U.S. Department
of Transportation

**Federal Aviation
Administration**

FAA-S-8081-15B

Private Pilot

Practical Test Standards

for

Rotorcraft Category

Gyroplane Rating

November 2023

Flight Standards Service
Washington, DC 20591

Foreword

FAA-S-8081-15B, Private Pilot Practical Test Standards for Rotorcraft Category Gyroplane Rating, is published by the FAA to establish the standards for the private pilot practical test for the rotorcraft category, gyroplane class. FAA inspectors and designated evaluators shall conduct practical tests in compliance with these standards. Instructors and applicants should find these standards helpful in practical test preparation.

FAA-S-8081-15B supersedes FAA-S-8081-15A, Private Pilot for Practical Test Standards for Rotorcraft Gyroplane with Change 1, dated July 2005.

Major Enhancements

- All references reviewed and updated throughout
- Changed “cockpit” to “flight deck” throughout
- Introduction:
  - Updated reference list in “Practical Test Description” section
  - Updated “Abbreviations” section
  - Updated “Practical Test Prerequisites” section
  - Added “Evaluator Responsibility” section
  - Updated Task Table
  - Updated Checklists
- Removed helicopter section
- Deleted Area Of Operation – Night Operation and moved the Task, Task Night Preparation to Area of Operation I. Preflight Preparation Task I.

Table of Contents

Introduction

General Information

The FAA has developed the PTS for use by FAA inspectors and evaluators when conducting the practical test. Instructors should use this PTS when preparing applicants for practical tests. Applicants should be familiar with this PTS and refer to these standards during their training.

Throughout this PTS the following titles: ASI, pilot examiner (other than administrative pilot examiners), TCE; or chief instructor, assistant chief instructor, or check instructor of pilot school holding examining authority, will be referred to as an evaluator.

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 PTS may be emailed to acsptsinquiries@faa.gov.

PTS Concept

14 CFR part 61 specifies the subject areas in which knowledge and skill 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.

PTS Description

This PTS includes the Areas of Operation and Tasks for the issuance of an initial Private Pilot Certificate and for the addition of category and/or class ratings to that certificate.

Areas of Operation are phases of the practical test arranged in a logical sequence within this standard. They begin with Preflight Preparation and end with Postflight Procedures. The evaluator may conduct the practical test in any sequence that will result in a complete and efficient test. However, the ground portion of the practical test must be accomplished before the flight portion.

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 or Task.

Reference identifies the publication(s) that describe(s) the Task. Descriptions of Tasks are not included in the standards because this information can be found in the current issue of the listed reference. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications.

These practical test standards are based on the following reference list:

14 CFR part 43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration
14 CFR part 61	Certification: Pilots and Flight Instructors and Ground Instructors
14 CFR part 67	Medical Standards and Certification
14 CFR part 71	Designation of Class A, B, C, D, and E Airspace Areas; Air Traffic Service Routes; and Reporting Points
14 CFR part 91	General Operating and Flight Rules
FAA-H-8083-1	Aircraft Weight and Balance Handbook
FAA-H-8083-21	Rotorcraft Flying Handbook

FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
FAA-H-8083-28	Aviation Weather Handbook
AC 91-55	Reduction of Electrical System Failures Following Aircraft Engine Starting
AIM	Aeronautical Information Manual
FDC NOTAMs	National Flight Data Center Notices to Air Missions
Other	Chart Supplements
	Pertinent Pilot's Operating Handbooks
	Gyroplane Flight Manual
	FAA-Approved Flight Manuals
	Navigation Charts
	Navigational Equipment Operations Manuals

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.

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.

Acronyms/Abbreviations

14 CFR	Title 14 of the Code of Federal Regulations
AC	Advisory Circular
ADM	Aeronautical Decision Making
AELS	Aviation English Language Standards
AGL	Above Ground Level
AIRMET	Airman's Meteorological Information
AKTR	Airman Knowledge Test Report
AMEL	Airplane Multiengine Land
AMES	Airplane Multiengine Sea
ASEL	Airplane Single-Engine Land
ASES	Airplane Single-Engine Sea
ASI	Aviation Safety Inspection
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
AWOS	Automated Weather Observation System
CFIT	Controlled Flight into Terrain
CRM	Crew Resource Management
ETA	Estimated Time of Arrival
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FSO	Flight Standards Office
GFA	Graphical Forecasts for Aviation
ID	Identification
MEL	Minimum Equipment List
METAR	Aviation Routine Weather Report
NOTAM	Notice to Air Missions
PDF	Portable Document Format
PTS	Practical Test Standards
RH	Rotorcraft-Helicopter
RPM	Revolutions per Minute
SIGMETS	Significant Meteorological Advisory
SOP	Standard Operating Procedure

SRM	Single-Pilot Resource Management
SUA	Special Use Airspace
TAF	Terminal Aviation Forecast
TCE	Training Center Evaluator
TFR	Temporary Flight Restriction
U.S.	United States
VFR	Visual Flight Rules

Use of the PTS

The PTS has been designed to evaluate competency in both knowledge and skill.

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

An applicant who holds at least a Private Pilot Certificate seeking an additional rotorcraft category rating and/or class rating at the private pilot level will be evaluated in the Areas of Operation and Tasks listed in the Additional Rating Task Table. At the discretion of the evaluator, an evaluation of the applicant's competence in the remaining Areas of Operation and Tasks may be conducted.

If the applicant holds two or more category or class ratings at least at the private level, and the rating table indicates differing required Tasks, the “least restrictive” entry applies. For example, if “All” and “None” are indicated for one Area of Operation, the “None” entry applies. If “B” and “B, C” are indicated, the “B” entry applies.

In preparation for each practical test, the evaluator must develop a written “plan of action” for each practical test. The “plan of action” is a tool, for the sole use of the evaluator, to be used in evaluating the applicant. The plan of action need not be grammatically correct or in any formal format. The plan of action must contain all of the required Areas of Operation and Tasks and any optional Tasks selected by the evaluator. The “plan of action” must incorporate one or more scenarios that will be used during the practical test.

The evaluator should try to include as many of the Tasks into the scenario portion of the test as possible, but maintain the flexibility to change due to unexpected situations as they arise and still result in an efficient and valid test. Any Task selected for evaluation during a practical test is to be evaluated in its entirety.

The evaluator is not required to follow the precise order in which the Areas of Operation and Tasks appear in this book. The evaluator may change the sequence or combine Tasks with similar objectives to have an orderly and efficient flow of the practical test. For example, lost procedures may be combined with radio navigation. The evaluator's “plan of action” should include the order and combination of Tasks to be demonstrated by the applicant in a manner that will result in an efficient and valid test.

The evaluator is expected to use good judgment in the performance of simulated emergency procedures. The use of the safest means for simulation is expected. Consideration must be given to local conditions (both meteorological and topographical), at the time of the test, as well as the applicant's, workload, and the condition of the aircraft used. If the procedure being evaluated would jeopardize safety, it is expected that the applicant will simulate that portion of the maneuver.

Special Emphasis Areas

Evaluators must place special emphasis upon areas of aircraft operation considered critical to flight safety. Among these are:

1. positive aircraft control;
2. procedures for positive exchange of flight controls (who is flying the aircraft);
3. collision avoidance;
4. wake turbulence avoidance;
5. runway incursion avoidance;
6. CFIT;
7. wire strike avoidance;
8. ADM and risk management;
9. checklist usage;
10. TFRs;
11. SUA;
12. Aviation security;
13. SRM and CRM; and
14. other areas deemed appropriate to any phase of the practical test.

Although these areas may not be specifically addressed under each Task, they are essential to flight safety and will be evaluated during the practical test. In all instances, the applicant's actions will relate to the complete situation.

Practical Test Prerequisites

14 CFR part 61, section 61.39 and subpart E, provide practical test and certification prerequisites.

Aircraft and Equipment Required for the Practical Test

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

Evaluator Responsibility

The evaluator must determine that the applicant meets FAA 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 FAA Form 8710-1, Application for an Airman Certificate and/or Rating 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

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

Notice of Disapproval of Application, 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 conducting the practical test is responsible for determining that the applicant meets the acceptable standards of knowledge and skill of each Task within the appropriate practical test standard. Since there is no formal division between the “oral” and “skill" portions of the practical test, this becomes an ongoing process throughout the test. Oral questioning, to determine the applicant’s knowledge of Tasks and related safety factors, should be used judiciously at all times, especially during the flight portion of the practical test.

Evaluators must test to the greatest extent practicable the applicant's correlative abilities rather than mere rote enumeration of facts throughout the practical test.

If 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 interest of fairness and does not mean that instruction, practice, or the repeating of an unsatisfactory task is permitted during the certification process.

Throughout the flight portion of the practical test, the evaluator must evaluate the applicant's use of visual scanning and collision avoidance procedures.

Flight Instructor Responsibility

An appropriately rated flight instructor is responsible for training the private pilot applicant to acceptable standards in all subject matter areas, procedures, and maneuvers included in the Tasks within the appropriate PTS.

Because of the impact of their teaching activities in developing safe, proficient pilots, flight instructors should exhibit a high level of knowledge, skill, and the ability to impart that knowledge and skill to students. Additionally, the flight instructor must certify that the applicant is able to perform safely as a private pilot and is competent to pass the required practical test.

Throughout the applicant's training, the flight instructor is responsible for emphasizing the performance of effective visual scanning, collision avoidance, and runway incursion avoidance procedures. These areas are covered, in part, in AC 90-48, Pilots’ Role in Collision Avoidance; FAA-H-8083-25, Pilot’s Handbook of Aeronautical Knowledge; and the Aeronautical Information Manual.

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 examiner, the applicant does not meet the standards of performance of any Task performed, 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 disapproval notice 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).

Letter of Discontinuance

When a practical test is discontinued for reasons other than unsatisfactory performance (e.g., equipment failure, weather, or illness), FAA Form 8700-1, Airman Certificate and/or Rating Application, and, if applicable, the AKTR, is 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, Crew Resource Management, and Single-Pilot Resource Management

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 the elements of the 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. Division of attention and proper visual scanning would be considered when using a checklist.

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 technique while dividing attention both inside and/or outside the cockpit, the evaluator should 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.

Positive Exchange of Flight Controls

During flight, there must always be a clear understanding between pilots of who has control of the aircraft. Prior to flight, a briefing should be conducted that includes the procedure for the exchange of flight controls. A positive three-step process, subsequently described, in the exchange of flight controls between pilots is a proven procedure and one that is strongly recommended.

When one pilot wishes to give the other pilot control of the aircraft, he or she will say, “You have the flight controls.” The other pilot acknowledges immediately by saying, “I have the flight controls.” The first pilot again says, “You have the flight controls.” When control is returned to the first pilot, follow the same procedure. A visual check is recommended to verify that the exchange has occurred. There should never be any doubt as to who is flying the aircraft.

Additional Rating Task Table

Rotorcraft - Gyroplane

Addition of a Rotorcraft – Gyroplane rating to an existing Private Pilot Certificate									
Required Tasks are indicated by either the Task letter(s) that apply(s) or an indication that all or none of the Tasks must be tested based on the notes in each Area of Operation.									
Areas of Operation	**Pilot Rating(s) Held**								
	ASEL	**ASES**	**AMEL**	**AMES**	**RH**	**Non-Power Glider**	**Power Glider**	**Free Balloon**	**Airship**
I	E,F,G	E,F,G	E,F,G	E,F,G	E,F,G	E,F,G	E,F,G	E,F,G	E,F,G
II	All	All	All	All	All	All	All	All	All
III	B	B,C	B	B,C	B	All	B	All	B
IV	All	All	All	All	All	All	All	All	All
V	All	All	All	All	All	All	All	All	All
VI	All	All	All	All	All	All	All	All	All
VII	None	None	None	None	None	B,C,D	B,C,D	B,C,D	None
VIII	All	All	All	All	All	All	All	All	All
IX	All	All	All	All	All	All	All	All	All
X	None	None	None	None	None	All	All	All	All

Applicant's Practical Test Checklist

Rotorcraft - Gyroplane

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 Gyroplane Flight Manual
- ☐ FCC Station License (if applicable)

Personal Equipment

- ☐ Current Aeronautical Charts
- ☐ Computer and Plotter
- ☐ Flight Plan Form
- ☐ Flight Logs
- ☐ Current AIM, Chart Supplements, and Appropriate Publications

Personal Records

- ☐ Identification – Photo/Signature ID
- ☐ Pilot Certificate
- ☐ Current and Appropriate Medical Certificate
- ☐ Completed FAA Form 8710-1, Airman Certificate and/or Rating Application with Instructor's Signature (if applicable)
- ☐ AKTR (if applicable)
- ☐ Pilot Logbook with Appropriate Instructor Endorsements
- ☐ FAA Form 8060-5, Notice of Disapproval (if applicable)
- ☐ Approved School Graduation Certificate (if applicable)
- ☐ Evaluator's Fee (if applicable)

Evaluator's Practical Test Checklist

Rotorcraft - Gyroplane

Applicant's Name: _____

Location:_____

Date/Time: _____

I. Preflight Preparation

- □ **A.** Certificates and Documents
- □ **B.** Airworthiness Requirements
- □ **C.** Weather Information
- □ **D.** Cross-Country Flight Planning
- □ **E** National Airspace System
- □ **F** Performance and Limitations
- □ **G** Operation of Systems
- □ **H.** Aeromedical Factors
- □ **I.** Night Preparation

II. Preflight Procedures

- □ **A.** Preflight Inspection
- □ **B.** Flight Deck Management
- □ **C.** Engine Starting
- □ **D.** Taxiing
- □ **E.** Before Takeoff Check

III. Airport Operations

- □ **A.** Radio Communications and ATC Light Signals
- □ **B.** Traffic Patterns
- □ **C.** Airport Markings and Lighting

IV. Takeoffs, Landings, and Go-Arounds

- □ **A.** Normal and Crosswind Takeoff and Climb
- □ **B.** Normal and Crosswind Approach and Landing
- □ **C.** Soft-Field Takeoff and Climb
- □ **D.** Soft-Field Approach and Landing
- □ **E.** Short-Field Takeoff and Climb
- □ **F.** Short-Field Approach and Landing
- □ **G.** Go-Around

V. Performance Maneuver

- □ Steep Turns

VI. Ground Reference Maneuvers

- **A.** Rectangular Course
- **B.** S-Turns
- **C.** Turns Around a Point

VII. Navigation

- **A.** Pilotage and Dead Reckoning
- **B.** Navigation and Radar Services
- **C.** Diversion
- **D.** Lost Procedures

VIII. Flight at Slow Airspeed

- **A.** Maneuvering at Slow Airspeeds
- **B.** High Rate of Descent and Recovery

IX. Emergency Operations

- **A.** Emergency Approach and Landing
- **B.** Lift-Off at Low Airspeed and High Angle Of Attack
- **C.** Ground Resonance
- **D.** Systems and Equipment Malfunctions
- **E.** Emergency Equipment and Survival Gear

X. Postflight Procedures

- **A.** After Landing, Parking, and Securing

Areas of Operation:

I. Preflight Preparation

Note: *The evaluator shall develop a scenario based on real time weather to evaluate Tasks C, D, E, and F.*

Task A: Certificates and Documents

References: 14 CFR parts 43, 61, 67, 91; FAA-H-8083-21, FAA-H-8083-25; Gyroplane Flight Manual.

Objective: To determine that the applicant exhibits knowledge of the elements related to certificates and documents by:

1. Explaining—

    a. private pilot certificate privileges, limitations, and recent flight experience requirements.
    b. medical certificate class and duration.
    c. pilot logbook or flight records.

2. Locating and explaining—

    a. airworthiness and registration certificates.
    b. operating limitations, placards, instrument markings, and gyroplane flight manual.
    c. weight and balance data and equipment list.

Task B: Airworthiness Requirements

References: 14 CFR part 91; FAA-H-8083-21.

Objective: To determine that the applicant exhibits knowledge of the elements related to airworthiness requirements by:

1. Explaining—

    a. required instruments and equipment for day/night VFR.
    b. procedures and limitations for determining airworthiness of the gyroplane with inoperative instruments and equipment with and without an MEL.
    c. requirements and procedures for obtaining a special flight permit.

2. Locating and explaining—

    a. airworthiness directives.
    b. compliance records.
    c. maintenance/inspection requirements.
    d. appropriate record keeping.

Task C: Weather Information

References: 14 CFR part 91; FAA-H-8083-25, FAA-H-8083-28; AIM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports, charts, and forecasts from various sources with emphasis on—

    a. METAR, TAF, and GFA.
    b. surface analysis chart.
    c. radar summary chart.
    d. winds and temperature aloft chart.
    e. significant weather prognostic charts.
    f. AWOS, SIGMETs, and AIRMETs.
    g. PIREPs.
    h. windshear reports.
    i. icing and freezing level information ASOS, and ATIS reports.

3. Makes a competent “go/no-go” decision based on available weather information.

Task D: Cross-Country Flight Planning

References: 14 CFR part 91; FAA-H-8083-25; Navigation Charts; Chart Supplements; NOTAMS; AIM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a pre-planned VFR cross-country flight, as previously assigned by the evaluator. On the day of the practical test, the final flight plan shall be to the first fuel stop necessary, based on maximum allowable passengers, baggage, and/or cargo loads using real-time weather.
2. Uses appropriate and current aeronautical charts.
3. Properly identifies airspace, obstructions, and terrain features, including discussion of wire strike avoidance techniques.
4. Selects easily identifiable en route checkpoints.
5. Selects the most favorable altitudes, considering weather conditions and equipment capabilities.
6. Computes headings, flight time, and fuel requirements.
7. Selects appropriate navigation systems/facilities and communication frequencies.
8. Applies pertinent information from NOTAMs and other flight publications.
9. Completes a navigation log and simulates filing a VFR flight plan.

Task E: National Airspace System

References: 14 CFR parts 71, 91; Navigation Charts; AIM.

Objective: To determine that the applicant exhibits knowledge of the elements related to the National Airspace System by explaining:

1. Basic VFR Weather Minimums – for all classes of airspace.
2. Airspace classes – their boundaries, pilot certification, and gyroplane equipment requirements for the following—

    a. Class A.
    b. Class B.
    c. Class C.
    d. Class D.
    e. Class E.
    f. Class G.

4. Special use airspace and other airspace areas.

Task F: Performance and Limitations

References: FAA-H-8083-1, FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance and the adverse effects of exceeding limitations.
2. Computes weight and balance. Determines the computed weight and center of gravity is within the gyroplane's operating limitations and if the weight and center of gravity will remain within limits during all phases of flight.
3. Demonstrates the use of appropriate performance charts, tables, and data.
4. Describes the effects of atmospheric conditions on the gyroplane's performance.
5. Understands the cause, effect, and avoidance procedure of "power pushover," and "pilot induced oscillation."

Task G: Operation of Systems

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the gyroplane provided for the flight test by explaining at least three (3) of the following systems selected by the evaluator.

1. Primary flight controls and trim.
2. Powerplant.
3. Rotor, including prerotator/spin-up control, if applicable.
4. Landing gear, brakes, and steering.
5. Fuel, oil, and hydraulic.
6. Electrical.
7. Pitot-static, vacuum/pressure, and associated flight instruments, if applicable.
8. Environmental, if applicable.
9. Anti-icing, including carburetor heat, if applicable.
10. Avionics equipment.

Task H: Aeromedical Factors

References: FAA-H-8083-21; AIM.

Objective: To determine that the applicant exhibits knowledge of the elements related to aeromedical factors by explaining:

1. The symptoms, causes, effects, and corrective actions of at least three of the following—

    a. hypoxia.
    b. hyperventilation.
    c. middle ear and sinus problems.
    d. spatial disorientation.
    e. motion sickness.
    f. carbon monoxide poisoning.
    g. stress and fatigue.

2. The effects of alcohol and drugs, including over-the-counter drugs.
3. The effects of nitrogen excesses during scuba dives upon a pilot and/or passenger in flight.

Task I: Night Preparation

References: FAA-H-8083-21, FAA-H-8083-25; AIM, Gyroplane Flight Manual.

Objective: To determine that the applicant exhibits knowledge of the elements related to night operations by explaining:

1. Physiological aspects of night flying as it relates to vision.
2. Lighting systems identifying airports, runways, taxiways and obstructions, and pilot controlled lighting.
3. Airplane lighting systems.
4. Personal equipment essential for night flight.
5. Night orientation, navigation, and chart reading techniques.
6. Safety precautions and emergencies unique to night flying.

II. Preflight Procedures

Task A: Preflight Inspection

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to a preflight inspection including which items must be inspected, the reasons for checking each item, and how to detect possible defects.
2. Inspects the gyroplane with reference to an appropriate checklist.
3. Verifies that the gyroplane is in condition for safe flight.

Task B: Flight Deck Management

References: 14 CFR part 91; FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to flight deck management procedures.
2. Ensures all loose items in the aircraft are secured.
3. Organizes and arranges material and equipment in an efficient manner so they are readily available.
4. Briefs the occupants on the use of safety belts, shoulder harnesses, doors, propeller and rotor blade avoidance, and emergency procedures.

Task C: Engine Starting

References: AC 91-55; FAA-H-8083-21, FAA-H-8083-25; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to recommended engine starting procedures. This shall include the use of an external power source, starting under various atmospheric conditions, awareness of other persons and property during start, and the effects of using incorrect starting procedures.
2. Positions the gyroplane properly considering structures, surface conditions, other aircraft, and the safety of nearby persons and property.
3. Utilizes the appropriate checklist for starting procedure.

Task D: Taxiing

References: FAA-H-8083-21, FAA-H-8083-25; AIM; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to recommended taxi procedures, including rotor blade management and the effect of wind during taxiing.
2. Performs a brake check immediately after the gyroplane begins moving.
3. Properly positions rotor blades while taxiing.
4. Controls direction and speed without excessive use of brakes.
5. Complies with airport markings, signals, ATC clearances, and instructions.
6. Avoids other aircraft and hazards.
7. Properly positions the gyroplane for runup considering other aircraft, surface conditions, and if applicable, existing wind conditions.

Task E: Before Takeoff Check

References: FAA-H-8083-21, FAA-H-8083-25; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to the before takeoff check. This shall include the reasons for checking the items and how to detect malfunctions.
2. Positions the gyroplane properly considering other aircraft, surface conditions, and wind conditions.
3. Divides attention inside and outside the aircraft.
4. Accomplishes the before takeoff check and ensures that the gyroplane is in safe operating condition.
5. Reviews takeoff performance airspeeds and expected takeoff distance.
6. Describes takeoff emergency procedures, to include low speed/high speed blade flap situations.
7. Avoids runway incursions and/or ensures no conflict with traffic prior to taxiing into takeoff position.
8. Utilizes proper rotor spin-up procedure.

III. Airport Operations

Task A: Radio Communications and ATC Light Signals

References: 14 CFR part 91; FAA-H-8083-25; AIM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications and ATC light signals.
2. Selects appropriate frequencies.
3. Transmits using recommended phraseology.
4. Acknowledges radio communications and complies with instructions.

Task B: Traffic Patterns

References: 14 CFR part 91; AIM; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to traffic patterns. This shall include procedures at airports with and without operating control towers, prevention of runway incursions, collision avoidance, wake turbulence avoidance, and wind shear.
2. Complies with proper traffic pattern procedures.
3. Maintains proper spacing from other traffic.
4. Corrects for wind drift to maintain the proper ground track.
5. Maintains orientation with the runway/landing area in use.
6. Maintains traffic pattern altitude, ±100 feet, and the appropriate airspeed, ±5 knots.

Task C: Airport Markings and Lighting

References: FAA-H-8083-25; AIM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to airport runway and taxiway operations with emphasis on runway incursion avoidance.
2. Properly identifies and interprets airport runway and taxiway signs, markings, and lighting.

IV. Takeoffs, Landings, and Go-Arounds

Task A: Normal and Crosswind Takeoff and Climb

References: FAA-H-8083-21; Gyroplane Flight Manual.

Note: If a calm wind weather condition exists, the applicant's knowledge of the crosswind elements must be evaluated through oral testing; otherwise, a crosswind takeoff and climb must be demonstrated.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind takeoff, climb operations, and rejected takeoff procedures. Positions the flight controls for the existing wind conditions.
2. Prerotates rotor blades to appropriate RPM.
3. Clears the area, taxies into the takeoff position, and aligns the gyroplane with takeoff path.
4. Advances the throttle as required.
5. Maintains proper directional control during acceleration on the surface.
6. Attains the proper lift-off attitude and airspeed.
7. Accelerates to appropriate climb airspeed, ±5 knots.
8. Maintains takeoff power to a safe maneuvering altitude, then sets climb power.
9. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
10. Remains aware of the possibility of wind shear and/or wake turbulence.
11. Completes the prescribed checklist, if applicable.

Task B: Normal and Crosswind Approach and Landing

References: FAA-H-8083-21; Gyroplane Flight Manual.

Note: If a calm wind weather condition exists, the applicant's knowledge of the crosswind elements must be evaluated through oral testing; otherwise, a crosswind takeoff and climb must be demonstrated.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to normal and crosswind approach and landing.
2. Adequately surveys the intended landing area.
3. Considers the wind conditions, landing surface, obstructions, and selects a suitable touchdown point.
4. Establishes and maintains a stabilized approach at the recommended airspeed, with gust correction factor applied, ±5 knots.
5. Maintains proper ground track with crosswind correction, if necessary.
6. Remains aware of the possibility of wind shear and/or wake turbulence.
7. Makes smooth, timely, and correct control application during the flare and touchdown
8. Touches down smoothly, beyond and within 200 feet of a specified point with no appreciable drift, and with the longitudinal axis aligned with the intended landing path.
9. Completes the appropriate checklist.

Task C: Soft-Field Takeoff and Climb

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to a soft-field takeoff and climb.
2. Determines and utilizes best takeoff procedure based on the capabilities of this gyroplane and current conditions.
3. Positions the flight controls for existing wind conditions and to maximize lift as quickly as possible.
4. Prerotates rotor blades to appropriate RPM.
5. Clears the area; taxies onto the takeoff surface at a speed consistent with safety, without stopping, while advancing the throttle smoothly to takeoff power.
6. Maintains proper directional control.
7. Lifts off and remains in ground effect while accelerating to recommended climb airspeed.
8. Maintains recommended climb airspeed, ±5 knots.
9. Maintains takeoff power to a safe maneuvering altitude, then sets climb power.
10. Maintains proper ground track with crosswind correction, if necessary.
11. Remains aware of the possibility of wind shear and/or wake turbulence.
12. Completes the appropriate checklist.

Task D: Soft-Field Approach and Landing

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to a soft-field approach and landing.
2. Considers the wind conditions, landing surface, and obstacles, and selects the most suitable touchdown area.
3. Establishes and maintains a stabilized approach at the recommended airspeed, with gust correction factor applied, ±5 knots.
4. Maintains proper ground track with crosswind correction, if necessary.
5. Remains aware of the possibility of wind shear and/or wake turbulence.
6. Makes smooth, timely, and correct control application during the flare and touchdown.
7. Touches down smoothly, at a minimum descent rate and airspeed with no appreciable drift, and with the longitudinal axis aligned with the intended landing path.
8. Completes the appropriate checklist.

Task E: Short-Field Takeoff and Climb

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to short-field takeoff and maximum performance climb
2. Properly positions controls.
3. Prerotates rotor blades to appropriate RPM.
4. Clears the area, taxies into the takeoff position and aligns the gyroplane for maximum utilization of available takeoff area.
5. Advances the throttle as required.
6. Climbs at manufacturer's recommended airspeed, or in its absence at V_X, ±5 knots until the obstacle is cleared, or until the gyroplane is at least 50 feet above the surface.
7. After clearing the obstacle, accelerates to appropriate airspeed, ±5 knots.
8. Maintains takeoff power to a safe maneuvering altitude, then sets climb power.

9. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
10. Remains aware of the possibility of wind shear and/or wake turbulence.
11. Completes the appropriate checklist.

Task F: Short-Field Approach and Landing

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to short-field approach and landing.
2. Considers the wind conditions, landing surface, and obstacles.
3. Selects a suitable touchdown point.
4. Establishes and maintains a stabilized approach at the recommended airspeed, with gust correction factor applied, ±5 knots.
5. Maintains proper ground track with crosswind correction, if necessary.
6. Remains aware of the possibility of wind shear and/or wake turbulence.
7. Makes smooth, timely, and correct control application during the flare and touchdown.
8. Touches down smoothly, with little or no float beyond and within 100 feet of a specified point with no appreciable drift, and with the longitudinal axis aligned with the intended landing path.
9. Applies brakes, as necessary, to stop in the shortest distance consistent with safety.
10. Completes the prescribed checklist, if applicable.

Task G: Go-Around

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to a go-around and when it is necessary.
2. Makes a timely decision to discontinue the approach to landing.
3. Applies appropriate power and establishes a climb at the appropriate airspeed, ±5 knots.
4. Maintains takeoff power to a safe maneuvering altitude, then sets climb power.
5. Maintains proper ground track with crosswind correction, if necessary.
6. Completes the prescribed checklist, if applicable.

V. Performance Maneuver

A. Task: Steep Turns

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to steep turns.
2. Selects a safe altitude.
3. Establishes the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_A.
4. Smoothly enters a coordinated steep 360° turn with a 40° bank.
5. Performs the task in the opposite direction, as specified by the evaluator.
6. Divides attention between gyroplane control and orientation.
7. Maintains the entry altitude, ±100 feet, airspeed, ±10 knots, bank, ±5°; and rolls out on the entry heading, ±10°.

VI. Ground Reference Maneuvers

Note: *The evaluator shall select at least one Task.*

Task A: Rectangular Course

Reference: FAA-H-8083-21.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to a rectangular course.
2. Selects an appropriate ground reference based on wind direction and emergency landing areas.
3. Plans the maneuver so as to enter a left or right pattern, 600 to 1,000 feet AGL at an appropriate distance from the selected reference area, 45° to the downwind leg.
4. Applies adequate wind-drift correction during straight-and-turning flight to maintain a constant ground track around the rectangular reference area.
5. Divides attention between gyroplane control and the ground track while maintaining coordinated flight.
6. Maintains altitude, ±100 feet; maintains airspeed, ±10 knots.

Task B: S-Turns

Reference: FAA-H-8083-21.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to S-turns.
2. Selects an appropriate reference line based on wind direction and emergency landing areas.
3. Plans the maneuver so as to enter at 600 to 1,000 feet AGL, perpendicular to the selected reference line.
4. Applies adequate wind-drift correction to track a constant radius turn on each side of the selected reference line.
5. Reverses the direction of turn directly over the selected reference line.
6. Divides attention between gyroplane control and the ground track while maintaining coordinated flight.
7. Maintains the entry altitude throughout the maneuver, ±100 feet; maintains airspeed, ±10 knots.

Task C: Turns Around a Point

Reference: FAA-H-8083-21.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to turns around a point.
2. Selects an appropriate reference point based on wind direction and emergency landing areas.
3. Plans the maneuver so as to enter left or right at 600 to 1,000 feet AGL, at an appropriate distance from the reference point.
4. Applies adequate wind-drift correction to track a constant radius circle around the selected reference point with a bank of approximately 40° at the steepest point in the turn.
5. Divides attention between gyroplane control and the ground track while maintaining coordinated flight.
6. Maintains altitude, ±100 feet; maintains airspeed, ±10 knots.

VII. Navigation

Task A: Pilotage and Dead Reckoning

Reference: FAA-H-8083-25.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to pilotage and dead reckoning.
2. Correctly flies to at least the first planned checkpoint to demonstrate accuracy in computations.
3. Identifies landmarks by relating surface features to chart symbols.
4. Navigates by means of precomputed headings, groundspeed, and elapsed time.
5. Verifies the gyroplane's position within 3 nautical miles of the flight planned route at all times.
6. Arrives at the en route checkpoints within 5 minutes of the initial or revised ETA and provides a destination estimate.
7. Maintains the appropriate altitude, ±200 feet and established heading, ±15°.

Task B: Navigation and Radar Services

References: FAA-H-8083-25; Navigation Equipment Operation Manuals.

Note: *If the gyroplane is not equipped with electronic navigation aids, competency will be evaluated through oral testing.*

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to navigation and ATC radar services.
2. Demonstrates the ability to use an airborne electronic navigation system.
3. Locates the gyroplane's position using the navigation system.
4. Intercepts and tracks a given course radial or bearing, as appropriate.
5. Recognizes and describes the indication of station or waypoint passage, if appropriate.
6. Recognizes signal loss and takes appropriate action.
7. Uses proper communication procedures when utilizing ATC radar services.
8. Maintains the appropriate altitude, ±200 feet and headings, ± 15°.

Task C: Diversion

References: FAA-H-8083-25.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to diversion.
2. Selects an appropriate alternate airport and route.
3. Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate airport.
4. Maintains the appropriate altitude, ± 200 feet and established heading, ±15°.

Task D: Lost Procedures

References: FAA-H-8083-25; AC 61-84; AIM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to lost procedures.
2. Selects an appropriate course of action.
3. Maintains an appropriate heading and climbs if necessary.
4. Identifies prominent landmarks.
5. Uses available navigation aids and/or contacts an appropriate facility for assistance, if gyroplane is radio equipped.
6. Plans a precautionary landing if deteriorating weather and/or fuel exhaustion is impending.

VIII. Flight at Slow Airspeeds

Task A: Maneuvering at Slow Airspeeds

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to flight characteristics and controllability associated with maneuvering during slow flight.
2. Selects a safe altitude.
3. Establishes and maintains a specified airspeed +5, -0, in straight-and-level flight, turns, climbs, and descents as directed.
4. Maintains the specified altitude, ±100 feet.
5. Maintains the specified heading during straight flight, ±10°.
6. Maintains specified bank angle, ±10°, during turning flight.
7. Rolls out on specified headings, ±10°.
8. Divides attention between gyroplane control and orientation.

Task B: High Rate of Descent and Recovery

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to aerodynamic factors associated with a high rate of descent and recovery and how this relates to actual approach and landing situations.
2. Selects an entry altitude that allows the task to be completed no lower than 500 feet AGL.
3. Establishes an airspeed that will induce a high rate of descent in high or low power settings.
4. Recognizes the onset of a high rate of descent.
5. Promptly recovers with or without power as directed.
6. Maintains the specified heading, ±10°.
7. Resumes normal cruising flight.

IX. Emergency Operations

Note: *Task B may be tested orally at the discretion of the evaluator. Tasks C through E are knowledge only items.*

Task A: Emergency Approach and Landing

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency approach and landing with a power failure.
2. Establishes and maintains the appropriate airspeed, ±5 knots.
3. Selects a suitable landing area, considering the possibility of an actual forced landing.
4. Plans and follows a flight pattern to the selected landing area, considering altitude, wind, terrain, obstacles, and other factors.
5. Attempts to determine the reason for the simulated malfunction, if time permits.
6. Completes the prescribed checklist, if applicable.

Task B: Lift-Off at Low Airspeed and High Angle of Attack

Reference: Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to lift-off at low airspeed and high angle of attack, including combination of conditions, which are likely to lead to this situation.
2. Properly positions the controls.
3. Prerotates rotor blades to appropriate RPM, if applicable.
4. Clears the area; taxies into the takeoff position and aligns the gyroplane with the takeoff path.
5. Maintains proper directional control during acceleration on the surface.
6. Rotates for takeoff prior to normal lift-off airspeed with high angle of attack.
7. Detects the development of a low airspeed and high angle of attack, and initiates prompt corrective action.
8. Accelerates to recommended climb airspeed, ±5 knots.

Task C: Ground Resonance

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to a fully articulated rotor system and the aerodynamics of ground resonance.
2. Understands the conditions that contribute to ground resonance.
3. Explains preventive flight techniques used during takeoffs and landings.

Task D: Systems and Equipment Malfunctions

Reference: Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to causes, indications, and pilot actions for various systems and equipment malfunctions.
2. Analyzes the situation and takes action, appropriate to the gyroplane used for the practical test, in at least three of the following areas—

    a. engine/oil and fuel.
    b. hydraulic, if applicable.
    c. electrical.
    d. carburetor or induction icing.
    e. smoke and/or fire.
    f. flight control/trim.
    g. pitot static/vacuum and associated flight instruments, if applicable.
    h. rotor and/or propeller.
    i. any other emergency unique to the gyroplane flown.

Task E: Emergency Equipment and Survival Gear

References: FAA-H-8083-21; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency equipment and survival gear appropriate to the gyroplane and environment encountered during flight. Identifies appropriate equipment that should be aboard the gyroplane.

X. Postflight Procedures

Task A: After Landing, Parking, and Securing

References: FAA-H-8083-21, FAA-H-8083-25; AIM; Gyroplane Flight Manual.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to after landing, parking, and securing procedures.
2. Maintains directional control after touchdown while decelerating to an appropriate speed.
3. Observes runway hold lines and other surface control markings and lighting.
4. Parks in an appropriate area, considering the safety of nearby persons and property.
5. Follows the appropriate procedure for engine shutdown.
6. Completes the appropriate checklist.
7. Conducts an appropriate post flight inspection and secures the aircraft.