed approach procedure. For a single engine helicopter, at least one manually controlled precision approach must be accomplished.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the precision instrument approach procedures with all engines operating, and with one engine inoperative.
2. Establishes two-way communications with ATC as appropriate to the phase of flight or approach segment and uses the proper communications phraseology and techniques.
3. Accomplishes the appropriate precision instrument approach procedure as selected by the evaluator.
4. Complies, in a timely manner, with all clearances, instructions, and procedures.
5. Advises ATC anytime the helicopter is unable to comply with a clearance.
6. Establishes the appropriate helicopter configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions.
7. Completes the helicopter checklist items appropriate to the phase of flight or approach segment.
8. Prior to beginning the final approach segment, maintains the desired altitude ±100 feet (30 meters), the desired airspeed within ±10 knots, the desired heading within ±5°; and accurately tracks radials, courses, and bearings.
9. Selects, tunes, identifies, and monitors the operational status of ground and helicopter navigation equipment used for the approach.
10. Applies the necessary adjustments to the published DA/DH and visibility criteria for the helicopter approach category as required, such as—

    a. FDC and Class II NOTAMs.
    b. Inoperative helicopter and ground navigation equipment.
    c. Inoperative visual aids associated with the landing environment.
    d. NWS reporting factors and criteria.

11. Establishes a predetermined rate of descent at the point where the electronic glide slope begins which approximates that required for the helicopter to follow the glide slope.
12. Maintains a stabilized final approach, arriving at DA/DH with no more than one-quarter scale deflection of the localizer, or the glide slope indicators and the airspeed/V-speed within ±5 knots of that desired.
13. Avoids descent below the DA/DH before initiating a missed approach procedure or transitioning to a landing.
14. Initiates immediately the missed approach procedure, when at the DA/DH, and the required visual references for the runway or intended landing area are not distinctly visible and identifiable.
15. Transitions to a normal landing approach only when the helicopter is in a position from which a descent to a landing on the runway or intended landing area can be made at a normal rate of descent using normal maneuvering.

D. TASK: NONPRECISION INSTRUMENT APPROACHES

REFERENCES: POH, FAA-H-8083-15, RFM, AIM; Instrument Approach Procedure Charts.

NOTE: A nonprecision approach is a standard instrument approach procedure to a published minimum descent altitude without approved vertical guidance. The applicant may use navigation systems that display advisory vertical guidance during nonprecision approach operations, if available.

The evaluator must select, and the applicant must accomplish at least two different nonprecision approaches in simulated or actual instrument meteorological conditions. The two approaches must meet the following critiria:

- At least one procedure must include a course reversal maneuver (e.g., procedure turn, holding in lieu, or the course reversal from an initial approach fix on a Terminal Area Arrival);
- The applicant must accomplish at least one procedure from an initial approach fix without the use of autopilot and without the assistance of radar vectors. During this Task, flying without using the autopilot does not prevent use of the flight director; and
- The applicant must fly one procedure with reference to backup or partial panel instrumentation or navigation display, depending on the aircraft's instrument avionics configuration, representing a realistic failure mode(s) for the equipment used.

The evaluator has discretion to have the applicant perform a landing or a missed approach at the completion of each approach.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of nonprecision approach procedures representative of those the applicant is likely to use.
2. Establishes two-way communications with ATC as appropriate to the phase of flight or approach segment and uses proper communications phraseology and techniques.
3. Accomplishes the nonprecision instrument approach procedures selected by the evaluator.
4. Complies with all clearances issued by ATC.
5. Advises ATC or the evaluator any time the helicopter is unable to comply with a clearance.
6. Establishes the appropriate helicopter configuration and airspeed and completes all applicable checklist items.
7. Maintains, prior to beginning the final approach segment, the desired altitude ±100 feet (30 meters), the desired airspeed ±10 knots, the desired heading ±5°; and accurately tracks radials, courses, and bearings.
8. Selects, tunes, identifies, and monitors the operational status of ground and helicopter navigation equipment used for the approach.
9. Applies the necessary adjustments to the published Minimum Descent Altitude and visibility criteria for the helicopter approach category when required, such as—

    a. Notice to Air Missions, including Flight Data Center Procedural NOTAMs.
    b. Inoperative helicopter and ground navigation equipment.
    c. Inoperative visual aids associated with the landing environment.
    d. NWS reporting factors and criteria.

10. Establishes a rate of descent that will ensure arrival at the Minimum Descent Altitude with the helicopter in a position from which a descent to a landing on the intended runway or landing area can be made at a normal rate using normal maneuvering.
11. Allows, while on the final approach segment, not more than quarter-scale deflection of the CDI or ±5° in the case of the RMI or bearing pointer, and maintains airspeed within ±5 knots of that desired.

12. Maintains the Minimum Descent Altitude, when reached, within -0, +50 feet (-0, +15 meters) to the missed approach point.
13. Executes the missed approach procedure if the required visual references for the intended runway are not distinctly visible and identifiable at the missed approach point.
14. Executes a normal landing from a straight-in approach.

NOTE: The instrument approach is considered to begin when the helicopter is over the initial approach fix for the procedure being used and ends when the helicopter touches down on the runway or landing area, or when transition to a missed approach configuration is completed. Instrument conditions need not be simulated below the minimum altitude for the approach being accomplished.

E. TASK: MISSED APPROACH

REFERENCES: POH, FAA-H-8083-15, RFM, AIM; Instrument Approach Procedure Charts.

NOTE: The applicant must perform two missed approaches with at least one being from a precision approach and one consisting of a published missed approach.

Descending below the MDA or continuing a precision approach below DH/DA without the runway environment in sight constitutes unsatisfactory performance. However, even if the applicant initiates a missed approach at the DA/DH, some aircraft briefly descend below DA/DH due to the momentum. This descent below DA/DH does not constitute unsatisfactory performance, as long as the descent below the DA/DH does not continue.

Objective. To determine that the applicant:

1. While in actual or simulated instrument conditions, exhibits adequate knowledge of missed approach procedures associated with standard instrument approaches.
2. Initiates the missed approach procedure promptly by the timely application of power, establishes the proper climb attitude, and reduces drag in accordance with the approved procedures.
3. Reports to ATC, beginning the missed approach procedure.
4. Complies with the appropriate missed approach procedure or ATC clearance.
5. Advises ATC any time the helicopter is unable to comply with a clearance.
6. Follows the recommended helicopter checklist items appropriate to the go-around procedure for the helicopter used.
7. Requests clearance, if appropriate, to the alternate airport, another approach, a holding fix, or as directed by the evaluator.
8. Maintains the desired altitudes ±100 feet (30 meters), airspeed ±5 knots, heading ±5°, and accurately tracks courses, radials, and bearings.

VI. AREA OF OPERATION: LANDINGS AND APPROACHES TO LANDINGS

NOTE: Not withstanding the authorizations for the combining of maneuvers and for the waiver of maneuvers, the applicant must make at least four landings to a hover or to the ground. These landings must include the types listed in this AREA OF OPERATION; however, more than one type may be combined where appropriate (e.g., crosswind and landing from a precision approach or landing with simulated powerplant failure, etc.).

A. TASK: NORMAL AND CROSSWIND APPROACHES AND LANDINGS

REFERENCES: POH, FAA-H-8083-21, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of normal and crosswind approaches and landings including recommended approach angles, airspeeds, V-speeds, configurations, performance limitations, wake turbulence, and safety factors (as appropriate to the helicopter).
2. Establishes the approach and landing configuration appropriate for the runway or designated landing area and meteorological conditions, and adjusts the powerplant controls as required.
3. Maintains a ground track, within ±5°, that ensures the desired traffic pattern will be flown, taking into account any obstructions and ATC or evaluator instructions.
4. Verifies existing wind conditions, makes proper correction for drift, and maintains a precise ground track.
5. Maintains a normal approach angle and recommended airspeed and a normal rate of closure to the point of transition to a hover or touchdown.
6. Terminates the approach in a smooth transition to a hover or to a touchdown within 2 feet (.6 meter) of the designated point. If a hover termination is specified, it will be within ±2 feet (.6 meter) of recommended hovering altitude.
7. Completes the applicable after-landing checklist items in a timely manner and as recommended by the manufacturer.

B. TASK: APPROACH AND LANDING WITH SIMULATED POWERPLANT FAILURE—MULTIENGINE HELICOPTER

REFERENCES: POH, FAA-H-8083-21, RFM.

NOTE: In a multiengine helicopter maneuvering to a landing, the applicant should follow a procedure that simulates the loss of one powerplant.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of maneuvering to a landing with a powerplant inoperative, including the controllability factors associated with maneuvering, and the applicable emergency procedures.
2. Proceeds toward the nearest suitable airport or landing area.
3. Maintains, prior to beginning the final approach segment, the desired altitude ±100 feet (30 meters), the desired airspeed ±10 knots, the desired heading ±5°, and accurately tracks courses, radials, and bearings.
4. Establishes the approach and landing configuration appropriate for the runway or landing area and meteorological conditions and adjusts the powerplant controls as required.
5. Maintains a normal approach angle and recommended airspeed to the point of transition to touchdown.
6. Terminates the approach in a smooth transition to touchdown.
7. Completes the after-landing checklist items in a timely manner, after clearing the runway, and as recommended by the manufacturer.

C. TASK: REJECTED LANDING

REFERENCES: POH, FAA-H-8083-21, RFM; FSB Report.

NOTE: The instrument conditions need not be simulated below 100 feet above the runway. This maneuver should be initiated approximately 50 feet above the runway or landing area and approximately over the runway threshold.

For those applicants seeking a VFR-only type rating and where this maneuver is accomplished with a simulated engine failure, it should not be initiated at speeds or altitudes below that recommended in the flight manual.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of a rejected landing procedure, including the conditions that dictate a rejected landing, the importance of a timely decision, the recommended airspeed/V-speeds, and also the applicable “clean-up” procedure.
2. Makes a timely decision to reject the landing for actual or simulated circumstances.
3. Applies the appropriate power setting for the flight condition and establishes a pitch attitude necessary to obtain the desired performance.
4. Adjusts helicopter configuration and retracts the landing gear, if appropriate, in the correct sequence and at a safe altitude, establishes a positive rate of climb and the appropriate airspeed/V-speed within ±5 knots.
5. Trims the helicopter as necessary and maintains the proper ground track, within ±5°, during the rejected landing procedure.
6. Accomplishes the appropriate checklist items in a timely manner in accordance with approved procedures.

VII. AREA OF OPERATION: NORMAL AND ABNORMAL PROCEDURES

A. TASK: NORMAL AND ABNORMAL PROCEDURES

REFERENCES: POH, FAA-H-8083-21, RFM.

Objective. To determine that the applicant:

1. Possesses adequate knowledge of the normal and abnormal procedures of the systems, subsystems, and devices relative to the helicopter type (as may be determined by the evaluator).
2. Demonstrates the proper use of the helicopter's systems, subsystems, and devices (as may be determined by the evaluator) appropriate to the helicopter, such as—

    a. powerplant.
    b. fuel system.
    c. electrical system.
    d. hydraulic system.
    e. environmental system.
    f. fire detection and extinguishing systems.
    g. navigation and avionics systems.
    h. automatic flight control system, electronic flight instrument system, and related subsystems.
    i. flight control systems.
    j. anti-ice and deice systems.
    k. helicopter and personal emergency equipment.
    l. loss of tail rotor effectiveness.
    m. other systems, subsystems, and devices specific to the type helicopter.

VIII. AREA OF OPERATION: EMERGENCY PROCEDURES

A. TASK: EMERGENCY PROCEDURES

REFERENCES: POH, RFM.

Objective. To determine that the applicant:

1. Possesses adequate knowledge of the emergency procedures (as may be determined by the evaluator) relating to the particular helicopter type.
2. Demonstrates the proper emergency procedures (as must be determined by the evaluator) relating to the particular helicopter type, including—

    a. inflight fire and smoke removal.
    b. emergency descent.
    c. autorotation, with a power recovery.
    d. ditching.
    e. emergency evacuation.

3. Demonstrates the proper procedure for any other emergency outlined (as must be determined by the evaluator) in the appropriate approved helicopter RFM.

IX. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER-LANDING PROCEDURES

REFERENCES: POH, RFM, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of safe after-landing/taxi procedures (as appropriate to the helicopter).
2. Demonstrates proficiency by maintaining correct and positive helicopter control. This includes hovering taxi, air taxiing; and in helicopters with wheels, includes ground taxiing. In helicopters equipped with float devices, this includes water taxiing, approaching a buoy, and docking.
3. Maintains proper spacing on other helicopter, obstructions, and persons.
4. Accomplishes the applicable checklist items and performs the recommended procedures.
5. Maintains the desired track and speed.
6. Complies with instructions issued by ATC (or the evaluator simulating ATC).
7. Observes runway hold lines, localizer and glide slope critical areas, and other surface control markings and lighting.
8. Maintains constant vigilance and control of the helicopter during the taxi operation.

B. TASK: PARKING AND SECURING

REFERENCES: POH, RFM, FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the parking and the securing helicopter procedures.
2. Demonstrates adequate knowledge of the helicopter forms/logs to record the flight time/discrepancies.

APPENDIX 1—TASK VS. FLIGHT SIMULATION TRAINING DEVICE CREDIT

FLIGHT SIMULATION TRAINING DEVICE CREDIT

FAA aviation safety inspectors and part 142 TCE conducting the Airline Transport Pilot and Aircraft Type Rating Practical Test with FSTD should consult appropriate documentation to ensure that the device has been approved for training, testing, or checking, and assigned the appropriate qualification level in accordance with the requirements of 14 CFR part 60. This Appendix 1 table lists the maximum approvable capabilities for FSTDs.

FSTDs may only be used in accordance with air carrier training programs or approved courses conducted by a training center certificated under part 142.

The FAA must approve each device for training and/or evaluating specific flight TASKS listed in this Appendix, and each device must continue to support the level of student or applicant performance required by the practical test standards.

The helicopter may be used for all TASKS. An aircraft and/or a higher level FSTD is required for those items that cannot be trained or evaluated using a lower level FSTD. Level C and D simulators may be used as indicated only if the applicant meets regulatory prerequisite experience requirements. Level A helicopter FSTD standards have not been defined.

NOTE: Users of the following charts are cautioned that the use of the chart alone is incomplete. The description and objective of each TASK as listed in the body of the PTS, including all NOTES, must also be incorporated for accurate FSTD use.

USE OF CHART

X Creditable.
X1 Creditable only if accomplished in conjunction with a running takeoff or running landing in an FSTD that represents an aircraft equipped with wheeled landing gear.
A Creditable only if appropriate systems are installed and operating.

FLIGHT TASK **FSTD LEVEL**

Areas of Operation:	**4**	**5**	**6**	**7**	**A**	**B**	**C**	**D**
II. Preflight Procedures								
A. Preflight Inspection (Cockpit Only)	**A**	**A**	**X**	**X**	**-**	**X**	**X**	**X**
B. Powerplant Start	**A**	**A**	**X**	**X**	**-**	**X**	**X**	**X**
C1. Taxiing - Ground	**-**	**-**	**-**	**-**	**-**	**X**	**X**	**X**
C2. Taxiing - Hover (1)	**-**	**-**	**-**	**-**	**-**	**-**	**X**	**X**
D. Pretakeoff Checks	**A**	**A**	**X**	**X**	**-**	**X**	**X**	**X**
III. Takeoff and Departure Phase (2)								
A. Normal and Crosswind Takeoff	**-**	**-**	**-**	**-**	**-**	**X1**	**X**	**X**
B. Instrument Takeoff	**-**	**-**	**-**	**X1**	**-**	**X1**	**X**	**X**
C. Powerplant Failure During Takeoff	**-**	**-**	**-**	**-**	**-**	**X1**	**X**	**X**
D. Rejected Takeoff	**-**	**-**	**-**	**-**	**-**	**X1**	**X**	**X**
E. Instrument Departure	**-**	**-**	**X**	**X**	**-**	**X**	**X**	**X**
IV. Inflight Maneuvers	**4**	**5**	**6**	**7**	**A**	**B**	**C**	**D**
A. Steep Turns	**-**	**-**	**-**	**-**	**-**	**X**	**X**	**X**
B. Power Plant Failure-Multiengine Helicopter (3)	**-**	**-**	**X**	**X**	**-**	**X**	**X**	**X**
C. Power Plant Failure-Single Engine Helicopter (4)	**-**	**-**	**X**	**X**	**-**	**X**	**X**	**X**
D. Recovery from Unusual Attitudes	**-**	**-**	**-**	**-**	**-**	**X**	**X**	**X**
E. Settling-With-Power	**-**	**-**	**-**	**-**	**-**	**-**	**X**	**X**

The notes below are depicted in the table above in parenthesis:

(1) Checking in the hover task requires six degree of freedom motion cues.
(2) Any takeoff from a hover requires six degree of motion cues. Running takeoffs may be authorized for level B devices with three degree of freedom motion cues.
(3) Authorized only for in-flight failures not terminating in a landing (level 6 and 7).
(4) Authorized only for in-flight failures not terminating in a landing (level 6 and 7).

FLIGHT TASK **FSTD LEVEL**

Areas of Operation: Section Two	**4**	**5**	**6**	**7**	**A**	**B**	**C**	**D**
V. Instrument Procedures								
A. Instrument Arrival	-	-	X	X	-	X	X	X
B. Holding	-	-	X	X	-	X	X	X
C1. Precision Instrument Approach (Normal)	-	A	X	X	-	X	X	X
C2. Precision Instrument Approach (Manual/Powerplant Failure)	-	-	-	-	-	X	X	X
D. Nonprecision Instrument Approaches		A	X	X	-	X	X	X
E1. Missed Approach (Normal)	-	-	-	-	-	X	X	X
E2. Missed Approach (Powerplant Failure)	-	-	-	-	-	X	X	X
VI. Landings and Approaches to Landings								
A. Normal and Crosswind Approaches and Landings	-	-	-	-	-	X1	X	X
B. Approach and Landing with Simulated Powerplant Failure—Multiengine Helicopter	-	-	-	-	-	X1	X	X
C. Rejected Landing	-	-	-	-	-	X	X	X
VII. Normal and Abnormal Procedures (5)	**4**	**5**	**6**	**7**	**A**	**B**	**C**	**D**
A. Powerplant	A	A	X	X	-	X	X	X
B. Fuel System	A	A	X	X	-	X	X	X
C. Electrical System	A	A	X	X	-	X	X	X
D. Hydraulic System	A	A	X	X	-	X	X	X
E. Environmental System	A	A	X	X	-	X	X	X
F. Fire Detection and Extinguishing Systems	A	A	X	X	-	X	X	X
G. Navigation and Aviation Systems	A	A	X	X	-	X	X	X
H. Automatic Flight Control System, Electronic Flight Instrument System and Related Subsystems	A	A	X	X	-	X	X	X
I. Flight Control Systems	-	-	A	X	-	X	X	X
J. Anti-ice and Deice Systems	A	A	X	X	-	X	X	X
K. Helicopter and Personal Emergency Equipment	A	A	X	X	-	X	X	X
L. Loss of Tail Rotor Effectiveness	-	-	-	-	-	X	X	X
M. Other systems, subsystems, and devices specific to the type helicopter	A	A	X	X	-	X	X	X

Note: Evaluation of normal and abnormal procedures can usually be accomplished in conjunction with other events and do not normally require a specific event to test the applicant's use of the aircraft systems and devices. An applicant's performance must be evaluated based on the maintenance of helicopter control, the ability to recognize and analyze abnormal indications, and the ability to apply corrective procedures in a timely manner.

FLIGHT TASK **FSTD LEVEL**

Areas of Operation: Section Two	**4**	**5**	**6**	**7**	**A**	**B**	**C**	**D**
VIII. Emergency Procedures								
A. Emergency Descent	**-**	**-**	**X**	**X**	-	**X**	**X**	**X**
B. Inflight Fire and Smoke Removal	**A**	**A**	**X**	**X**	-	**X**	**X**	**X**
C. Emergency Evacuation	**-**	**-**	**A**	**A**	**-**	**-**	**-**	**-**
D. Ditching	**-**	**-**	**-**	**-**	**-**	**-**	**X**	**X**
E. Autorotative Landing	**-**	**-**	**-**	**-**	**-**	**-**	**X**	**X**
IX. Postflight Procedures								
A. After-Landing Procedures	**A**	**A**	**X**	**X**	**-**	**X**	**X**	**X**
B. Parking and Securing	**A**	**A**	**X**	**X**	**-**	**X**	**X**	**X**