

PRIVATE PILOT

Practical Test Standards

for

AIRPLANE
(SEL, MEL, SES, MES)

MAY 1995

FLIGHT STANDARDS SERVICE
Washington, DC 20591

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NOTE

Material in FAA-S-8081-14 will be effective May 1, 1995. All previous editions of the Airplane Practical Test Standards will be obsolete as of this date.

FOREWORD

The Private Pilot - Airplane Practical Test Standards book has been published by the Federal Aviation Administration (FAA) to establish the standards for the private pilot certification practical tests for the airplane category and the single-engine, land and sea; multiengine, land and sea classes. FAA inspectors and designated pilot examiners shall conduct practical tests in compliance with these standards. Flight instructors and applicants should find these standards helpful during training and when preparing for the practical test.

William J. White

Deputy Director, Flight Standards Service

RECORD OF CHANGES

Change 1: 4/28/97

Reason: Text in all STEEP TURNS Tasks has been changed to emphasize steep turn entry speed at manufacturer's recommended speed, or one designated by the Examiner, not to exceed V_A . This provides an option of a slower entry speed, when operating a lower performance land or seaplane.

- **SINGLE-ENGINE LAND**

AREA OF OPERATION: PERFORMANCE MANEUVER

TASK: STEEP TURNS

- **MULTIENGINE LAND**

AREA OF OPERATION: PERFORMANCE MANEUVER

TASK: STEEP TURNS

- **SINGLE-ENGINE SEA**

AREA OF OPERATION: PERFORMANCE MANEUVER

TASK: STEEP TURNS

- **MULTIENGINE SEA**

AREA OF OPERATION: PERFORMANCE MANEUVERS

TASK A: STEEP TURNS

INTRODUCTION

The Flight Standards Service of the FAA has developed this practical test book as a standard to be used by FAA inspectors and designated pilot examiners when conducting pilot practical tests. Flight instructors are expected to use this book when preparing applicants for practical tests.

This publication may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

The FAA gratefully acknowledges the valuable assistance provided by organizations and individuals who have contributed their time and talent in the development and revision of the Private Pilot Practical Test Standards.

Comments regarding this publication should be sent to:

U.S. Department of Transportation
Federal Aviation Administration
Flight Standards Service
Operations Support Branch, AFS-630
P.O. Box 25082
Oklahoma City, OK 73125

PRACTICAL TEST CONCEPT

Federal Aviation Regulations (FAR's) specify the areas in which knowledge and skill shall be demonstrated by the applicant before the issuance of a pilot certificate. The FAR's provide the flexibility to permit the FAA to publish practical test standards containing specific TASKS in which pilot competency shall be demonstrated. The FAA will revise this book whenever it is determined that changes are needed in the interest of safety. Adherence to the regulations and the practical test standards is mandatory for the evaluation of pilot applicants.

PRACTICAL TEST STANDARDS BOOK DESCRIPTION

This test book contains the following private pilot practical test standards:

Section 1	Airplane, Single-Engine Land
Section 2	Airplane, Multiengine Land
Section 3	Airplane, Single-Engine Sea
Section 4	Airplane, Multiengine Sea

The Private Pilot Practical Test Standards include 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.

PRACTICAL TEST STANDARDS DESCRIPTION

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 examiner, however, may conduct the practical test in any sequence that results in a complete and efficient test. The Roman numerals preceding each AREA OF OPERATION relate that AREA OF OPERATION to the corresponding regulatory requirement.

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

The 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 reference if their content conveys substantially the same meaning as the referenced publications.

References upon which this practical test book is based include:

FAR Part 43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration
FAR Part 61	Certification: Pilots and Flight Instructors
FAR Part 91	General Operating and Flight Rules
FAR Part 97	Standard Instrument Approach Procedures
NTSB Part 830	Notification and Reporting of Aircraft Accidents and Incidents
AC 00-2	Advisory Circular Checklist
AC 00-6	Aviation Weather
AC 00-45	Aviation Weather Services
AC 61-21	Flight Training Handbook
AC 61-23	Pilot's Handbook of Aeronautical Knowledge
AC 61-27	Instrument Flying Handbook
AC 61-65	Certification: Pilots and Flight Instructors
AC 61-67	Stall Spin Awareness Training
AC 61-84	Role of Preflight Preparation
AC 67-2	Medical Handbook for Pilots
AC 90-48	Pilots' Role in Collision Avoidance
AC 91-23	Pilot's Weight and Balance Handbook
AC 91-69	Seaplane Safety for FAR Part 91 Operations
AC 120-51	Crew Resource Management Training
AIM	Airman's Information Manual
AFD	Airport Facility Directory
NOTAM's	Notices to Airmen
	Pilot Operating Handbooks
	FAA-Approved Flight Manuals

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 should be able to do;
2. the conditions under which the TASK is to be performed; and
3. the minimum acceptable standards of performance.

Information considered directive in nature is described in this practical test standard in terms such as “shall” and “must,” and means that the actions are mandatory. Terms such as “will,” “should,” or “may,” provide guidance and describe actions that are desirable, permissive, or not mandatory and allow for flexibility.

USE OF THE PRACTICAL TEST STANDARDS

The FAA requires that each Private Pilot practical test be conducted in accordance with the appropriate Private Pilot Practical Test Standard and the policies set forth in this INTRODUCTION. Private pilot applicants shall be evaluated in **ALL** TASKS included in each AREA OF OPERATION of the appropriate practical test standard.

In preparation for the practical test, the examiner shall develop a written “plan of action.” The “plan of action” shall include all TASKS in each AREA OF OPERATION. Any TASK selected shall be evaluated in its entirety. However, if the elements in one TASK have already been evaluated in another TASK, they need not be repeated.

The examiner may, for any valid reason, elect to evaluate certain TASKS orally. Such TASKS include those that are impracticable, such as night flying.

The examiner is not required to follow the precise order in which the AREAS OF OPERATION and TASKS appear in this book. The examiner may change the sequence or combine TASKS with similar Objectives to meet the orderly, efficient flow of a well-run practical test. For example, a rectangular course may be combined with an airport traffic pattern. However, the Objectives of all TASKS must be demonstrated and evaluated at some time during the practical test.

Examiners shall place special emphasis upon those aircraft operations that are most critical to flight safety. Among these areas are precise aircraft control and sound judgment in decision making. Although these areas may or may not be shown under each TASK, they are essential to flight safety and shall receive careful evaluation throughout the practical test. If these areas are shown in the Objective, additional emphasis shall be placed on them.

THE EXAMINER SHALL ALSO EMPHASIZE STALL/SPIN AWARENESS, SPATIAL DISORIENTATION, WAKE TURBULENCE AVOIDANCE, LOW LEVEL WIND SHEAR, INFIGHT COLLISION AVOIDANCE, RUNWAY INCURSION AVOIDANCE, AND CHECKLIST USAGE.

In the performance of simulated emergency procedures, consideration must always be given to local conditions, including weather and terrain. If the procedure being evaluated would jeopardize safety, the examiner shall simulate that portion of the TASK.

PRIVATE PILOT PRACTICAL TEST PREREQUISITES

An applicant for the private pilot practical test is required by Federal Aviation Regulations to:

1. pass the appropriate pilot knowledge test since the beginning of the 24th month before the month in which the practical test is taken;
2. obtain the applicable instruction and aeronautical experience prescribed for the pilot certificate or rating sought;
3. possess a current medical certificate appropriate to the certificate or rating sought;
4. meet the age requirement for the issuance of the certificate or rating sought; and
5. obtain a written statement from an appropriately certificated flight instructor certifying that the applicant has been given flight instruction in preparation for the practical test within 60 days preceding the date of application. The statement shall also state that the instructor finds the applicant competent to pass the practical test and that the applicant has satisfactory knowledge of the subject area(s) in which a deficiency was indicated by the airman knowledge test report.

NOTE: AC 61-65, Certification: Pilots and Flight Instructors, states that the instructor may sign the instructor's recommendation on the reverse side of FAA Form 8710-1, Airman Certificate and/or Rating Application, in lieu of the previous statement, provided all appropriate FAR Part 61 requirements are substantiated by reliable records.

AIRCRAFT AND EQUIPMENT REQUIRED FOR THE PRACTICAL TEST

The private pilot applicant is required by FAR Section 61.45 to provide an appropriate, airworthy, certificated aircraft for the practical test. The aircraft must be equipped for, and its operating limitations must not prohibit, the performance of all TASKS required on the test.

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 strengthen this area of pilot training and evaluation, the examiner shall provide a realistic distraction during the **flight** portion of the practical test. This will give the examiner a positive opportunity to evaluate the applicant's ability to divide attention, both inside and outside the cockpit, while maintaining safe flight.

APPLICANT'S USE OF CHECKLISTS

Throughout the practical test standard the applicant is evaluated on using the checklist. Its 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 met, would be appropriate. In any case, use of the checklist must consider proper scanning and division of attention at all times.

STABILIZED APPROACH

The term "STABILIZED APPROACH" as used in this practical test standard is not intended to be construed in the same context as the term utilized in large aircraft operation. The term as utilized in this book means that the aircraft is in a position where minimum input of all controls will result in a safe landing. Excessive control input at any point could be an indication of improper planning.

CREW RESOURCE MANAGEMENT (CRM)

CRM "...refers to the effective use of ALL available resources; human resources, hardware, and information." Human resources "...includes all other groups routinely working with the cockpit crew (or pilot) who are involved in decisions that are required to operate a flight safely. These groups include, but are not limited to: dispatchers, cabin crewmembers, maintenance personnel, and air traffic controllers." CRM is not a single TASK, it is a set of skill competencies that must be evident in all TASKS in this PTS as applied to either single pilot or a crew operation.

METRIC CONVERSION INITIATIVE

To assist pilots in understanding and using the metric measurement system, the practical test standards refer to the metric equivalent of various altitudes throughout. The inclusion of meters is intended to familiarize pilots with its use. The metric altimeter is arranged in 10 meter increments; therefore, when converting from feet to meters, the exact conversion, being too exact for practical purposes, is rounded to the nearest 10 meter increment or even altitude as necessary.

MANUFACTURER'S RECOMMENDATION

The term “recommended” refers to the manufacturer's recommendation. If the manufacturer's recommendation is not available, the description in AC 61-21 shall be used.

SPECIFIED BY THE EXAMINER

Use of the word “specified” means as specified by the examiner.

EXAMINER¹ RESPONSIBILITY

The examiner conducting the practical test is responsible for determining that the applicant meets the acceptable standards of knowledge and skill outlined in the Objective of each TASK within the appropriate practical test standard. Since there is no formal division between the “knowledge” and “skill” portions of the practical test, oral questioning becomes an ongoing process throughout the test. Oral questioning, to determine the applicant's knowledge of the TASKS and related safety factors, should be used judiciously at all times, especially during the flight portion of the practical test.

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

Throughout the flight portion of the practical test, the examiner shall evaluate the applicant's procedures for visual scanning, inflight collision avoidance, runway incursion avoidance, and positive exchange of flight controls.

¹The word “examiner” denotes either the FAA inspector or FAA designated pilot examiner who conducts the flight test.

FLIGHT INSTRUCTOR RESPONSIBILITY

An appropriately rated flight instructor is responsible for training the student to acceptable standards in **all** knowledge areas, procedures, and maneuvers as outlined in the Objective of each TASK within the appropriate Private Pilot Practical Test Standard. Because of the impact of their teaching activities in developing safe, proficient pilots, flight instructors should exhibit a high level of knowledge and 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 for the certificate or rating sought.

Throughout the applicant's training, the flight instructor is responsible for emphasizing effective visual scanning, and inflight collision and runway incursion avoidance, and the positive exchange of flight controls. These areas are covered, in part, in AC 90-48, Pilots' Role in Collision Avoidance; AC 61-21, Flight Training Handbook; AC 61-23, Pilot's Handbook of Aeronautical Knowledge; and the Airman's Information Manual.

SATISFACTORY PERFORMANCE

Satisfactory performance is based on the applicant's ability to safely:

1. perform the approved AREAS OF OPERATION for the certificate or rating sought within the approved standards;
2. demonstrate mastery of the aircraft with the successful outcome of each task performed never seriously in doubt;
3. demonstrate satisfactory proficiency and competency within the approved standards;
4. demonstrate sound judgment; and
5. demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.

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. The examiner or applicant may discontinue the test any time after the failure of an AREA OF OPERATION makes the applicant ineligible for the certificate or rating sought. The test will be continued **ONLY** with the consent of the applicant. Whether the test is continued or discontinued, the applicant is entitled credit for only those TASKS satisfactorily performed. However, during the retest and at the discretion of the examiner, any TASK may be re-evaluated, including those previously passed.

Typical areas of unsatisfactory performance and grounds for disqualification are:

1. Any action or lack of action by the applicant which requires corrective intervention by the examiner 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 examiner will record the applicant's unsatisfactory performance in terms of the AREA OF OPERATION appropriate to the practical test conducted.

USE OF RATING TASKS TABLES

If an applicant already holds a private pilot certificate and is seeking an additional class rating, use the appropriate table at the beginning of each section to determine which TASKS are required to be evaluated. However, at the discretion of the examiner, the applicant's competence in any TASK may be evaluated.

If the applicant holds two or more category or class ratings at the private level, and the 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.

SECTION 1

AIRPLANE

SINGLE-ENGINE LAND

(ASEL)

Practical Test Standard

NOTE: An applicant seeking initial certification as a private pilot with an airplane single-engine land class rating will be evaluated in all TASKS listed within this section.

At the discretion of the examiner, an applicant seeking the addition of an airplane single-engine land class rating need not be evaluated on those AREAS OF OPERATIONS/TASKS so noted in the following rating tasks table.

Addition of an Airplane Single-Engine Land Rating to an Existing Private Pilot Certificate									
Area of Operation	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.								
	PRIVATE PILOT RATING(S) HELD								
	ASES	AMEL	AMES	RH	RG	Non-Power Glider	Power Glider	Free Balloon	Airship
I	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G
II	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
III	B,C	B	B,C	B	B	ALL	B	ALL	B
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	NONE	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VI	NONE	NONE	NONE	ALL	NONE	ALL	NONE	ALL	ALL
VII	NONE	NONE	NONE	NONE	NONE	ALL	NONE	ALL	NONE
VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	ALL	NONE
XII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

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F. OPERATION OF SYSTEMS	1
G. MINIMUM EQUIPMENT LIST	1
H. AEROMEDICAL FACTORS	1
II. PREFLIGHT PROCEDURES	1
A. PREFLIGHT INSPECTION	1
B. COCKPIT MANAGEMENT	1
C. ENGINE STARTING	1
D. TAXIING	1
E. BEFORE TAKEOFF CHECK	1
III. AIRPORT OPERATIONS	1
A. RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS	1
B. TRAFFIC PATTERNS	1
C. AIRPORT AND RUNWAY MARKINGS AND LIGHTING	1
IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS	1
A. NORMAL AND CROSSWIND TAKEOFF AND CLIMB	1
B. NORMAL AND CROSSWIND APPROACH AND LANDING	1
C. SOFT-FIELD TAKEOFF AND CLIMB	1
D. SOFT-FIELD APPROACH AND LANDING	1
E. SHORT-FIELD TAKEOFF AND CLIMB	1
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G. FORWARD SLIP TO A LANDING	1
H. GO-AROUND	1

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APPLICANT'S PRACTICAL TEST CHECKLIST

APPOINTMENT WITH EXAMINER:

EXAMINER'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 Airplane Flight Manual
- FCC Station License

PERSONAL EQUIPMENT

- View-Limiting Device
- Current Aeronautical Charts
- Computer and Plotter
- Flight Plan Form
- Flight Logs
- Current AIM, Airport Facility Directory, 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)
- AC Form 8080-2, Airman Written Test Report, or Computer Test Report
- Pilot Logbook with Appropriate Instructor Endorsements
- FAA Form 8060-5, Notice of Disapproval (if applicable)
- Approved School Graduation Certificate (if applicable)
- Examiner's Fee (if applicable)

EXAMINER'S PRACTICAL TEST CHECKLIST

(ASEL)

APPLICANT'S NAME _____

LOCATION _____

DATE/TIME _____

I. PREFLIGHT PREPARATION

- A. CERTIFICATES AND DOCUMENTS
- B. WEATHER INFORMATION
- C. CROSS-COUNTRY FLIGHT PLANNING
- D. NATIONAL AIRSPACE SYSTEM
- E. PERFORMANCE AND LIMITATIONS
- F. OPERATION OF SYSTEMS
- G. MINIMUM EQUIPMENT LIST
- H. AEROMEDICAL FACTORS

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- B. COCKPIT 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 AND RUNWAY 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. FORWARD SLIP TO A LANDING
- H. 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 SYSTEMS AND RADAR SERVICES
- **C.** DIVERSION
- **D.** LOST PROCEDURES

VIII. SLOW FLIGHT AND STALLS

- **A.** MANEUVERING DURING SLOW FLIGHT
- **B.** POWER-OFF STALLS
- **C.** POWER-ON STALLS
- **D.** SPIN AWARENESS

IX. BASIC INSTRUMENT MANEUVERS

- **A.** STRAIGHT-AND-LEVEL FLIGHT
- **B.** CONSTANT AIRSPEED CLIMBS
- **C.** CONSTANT AIRSPEED DESCENTS
- **D.** TURNS TO HEADINGS
- **E.** UNUSUAL FLIGHT ATTITUDES
- **F.** RADIO COMMUNICATIONS, NAVIGATION SYSTEMS/FACILITIES, AND RADAR SERVICES

X. EMERGENCY OPERATIONS

- **A.** EMERGENCY DESCENT
- **B.** EMERGENCY APPROACH AND LANDING
- **C.** SYSTEMS AND EQUIPMENT MALFUNCTIONS
- **D.** EMERGENCY EQUIPMENT AND SURVIVAL GEAR

XI. NIGHT OPERATIONS

- **A.** NIGHT PREPARATION
- **B.** NIGHT FLIGHT

XII. POSTFLIGHT PROCEDURES

- **A.** AFTER LANDING
- **B.** PARKING AND SECURING

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

REFERENCES: FAR Parts 43, 61, 91; AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to certificates and documents by explaining the appropriate—
 - a. pilot certificate, privileges and limitations.
 - b. medical certificate, class and duration.
 - c. pilot logbook or flight record, required entries.
2. Exhibits knowledge of the elements related to certificates and documents by locating and explaining the—
 - a. airworthiness and registration certificates.
 - b. operating limitations, placards, instrument markings, handbooks, and manuals.
 - c. weight and balance data, including the equipment list.
 - d. airworthiness directives and compliance records, maintenance requirements, tests, and appropriate records.

B. TASK: WEATHER INFORMATION

REFERENCES: AC 00-6, AC 00-45, AC 61-23, AC 61-84; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports and forecasts from various sources with emphasis on—
 - a. PIREP's.
 - b. SIGMET's and AIRMET's.
 - c. wind shear reports.
2. Makes a competent "go/no-go" decision based on available weather information.

C. TASK: CROSS-COUNTRY FLIGHT PLANNING

REFERENCES: AC 61-21, AC 61-23, AC 61-84; Navigation Charts; Airport/Facility Directory; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a preplanned VFR cross-country flight near the maximum range of the airplane, as previously assigned by the examiner. The final flight plan shall include real-time weather to the first fuel stop, with maximum allowable passenger and baggage loads.
2. Uses appropriate, current aeronautical charts.
3. Plots a course for the intended route of flight.
4. Identifies airspace, obstructions, and terrain features.
5. Selects easily identifiable en route checkpoints.
6. Selects the most favorable altitudes, considering weather conditions and equipment capabilities.
7. Computes headings, flight time, and fuel requirements.
8. Selects appropriate navigation systems/facilities and communication frequencies.
9. Confirms availability of alternate airports.
10. Extracts and records pertinent information from NOTAM's, the Airport/Facility Directory, and other flight publications.
11. Completes a navigation log and simulates filing a VFR flight plan.

D. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: FAR 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 airplane equipment requirements for the following–
 - a. Class A.
 - b. Class B.
 - c. Class C.
 - d. Class D.
 - e. Class E.
 - f. Class G.
3. Special use airspace and other airspace areas.

E. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: AC 61-21, AC 61-23, AC 61-84, AC 91-23; Pilot's Operating Handbook, FAA-Approved Airplane 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, if available from the manufacturer, to determine performance, including takeoff, climb, cruise, range, and endurance, and the adverse effects of exceeding limitations.
2. Computes weight and balance, including adding, removing, and shifting weight. Determines if the weight and center of gravity will remain within limits during all phases of flight.
3. Describes the effects of atmospheric conditions on the airplane's performance.
4. Determines whether the computed performance is within the airplane's capabilities and operating limitations.

F. TASK: OPERATION OF SYSTEMS

REFERENCES: AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the airplane provided for the flight test by explaining at least three of the following:

1. Primary flight controls and trim.
2. Flaps, leading edge devices, and spoilers.
3. Powerplant.
4. Propeller.
5. Landing gear.
6. Fuel, oil, and hydraulic systems.
7. Electrical system.
8. Pitot-static system, vacuum/pressure system and associated flight instruments.
9. Environmental system.
10. Deicing and anti-icing systems.
11. Avionics system.

G. TASK: MINIMUM EQUIPMENT LIST

REFERENCE: FAR Part 91.

Objective. To determine that the applicant exhibits knowledge of the elements related to the use of an approved Part 91 minimum equipment list by explaining:

1. Required instruments and equipment for day VFR and night VFR flight.
2. Procedures for operating the airplane with inoperative instruments and equipment.
3. Requirements and procedures for obtaining a special flight permit.

H. TASK: AEROMEDICAL FACTORS

REFERENCES: AC 61-21, AC 67-2; 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 over-the-counter drugs.
3. The effects of nitrogen excesses during scuba dives upon a pilot or passenger in flight.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to preflight inspection. This shall include which items must be inspected, the reasons for checking each item, and how to detect possible defects.
2. Inspects the airplane with reference to the checklist.
3. Verifies the airplane is in condition for safe flight.

B. TASK: COCKPIT MANAGEMENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cockpit management procedures.
2. Ensures all loose items in the cockpit and cabin are secured.
3. Briefs passengers on the use of safety belts, shoulder harnesses, and emergency procedures.
4. Organizes material and equipment in a logical, efficient flow pattern.
5. Utilizes all appropriate checklists.

C. TASK: ENGINE STARTING

REFERENCES: AC 61-21, AC 61-23, AC 91-13, AC 91-55; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine starting. This shall include the use of an external power source and starting under various atmospheric conditions, as appropriate.
2. Positions the airplane properly considering open hangars, other aircraft, the safety of nearby persons and property on the ramp, and surface conditions.
3. Accomplishes the correct starting procedure.
4. Completes the appropriate checklist.

D. TASK: TAXIING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to safe taxi procedures.
2. Positions the flight controls properly for the existing wind conditions.
3. Performs a brake check immediately after the airplane begins moving.
4. Controls direction and speed without excessive use of brakes.
5. Complies with airport markings, signals, and ATC clearances.
6. Avoids other aircraft and hazards.
7. Completes the appropriate checklist.

E. TASK: BEFORE TAKEOFF CHECK

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane 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 each item and how to detect malfunctions.
2. Positions the airplane properly considering other aircraft, wind and surface conditions.
3. Divides attention inside and outside the cockpit.
4. Ensures that engine temperature and pressure are suitable for run-up and takeoff.
5. Accomplishes the before takeoff check and confirms that the airplane is in safe operating condition.
6. Reviews takeoff performance airspeeds, takeoff distances, emergency procedures, and the departure procedure.
7. Assures no conflict with traffic prior to taxiing into takeoff position.
8. Completes the appropriate checklist.

III. AREA OF OPERATION: AIRPORT OPERATIONS

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications and ATC light signals. This shall include radio failure procedures.
2. Selects appropriate frequencies.
3. Transmits using recommended phraseology.
4. Acknowledges radio communications and complies with instructions.
5. Uses prescribed procedures following radio communications failure.
6. Interprets and complies with ATC light signals.

B. TASK: TRAFFIC PATTERNS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to traffic patterns. This shall include procedures at controlled and uncontrolled airports, runway incursion and collision avoidance, wake turbulence avoidance, and wind shear.
2. Complies with traffic pattern procedures.
3. Maintains proper spacing from other traffic.
4. Establishes an appropriate distance from the runway, considering the possibility of an engine failure.
5. Corrects for wind drift to maintain the proper ground track.
6. Maintains orientation with the runway in use.
7. Maintains traffic pattern altitude, ± 100 feet (30 meters), and the appropriate airspeed, ± 10 knots.
8. Completes the appropriate checklist.

C. TASK: AIRPORT AND RUNWAY MARKINGS AND LIGHTING

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to airport and runway markings and lighting.
2. Identifies and interprets airport, runway and taxiway markings and lighting.

IV. AREA OF OPERATION: TAKEOFFS, LANDINGS, AND GO-AROUNDS

A. TASK: NORMAL AND CROSSWIND TAKEOFF AND CLIMB

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind takeoff and climb.
2. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
3. Clears the area; taxies into the takeoff position and aligns the airplane on the runway centerline.
4. Advances the throttle smoothly to takeoff power.
5. Rotates at the recommended airspeed, lifts off, and accelerates to V_Y .
6. Establishes the pitch attitude for V_Y and maintains V_Y , +10/-5 knots, during the climb.
7. Retracts the landing gear, if retractable, and flaps after a positive rate of climb is established.
8. Maintains takeoff power to a safe maneuvering altitude.
9. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
10. Complies with noise abatement procedures.
11. Completes the appropriate checklist.

B. TASK: NORMAL AND CROSSWIND APPROACH AND LANDING

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind approach and landing.
2. Considers the wind conditions, landing surface and obstructions, and selects the most suitable touchdown point.
3. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
4. Maintains a stabilized approach and the recommended approach airspeed, or in its absence, not more than $1.3 V_{SO}$, +10/-5 knots, with gust factor applied.
5. Makes smooth, timely, and correct control application during the roundout and touchdown.
6. Touches down smoothly at the approximate stalling speed, at or within 400 feet (120 meters) beyond a specified point, with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
7. Maintains crosswind correction and directional control throughout the approach and landing.
8. Completes the appropriate checklist.

C. TASK: SOFT-FIELD TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a soft-field takeoff and climb.
2. Positions the flight controls for the existing wind conditions and so as to maximize lift as quickly as possible; sets the flaps as recommended.
3. Clears the area; taxis onto the takeoff surface at a speed consistent with safety and aligns the airplane without stopping while advancing the throttle smoothly to takeoff power.

4. Establishes and maintains the pitch attitude that will transfer the weight of the airplane from the wheels to the wings as rapidly as possible.
5. Lifts off and remains in ground effect while accelerating to V_Y .
6. Establishes the pitch attitude for V_Y and maintains V_Y , +10/-5 knots, during the climb.
7. Retracts the landing gear, if retractable, and flaps after a positive rate of climb is established.
8. Maintains takeoff power to a safe maneuvering altitude.
9. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
10. Complies with noise abatement procedures.
11. Completes the appropriate checklist.

D. TASK: SOFT-FIELD APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane 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 obstructions, and selects the most suitable touchdown point.
3. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
4. Maintains a stabilized approach and the recommended approach airspeed, or in its absence not more than $1.3 V_{SO}$, +10/-5 knots, with gust factor applied.
5. Makes smooth, timely, and correct control application during the roundout and touchdown.
6. Touches down smoothly with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
7. Maintains the correct position of the flight controls and sufficient speed to taxi on the soft surface.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

E. TASK: SHORT-FIELD TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a short-field takeoff and climb.
2. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
3. Clears the area; taxis into the takeoff position so as to allow maximum utilization of available takeoff area and aligns the airplane on the runway centerline.
4. Advances the throttle smoothly to takeoff power.
5. Rotates at the recommended airspeed, lifts off and accelerates to the recommended obstacle clearance airspeed or V_x .
6. Establishes the pitch attitude for the recommended obstacle clearance airspeed, or V_x , and maintains that airspeed, +10/-5 knots, until the obstacle is cleared, or until the airplane is 50 feet (20 meters) above the surface.
7. After clearing the obstacle, accelerates to V_y , establishes the pitch attitude for V_y , and maintains V_y , +10/-5 knots, during the climb.
8. Retracts the landing gear, if retractable, and flaps after a positive rate of climb is established.
9. Maintains takeoff power to a safe maneuvering altitude.
10. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
11. Complies with noise abatement procedures.
12. Completes the appropriate checklist.

F. TASK: SHORT-FIELD APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a short-field approach and landing.
2. Considers the wind conditions, landing surface and obstructions, and selects the most suitable touchdown point.
3. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
4. Maintains a stabilized approach and the recommended approach airspeed, or in its absence not more than $1.3 V_{SO}$, +10/-5 knots, with gust factor applied.
5. Makes smooth, timely, and correct control application during the roundout and touchdown.
6. Touches down smoothly at the approximate stalling speed, at or within 200 feet (60 meters) beyond a specified point, with no side drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
7. Applies brakes, as necessary, to stop in the shortest distance consistent with safety.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

G. TASK: FORWARD SLIP TO A LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a forward slip to a landing.
2. Considers the wind conditions, landing surface and obstructions, and selects the most suitable touchdown point.
3. Establishes the slipping attitude at the point from which a landing can be made using the recommended approach and landing configuration and airspeed; adjusts pitch attitude and power as required.
4. Maintains a ground track aligned with the runway centerline and an airspeed which results in minimum float during the roundout.

5. Makes smooth, timely, and correct control application during the recovery from the slip, the roundout, and the touchdown.
6. Touches down smoothly at the approximate stalling speed, at or within 400 feet (120 meters) beyond a specified point, with no side drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
7. Maintains crosswind correction and directional control throughout the approach and landing.
8. Completes the appropriate checklist.

H. TASK: GO-AROUND

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a go-around.
2. Makes a timely decision to discontinue the approach to landing.
3. Applies takeoff power immediately and transitions to the climb pitch attitude for $V_Y + 10/-5$ knots.
4. Retracts the flaps to the approach setting, if applicable.
5. Retracts the landing gear, if retractable, after a positive rate of climb is established.
6. Maintains takeoff power to a safe maneuvering altitude, then sets power and transitions to the airspeed appropriate for the traffic pattern.
7. Maintains directional control and proper wind-drift correction throughout the climb.
8. Complies with noise abatement procedures, as appropriate.
9. Flies the appropriate traffic pattern.
10. Completes the appropriate checklist.

V. AREA OF OPERATION: PERFORMANCE MANEUVER

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TASK: STEEP TURNS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to steep turns.
2. Selects an altitude that will allow the task to be performed no lower than 1,500 feet (460 meters) AGL.
3. Establishes the manufacturer's recommended airspeed or if one is not stated, the examiner may designate a safe airspeed not to exceed V_A .
4. Rolls into a coordinated 360° turn; maintains a 45° bank, $\pm 5^\circ$; and rolls out on the entry heading, $\pm 10^\circ$.
5. Performs the task in the opposite direction, as specified by the examiner.
6. Divides attention between airplane control and orientation.
7. Maintains the entry altitude, ± 100 feet (30 meters), and airspeed, ± 10 knots.

VI. AREA OF OPERATION: GROUND REFERENCE MANEUVERS

A. TASK: RECTANGULAR COURSE

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a rectangular course.
2. Determines the wind direction and speed.
3. Selects the ground reference area with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at traffic pattern altitude, at an appropriate distance from the selected reference area, 45° to the downwind leg, with the first circuit to the left.
5. Applies adequate wind-drift correction during straight-and-turning flight to maintain a constant ground track around the rectangular reference area.
6. Divides attention between airplane control and the ground track and maintains coordinated flight.
7. Exits at the point of entry at the same altitude and airspeed at which the maneuver was started, and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

B. TASK: S-TURNS

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to S-turns.
2. Determines the wind direction and speed.
3. Selects the reference line with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL, perpendicular to the selected reference line, downwind, with the first series of turns to the left.
5. Applies adequate wind-drift correction to track a constant radius half-circle on each side of the selected reference line.
6. Divides attention between airplane control and the ground track and maintains coordinated flight.
7. Reverses course, as directed by the examiner, and exits at the point of entry at the same altitude and airspeed at which the maneuver was started.

8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

C. TASK: TURNS AROUND A POINT

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to turns around a point.
2. Determines the wind direction and speed.
3. Selects the reference point with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL, at an appropriate distance from the reference point, with the airplane headed downwind and the first turn to the left.
5. Applies adequate wind-drift correction to track a constant radius circle around the selected reference point with a bank of approximately 45° at the steepest point in the turn.
6. Divides attention between airplane control and the ground track and maintains coordinated flight.
7. Completes two turns, exits at the point of entry at the same altitude and airspeed at which the maneuver was started, and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

VII. AREA OF OPERATION: NAVIGATION

A. TASK: PILOTAGE AND DEAD RECKONING

REFERENCES: AC 61-21, AC 61-23, AC 61-84.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to pilotage and dead reckoning.
2. Follows the preplanned course solely by reference to landmarks.
3. Identifies landmarks by relating surface features to chart symbols.
4. Navigates by means of precomputed headings, groundspeeds, and elapsed time.
5. Corrects for and records the differences between preflight fuel, groundspeed, and heading calculations and those determined en route.
6. Verifies the airplane's position within 3 nautical miles of the flight-planned route at all times.
7. Arrives at the en route checkpoints and destination within 5 minutes of the ETA.
8. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.
9. Completes all appropriate checklists.

B. TASK: NAVIGATION SYSTEMS AND RADAR SERVICES

REFERENCES: AC 61-21, AC 61-23; Navigation Equipment Operation Manuals.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to navigation systems and radar services.
2. Selects and identifies the appropriate navigation system/facility.
3. Locates the airplane's position using radials, bearings, or coordinates, as appropriate.
4. Intercepts and tracks a given radial or bearing, if appropriate.
5. Recognizes and describes the indication of station 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 (60 meters).

C. TASK: DIVERSION

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to diversion.
2. Selects an appropriate alternate airport and route.
3. Diverts promptly toward the alternate airport.
4. Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate airport.
5. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.

D. TASK: LOST PROCEDURES

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to lost procedures.
2. Selects the best course of action when given a lost situation.
3. Maintains the original or an appropriate heading and climbs, if necessary.
4. Identifies the nearest concentration of prominent landmarks.
5. Uses navigation systems/facilities and/or contacts an ATC facility for assistance, as appropriate.
6. Plans a precautionary landing if deteriorating weather and/or fuel exhaustion is imminent.

VIII. AREA OF OPERATION: SLOW FLIGHT AND STALLS

A. TASK: MANEUVERING DURING SLOW FLIGHT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to maneuvering during slow flight.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL or the recommended altitude, whichever is higher.
3. Stabilizes the airspeed at $1.2 V_{S1}$, +10/-5 knots.
4. Accomplishes coordinated straight-and-level flight and level turns, at bank angles and in configurations, as specified by the examiner.
5. Accomplishes coordinated climbs and descents, straight and turning, at bank angles and in configurations as specified by the examiner.
6. Divides attention between airplane control and orientation.
7. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, +10/-5 knots.
8. Maintains the specified angle of bank, not to exceed 30° in level flight, +0/- 10° ; maintains the specified angle of bank, not to exceed 20° in climbing or descending flight, +0/- 10° ; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

B. TASK: POWER-OFF STALLS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-off stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-off stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL or the recommended altitude, whichever is higher.

3. Establishes a stabilized approach in the approach or landing configuration, as specified by the examiner.
4. Transitions smoothly from the approach or landing attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 30° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the airplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

C. TASK: POWER-ON STALLS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-on stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-on stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL or the recommended altitude, whichever is higher.
3. Establishes the takeoff or departure configuration, airspeed, and power as specified by the examiner.
4. Transitions smoothly from the takeoff or departure attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.

7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power as appropriate, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the airplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

D. TASK: SPIN AWARENESS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to spin awareness by explaining:

1. Flight situations where unintentional spins may occur.
2. The technique used to recognize and recover from unintentional spins.
3. The recommended spin recovery procedure for the airplane used for the practical test.

IX. AREA OF OPERATION: BASIC INSTRUMENT MANEUVERS

A. TASK: STRAIGHT-AND-LEVEL FLIGHT

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight-and-level flight.
2. Maintains straight-and-level flight solely by reference to instruments using proper instrument cross-check and interpretation, and coordinated control application.
3. Maintains altitude, ± 200 feet (60 meters); heading, $\pm 20^\circ$; and airspeed, ± 10 knots.

B. TASK: CONSTANT AIRSPEED CLIMBS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed climbs.
2. Establishes the climb configuration specified by the examiner.
3. Transitions to the climb pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates climbs solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

C. TASK: CONSTANT AIRSPEED DESCENTS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed descents.
2. Establishes the descent configuration specified by the examiner.
3. Transitions to the descent pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates descents solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

D. TASK: TURNS TO HEADINGS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during turns to headings.
2. Transitions to the level-turn attitude using proper instrument cross-check and interpretation, and coordinated control application.
3. Demonstrates turns to headings solely by reference to instruments; maintains altitude, ± 200 feet (60 meters); maintains a standard rate turn and rolls out on the assigned heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

E. TASK: RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during unusual attitudes.
2. Recognizes unusual flight attitudes solely by reference to instruments; recovers promptly to a stabilized level flight attitude using proper instrument cross-check and interpretation and smooth, coordinated control application in the correct sequence.

**F. TASK: RADIO COMMUNICATIONS, NAVIGATION
SYSTEMS/FACILITIES, AND RADAR SERVICES**

REFERENCES: AC 61-21, AC 61-23, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications, navigation systems/facilities, and radar services available for use during flight solely by reference to instruments.
2. Selects the proper frequency and identifies the appropriate facility.
3. Follows verbal instructions and/or navigation systems/facilities for guidance.
4. Determines the minimum safe altitude.
5. Maintains altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

X. AREA OF OPERATION: EMERGENCY OPERATIONS

A. TASK: EMERGENCY DESCENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an emergency descent.
2. Recognizes the urgency of an emergency descent.
3. Establishes the recommended emergency descent configuration and airspeed, and maintains that airspeed, ± 5 knots.
4. Demonstrates orientation, division of attention, and proper planning.
5. Follows the appropriate emergency checklist.

B. TASK: EMERGENCY APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency approach and landing procedures.
2. Establishes and maintains the recommended best-glide attitude, configuration, and airspeed, ± 10 knots.
3. Selects a suitable emergency landing area within gliding distance.
4. Plans and follows a flight pattern to the selected landing area considering altitude, wind, terrain, and obstructions.
5. Attempts to determine the reason for the malfunction and makes the correction, if possible.
6. Maintains positive control of the airplane at all times.
7. Follows the appropriate emergency checklist.

C. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to system and equipment malfunctions appropriate to the airplane provided for the flight test.
2. Analyzes the situation and takes the appropriate action for simulated emergencies, such as—
 - a. partial or complete power loss.
 - b. engine roughness or overheat.
 - c. carburetor or induction icing.
 - d. loss of oil pressure.
 - e. fuel starvation.
 - f. electrical system malfunction.
 - g. flight instruments malfunction.
 - h. landing gear or flap malfunction.
 - i. inoperative trim.
 - j. inadvertent door or window opening.
 - k. structural icing.
 - l. smoke/fire/engine compartment fire.
 - m. any other emergency appropriate to the airplane provided for the flight test.
3. Follows the appropriate emergency checklist.

D. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency equipment and survival gear appropriate to the airplane provided for the flight test, such as—
 - a. location in the airplane.
 - b. method of operation or use.
 - c. servicing requirements.
 - d. method of safe storage.
 - e. equipment and survival gear appropriate for operation in various climates and topographical environments.
2. Follows the appropriate emergency checklist.

XI. AREA OF OPERATION: NIGHT OPERATIONS

NOTE: If an applicant does not meet the aeronautical experience requirements of FAR Section 61.109(a)(2), the applicant's certificate shall bear the limitation "Night Flying Prohibited."

A. TASK: NIGHT PREPARATION

REFERENCES: AC 61-21, AC 61-23, AC 67-2; Pilot's Operating Handbook, FAA-Approved Airplane 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 including the effects of changing light conditions, coping with illusions, and how the pilot's physical condition affects visual acuity.
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 peculiar to night flying.

B. TASK: NIGHT FLIGHT

NOTE: The examiner shall orally evaluate element 1 and at least one of the elements, 2 through 6.

REFERENCES: AC 61-21, AC 67-2; AIM, Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to night flight.
2. Inspects the interior and exterior of the airplane with emphasis on those items essential for night flight.
3. Taxies and accomplishes the before takeoff check adhering to good operating practice for night conditions.
4. Performs takeoffs and climbs with emphasis on visual references.
5. Navigates and maintains orientation under VFR conditions.
6. Approaches, lands, and taxies, adhering to good operating practices for night conditions.
7. Completes all appropriate checklists.

XII. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to after-landing procedures.
2. Taxies to the parking/refueling area using the proper wind control technique and obstacle avoidance procedures.
3. Completes the appropriate checklist.

B. TASK: PARKING AND SECURING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to parking and securing procedures. This shall include an understanding of parking hand signals and deplaning passengers.
2. Parks the airplane properly, considering other aircraft and the safety of nearby persons and property on the ramp.
3. Follows the recommended procedure for engine shutdown and securing the cockpit and the airplane.
4. Performs a satisfactory postflight inspection.
5. Completes the appropriate checklist.

SECTION 2

AIRPLANE MULTIENGINE LAND (AMEL) Practical Test Standard

NOTE: An applicant seeking initial certification as a private pilot with an airplane multiengine land class rating will be evaluated in all TASKS listed within this section.

At the discretion of the examiner, an applicant seeking the addition of an airplane multiengine land class rating need not be evaluated on those AREAS OF OPERATIONS/TASKS so noted in the following rating tasks table.

Addition of an Airplane Multiengine Land Rating to an Existing Private Pilot Certificate									
Area of Operation	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.								
	PRIVATE PILOT RATING(S) HELD								
	ASEL	ASES	AMES	RH	RG	Non- Power Glider	Power Glider	Free Balloon	Airship
I	A,E	A,E	A,E	A,E	A,E	A,E	A,E	A,E	A,E
II	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
III	B	B,C	B,C	B	B	ALL	B	ALL	B
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	A *	A *	A *	A *	A *	A *	A *	A *	A *
VI	NONE	NONE	NONE	ALL	NONE	ALL	NONE	ALL	ALL
VII	NONE	NONE	NONE	NONE	NONE	ALL	NONE	ALL	NONE
VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XI	ALL	ALL	A,B	ALL	ALL	ALL	ALL	ALL	ALL
XII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

* If the applicant is instrument rated and instrument competency in a multiengine airplane has not been previously demonstrated, TASKS B, C, and D may be performed at this time, otherwise a VFR ONLY restriction shall be specified on the issued certificate.

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APPLICANT'S PRACTICAL TEST CHECKLIST

APPOINTMENT WITH EXAMINER:

EXAMINER'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 Airplane Flight Manual
- FCC Station License

PERSONAL EQUIPMENT

- View-Limiting Device
- Current Aeronautical Charts
- Computer and Plotter
- Flight Plan Form
- Flight Logs
- Current AIM, Airport Facility Directory, 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)
- AC Form 8080-2, Airman Written Test Report, or Computer Test Report
- Pilot Logbook with Appropriate Instructor Endorsements
- FAA Form 8060-5, Notice of Disapproval (if applicable)
- Approved School Graduation Certificate (if applicable)
- Examiner's Fee (if applicable)

EXAMINER'S PRACTICAL TEST CHECKLIST

(AMEL)

APPLICANT'S NAME _____

LOCATION _____

DATE/TIME _____

I. PREFLIGHT PREPARATION

- A. CERTIFICATES AND DOCUMENTS
- B. WEATHER INFORMATION
- C. CROSS-COUNTRY FLIGHT PLANNING
- D. NATIONAL AIRSPACE SYSTEM
- E. MINIMUM EQUIPMENT LIST
- F. AEROMEDICAL FACTORS

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- B. COCKPIT 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 AND RUNWAY MARKINGS AND LIGHTING

IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS

- A. NORMAL AND CROSSWIND TAKEOFF AND CLIMB
- B. NORMAL AND CROSSWIND APPROACH AND LANDING
- C. SHORT-FIELD TAKEOFF AND CLIMB
- D. SHORT-FIELD APPROACH AND LANDING
- E. GO-AROUND

V. PERFORMANCE MANEUVERS

- A. STEEP TURNS
- B. ENGINE FAILURE DURING FLIGHT (BY REFERENCE TO INSTRUMENTS)
- C. INSTRUMENT APPROACH – ALL ENGINES OPERATING (BY REFERENCE TO INSTRUMENTS)
- D. INSTRUMENT APPROACH – ONE ENGINE INOPERATIVE (BY REFERENCE TO INSTRUMENTS)

VI. GROUND REFERENCE MANEUVERS

- **A. RECTANGULAR COURSE**
- **B. S-TURNS**
- **C. TURNS AROUND A POINT**

VII. NAVIGATION

- **A. PILOTAGE AND DEAD RECKONING**
- **B. NAVIGATION SYSTEMS AND RADAR SERVICES**
- **C. DIVERSION**
- **D. LOST PROCEDURES**

VIII. SLOW FLIGHT AND STALLS

- **A. MANEUVERING DURING SLOW FLIGHT**
- **B. POWER-OFF STALLS**
- **C. POWER-ON STALLS**
- **D. SPIN AWARENESS**

IX. BASIC INSTRUMENT MANEUVERS

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- **C. ENGINE INOPERATIVE – LOSS OF DIRECTIONAL
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- **D. ENGINE FAILURE DURING TAKEOFF BEFORE V_{MC}
(SIMULATED)**
- **E. ENGINE FAILURE AFTER LIFT-OFF (SIMULATED)**
- **F. APPROACH AND LANDING WITH AN INOPERATIVE
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- **G. SYSTEMS AND EQUIPMENT MALFUNCTIONS**
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- **B. OPERATION OF SYSTEMS**
- **C. ENGINE INOPERATIVE PRINCIPLES OF FLIGHT**

XII. NIGHT OPERATIONS

- **A.** NIGHT PREPARATION
- **B.** NIGHT FLIGHT

XIII. POSTFLIGHT PROCEDURES

- **A.** AFTER LANDING
- **B.** PARKING AND SECURING

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

REFERENCES: FAR Parts 43, 61, 91; AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to certificates and documents by explaining the appropriate—
 - a. pilot certificate, privileges and limitations.
 - b. medical certificate, class and duration.
 - c. pilot logbook or flight record, required entries.
2. Exhibits knowledge of the elements related to certificates and documents by locating and explaining the—
 - a. airworthiness and registration certificates.
 - b. operating limitations, placards, instrument markings, handbooks, and/or manuals.
 - c. weight and balance data, including the equipment list.
 - d. airworthiness directives and compliance records, maintenance requirements, tests, and appropriate records.

B. TASK: WEATHER INFORMATION

REFERENCES: AC 00-6, AC 00-45, AC 61-23, AC 61-84; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports and forecasts from various sources with emphasis on—
 - a. PIREP's.
 - b. SIGMETs and AIRMET's.
 - c. wind shear reports.
2. Makes a competent "go/no-go" decision based on available weather information.

C. TASK: CROSS-COUNTRY FLIGHT PLANNING

REFERENCES: AC 61-21, AC 61-23, AC 61-84; Navigation Charts; Airport/Facility Directory; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a preplanned VFR cross-country flight near the maximum range of the airplane, as previously assigned by the examiner. The final flight plan shall include real-time weather to the first fuel stop, with maximum allowable passenger and baggage loads.
2. Uses appropriate, current aeronautical charts.
3. Plots a course for the intended route of flight.
4. Identifies airspace, obstructions, and terrain features.
5. Selects easily identifiable en route checkpoints.
6. Selects the most favorable altitudes, considering weather conditions and equipment capabilities.
7. Computes headings, flight time, and fuel requirements.
8. Selects appropriate navigation systems/facilities and communication frequencies.
9. Confirms availability of alternate airports.
10. Extracts and records pertinent information from NOTAM's, the Airport/Facility Directory, and other flight publications.
11. Completes a navigation log and simulates filing a VFR flight plan.

D. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: FAR 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 airplane equipment requirements for the following—
 - a. Class A.
 - b. Class B.
 - c. Class C.
 - d. Class D.
 - e. Class E.
 - f. Class G.
3. Special use airspace and other airspace areas.

E. TASK: MINIMUM EQUIPMENT LIST

REFERENCE: FAR Part 91.

Objective. To determine that the applicant exhibits knowledge of the elements related to the use of an approved Part 91 minimum equipment list by explaining:

1. Required instruments and equipment for day VFR and night VFR flight.
2. Procedures for operating the airplane with inoperative instruments and equipment.
3. Requirements and procedures for obtaining a special flight permit.

F. TASK: AEROMEDICAL FACTORS

REFERENCES: AC 61-21, AC 67-2; 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 over-the-counter drugs.
3. The effects of nitrogen excesses during scuba dives upon a pilot or passenger in flight.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to preflight inspection. This shall include which items must be inspected, the reasons for checking each item, and how to detect possible defects.
2. Inspects the airplane with reference to the checklist.
3. Verifies the airplane is in condition for safe flight.

B. TASK: COCKPIT MANAGEMENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cockpit management procedures.
2. Organizes material and equipment in a logical, efficient flow pattern.
3. Briefs passengers on the use of safety belts, shoulder harnesses, and emergency procedures.
4. Utilizes all appropriate checklists.

C. TASK: ENGINE STARTING

REFERENCES: AC 61-21, AC 61-23, AC 91-13, AC 91-55; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine starting. This shall include the use of an external power source and starting under various atmospheric conditions.
2. Positions the airplane properly considering open hangars, other aircraft, the safety of nearby persons and property on the ramp, and surfaces conditions.
3. Accomplishes the correct starting procedure.
4. Completes the appropriate checklist.

D. TASK: TAXIING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to safe taxi procedures.
2. Positions the flight controls properly for the existing wind conditions.
3. Performs a brake check immediately after the airplane begins moving.
4. Controls direction and speed without excessive use of brakes.
5. Complies with airport markings, signals, and ATC clearances.
6. Avoids other aircraft and hazards.
7. Completes the appropriate checklist.

E. TASK: BEFORE TAKEOFF CHECK

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane 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 each item and how to detect malfunctions.
2. Positions the airplane properly considering other aircraft, wind and surface conditions.
3. Divides attention inside and outside the cockpit.
4. Ensures that engine temperatures and pressures are suitable for run-up and takeoff.
5. Accomplishes the before takeoff check and confirms that the airplane is in safe operating condition.
6. Reviews takeoff performance airspeeds, takeoff distances, emergency procedures, and the departure procedure.
7. Assures no conflict with traffic prior to taxiing into takeoff position.
8. Completes the appropriate checklist.

III. AREA OF OPERATION: AIRPORT OPERATIONS

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications and ATC light signals. This shall include radio failure procedures.
2. Selects appropriate frequencies.
3. Transmits using recommended phraseology.
4. Acknowledges radio communications and complies with instructions.
5. Uses prescribed procedures following radio communications failure.
6. Interprets and complies with ATC light signals.

B. TASK: TRAFFIC PATTERNS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to traffic patterns. This shall include procedures at controlled and uncontrolled airports, runway incursion and collision avoidance, wake turbulence avoidance, and wind shear.
2. Complies with traffic pattern procedures.
3. Maintains proper spacing from other traffic.
4. Establishes an appropriate distance from the runway.
5. Corrects for wind drift to maintain the proper ground track.
6. Maintains orientation with the runway in use.
7. Maintains traffic pattern altitude, ± 100 feet (30 meters), and the appropriate airspeed, ± 10 knots.
8. Completes the appropriate checklist.

C. TASK: AIRPORT AND RUNWAY MARKINGS AND LIGHTING

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to airport and runway markings and lighting.
2. Identifies and interprets airport, runway and taxiway markings and lighting.

IV. AREA OF OPERATION: TAKEOFFS, LANDINGS, AND GO-AROUNDS

A. TASK: NORMAL AND CROSSWIND TAKEOFF AND CLIMB

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind takeoff and climb.
2. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
3. Clears the area, taxies into the takeoff position and aligns the airplane on the runway centerline.
4. Advances the throttle smoothly to takeoff power.
5. Rotates at the recommended airspeed, lifts off, accelerates to and establishes the pitch attitude for V_Y and maintains V_Y , +10/-5 knots, during the climb.
6. Retracts the landing gear and flaps after a positive rate of climb is established.
7. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets climb power and transitions to the recommended climb airspeed.
8. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
9. Complies with noise abatement procedures.
10. Completes the appropriate checklist.

B. TASK: NORMAL AND CROSSWIND APPROACH AND LANDING

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind approach and landing.
2. Considers the wind conditions, landing surface and obstructions, and selects the most suitable touchdown point.
3. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
4. Maintains a stabilized approach and the recommended approach airspeed, or in its absence not more than $1.3 V_{SO}$, +10/-5 knots, with gust factor applied.
5. Makes smooth, timely, and correct control application during the roundout and touchdown.
6. Touches down smoothly at the approximate stalling speed, at or within 400 feet (120 meters) beyond a specified point, with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
7. Maintains crosswind correction and directional control throughout the approach and landing.
8. Completes the appropriate checklist.

C. TASK: SHORT-FIELD TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a short-field takeoff and climb.
2. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
3. Clears the area; taxis into the takeoff position so as to allow maximum utilization of the available takeoff area and aligns the airplane on the runway centerline.
4. Advances the throttle smoothly to takeoff power.

5. Rotates at the recommended airspeed, lifts off and accelerates to the recommended obstacle clearance airspeed or V_x .
6. Establishes the pitch attitude for the recommended obstacle clearance airspeed, or V_x , and maintains that airspeed, +10/-5 knots, until the obstacle is cleared, or until the airplane is 50 feet (20 meters) above the surface.
7. After clearing the obstacle, accelerates to V_y , establishes the pitch attitude for V_y , and maintains V_y , +10/-5 knots, during the climb.
8. Retracts the landing gear and flaps after a positive rate of climb is established.
9. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets climb power and transitions to the recommended climb airspeed.
10. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
11. Complies with noise abatement procedures.
12. Completes the appropriate checklist.

D. TASK: SHORT-FIELD APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a short-field approach and landing.
2. Considers the wind conditions, landing surface, and obstructions, and selects the most suitable touchdown point.
3. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
4. Maintains a stabilized approach and the recommended approach airspeed, or in its absence not more than $1.3 V_{SO}$, +10/-5 knots, with gust factor applied.
5. Makes smooth, timely, and correct control application during the roundout and touchdown.
6. Touches down smoothly at the approximate stalling speed, at or within 200 feet (60 meters) beyond a specified point, with no side drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
7. Applies brakes, as necessary, to stop in the shortest distance consistent with safety.

8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

E. TASK: GO-AROUND

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a go-around.
2. Makes a timely decision to discontinue the approach to landing.
3. Applies takeoff power immediately and transitions to the climb pitch attitude for V_Y , +10/-5 knots.
4. Retracts the flaps to the approach setting.
5. Retracts the landing gear after a positive rate of climb is established.
6. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets power and transitions to the airspeed appropriate for the traffic pattern.
7. Maintains directional control and proper wind-drift correction throughout the climb.
8. Complies with noise abatement procedures, as appropriate.
9. Flies the appropriate traffic pattern.
10. Completes the appropriate checklist.

V. AREA OF OPERATION: PERFORMANCE MANEUVERS

Change 1
4/28/97

A. TASK: STEEP TURNS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to steep turns.
2. Selects an altitude that will allow the task to be performed no lower than 3,000 feet (920 meters) AGL.
3. Establishes the manufacturer's recommended airspeed or if one is not stated, the examiner may designate a safe airspeed not to exceed V_A .
4. Rolls into a coordinated 360° turn; maintains a 45° bank, $\pm 5^\circ$; and rolls out on the entry heading, $\pm 10^\circ$.
5. Performs the task in the opposite direction, as specified by the examiner.
6. Divides attention between airplane control and orientation.
7. Maintains the entry altitude, ± 100 feet (30 meters), and airspeed, ± 10 knots.

NOTE: For applicants electing not to demonstrate competency in TASKS B, C, and D, multiengine privileges will be limited to VFR only.

If the applicant elects to demonstrate competency in TASKS B, C, and D, but then demonstrates unsatisfactorily one or more of those TASKS, the applicant will be issued a "Notice of Disapproval of Application" for the practical test. After the flight test is initiated, the applicant shall not be permitted to revert to the "VFR only" option.

**B. TASK: ENGINE FAILURE DURING FLIGHT (BY
REFERENCE TO INSTRUMENTS)**

REFERENCES: FAR Part 61; AC 61-21, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine failure during flight by (reference to instruments).
2. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
4. Establishes the recommended best engine inoperative airspeed.
5. Banks toward the operative engine as required for best performance, trims the airplane, and maintains control.
6. Attempts to determine the reason for the engine malfunction, if appropriate.
7. Simulates feathering the propeller of the inoperative engine.
8. Monitors the operating engine and makes adjustments as necessary.
9. Follows the checklist to verify procedures for securing the inoperative engine.
10. Demonstrates coordinated flight with one engine inoperative (propeller at zero thrust), including—
 - a. straight-and-level flight.
 - b. turns in both directions.
 - c. descents to assigned altitudes.
 - d. climbs to assigned altitudes, if the airplane is capable of climbing under the existing conditions.
11. Demonstrates engine restart in accordance with recommended procedures and completes the checklist.
12. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, ± 10 knots.
13. Maintains the specified angle of bank, $\pm 10^\circ$; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

**C. TASK: INSTRUMENT APPROACH – ALL ENGINES
OPERATING (BY REFERENCE TO
INSTRUMENTS)**

REFERENCES: FAR Part 61; AC 61-21, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a published instrument approach with all engines operating (by reference to instruments).
2. Displays efficient cockpit management procedures throughout the approach.
3. Sets up for the approach by tuning and identifying the correct navigation frequencies and by selecting the correct course(s).
4. Communicates with the appropriate ATC facility and transmits using recommended phraseology.
5. Complies with an actual or simulated ATC IFR clearance, ATC advisories and instructions.
6. Maintains the specified altitude within ± 100 feet (30 meters) and the specified airspeed within ± 10 knots, prior to reaching the final approach fix.
7. Establishes a rate of descent that will ensure arrival at the MDA or DH with the airplane in a position from which descent to a landing on the intended runway can be made, straight-in or circling.
8. Allows, while on the final approach course, no more than three-quarter-scale deflection of the localizer and glideslope indications, nor more than 10° deflection (full scale deflection) after intercepting the VOR or NDB final approach course.
9. Avoids descent below the MDA or exceeding the visibility criteria for the aircraft approach category when circling.
10. Executes the published missed approach procedure at the missed approach point or complies with instructions from ATC at the designated missed approach point.
11. Completes all appropriate checklists.

**D. TASK: INSTRUMENT APPROACH – ONE ENGINE
INOPERATIVE (BY REFERENCE TO
INSTRUMENTS)**

REFERENCES: FAR Part 61; AC 61-21, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a published instrument approach with one engine inoperative (by reference to instruments).
2. Displays efficient cockpit management procedures throughout the approach.
3. Sets up for the approach by tuning and identifying the correct navigation frequencies and by selecting the correct course(s).
4. Communicates with the appropriate ATC facility and transmits using recommended phraseology.
5. Complies with an actual or simulated ATC IFR clearance, ATC advisories and instructions.
6. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
7. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
8. Establishes the recommended best engine inoperative airspeed.
9. Banks toward the operative engine as required for best performance, trims the airplane, and maintains control.
10. Establishes and maintains the recommended flight attitude and configuration for the best performance for all maneuvering necessary for the instrument approach procedure.
11. Attempts to determine the reason for the engine failure, if appropriate.
12. Simulates feathering the propeller of the inoperative engine.
13. Monitors the operating engine and makes adjustments as necessary.
14. Follows the checklist to verify procedures for securing the inoperative engine.
15. Maintains the specified altitude within ± 100 feet (30 meters) and the specified airspeed within ± 10 knots prior to reaching the final approach fix.
16. Establishes a rate of descent that will ensure arrival at the MDA or DH with the airplane in a position from which descent to a landing on the intended runway can be made, straight-in or circling.

17. Allows, while on the final approach course, no more than three-quarter-scale deflection of the localizer and glideslope indications, nor more than 10° deflection (full scale deflection) after intercepting the VOR or NDB final approach course.
18. Avoids exceeding the visibility criteria for the aircraft approach category when circling.
19. Completes a safe landing and all appropriate checklists.

VI. AREA OF OPERATION: GROUND REFERENCE MANEUVERS

A. TASK: RECTANGULAR COURSE

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a rectangular course.
2. Determines the wind direction and speed.
3. Selects the ground reference area with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at traffic pattern altitude, at an appropriate distance from the selected reference area, 45° to the downwind leg, with the first circuit to the left.
5. Applies adequate wind-drift correction during straight-and-turning flight to maintain a constant ground track around the rectangular reference area.
6. Divides attention between airplane control and the ground track and maintains coordinated flight.
7. Exits at the point of entry at the same altitude and airspeed at which the maneuver was started, and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

B. TASK: S-TURNS

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to S-turns.
2. Determines the wind direction and speed.
3. Selects the reference line with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL, perpendicular to the selected reference line, downwind, with the first series of turns to the left.
5. Applies adequate wind-drift correction to track a constant radius half-circle on each side of the selected reference line.
6. Divides attention between airplane control and the ground track and maintains coordinated flight.

7. Reverses course, as directed by the examiner, and exits at the point of entry at the same altitude and airspeed at which the maneuver was started.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

C. TASK: TURNS AROUND A POINT

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to turns around a point.
2. Determines the wind direction and speed.
3. Selects the reference point with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL, at an appropriate distance from the reference point, with the airplane headed downwind and the first turn to the left.
5. Applies adequate wind-drift correction to track a constant radius circle around the selected reference point with a bank of approximately 45° at the steepest point in the turn.
6. Divides attention between airplane control and the ground track and maintains coordinated flight.
7. Completes two turns, exits at the point of entry at the same altitude and airspeed at which the maneuver was started, and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

VII. AREA OF OPERATION: NAVIGATION

A. TASK: PILOTAGE AND DEAD RECKONING

REFERENCES: AC 61-21, AC 61-23, AC 61-84.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to pilotage and dead reckoning.
2. Follows the preplanned course solely by reference to landmarks.
3. Identifies landmarks by relating surface features to chart symbols.
4. Navigates by means of precomputed headings, groundspeeds, and elapsed time.
5. Corrects for and records the differences between preflight fuel, groundspeed, and heading calculations and those determined en route.
6. Verifies the airplane's position within 3 nautical miles of the flight-planned route at all times.
7. Arrives at the en route checkpoints and destination within 5 minutes of the ETA.
8. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.
9. Completes all appropriate checklists.

B. TASK: NAVIGATION SYSTEMS AND RADAR SERVICES

REFERENCES: AC 61-21, AC 61-23; Navigation Equipment Operation Manuals.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to navigation systems and radar services.
2. Selects and identifies the appropriate navigation system/facility.
3. Locates the airplane's position using radials, bearings, or coordinates, as appropriate.
4. Intercepts and tracks a given radial or bearing, if appropriate.
5. Recognizes and describes the indication of station 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 (60 meters).

C. TASK: DIVERSION

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to diversion.
2. Selects an appropriate alternate airport and route.
3. Diverts promptly toward the alternate airport.
4. Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate airport.
5. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.

D. TASK: LOST PROCEDURES

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to lost procedures.
2. Selects the best course of action when given a lost situation.
3. Maintains the original or an appropriate heading and climbs, if necessary.
4. Identifies the nearest concentration of prominent landmarks.
5. Uses navigation systems/facilities and/or contacts an appropriate ATC facility for assistance.
6. Plans a precautionary landing if deteriorating weather and/or fuel exhaustion is impending.

VIII. AREA OF OPERATION: SLOW FLIGHT AND STALLS

A. TASK: MANUEVERING DURING SLOW FLIGHT

REFERENCES: 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to maneuvering during slow flight.
2. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the recommended altitude, whichever is higher.
3. Stabilizes the airspeed at 10 knots, $\pm 10/-5$ knots, above $1.2 V_{S1}$ or V_{MC} , whichever is greater.
4. Accomplishes coordinated straight-and-level flight and level turns, at bank angles and in configurations, as specified by the examiner.
5. Accomplishes coordinated climbs and descents, straight and turning, at bank angles and in configurations, as specified by the examiner.
6. Divides attention between airplane control and orientation.
7. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, $\pm 10/-5$ knots.
8. Maintains the specified angle of bank, not to exceed 30° in level flight, $\pm 10/-10^\circ$; maintains the specified angle of bank, not to exceed 20° in climbing or descending flight, $\pm 10/-10^\circ$; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

B. TASK: POWER-OFF STALLS

NOTE: No stall shall be performed with one engine throttled or inoperative and the other engine(s) developing effective power.

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-off stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-off stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the recommended altitude, whichever is higher.
3. Establishes a stabilized approach in the approach or landing configuration, as specified by the examiner.
4. Transitions smoothly from the approach or landing attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 30° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the airplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

C. TASK: POWER-ON STALLS

NOTE: No stall shall be performed with one engine throttled or inoperative and the other engine(s) developing effective power.

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-on stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-on stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the recommended altitude, whichever is higher.
3. Establishes the takeoff or departure configuration, airspeed, and power as specified by the examiner.
4. Transitions smoothly from the takeoff or departure attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power as appropriate, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the airplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

D. TASK: SPIN AWARENESS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to spin awareness by explaining:

1. Flight situations where unintentional spins may occur.
2. The technique used to recognize and recover from unintentional spins.
3. The recommended spin recovery procedure for the airplane used for the practical test.

IX. AREA OF OPERATION: BASIC INSTRUMENT MANEUVERS

A. TASK: STRAIGHT-AND-LEVEL FLIGHT

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight-and-level flight.
2. Maintains straight-and-level flight solely by reference to instruments using proper instrument cross-check and interpretation, and coordinated control application.
3. Maintains altitude, ± 200 feet (60 meters); heading, $\pm 20^\circ$; and airspeed, ± 10 knots.

B. TASK: CONSTANT AIRSPEED CLIMBS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed climbs.
2. Establishes the climb configuration specified by the examiner.
3. Transitions to the climb pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates climbs solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

C. TASK: CONSTANT AIRSPEED DESCENTS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed descents.
2. Establishes the descent configuration specified by the examiner.
3. Transitions to the descent pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates descents solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

D. TASK: TURNS TO HEADINGS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during turns to headings.
2. Transitions to the level-turn attitude using proper instrument cross-check and interpretation, and coordinated control application.
3. Demonstrates turns to headings solely by reference to instruments; maintains altitude, ± 200 feet (60 meters); maintains a standard rate turn and rolls out on the assigned heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

E. TASK: RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during unusual attitudes.
2. Recognizes unusual flight attitudes solely by reference to instruments; recovers promptly to a stabilized level flight attitude using proper instrument cross-check and interpretation and smooth, coordinated control application in the correct sequence.

F. TASK: RADIO COMMUNICATIONS, NAVIGATION SYSTEMS/FACILITIES, AND RADAR SERVICES

REFERENCES: AC 61-21, AC 61-23, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications, navigation systems/facilities, and radar services available for use during flight solely by reference to instruments.
2. Selects the proper frequency and identifies the appropriate facility.
3. Follows verbal instructions and/or navigation system/facilities for guidance.
4. Determines the minimum safe altitude.
5. Maintains altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

X. AREA OF OPERATION: EMERGENCY OPERATIONS

A. TASK: EMERGENCY DESCENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an emergency descent.
2. Recognizes the urgency of an emergency descent.
3. Establishes the recommended emergency descent configuration and airspeed, and maintains that airspeed, ± 5 knots.
4. Demonstrates orientation, division of attention, and proper planning.
5. Follows the appropriate emergency checklist.

B. TASK: MANEUVERING WITH ONE ENGINE INOPERATIVE

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

NOTE: The feathering of one propeller shall be demonstrated in multiengine airplanes equipped with propellers which can be safely feathered and unfeathered in flight. An appropriately equipped airplane shall be provided by the applicant. This shall be performed at altitudes, in areas and from positions where safe landings on established airports can be readily accomplished, in the event difficulty is encountered in unfeathering and/or restarting. A propeller that cannot be unfeathered during the practical test shall be treated as an emergency.

At altitudes lower than 3,000 feet (920 meters) above the surface, simulated engine failure shall be performed by throttling the engine back to idle and then establishing zero thrust.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to maneuvering with one engine inoperative.
2. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.

4. Establishes the recommended best engine inoperative airspeed.
5. Banks toward the operating engine as required for best performance, trims the airplane, and maintains control.
6. Attempts to determine the reason for the engine malfunction, if appropriate.
7. Feathers the propeller of the inoperative engine.
8. Monitors the operating engine and makes adjustments as necessary.
9. Follows the appropriate emergency checklist to verify procedures for securing the inoperative engine and turns toward the nearest suitable airport.
10. Demonstrates coordinated flight with one engine inoperative (propeller feathered), including—
 - a. straight-and-level flight.
 - b. turns in both directions.
 - c. descents to assigned altitudes.
 - d. climbs to assigned altitudes, if the airplane is capable of climbing under the existing conditions.
11. Divides attention between coordinated control, the flightpath, and orientation.
12. Demonstrates engine restart in accordance with recommended procedures.
13. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, ± 10 knots.
14. Maintains the specified angle of bank, $\pm 10^\circ$; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

C. TASK: ENGINE INOPERATIVE-LOSS OF DIRECTIONAL CONTROL DEMONSTRATION

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

NOTE: Airplanes with normally aspirated engines will lose power as altitude increases because of the reduced density of the air entering the induction system of the engines. This loss of power will result in a V_{MC} lower than the stall speed at higher altitudes. Also, some airplanes have such an effective rudder that even at sea level V_{MC} is lower than stall speed. For these airplanes, a demonstration of loss of directional control may be safely conducted by limiting rudder travel to simulate maximum available rudder. Limiting rudder travel should be accomplished at a speed well above the power-off stall speed (approximately 20 knots). This will avoid the hazards of stalling one wing with maximum allowable power applied to the engine on the other wing. In the event of any indication of stall prior to loss of directional control, recover to the entry airspeed. The demonstration should then be accomplished with the rudder travel limited at a higher airspeed.

Do not perform this maneuver by increasing the pitch attitude to a high angle with both engines operating and then reducing power on the critical engine. This technique is hazardous and may result in loss of airplane control.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine inoperative loss of directional control by explaining the—
 - a. meaning of the term “critical engine.”
 - b. effects of density altitude on the V_{MC} demonstration.
 - c. effects of airplane weight and center of gravity on control.
 - d. reasons for variations in V_{MC} .
 - e. relationship of V_{MC} to stall speed.
 - f. reasons for loss of directional control.
 - g. indications of loss of directional control.
 - h. importance of maintaining the proper pitch and bank attitude, and the proper coordination of controls.
 - i. loss of directional control recovery procedure.
 - j. engine failure during takeoff including planning, decisions, and single-engine operations.

2. Exhibits skills in performing an engine inoperative-loss of directional control demonstration—
- a. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
 - b. Configures the airplane at V_{SSE}/V_{SSE} as follows:
 - (1) Landing gear retracted.
 - (2) Flaps set for takeoff.
 - (3) Cowl flaps set for takeoff.
 - (4) Trim set for takeoff.
 - (5) Propellers set for high RPM.
 - (6) Power on the critical engine reduced to idle.
 - (7) Power on the operating engine set to takeoff or maximum available power.
 - c. Establishes a single engine climb attitude with the airspeed at approximately 10 knots above V_{SSE} .
 - d. Establishes a bank toward the operating engine, required for best performance.
 - e. Increases the pitch attitude slowly to reduce the airspeed, at approximately 1 knot per second, while applying rudder to maintain directional control until full rudder is applied.
 - f. Recognizes and announces the first indications of loss of directional control, stall warning or buffet.
 - g. Recovers promptly by simultaneously reducing power sufficiently on the operating engine while decreasing the angle of attack as necessary to regain airspeed and directional control with a minimum loss of altitude. Recovery **SHOULD NOT** be attempted by increasing the power on the simulated failed engine.
 - h. Recovers within 20° of the entry heading.
 - i. Accelerates to V_{XSE}/V_{YSE} , as appropriate, +10/-5 knots, during the recovery.

D. TASK: ENGINE FAILURE DURING TAKEOFF BEFORE V_{MC} (SIMULATED)

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

NOTE: Engine failure shall be accomplished before reaching 50 percent of the calculated V_{MC} .

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine failure on takeoff before V_{MC} .
2. Closes throttles smoothly and promptly after simulated engine failure.
3. Maintains directional control and applies braking as necessary.

E. TASK: ENGINE FAILURE AFTER LIFT-OFF (SIMULATED)

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine failure after lift-off.
2. Recognizes engine failure promptly, maintains control, and utilizes the recommended emergency procedure.
3. Reduces drag, identifies and verifies the inoperative engine after simulated engine failure.
4. Simulates feathering the propeller of the inoperative engine.
5. Establishes V_{YSE} ; if obstructions are present, establishes V_{XSE} or $V_{MC} + 10$, whichever is greater, until obstructions are cleared, then transitions to V_{YSE} .
6. Banks toward the operating engine as required for best performance, trims the airplane and maintains control.
7. Monitors the operating engine and makes adjustments as necessary.
8. Recognizes the airplane's performance capabilities. If a climb is not possible at V_{YSE} , maintains V_{YSE} and returns to the departure airport for a landing or initiates an approach to the most suitable landing area available.
9. Secures the inoperative engine, if appropriate.
10. Maintains heading, $\pm 10^\circ$, and airspeed, $+10/-5$ knots.
11. Completes the appropriate emergency checklist.

**F. TASK: APPROACH AND LANDING WITH AN
 INOPERATIVE ENGINE (SIMULATED)**

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-
Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an approach and landing with an inoperative engine.
2. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
4. Simulates feathering the propeller of the inoperative engine.
5. Establishes the recommended best engine inoperative airspeed, +10/-5 knots.
6. Banks toward the operating engine as required for best performance, trims the airplane, and maintains control.
7. Monitors the operating engine and makes adjustments as necessary.
8. Considers the wind conditions, landing surface, and obstructions, and selects the most suitable touchdown point.
9. Establishes the recommended best engine inoperative approach landing configuration, and airspeed.
10. Maintains a stabilized approach and the recommended approach airspeed, +10/-5 knots of V_{YSE} until landing is assured.
11. Makes smooth, timely, and correct control application during the roundout and touchdown.
12. Touches down smoothly at or within 500 feet beyond a specified point, with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
13. Maintains crosswind correction and directional control throughout the approach and landing.
14. Completes the appropriate emergency checklist.

G. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to system and equipment malfunctions appropriate to the airplane provided for the flight test.
2. Analyzes the situation and takes appropriate action for simulated emergencies, such as—
 - a. partial or complete power loss.
 - b. engine roughness or overheat.
 - c. carburetor or induction icing.
 - d. loss of oil pressure.
 - e. fuel starvation.
 - f. electrical system malfunction.
 - g. flight instruments malfunction.
 - h. landing gear or flap malfunction.
 - i. inoperative trim.
 - j. inadvertent door or window opening.
 - k. structural icing.
 - l. smoke/fire/engine compartment fire.
 - m. any other emergency appropriate to the airplane provided for the flight test.
3. Follows the appropriate emergency checklist.

H. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency equipment and survival gear appropriate to the airplane provided for the flight test, by explaining—
 - a. location in the airplane.
 - b. method of operation or use.
 - c. servicing requirements.
 - d. method of safe storage.
 - e. equipment and survival gear appropriate for operation in various climates and topographical environments.
2. Follows the appropriate emergency checklist.

XI. AREA OF OPERATION: MULTIENGINE OPERATIONS

A. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: AC 61-21, AC 61-23, AC 61-84, AC 91-23; Pilot's Operating Handbook, FAA-Approved Airplane 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, including adding, removing, and shifting weight. Determines if the weight and center of gravity will remain within limits during all phases of flight.
3. Demonstrates use of the appropriate performance charts, tables, and data including takeoff, cruise, range, and endurance.
4. Calculates takeoff and climb performance, accelerate-stop and accelerate-go distances, and service ceilings – all engines, single-engine.
5. Describes the effects of atmospheric conditions on the airplane's performance.
6. Determines whether the computed performance is within the airplane's capabilities and operating limitations.

B. TASK: OPERATION OF SYSTEMS

REFERENCES: AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to the operation of systems appropriate to the airplane provided for the flight test by explaining at least three of the following :

1. Primary flight controls and trim.
2. Flaps, leading edge devices, and spoilers.
3. Powerplants.
4. Propellers.
5. Landing gear.
6. Fuel, oil, and hydraulic systems.
7. Electrical system.
8. Pitot-static system, vacuum/pressure system, and associated flight instruments.

9. Environmental system.
10. Deicing and anti-icing systems.
11. Avionics system.

C. TASK: ENGINE INOPERATIVE PRINCIPLES OF FLIGHT

REFERENCES: AC 61-21; AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to engine inoperative principles of flight by explaining:

1. The meaning of the term "critical engine."
2. The reasons for variation in V_{MC} , for loss of directional control and indications of the approaching loss.
3. The relationship of V_{MC} to stall speed, including a determination of whether a V_{MC} demonstration can be safely accomplished.
4. The effects of weight and center-of-gravity location.
5. The effects of density altitude.
6. Procedures for engine failure on takeoff prior to V_{MC} , after liftoff, during cruise, and on approach to land.
7. Procedures for engine shutdown, securing, and restart.

XII. AREA OF OPERATION: NIGHT OPERATIONS

NOTE: If an applicant does not meet the aeronautical experience requirements of FAR Section 61.109(a)(2), the applicant's certificate shall bear the limitation "Night Flying Prohibited."

A. TASK: NIGHT PREPARATION

REFERENCES: AC 61-21, AC 61-23, AC 67-2; Pilot's Operating Handbook, FAA-Approved Airplane 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 including the effects of changing light conditions, coping with illusions, and how the pilot's physical condition affects visual acuity.
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 peculiar to night flying.

B. TASK: NIGHT FLIGHT

NOTE: The examiner shall orally evaluate element 1 and at least one of the elements, 2 through 6.

REFERENCES: AC 61-21, AC 67-2; AIM; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to night flight.
2. Inspects the interior and exterior of the airplane with emphasis on those items essential for night flight.
3. Taxies and accomplishes the before takeoff check adhering to good operating practice for night conditions.
4. Performs takeoffs and climbs with emphasis on visual references.
5. Navigates and maintains orientation under VFR conditions.
6. Approaches, lands, and taxies, adhering to good operating practices for night conditions.
7. Completes all appropriate checklists.

XIII. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to after-landing procedures.
2. Taxies to the parking/refueling area using the proper wind control technique and obstacle avoidance procedures.
3. Completes the appropriate checklist.

B. TASK: PARKING AND SECURING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to parking and securing procedures. This shall include an understanding of parking hand signals and deplaning passengers.
2. Parks the airplane properly, considering other aircraft and the safety of nearby persons and property on the ramp.
3. Follows the recommended procedure for engine shutdown and securing the cockpit and the airplane.
4. Performs a satisfactory postflight inspection.
5. Completes the appropriate checklist.

SECTION 3

AIRPLANE SINGLE-ENGINE SEA (ASES) Practical Test Standard

NOTE: An applicant seeking initial certification as a private pilot with an airplane single-engine sea class rating will be evaluated in all TASKS listed within this section.

At the discretion of the examiner, an applicant seeking the addition of an airplane single-engine sea class rating need not be evaluated on those AREAS OF OPERATIONS/TASKS so noted in the following rating tasks table.

Addition of an Airplane Single-Engine Sea Rating to an Existing Private Pilot Certificate									
Area of Operation	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.								
	PRIVATE PILOT RATING(S) HELD								
	ASEL	AMEL	AMES	RH	RG	Non-Power Glider	Power Glider	Free Balloon	Airship
I	A, E, F, G, I, J	A, E, F, G, I, J	A, E, F, G	A, E, F, G, I, J	A, E, F, G, I, J	A, E, F, G, I, J	A, E, F, G, I, J	A, E, F, G, I, J	A, E, F, G, I, J
II	ALL	ALL	A, B, C, D, F	ALL	ALL	ALL	ALL	ALL	ALL
III	B, C	B, C	B	B, C	B, C	ALL	B, C	ALL	B, C
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	XXXX	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VI	NONE	NONE	NONE	ALL	NONE	ALL	NONE	ALL	ALL
VII	NONE	NONE	NONE	NONE	NONE	ALL	NONE	ALL	NONE
VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	ALL	NONE
XII	ALL	ALL	A, F	ALL	ALL	ALL	ALL	ALL	ALL

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APPLICANT'S PRACTICAL TEST CHECKLIST

APPOINTMENT WITH EXAMINER:

EXAMINER'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 Airplane Flight Manual
- FCC Station License

PERSONAL EQUIPMENT

- View-Limiting Device
- Current Aeronautical Charts
- Computer and Plotter
- Flight Plan Form
- Flight Logs
- Current AIM, Airport Facility Directory, 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)
- AC Form 8080-2, Airman Written Test Report, or Computer Test Report
- Pilot Logbook with Appropriate Instructor Endorsements
- FAA Form 8060-5, Notice of Disapproval (if applicable)
- Approved School Graduation Certificate (if applicable)
- Examiner's Fee (if applicable)

EXAMINER'S PRACTICAL TEST CHECKLIST

(ASES)

APPLICANT'S NAME _____

LOCATION _____

DATE/TIME _____

I. PREFLIGHT PREPARATION

- A. CERTIFICATES AND DOCUMENTS
- B. WEATHER INFORMATION
- C. CROSS-COUNTRY FLIGHT PLANNING
- D. NATIONAL AIRSPACE SYSTEM
- E. PERFORMANCE AND LIMITATIONS
- F. OPERATION OF SYSTEMS
- G. MINIMUM EQUIPMENT LIST
- H. AEROMEDICAL FACTORS
- I. WATER AND SEAPLANE CHARACTERISTICS
- J. SEAPLANE BASES, MARITIME RULES, AND AIDS TO MARINE NAVIGATION

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- B. COCKPIT MANAGEMENT
- C. ENGINE STARTING
- D. TAXIING
- E. SAILING
- F. BEFORE TAKEOFF CHECK

III. SEAPLANE BASE AND AIRPORT OPERATIONS

- A. RADIO COMMUNICATION AND ATC LIGHT SIGNALS
- B. TRAFFIC PATTERNS
- C. SEAPLANE BASE/AIRPORT AND LANDING AREA/RUNWAY MARKINGS AND LIGHTING

IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS

- A. NORMAL AND CROSSWIND TAKEOFF AND CLIMB
- B. NORMAL AND CROSSWIND APPROACH AND LANDING
- C. GLASSY WATER TAKEOFF AND CLIMB
- D. GLASSY WATER APPROACH AND LANDING
- E. ROUGH WATER TAKEOFF AND CLIMB
- F. ROUGH WATER APPROACH AND LANDING
- G. CONFINED-AREA TAKEOFF AND CLIMB
- H. CONFINED-AREA APPROACH AND LANDING
- I. FORWARD SLIP TO A LANDING

- **J. 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 SYSTEMS AND RADAR SERVICES**
- **C. DIVERSION**
- **D. LOST PROCEDURES**

VIII. SLOW FLIGHT AND STALLS

- **A. MANEUVERING DURING SLOW FLIGHT**
- **B. POWER-OFF STALLS**
- **C. POWER-ON STALLS**
- **D. SPIN AWARENESS**

IX. BASIC INSTRUMENT MANEUVERS

- **A. STRAIGHT-AND-LEVEL FLIGHT**
- **B. CONSTANT AIRSPEED CLIMBS**
- **C. CONSTANT AIRSPEED DESENTS**
- **D. TURNS TO HEADINGS**
- **E. UNUSUAL FLIGHT ATTITUDES**
- **F. RADIO COMMUNICATIONS, NAVIGATION SYSTEM/FACILITIES, AND RADAR SERVICES**

X. EMERGENCY OPERATIONS

- **A. EMERGENCY DESCENT**
- **B. EMERGENCY APPROACH AND LANDING**
- **C. SYSTEMS AND EQUIPMENT MALFUNCTIONS**
- **D. EMERGENCY EQUIPMENT AND SURVIVAL GEAR**

XI. NIGHT OPERATIONS

- **A. NIGHT PREPARATION**
- **B. NIGHT FLIGHT**

XII. POSTFLIGHT PROCEDURES

- **A. AFTER LANDING**
- **B. ANCHORING**
- **C. DOCKING AND MOORING**
- **D. BEACHING**
- **E. RAMPING**
- **F. PARKING AND SECURING**

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

REFERENCES: FAR Parts 43, 61, 91; AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to certificates and documents by explaining the appropriate—
 - a. pilot certificate, privileges and limitations.
 - b. medical certificate, class and duration.
 - c. pilot logbook or flight record, required entries.
2. Exhibits knowledge of the elements related to certificates and documents by locating and explaining the—
 - a. airworthiness and registration certificates.
 - b. operating limitations, placards, instrument markings, handbooks, and manuals.
 - c. weight and balance data, including the equipment list.
 - d. airworthiness directives and compliance records, maintenance requirements, tests, and appropriate records.

B. TASK: WEATHER INFORMATION

REFERENCES: AC 00-6, AC 00-45, AC 61-23, AC 61-84; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports and forecasts from various sources with emphasis on—
 - a. PIREP's.
 - b. SIGMET's and AIRMET's.
 - c. wind shear reports.
2. Makes a competent "go/no-go" decision based on available weather information.

C. TASK: CROSS-COUNTRY FLIGHT PLANNING

REFERENCES: AC 61-21, AC 61-23, AC 61-84; Navigation Charts; Airport/Facility Directory; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a preplanned VFR cross-country flight near the maximum range of the seaplane, as previously assigned by the examiner. The final flight plan shall include real-time weather to the first fuel stop, with maximum allowable passenger and baggage loads.
2. Uses appropriate, current aeronautical charts.
3. Plots a course for the intended route of flight.
4. Identifies airspace, obstructions, and terrain features.
5. Selects easily identifiable en route checkpoints.
6. Selects the most favorable altitudes, considering weather conditions and equipment capabilities.
7. Computes headings, flight time, and fuel requirements.
8. Selects appropriate navigation systems/facilities and communication frequencies.
9. Confirms availability of alternate seaplane bases.
10. Extracts and records pertinent information from NOTAM's, the Airport/Facility Directory, and other flight publications.
11. Completes a navigation log and simulates filing a VFR flight plan.

D. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: FAR 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 seaplane equipment requirements for the following—
 - a. Class A.
 - b. Class B.
 - c. Class C.
 - d. Class D.
 - e. Class E.
 - f. Class G.
3. Special use airspace and other airspace areas.

E. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: AC 61-21, AC 61-23, AC 61-84, AC 91-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

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, if available from the manufacturer, to determine performance, including climb, cruise, range, and endurance, and the adverse effects of exceeding limitations.
2. Computes weight and balance, including adding, removing, and shifting weight. Determines if the weight and center of gravity will remain within limits during all phases of flight.
3. Describes the effects of atmospheric conditions on the seaplane's performance.
4. Determines whether the computed performance is within the airplane's capabilities and operating limitations.

F. TASK: OPERATION OF SYSTEMS

REFERENCES: AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the seaplane provided for the flight test by explaining at least three of the following:

1. Primary flight controls and trim.
2. Flaps, leading edge devices, and spoilers.
3. Powerplant.
4. Propeller.
5. Landing gear, if applicable.
6. Floats or hull.
7. Water rudder.
8. Fuel, oil, and hydraulic systems.
9. Electrical system.
10. Pitot-static system, vacuum/pressure system and associated flight instruments.
11. Environmental system.
12. Deicing and anti-icing systems.
13. Avionics system.

G. TASK: MINIMUM EQUIPMENT LIST

REFERENCE: FAR Part 91.

Objective. To determine that the applicant exhibits knowledge of the elements related to the use of an approved Part 91 minimum equipment list by explaining:

1. Required instruments and equipment for day VFR and night VFR flight.
2. Procedures for operating the airplane with inoperative instruments and equipment.
3. Requirements and procedures for obtaining a special flight permit.

H. TASK: AEROMEDICAL FACTORS

REFERENCES: AC 61-21, AC 67-2; 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 over-the-counter drugs.
3. The effects of nitrogen excesses during scuba dives upon a pilot or passenger in flight.

I. TASK: WATER AND SEAPLANE CHARACTERISTICS

REFERENCE: AC 61-21.

Objective. To determine that the applicant exhibits knowledge of the elements related to water and seaplane characteristics by explaining:

1. The characteristics of a water surface as affected by features such as—
 - a. size and location.
 - b. protected and unprotected areas.
 - c. surface wind.
 - d. direction and strength of water current.
 - e. floating and partially submerged debris.
 - f. sandbars, islands, and shoals.
 - g. other features peculiar to the area.
2. Float and hull construction, and their effect on seaplane performance.
3. Causes of porpoising and skipping, and the pilot action required to prevent or correct these occurrences.

J. TASK: SEAPLANE BASES, MARITIME RULES, AND AIDS TO MARINE NAVIGATION

REFERENCES: AC 61-21; AIM.

Objective. To determine that the applicant exhibits knowledge of the elements related to seaplane bases, maritime rules, and aids to marine navigation by explaining:

1. How to identify and locate seaplane bases on charts or in directories.
2. Operating restrictions at various bases.
3. Right-of-way, steering, and sailing rules pertinent to seaplane operation.
4. Marine navigation aids such as buoys, beacons, lights, and sound signals.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

REFERENCES: AC-61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

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

B. TASK: COCKPIT MANAGEMENT

REFERENCES: AC 61-21, AC 61-69; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cockpit management procedures.
2. Ensures all loose items in the cabin and cockpit are secured.
3. Briefs passengers on the use of safety belts, shoulder harnesses, and emergency procedures.
4. Organizes material and equipment in a logical, efficient flow pattern.
5. Utilizes all appropriate checklists.

C. TASK: ENGINE STARTING

REFERENCES: AC 61-21, AC 61-23, AC 91-13, AC 91-55; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine starting. This shall include the use of an external power source, hand propping, and starting under various atmospheric conditions, as appropriate for the seaplane used for the practical test.
2. Positions the seaplane properly considering other aircraft, the safety of nearby persons and property, wind and water conditions, and a suitable taxi route.
3. Accomplishes the correct starting procedure.
4. Controls the seaplane's movement after engine start.
5. Completes the appropriate checklist.

D. TASK: TAXIING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to safe taxi procedures.
2. Positions the flight controls properly for the existing wind conditions.
3. Plans and follows the most favorable course considering wind, water current, and maritime regulations.
4. Uses the appropriate idle, plow, or step taxi technique.
5. Demonstrates 180 or 360° turns, as appropriate.
6. Prevents and corrects for porpoising and skipping.
7. Complies with seaplane base signs, signals, and clearances.
8. Avoids other aircraft, vessels, and hazards.
9. Completes the appropriate checklist.

E. TASK: SAILING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to sailing by explaining the techniques used in sailing.
2. Recognizes when power-on sailing and power-off sailing should be used.
3. Plans and follows the most favorable course while sailing toward a point considering the effect of wind, water currents, and water conditions.
4. Uses flight controls, flaps, doors, water rudder, and power correctly so as to follow the desired course.
5. Changes direction while sailing toward a downwind point to sailing toward a crosswind point.
6. Controls seaplane speed, as required.

F. TASK: BEFORE TAKEOFF CHECK

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

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 each item and how to detect malfunctions.
2. Positions the seaplane properly considering hazards, wind conditions, water surface condition and depth, surrounding terrain, and other watercraft.
3. Divides attention inside and outside the cockpit.
4. Ensures that engine temperature and pressure are suitable for run-up and takeoff.
5. Accomplishes the before takeoff check and confirms that the seaplane is in safe operating condition.
6. Reviews takeoff performance airspeeds, takeoff distances, emergency procedures, and the departure procedure.
7. Assures no conflict with traffic prior to taxiing into takeoff position.
8. Completes the appropriate checklist.

III. AREA OF OPERATION: SEAPLANE BASE AND AIRPORT OPERATIONS

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications and ATC light signals. This shall include radio failure procedures.
2. Selects appropriate frequencies.
3. Transmits using recommended phraseology.
4. Acknowledges radio communications and complies with instructions.
5. Uses prescribed procedures following radio communications failure.
6. Interprets and complies with ATC light signals.

B. TASK: TRAFFIC PATTERNS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to traffic patterns. This shall include procedures at controlled and uncontrolled seaports, remote landing sites, boat harbors, landing area/runway incursion and inflight collision avoidance, wake turbulence avoidance, and wind shear.
2. Complies with traffic pattern procedures.
3. Selects the most appropriate approach or departure path considering alignment with the wind, landing area congestion, and shoreline population.
4. Maintains proper spacing from other traffic.
5. Establishes an appropriate distance from the landing area/runway considering the possibility of an engine failure.
6. Corrects for wind-drift to maintain the proper ground track.
7. Maintains orientation with the landing area/runway in use.
8. Maintains traffic pattern altitude, ± 100 feet (30 meters), and the appropriate airspeed, ± 10 knots.
9. Completes the appropriate checklist.

**C. TASK: SEAPLANE BASE/AIRPORT AND LANDING
AREA/RUNWAY MARKINGS AND LIGHTING**

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to seaplane base/airport and landing area/runway markings and lighting.
2. Identifies and interprets seaplane base/airport, landing area/runway and taxiway markings and lighting.

IV. AREA OF OPERATION: TAKEOFFS, LANDINGS, AND GO-AROUNDS

A. TASK: NORMAL AND CROSSWIND TAKEOFF AND CLIMB

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind takeoff and climb.
2. Selects a takeoff path appropriate to the existing water conditions.
3. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
4. Clears the area, taxis into the takeoff position and aligns the seaplane properly – considering the takeoff path.
5. Retracts the water rudders, when appropriate, and advances the throttle smoothly to takeoff power.
6. Avoids excessive water spray on the propeller.
7. Establishes and maintains the most efficient planing/lift-off attitude, and corrects for porpoising and skipping.
8. Lifts off, accelerates to V_Y , establishes the pitch attitude for V_Y and maintains V_Y , +10/-5 knots, during the climb.
9. Retracts the flaps after a positive rate of climb is established.
10. Maintains takeoff power to a safe maneuvering altitude.
11. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
12. Complies with noise abatement procedures.
13. Completes the appropriate checklist.

B. TASK: NORMAL AND CROSSWIND APPROACH AND LANDING

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind approach and landing.
2. Considers the wind conditions, water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach and the recommended approach airspeed, +10/-5 knots, with gust factor applied.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Contacts the water in the correct pitch attitude.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

C. TASK: GLASSY WATER TAKEOFF AND CLIMB

NOTE: If a glassy water condition does not exist, the applicant's knowledge of glassy water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a glassy water takeoff and climb.
2. Selects a takeoff path appropriate to the glassy water conditions.
3. Positions the flight controls for the existing conditions; sets the flaps as recommended.
4. Clears the area, taxis into the takeoff position and aligns the seaplane properly – considering the takeoff path.
5. Retracts the water rudders, when appropriate, and advances the throttle smoothly to takeoff power.
6. Avoids excessive water spray on the propeller.
7. Establishes and maintains the most efficient planing/lift-off attitude, and corrects for porpoising, skipping, and unusual increases in water drag.
8. Lifts off, ensures a positive rate of climb, and avoids inadvertent water contact after lift-off.
9. Accelerates to V_Y , establishes the pitch attitude for V_Y and maintains V_Y , +10/-5 knots, during the climb.
10. Retracts the flaps after a positive rate of climb is established.
11. Maintains takeoff power to a safe maneuvering altitude.
12. Selects a flight path that will allow a safe return to the water should an engine failure occur.
13. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
14. Complies with noise abatement procedures.
15. Completes the appropriate checklist.

D. TASK: GLASSY WATER APPROACH AND LANDING

NOTE: If a glassy water condition does not exist, the applicant's knowledge of glassy water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a glassy water approach and landing.
2. Considers the water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach, the recommended approach airspeed, +10/-5 knots, and a touchdown pitch attitude throughout the final approach.
6. Makes smooth, timely, and correct control application during the touchdown.
7. Contacts the water in the correct pitch attitude and slows to idling taxi speed.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

E. TASK: ROUGH WATER TAKEOFF AND CLIMB

NOTE: If a rough water condition does not exist, the applicant's knowledge of rough water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilot's Operating Handbook; FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to rough water takeoff and climb.
2. Selects a takeoff path appropriate to the rough water conditions.
3. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
4. Clears the area, taxis into the takeoff position and aligns the seaplane properly – considering the takeoff path.
5. Retracts the water rudders, when appropriate, and advances the throttle smoothly to takeoff power.
6. Avoids excessive water spray on the propeller.
7. Establishes and maintains the smoothest and most efficient planing/lift-off attitude and corrects for porpoising, skipping, and excessive bouncing.
8. Lifts off, accelerates to V_Y , establishes the pitch attitude for V_Y and maintains V_Y , +10/-5 knots, during the climb.
9. Retracts the flaps after a positive rate of climb is established.
10. Maintains takeoff power to a safe maneuvering altitude.
11. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
12. Complies with noise abatement procedures.
13. Completes the appropriate checklist.

F. TASK: ROUGH WATER APPROACH AND LANDING

NOTE: If a rough water condition does not exist, the applicant's knowledge of rough water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilots Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a rough water approach and landing.
2. Considers the wind conditions, water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing, and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach and the recommended approach airspeed, (or in its absence, not more than $1.3 V_{SO}$), $+10/-5$ knots, with gust factor applied.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Contacts the water in the correct pitch attitude and at the correct touchdown speed – considering the type of rough water.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

G. TASK: CONFINED-AREA TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a confined-area takeoff and climb.
2. Selects a takeoff path appropriate to the confined area.
3. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
4. Clears the area and taxis into the takeoff position so as to allow maximum utilization of available takeoff area.
5. Retracts the water rudders, when appropriate, and advances the throttle smoothly to takeoff power.
6. Avoids excessive water spray on the propeller.
7. Establishes and maintains the most efficient planing/lift-off attitude and corrects for porpoising and skipping.
8. Makes plowing and step turns into the wind at the proper speed and appropriate radius.
9. Lifts off, accelerates to the recommended obstacle clearance speed, if available and if appropriate, or V_X , establishes the pitch attitude for the selected airspeed and maintains that airspeed, +10/-5 knots, until the obstacle is cleared, or until the seaplane is 50 feet (20 meters) above the surface.
10. After clearing the obstacle, accelerates to V_Y , establishes the pitch attitude for V_Y , and maintains V_Y , +10/-5 knots, during the climb.
11. Retracts the flaps after the obstacle is cleared or when recommended.
12. Maintains takeoff power to a safe maneuvering altitude.
13. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
14. Complies with noise abatement procedures.
15. Completes the appropriate checklist.

H. TASK: CONFINED-AREA APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a confined-area approach and landing.
2. Considers the wind conditions, water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach, and the recommended approach airspeed, or in its absence, not more than $1.3 V_{SO}$, $+10/-5$ knots, with gust factor applied.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Contacts the water in the correct pitch attitude.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

I. TASK: FORWARD SLIP TO A LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a forward slip to a landing.
2. Considers the wind conditions, water surface condition and depth, obstructions, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing and touchdown area.
4. Establishes the slipping attitude at the point from which a landing can be made using the recommended approach and landing configuration and airspeed; adjusts pitch attitude and power as required.

5. Maintains an appropriate ground track aligned with the landing path and an airspeed which results in minimum float during the roundout.
6. Makes smooth, timely, and correct control application during the recovery from the slip, the roundout, and the touchdown.
7. Contacts the water in the correct pitch attitude.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

J. TASK: GO-AROUND

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a go-around.
2. Makes a timely decision to discontinue the approach to landing.
3. Applies takeoff power immediately and transitions to the climb pitch attitude for V_Y , +10/-5 knots.
4. Sets the flaps to the appropriate setting, if applicable.
5. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets power and transitions to the airspeed appropriate for the traffic pattern.
6. Maintains directional control and proper wind-drift correction throughout the climb.
7. Complies with noise abatement procedures, as appropriate.
8. Flies the appropriate traffic pattern.
9. Completes the appropriate checklist.

**V. AREA OF OPERATION:
PERFORMANCE MANEUVER**

**Change 1
4/28/97**

TASK: STEEP TURNS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to steep turns.
2. Selects an altitude that will allow the task to be performed no lower than 1,500 feet (460 meters) AGL.
3. Establishes the manufacturer's recommended airspeed or if one is not stated, the examiner may designate a safe airspeed not to exceed V_A .
4. Rolls into a coordinated 360° turn; maintains a 45° bank, $\pm 5^\circ$; and rolls out on the entry heading, $\pm 10^\circ$.
5. Performs the task in the opposite direction, as specified by the examiner.
6. Divides attention between seaplane control and orientation.
7. Maintains the entry altitude, ± 100 feet (30 meters), and airspeed, ± 10 knots.

VI. AREA OF OPERATION: GROUND REFERENCE MANEUVERS

A. TASK: RECTANGULAR COURSE

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a rectangular course.
2. Determines the wind direction and speed.
3. Selects the ground reference area with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at traffic pattern altitude, at an appropriate distance from the selected reference area, 45° to the downwind leg, with the first circuit to the left.
5. Applies adequate wind-drift correction during straight-and-turning flight to maintain a constant ground track around the rectangular reference area.
6. Divides attention between seaplane control and the ground track, and maintains coordinated flight.
7. Exits at the point of entry at the same altitude and airspeed at which the maneuver was started, and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

B. TASK: S-TURNS

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to S-turns.
2. Determines the wind direction and speed.
3. Selects the reference line with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL, perpendicular to the selected reference line, downwind, with the first series of turns to the left.
5. Applies adequate wind-drift correction to track a constant radius half-circle on each side of the selected reference line.

6. Divides attention between seaplane control and the ground track, and maintains coordinated flight.
7. Reverses course, as directed by the examiner, and exits at the point of entry at the same altitude and airspeed at which the maneuver was started.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

C. TASK: TURNS AROUND A POINT

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to turns around a point.
2. Determines the wind direction and speed.
3. Selects the reference point with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL, at an appropriate distance from the reference point, with the seaplane headed downwind and the first turn to the left.
5. Applies adequate wind-drift correction to track a constant radius circle around the selected reference point with a bank of approximately 45° at the steepest point in the turn.
6. Divides attention between seaplane control and the ground track, and maintains coordinated flight.
7. Completes two turns, exits at the point of entry at the same altitude and airspeed at which the maneuver was started, and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

VII. AREA OF OPERATION: NAVIGATION

A. TASK: PILOTAGE AND DEAD RECKONING

REFERENCES: AC 61-21, AC 61-23, AC 61-84.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to pilotage and dead reckoning.
2. Follows the preplanned course solely by reference to landmarks.
3. Identifies landmarks by relating surface features to chart symbols.
4. Navigates by means of precomputed headings, groundspeeds, and elapsed time.
5. Corrects for and records the differences between preflight fuel, groundspeed, and heading calculations and those determined en route.
6. Verifies the seaplane's position within 3 nautical miles of the flight-planned route at all times.
7. Arrives at the en route checkpoints and destination within 5 minutes of the ETA.
8. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.
9. Completes all appropriate checklists.

B. TASK: NAVIGATION SYSTEMS AND RADAR SERVICES

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to navigation systems and ATC radar services.
2. Selects and identifies the appropriate navigation system/facility.
3. Locates the seaplane's position using radials, bearings, or coordinates, as appropriate.
4. Intercepts and tracks a given radial or bearing, if appropriate.
5. Recognizes and describes the indication of station 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 (60 meters).

C. TASK: DIVERSION

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to diversion.
2. Selects an appropriate alternate landing site/airport and route.
3. Diverts promptly toward the alternate landing site/airport.
4. Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate seaplane base/airport.
5. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.

D. TASK: LOST PROCEDURES

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to lost procedures.
2. Selects the best course of action when given a lost situation.
3. Maintains the original or an appropriate heading and climbs, if necessary.
4. Identifies the nearest concentration of prominent landmarks.
5. Uses navigation systems/facilities and/or contacts an ATC facility for assistance, as appropriate.
6. Plans a precautionary landing if deteriorating weather and/or fuel exhaustion is imminent.

VIII. AREA OF OPERATION: SLOW FLIGHT AND STALLS

A. TASK: MANEUVERING DURING SLOW FLIGHT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to maneuvering during slow flight.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL or the recommended altitude, whichever is higher.
3. Stabilizes the airspeed at $1.2 V_{S1}$, +10/-5 knots.
4. Accomplishes coordinated straight-and-level flight and level turns, at bank angles and in configurations, as specified by the examiner.
5. Accomplishes coordinated climbs and descents, straight and turning, at bank angles and in configurations, as specified by the examiner.
6. Divides attention between seaplane control and orientation.
7. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, +10/-5 knots.
8. Maintains the specified angle of bank, not to exceed 30° in level flight, +0/- 10° ; maintains the specified angle of bank, not to exceed 20° in climbing or descending flight, +0/- 10° ; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

B. TASK: POWER-OFF STALLS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-off stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-off stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL or the recommended altitude, whichever is higher.
3. Establishes a stabilized approach in the approach or landing configuration, as specified by the examiner.
4. Transitions smoothly from the approach or landing attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 30° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the airplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

C. TASK: POWER-ON STALLS

REFERENCES: AC 61-21; AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-on stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-on stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL or the recommended altitude, whichever is higher.
3. Establishes the takeoff or departure configuration, airspeed, and power as specified by the examiner.
4. Transitions smoothly from the takeoff or departure attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power as appropriate, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the airplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

D. TASK: SPIN AWARENESS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant exhibits knowledge of the elements related to spin awareness by explaining:

1. Flight situations where unintentional spins may occur.
2. The technique used to recognize and recover from unintentional spins.
3. The recommended spin recovery procedure for the airplane used for the practical test.

IX. AREA OF OPERATION: BASIC INSTRUMENT MANEUVERS

A. TASK: STRAIGHT-AND-LEVEL FLIGHT

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight-and-level flight.
2. Maintains straight-and-level flight solely by reference to instruments using proper instrument cross-check and interpretation, and coordinated control application.
3. Maintains altitude, ± 200 feet (60 meters); heading, $\pm 20^\circ$; and airspeed, ± 10 knots.

B. TASK: CONSTANT AIRSPEED CLIMBS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed climbs.
2. Establishes the climb configuration specified by the examiner.
3. Transitions to the climb pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates climbs solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

C. TASK: CONSTANT AIRSPEED DESCENTS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed descents.
2. Establishes the descent configuration specified by the examiner.
3. Transitions to the descent pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates descents solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

D. TASK: TURNS TO HEADINGS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during turns to headings.
2. Transitions to the level-turn attitude using proper instrument cross-check and interpretation, and coordinated control application.
3. Demonstrates turns to headings solely by reference to instruments; maintains altitude, ± 200 feet (60 meters); maintains a standard rate turn and rolls out on the assigned heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

E. TASK: RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during unusual attitudes.
2. Recognizes unusual flight attitudes solely by reference to instruments; recovers promptly to a stabilized level flight attitude using proper instrument cross-check and interpretation and smooth, coordinated control application in the correct sequence.

F. TASK: RADIO COMMUNICATIONS, NAVIGATION SYSTEMS/FACILITIES, AND RADAR SERVICES

REFERENCES: AC 61-21, AC 61-23, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications, navigation systems/facilities, and radar services available for use during flight solely by reference to instruments.
2. Selects the proper frequency and identifies the appropriate facility.
3. Follows verbal instructions and/or navigation systems/facilities for guidance.
4. Determines the minimum safe altitude.
5. Maintains altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

X. AREA OF OPERATION: EMERGENCY OPERATIONS

A. TASK: EMERGENCY DESCENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an emergency descent.
2. Recognizes the urgency of an emergency descent.
3. Establishes the recommended emergency descent configuration and airspeed, and maintains that airspeed, ± 5 knots.
4. Demonstrates orientation, division of attention, and proper planning.
5. Follows the appropriate emergency checklist.

B. TASK: EMERGENCY APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency approach and landing procedures.
2. Establishes and maintains the recommended best-glide attitude, configuration, and airspeed, ± 10 knots.
3. Selects a suitable emergency landing area within gliding distance.
4. Plans and follows a flight pattern to the selected landing area considering altitude, wind, terrain, and obstructions.
5. Attempts to determine the reason for the malfunction and makes the correction, if possible.
6. Maintains positive control of the seaplane at all times.
7. Follows the appropriate emergency checklist.

C. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to system and equipment malfunctions.
2. Analyzes the situation and takes the appropriate action for simulated emergencies, such as—
 - a. partial power loss.
 - b. engine roughness or overheat.
 - c. carburetor or induction icing.
 - d. loss of oil pressure.
 - e. fuel starvation.
 - f. electrical system malfunction.
 - g. flight instruments malfunction.
 - h. landing gear or flap malfunction.
 - i. water rudder malfunction.
 - j. inoperative trim.
 - k. inadvertent door or window opening.
 - l. structural icing.
 - m. smoke/fire/engine compartment fire.
 - n. any other emergency appropriate to the seaplane used for the practical test.
3. Follows the appropriate emergency checklist.

D. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency equipment and survival gear appropriate to the seaplane used for the practical test, such as—
 - a. location in the seaplane.
 - b. method of operation or use.
 - c. servicing requirements.
 - d. method of safe storage.
 - e. equipment and survival gear appropriate for operation in various climates and topographical environments.
2. Follows the appropriate emergency checklist.

XI. AREA OF OPERATION: NIGHT OPERATIONS

NOTE: If an applicant does not meet the aeronautical experience requirements of FAR Section 61.109(a)(2), the applicant's certificate shall bear the limitation "Night Flying Prohibited."

A. TASK: NIGHT PREPARATION

REFERENCES: AC 61-21, AC 61-23, AC 67-2; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

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

1. Physiological aspects of night flying including the effects of changing light conditions, coping with illusions, and how the pilot's physical condition affects visual acuity.
2. Lighting systems identifying seaplane bases/airports, runways, taxiways and obstructions, and pilot controlled lighting.
3. Seaplane lighting systems.
4. Personal equipment essential for night flight.
5. Night orientation, navigation, and chart reading techniques.
6. Safety precautions and emergencies peculiar to night flying.

B. TASK: NIGHT FLIGHT

NOTE: The examiner shall orally evaluate element 1 and at least one of the elements, 2 through 6.

REFERENCES: AC 61-21, AC 67-2; AIM; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to night flight.
2. Inspects the interior and exterior of the seaplane with emphasis on those items essential for night flight.
3. Taxies and accomplishes the before takeoff check adhering to good operating practice for night conditions.
4. Performs takeoffs and climbs with emphasis on visual references.
5. Navigates and maintains orientation under VFR conditions.
6. Approaches, lands, and taxies, adhering to good operating practices for night conditions.
7. Completes all appropriate checklists.

XII. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to after-landing procedures.
2. Taxies to the parking/refueling area using the proper wind control technique and obstacle avoidance procedures.
3. Completes the appropriate checklist.

B. TASK: ANCHORING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to anchoring.
2. Selects a suitable area for anchoring, considering seaplane movement, water depth, tide, wind, and weather changes.
3. Uses an adequate number of anchors and lines of sufficient strength and length to ensure the seaplane's security.

C. TASK: DOCKING AND MOORING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to docking and mooring.
2. Approaches the dock or mooring buoy in the proper direction, considering speed, obstructions, current, and wind.
3. Docks or moors the seaplane using lines of sufficient strength and length to ensure the seaplane's security.
4. Departs the dock or mooring buoy in a manner that does not endanger persons or vessels in the area.

D. TASK: BEACHING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to beaching.
2. Selects a suitable area for beaching, considering water depth, tide, current, and wind.
3. Approaches the beach in the proper direction and at a safe speed, considering the beach condition.
4. Beaches and secures the seaplane in a manner that will protect it from the harmful effect of wind, waves, and changes in water level.
5. Departs the beach in a safe manner, considering wind, current, traffic, and hazards.

E. TASK: RAMPING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to ramping.
2. Approaches the ramp in the proper direction and at a safe speed, considering current and wind.
3. Ramps the seaplane at the proper speed, in the proper attitude.
4. Secures the seaplane on the ramp in a manner that will protect it from the harmful effect of wind, waves, and changes in water level.
5. Departs the ramp in a manner that does not endanger other persons or vessels in the area.

F. TASK: PARKING AND SECURING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to parking and securing procedures. This shall include an understanding of parking hand signals and deplaning passengers.
2. Parks the seaplane properly, into the wind if possible, considering other aircraft and the safety of nearby persons and property on the ramp.
3. Follows the recommended procedure for engine shutdown and securing the cockpit and the seaplane.
4. Performs a satisfactory postflight inspection.
5. Completes the appropriate checklist.

SECTION 4

AIRPLANE MULTIENGINE SEA (AMES)

Practical Test Standard

NOTE: An applicant seeking initial certification as a private pilot with an airplane multiengine sea class rating will be evaluated in all TASKS listed within this section.

At the discretion of the examiner, an applicant seeking the addition of an airplane multiengine sea class rating need not be evaluated on those AREAS OF OPERATIONS/TASKS so noted in the following rating tasks table.

Addition of an Airplane Multiengine Sea Rating to an Existing Private Pilot Certificate									
Area of Operation	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.								
	PRIVATE PILOT RATING(S) HELD								
	AMEL	ASEL	ASES	RH	RG	Non- Power Glider	Power Glider	Free Balloon	Airship
I	A,E,G, H	A,E,G, H	A,E	A,E,G, H	A,E,G, H	A,E,G, H	A,E,G, H	A,E,G, H	A,E,G, H
II	ALL	ALL	A,B,C, D,F	ALL	ALL	ALL	ALL	ALL	ALL
III	B,C	B,C	B	B,C	B,C	ALL	B,C	ALL	ALL
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	A *	A *	A *	A *	A *	A *	A *	A *	A *
VI	NONE	NONE	NONE	ALL	NONE	ALL	NONE	ALL	ALL
VII	NONE	NONE	NONE	NONE	NONE	ALL	NONE	ALL	NONE
VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XI	A,B	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XII	NONE	NONE	NONE	NONE	NONE	ALL	NONE	ALL	NONE
XIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

* If the applicant is instrument rated and instrument competency in a multiengine airplane has not been previously demonstrated, TASKS B, C, and D may be performed at this time, otherwise a VFR ONLY restriction shall be specified on the issued certificate.

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APPLICANT'S PRACTICAL TEST CHECKLIST

APPOINTMENT WITH EXAMINER:

EXAMINER'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 Airplane Flight Manual
- FCC Station License

PERSONAL EQUIPMENT

- View-Limiting Device
- Current Aeronautical Charts
- Computer and Plotter
- Flight Plan Form
- Flight Logs
- Current AIM, Airport Facility Directory, 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)
- AC Form 8080-2, Airman Written Test Report, or Computer Test Report
- Pilot Logbook with Appropriate Instructor Endorsements
- FAA Form 8060-5, Notice of Disapproval (if applicable)
- Approved School Graduation Certificate (if applicable)
- Examiner's Fee (if applicable)

EXAMINER'S PRACTICAL TEST CHECKLIST

(AMES)

APPLICANT'S NAME _____

LOCATION _____

DATE/TIME _____

I. PREFLIGHT PREPARATION

- A. CERTIFICATES AND DOCUMENTS
- B. WEATHER INFORMATION
- C. CROSS-COUNTRY FLIGHT PLANNING
- D. NATIONAL AIRSPACE SYSTEM
- E. MINIMUM EQUIPMENT LIST
- F. AEROMEDICAL FACTORS
- G. WATER AND SEAPLANE CHARACTERISTICS
- H. SEAPLANE BASES, MARITIME RULES, AND AIDS TO MARINE NAVIGATION

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- B. COCKPIT MANAGEMENT
- C. ENGINE STARTING
- D. TAXIING
- E. SAILING
- F. BEFORE TAKEOFF CHECK

III. SEAPLANE BASE AND AIRPORT OPERATIONS

- A. RADIO COMMUNICATION AND ATC LIGHT SIGNALS
- B. TRAFFIC PATTERNS
- C. SEAPLANE BASE/AIRPORT AND LANDING AREA/RUNWAY MARKINGS AND LIGHTING

IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS

- A. NORMAL AND CROSSWIND TAKEOFF AND CLIMB
- B. NORMAL AND CROSSWIND APPROACH AND LANDING
- C. GLASSY WATER TAKEOFF AND CLIMB
- D. GLASSY WATER APPROACH AND LANDING
- E. ROUGH WATER TAKEOFF AND CLIMB
- F. ROUGH WATER APPROACH AND LANDING
- G. CONFINED-AREA TAKEOFF AND CLIMB
- H. CONFINED-AREA APPROACH AND LANDING
- I. GO-AROUND

V. PERFORMANCE MANEUVERS

- **A. STEEP TURNS**
- **B. ENGINE FAILURE DURING FLIGHT**
(BY REFERENCE TO INSTRUMENTS)
- **C. INSTRUMENT APPROACH – ALL ENGINES OPERATING**
(BY REFERENCE TO INSTRUMENTS)
- **D. INSTRUMENT APPROACH – ONE ENGINE INOPERATIVE**
(BY REFERENCE TO INSTRUMENTS)

VI. GROUND REFERENCE MANEUVERS

- **A. RECTANGULAR COURSE**
- **B. S-TURNS**
- **C. TURNS AROUND A POINT**

VII. NAVIGATION

- **A. PILOTAGE AND DEAD RECKONING**
- **B. NAVIGATION SYSTEMS AND RADAR SERVICES**
- **C. DIVERSION**
- **D. LOST PROCEDURES**

VIII. SLOW FLIGHT AND STALLS

- **A. MANEUVERING DURING SLOW FLIGHT**
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IX. BASIC INSTRUMENT MANEUVERS

- **A. STRAIGHT-AND-LEVEL FLIGHT**
- **B. CONSTANT AIRSPEED CLIMBS**
- **C. CONSTANT AIRSPEED DESCENTS**
- **D. TURNS TO HEADINGS**
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SYSTEMS/FACILITIES, AND RADAR
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X. EMERGENCY OPERATIONS

- **A. EMERGENCY DESCENT**
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- **E. ENGINE FAILURE AFTER LIFT-OFF (SIMULATED)**
- **F. APPROACH AND LANDING WITH AN INOPERATIVE ENGINE (SIMULATED)**
- **G. SYSTEMS AND EQUIPMENT MALFUNCTIONS**
- **H. EMERGENCY EQUIPMENT AND SURVIVAL GEAR**

XI. MULTIENGINE OPERATIONS

- **A.** PERFORMANCE AND LIMITATIONS
- **B.** OPERATION OF SYSTEMS
- **C.** ENGINE INOPERATIVE PRINCIPLES OF FLIGHT

XII. NIGHT OPERATIONS

- **A.** NIGHT PREPARATION
- **B.** NIGHT FLIGHT

XIII. POSTFLIGHT PROCEDURES

- **A.** AFTER LANDING
- **B.** ANCHORING
- **C.** DOCKING AND MOORING
- **D.** BEACHING
- **E.** RAMPING
- **F.** PARKING AND SECURING

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

REFERENCES: FAR Parts 43, 61, 91; AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to certificates and documents by explaining the appropriate—
 - a. pilot certificate, privileges and limitations.
 - b. medical certificate, class and duration.
 - c. pilot logbook or flight record, required entries.
2. Exhibits knowledge of the elements related to certificates and documents by locating and explaining the—
 - a. airworthiness and registration certificates.
 - b. operating limitations, placards, instrument markings, handbooks, and/or manuals.
 - c. weight and balance data, including the equipment list.
 - d. airworthiness directives and compliance records, maintenance requirements, tests, and appropriate records.

B. TASK: WEATHER INFORMATION

REFERENCES: AC 00-6, AC 00-45, AC 61-23, AC 61-84; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports and forecasts from various sources with emphasis on—
 - a. PIREP's.
 - b. SIGMETs and AIRMET's.
 - c. wind shear reports.
2. Makes a competent "go/no-go" decision based on available weather information.

C. TASK: CROSS-COUNTRY FLIGHT PLANNING

REFERENCES: AC 61-21, AC 61-23, AC 61-84; Navigation Charts; Airport/Facility Directory; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a preplanned VFR cross-country flight near the maximum range of the seaplane, as previously assigned by the examiner. The final flight plan shall include real-time weather to the first fuel stop, with maximum allowable passenger and baggage loads.
2. Uses appropriate, current aeronautical charts.
3. Plots a course for the intended route of flight.
4. Identifies airspace, obstructions, and terrain features.
5. Selects easily identifiable en route checkpoints.
6. Selects the most favorable altitudes, considering weather conditions and equipment capabilities.
7. Computes headings, flight time, and fuel requirements.
8. Selects appropriate navigation systems/facilities and communication frequencies.
9. Confirms availability of alternate landing sites.
10. Extracts and records pertinent information from NOTAM's, the Airport/Facility Directory, and other flight publications.
11. Completes a navigation log and simulates filing a VFR flight plan.

D. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: FAR 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 seaplane equipment requirements for the following—
 - a. Class A.
 - b. Class B.
 - c. Class C.
 - d. Class D.
 - e. Class E.
 - f. Class G.
3. Special use airspace and other airspace areas.

E. TASK: MINIMUM EQUIPMENT LIST

REFERENCE: FAR Part 91.

Objective. To determine that the applicant exhibits knowledge of the elements related to the use of an approved minimum equipment list by explaining:

1. Required instruments and equipment for day VFR and night VFR flight.
2. Procedures for operating the airplane with inoperative instruments and equipment.
3. Requirements and procedures for obtaining a special flight permit.

F. TASK: AEROMEDICAL FACTORS

REFERENCES: AC 61-21, AC 67-2; 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 over-the-counter drugs.
3. The effects of nitrogen excesses during scuba dives upon a pilot or passenger in flight.

G. TASK: WATER AND SEAPLANE CHARACTERISTICS

REFERENCE: AC 61-21.

Objective. To determine that the applicant exhibits knowledge of the elements related to water and seaplane characteristics by explaining:

1. The characteristics of a water surface as affected by features such as—
 - a. size and location.
 - b. protected and unprotected areas.
 - c. surface wind.
 - d. direction and strength of water current.
 - e. floating and partially submerged debris.
 - f. sandbars, islands, and shoals.
 - g. other features peculiar to the area.
2. Float and hull construction, and their effect on seaplane performance.
3. Causes of porpoising and skipping, and the pilot action required to prevent or correct these occurrences.

H. TASK: SEAPLANE BASES, MARITIME RULES, AND AIDS TO MARINE NAVIGATION

REFERENCES: AC 61-21; AIM.

Objective. To determine that the applicant exhibits knowledge of the elements related to seaplane bases, maritime rules, and aids to marine navigation by explaining:

1. How to identify and locate seaplane bases on charts or in directories.
2. Operating restrictions at various bases.
3. Right-of-way, steering, and sailing rules pertinent to seaplane operation.
4. Marine navigation aids such as buoys, beacons, lights, and sound signals.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

REFERENCES: AC-61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to preflight inspection. This shall include which items must be inspected, the reasons for checking each item, and how to detect possible defects.
2. Inspects the seaplane with reference to the checklist.
3. Verifies the seaplane is in condition for safe flight.

B. TASK: COCKPIT MANAGEMENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cockpit management procedures.
2. Ensures all loose items in the cabin and cockpit are secured.
3. Briefs passengers on the use of safety belts, shoulder harnesses, and emergency procedures.
4. Organizes material and equipment in a logical, efficient flow pattern.
5. Utilizes all appropriate checklists.

C. TASK: ENGINE STARTING

REFERENCES: AC 61-21, AC 61-23, AC 91-13, AC 91-55; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine starting. This shall include the use of an external power source and starting under various atmospheric conditions, as appropriate for the seaplane used for the practical test.
2. Positions the seaplane properly considering other aircraft, the safety of nearby persons and property, wind and water conditions, and a suitable taxi route.
3. Accomplishes the correct starting procedure.
4. Controls the seaplane's movement after engine start.
5. Completes the checklist.

D. TASK: TAXIING

REFERENCES: AC 61-21, AC 61-69; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to safe taxi procedures.
2. Positions the flight controls properly for the existing wind conditions.
3. Plans and follows the most favorable course considering wind, water current, and maritime regulations.
4. Uses the appropriate idle, plow, or step taxi technique.
5. Demonstrates 180 or 360° turns, as appropriate.
6. Prevents and corrects for porpoising and skipping.
7. Complies with seaplane base signs, signals, and clearances.
8. Avoids other aircraft, vessels, and hazards.
9. Completes the appropriate checklist.

E. TASK: SAILING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to sailing by explaining the techniques used in sailing.
2. Recognizes when power-on sailing and power-off sailing should be used.
3. Plans and follows the most favorable course while sailing toward a point considering the effect of wind, water currents, and water conditions.
4. Uses flight controls, flaps, doors, water rudder, and power correctly so as to follow the desired course.
5. Changes direction while sailing toward a downwind point to sailing toward a crosswind point.
6. Controls seaplane speed, as required.

F. TASK: BEFORE TAKEOFF CHECK

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

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 each item and how to detect malfunctions.
2. Positions the seaplane properly considering hazards, wind conditions, water surface condition and depth, surrounding terrain, and other watercraft.
3. Divides attention inside and outside the cockpit.
4. Ensures that engine temperatures and pressures are suitable for run-up and takeoff.
5. Accomplishes the before takeoff check and confirms that the seaplane is in safe operating condition.
6. Reviews takeoff performance airspeeds, takeoff distances, emergency procedures, and the departure procedure.
7. Assures no conflict with traffic prior to taxiing into takeoff position.
8. Completes the appropriate checklist.

III. AREA OF OPERATION:

SEAPLANE BASE AND AIRPORT OPERATIONS

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications and ATC light signals. This shall include radio failure procedures.
2. Selects appropriate frequencies.
3. Transmits using recommended phraseology.
4. Acknowledges radio communications and complies with instructions.
5. Uses prescribed procedures following radio communications failure.
6. Interprets and complies with ATC light signals.

B. TASK: TRAFFIC PATTERNS

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to traffic patterns. This shall include procedures at controlled and uncontrolled seaports, remote landing sites, boat harbors, landing area/runway incursion and inflight collision avoidance, wake turbulence avoidance, and wind shear.
2. Complies with traffic pattern procedures.
3. Selects the most appropriate approach or departure path considering alignment with the wind, landing area congestion, and shoreline population.
4. Maintains proper spacing from other traffic.
5. Establishes an appropriate distance from the landing area/runway.
6. Corrects for wind-drift to maintain the proper ground track.
7. Maintains orientation with the landing area/runway in use.
8. Maintains traffic pattern altitude, ± 100 feet (30 meters), and the appropriate airspeed, ± 10 knots.
9. Completes the appropriate checklist.

**C. TASK: SEAPLANE BASE/AIRPORT AND LANDING
AREA/RUNWAY MARKINGS AND LIGHTING**

REFERENCES: AC 61-21, AC 61-23; AIM.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to seaplane base/airport and landing area/runway markings and lighting.
2. Identifies and interprets seaplane base/airport, landing area/runway and taxiway markings and lighting.

IV. AREA OF OPERATION: TAKEOFFS, LANDINGS, AND GO-AROUNDS

A. TASK: NORMAL AND CROSSWIND TAKEOFF AND CLIMB

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind takeoff and climb.
2. Selects a takeoff path appropriate to the existing water conditions.
3. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
4. Clears the area, taxis into the takeoff position and aligns the seaplane properly – considering the takeoff path.
5. Retracts the water rudders, when appropriate, and advances the throttles smoothly to takeoff power.
6. Avoids excessive water spray on the propellers.
7. Establishes and maintains the most efficient planing/lift-off attitude, and corrects for porpoising and skipping.
8. Lifts off, accelerates to V_Y , establishes the pitch attitude for V_Y , and maintains that airspeed, $\pm 10/-5$ knots, during the climb.
9. Retracts the flaps after a positive rate of climb is established.
10. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets climb power and transitions to the recommended climb airspeed.
11. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
12. Complies with noise abatement procedures.
13. Completes the appropriate checklist.

B. TASK: NORMAL AND CROSSWIND APPROACH AND LANDING

NOTE: If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind approach and landing.
2. Considers the wind conditions, water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing area and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach and the recommended approach airspeed, +10/-5 knots, with gust factor applied.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Contacts the water in the correct pitch attitude.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

C. TASK: GLASSY WATER TAKEOFF AND CLIMB

NOTE: If a glassy water condition does not exist, the applicant's knowledge of glassy water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a glassy water takeoff and climb.
2. Selects a takeoff path appropriate to the glassy water conditions.

3. Positions the flight controls for the existing conditions; sets the flaps as recommended.
4. Clears the area, taxis into the takeoff position, and aligns the seaplane properly – considering the takeoff path.
5. Retracts the water rudders, when appropriate, and advances the throttles smoothly to takeoff power.
6. Avoids excessive water spray on the propellers.
7. Establishes and maintains the most efficient planing/lift-off attitude, and corrects for porpoising, skipping, and unusual increases in water drag.
8. Lifts off, ensures a positive rate of climb, and avoids inadvertent water contact after lift-off.
9. Accelerates to V_Y , establishes the pitch attitude for V_Y , and maintains that airspeed, +10/-5 knots, during the climb.
10. Retracts the landing gear and flaps after a positive rate of climb is established.
11. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets climb power and transitions to the recommended climb airspeed.
12. Selects a flight path that will allow a safe return to the water should an engine failure occur.
13. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
14. Complies with noise abatement procedures.
15. Completes the appropriate checklist.

D. TASK: GLASSY WATER APPROACH AND LANDING

NOTE: If a glassy water condition does not exist, the applicant's knowledge of glassy water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a glassy water approach and landing.
2. Considers the water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.

5. Maintains a stabilized approach, the recommended airspeed, or in its absence, not more than $1.3 V_{SO}$, $+10/-5$ knots, and a touchdown pitch attitude throughout the final approach.
6. Makes smooth, timely, and correct control application during the touchdown.
7. Contacts the water in the correct pitch attitude and slows to idling taxi speed.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

E. TASK: ROUGH WATER TAKEOFF AND CLIMB

NOTE: If a rough water condition does not exist, the applicant's knowledge of rough water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to rough water takeoff and climb.
2. Selects a takeoff path appropriate to the glassy water conditions.
3. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
4. Clears the area, taxis into the takeoff position, and aligns the seaplane properly – considering the takeoff path.
5. Retracts the water rudders, when appropriate, and advances the throttles smoothly to takeoff power.
6. Avoids excessive water spray on the propellers.
7. Establishes and maintains the smoothest and most efficient planing/lift-off attitude and corrects for porpoising, skipping, and excessive bouncing.
8. Lifts off, accelerates to V_Y , establishes the pitch attitude for V_Y , and maintains that airspeed, $+10/-5$ knots, during the climb.
9. Retracts the flaps after a positive rate of climb is established.
10. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets climb power and transitions to the recommended climb airspeed.

11. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
12. Complies with noise abatement procedures.
13. Completes the appropriate checklist.

F. TASK: ROUGH WATER APPROACH AND LANDING

NOTE: If a rough water condition does not exist, the applicant's knowledge of rough water elements shall be evaluated through oral testing. The applicant's skill shall be evaluated by simulating the TASK.

REFERENCES: AC 61-21; Pilots Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a rough water approach and landing.
2. Considers the wind conditions, water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach and the recommended approach airspeed, or in its absence, not more than $1.3 V_{SO}$, with gust factor applied, +10/-5 knots.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Contacts the water in the correct pitch attitude, at the correct touchdown speed, considering the type of rough water.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

G. TASK: CONFINED-AREA TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a confined-area takeoff and climb.
2. Selects a takeoff path appropriate to the confined area.
3. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
4. Clears the area and taxies into the takeoff position so as to allow maximum utilization of available takeoff area.
5. Retracts the water rudders, when appropriate, and advances the throttles smoothly to takeoff power.
6. Avoids excessive water spray on the propellers.
7. Establishes and maintains the most efficient planing/lift-off attitude and corrects for porpoising and skipping.
8. Makes plowing and step turns at the proper speed and appropriate radius.
9. Lifts off, accelerates to the recommended obstacle clearance airspeed, if available and if appropriate, or V_x , establishes the pitch attitude for the selected airspeed and maintains that airspeed, $+10/-5$ knots, until the obstacle is cleared, or until the seaplane is 50 feet (20 meters) above the surface.
10. After clearing the obstacle, accelerates to V_Y , establishes the pitch attitude for V_Y , and maintains V_Y , $+10/-5$ knots, during the climb.
11. Retracts the flaps after the obstacle is cleared or when recommended.
12. Maintains takeoff power to a safe maneuvering altitude.
13. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
14. Complies with noise abatement procedures.
15. Completes the appropriate checklist.

H. TASK: CONFINED-AREA APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook; FAA-Approved Seaplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a confined-area approach and landing.
2. Considers the wind conditions, water surface condition and depth, hazards, surrounding terrain, and other watercraft.
3. Selects the most suitable approach path, landing and touchdown area.
4. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.
5. Maintains a stabilized approach, and the recommended approach airspeed, or in its absence, not more than $1.3 V_{SO}$, $+10/-5$ knots, with gust factor applied.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Contacts the water in the correct pitch attitude.
8. Maintains crosswind correction and directional control throughout the approach and landing.
9. Completes the appropriate checklist.

I. TASK: GO AROUND

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a go-around.
2. Makes a timely decision to discontinue the approach to landing.
3. Applies takeoff power immediately and transitions to the climb pitch attitude for V_Y , +10/-5 knots.
4. Retracts the flaps to the appropriate setting.
5. Retracts the wing floats after a positive rate of climb is established.
6. Maintains takeoff power and best rate-of-climb airspeed to a safe maneuvering altitude, then sets power and transitions to the airspeed appropriate for the traffic pattern.
7. Maintains directional control and proper wind-drift correction throughout the climb.
8. Complies with noise abatement procedures, as appropriate.
9. Flies the appropriate traffic pattern.
10. Completes the appropriate checklist.

V. AREA OF OPERATION: PERFORMANCE MANEUVERS

**Change 1
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A. TASK: STEEP TURNS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to steep turns.
2. Selects an altitude that will allow the task to be performed no lower than 3,000 feet (920 meters) AGL.
3. Establishes the manufacturer's recommended airspeed or if one is not stated, the examiner may designate a safe airspeed not to exceed V_A .
4. Rolls into a coordinated 360° turn; maintains a 45° bank, $\pm 5^\circ$; and rolls out on the entry heading, $\pm 10^\circ$.
5. Performs the task in the opposite direction, as specified by the examiner.
6. Divides attention between seaplane control and orientation.
7. Maintains the entry altitude, ± 100 feet (30 meters), and airspeed, ± 10 knots.

NOTE: For applicants electing not to demonstrate competency in TASKS B, C, and D, multiengine privileges will be limited to VFR only. If the applicant elects to demonstrate competency in TASKS, B, C, and D, but then demonstrates unsatisfactorily one or more of those TASKS, the applicant will be issued a "Notice Of Disapproval of Application" for the practical test. After the flight test is initiated, the applicant shall not be permitted to revert to the "VFR only" option.

B. TASK: ENGINE FAILURE DURING FLIGHT (BY REFERENCE TO INSTRUMENTS)

REFERENCES: FAR Part 61; AC 61-21, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine failure during flight (by reference to instruments).
2. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
4. Establishes the recommended best engine inoperative airspeed.

5. Banks toward the operative engine as required for best performance, trims the seaplane, and maintains control.
6. Attempts to determine the reason for the engine malfunction, if appropriate.
7. Simulates feathering the propeller of the inoperative engine.
8. Monitors the operating engine and makes adjustments as necessary.
9. Follows the checklist to verify procedures for securing the inoperative engine.
10. Demonstrates coordinated flight with one engine inoperative (propeller at zero thrust), including—
 - a. straight-and-level flight.
 - b. turns in both directions.
 - c. descents to assigned altitudes.
 - d. climbs to assigned altitudes, if the seaplane is capable of climbing under the existing conditions.
11. Demonstrates engine restart in accordance with recommended procedures and completes the appropriate checklist.
12. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, ± 10 knots.
13. Maintains the specified angle of bank, $\pm 10^\circ$; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

**C. TASK: INSTRUMENT APPROACH – ALL ENGINES
OPERATING (BY REFERENCE TO INSTRUMENTS)**

REFERENCES: FAR Part 61; AC 61-21, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a published instrument approach with all engines operating (by reference to instruments).
2. Displays efficient cockpit management procedures throughout the approach.
3. Sets up for the approach by tuning and identifying the correct navigation frequencies and by selecting the correct course(s).
4. Communicates with the appropriate ATC facility and transmits using recommended phraseology.
5. Complies with an actual or simulated ATC IFR clearance, ATC advisories and instructions.

6. Maintains the specified altitude within ± 100 feet (30 meters) and the specified airspeed within ± 10 knots, prior to reaching the final approach fix.
7. Establishes a rate of descent that will ensure arrival at the MDA or DH with the seaplane in a position from which descent to a landing on the intended landing area can be made, straight-in or circling.
8. Allows, while on the final approach course, no more than three-quarter-scale deflection of the localizer and glideslope indications, nor more than 10° deflection (full scale deflection) after intercepting the VOR or NDB final approach course.
9. Avoids descent below the MDA or exceeding the visibility criteria for the aircraft approach category when circling.
10. Executes the published missed approach procedure at the missed approach point or complies with instructions from ATC at the designated missed approach point.
11. Completes all appropriate checklists.

**D. TASK: INSTRUMENT APPROACH – ONE ENGINE
INOPERATIVE (BY REFERENCE TO
INSTRUMENTS)**

REFERENCES: FAR Part 61; AC 61-21, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a published instrument approach with one engine inoperative (by reference to instruments).
2. Displays efficient cockpit management procedures throughout the approach.
3. Sets up for the approach by tuning and identifying the correct navigation frequencies and by selecting the correct course(s).
4. Communicates with the appropriate ATC facility and transmits using recommended phraseology.
5. Complies with an actual or simulated ATC IFR clearance, ATC advisories and instructions.
6. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
7. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
8. Establishes the recommended best engine inoperative airspeed.
9. Banks toward the operative engine as required for best performance, trims the airplane, and maintains control.

10. Establishes and maintains the recommended flight attitude and configuration for the best performance for all maneuvering necessary for the instrument approach procedure.
11. Attempts to determine the reason for the engine failure, if appropriate.
12. Simulates feathering the propeller of the inoperative engine.
13. Monitors the operating engine and makes adjustments as necessary.
14. Follows the checklist to verify procedures for securing the inoperative engine.
15. Maintains the specified altitude within ± 100 feet (30 meters) and the specified airspeed within ± 10 knots, prior to reaching the final approach fix.
16. Establishes a rate of descent that will ensure arrival at the MDA or DH with the airplane in a position from which descent to a landing on the intended landing area can be made, straight-in or circling.
17. Allows, while on the final approach course, no more than three-quarter-scale deflection of the localizer and glideslope indications, nor more than 10° deflection (full scale deflection) after intercepting the VOR or NDB final approach course.
18. Avoids exceeding the visibility criteria for the aircraft approach category when circling.
19. Completes a safe landing and all appropriate checklists.

VI. AREA OF OPERATION: GROUND REFERENCE MANEUVERS

A. TASK: RECTANGULAR COURSE

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a rectangular course.
2. Determines the wind direction and speed.
3. Selects the ground reference area with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at traffic pattern altitude, at an appropriate distance from the selected reference area, 45° to the downwind leg, with the first circuit to the left.
5. Applies adequate wind-drift correction during straight-and-turning flight to maintain a constant ground track around the rectangular reference area.
6. Divides attention between seaplane control and the ground track and maintains coordinated flight.
7. Exits at the point of entry at the same altitude and airspeed at which the maneuver was started and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

B. TASK: S-TURNS

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to S-turns.
2. Determines the wind direction and speed.
3. Selects the reference line with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL, perpendicular to the selected reference line, downwind, with the first series of turns to the left.
5. Applies adequate wind-drift correction to track a constant radius half-circle on each side of the selected reference line.
6. Divides attention between seaplane control and the ground track and maintains coordinated flight.

7. Reverses course, as directed by the examiner, and exits at the point of entry at the same altitude and airspeed at which the maneuver was started.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

C. TASK: TURNS AROUND A POINT

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to turns around a point.
2. Determines the wind direction and speed.
3. Selects the reference point with an emergency landing area within gliding distance.
4. Plans the maneuver so as to enter at 600 to 1,000 feet (180 to 300 meters) AGL at an appropriate distance from the reference point, with the seaplane headed downwind and the first turn to the left.
5. Applies adequate wind-drift correction to track a constant radius circle around the selected reference point with a bank of approximately 45° at the steepest point in the turn.
6. Divides attention between seaplane control and the ground track and maintains coordinated flight.
7. Completes two turns, exits at the point of entry at the same altitude and airspeed at which the maneuver was started, and reverses course as directed by the examiner.
8. Maintains altitude, ± 100 feet (30 meters); maintains airspeed, ± 10 knots.

VII. AREA OF OPERATION: NAVIGATION

A. TASK: PILOTAGE AND DEAD RECKONING

REFERENCES: AC 61-21, AC 61-23, AC 61-84.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to pilotage and dead reckoning.
2. Follows the preplanned course solely by reference to landmarks.
3. Identifies landmarks by relating surface features to chart symbols.
4. Navigates by means of precomputed headings, groundspeeds, and elapsed time.
5. Corrects for and records the differences between preflight fuel, groundspeed, and heading calculations and those determined en route.
6. Verifies the seaplane's position within 3 nautical miles of the flight-planned route at all times.
7. Arrives at the en route checkpoints and destination within 5 minutes of the ETA.
8. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.
9. Completes all appropriate checklists.

B. TASK: NAVIGATION SYSTEMS AND RADAR SERVICES

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to navigation systems and radar services.
2. Selects and identifies the appropriate navigation system/facility.
3. Locates the seaplane's position using radials, bearings, or coordinates, as appropriate.
4. Intercepts and tracks a given radial or bearing, if appropriate.
5. Recognizes and describes the indication of station 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 (60 meters).

C. TASK: DIVERSION

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to diversion.
2. Selects an appropriate alternate landing area/airport and route.
3. Diverts promptly toward the alternate landing area/airport.
4. Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate seaplane base/airport.
5. Maintains the appropriate altitude, ± 200 feet (60 meters) and established heading, $\pm 15^\circ$.

D. TASK: LOST PROCEDURES

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to lost procedures.
2. Selects the best course of action when given a lost situation.
3. Maintains the original or an appropriate heading and climbs, if necessary.
4. Identifies the nearest concentration of prominent landmarks.
5. Uses navigation systems/facilities and/or contacts an appropriate ATC facility for assistance, as appropriate.
6. Plans a precautionary landing if deteriorating weather and/or fuel exhaustion is impending.

VIII. AREA OF OPERATION: SLOW FLIGHT AND STALLS

A. TASK: MANEUVERING DURING SLOW FLIGHT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to maneuvering during slow flight.
2. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the recommended altitude, whichever is higher.
3. Stabilizes the airspeed at $1.2 V_{S1}$, +10/-5 knots.
4. Accomplishes coordinated straight-and-level flight and level turns, at bank angles and in configurations as specified by the examiner.
5. Accomplishes coordinated climbs and descents, straight and turning, at bank angles and in configurations, as specified by the examiner.
6. Divides attention between seaplane control and orientation.
7. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, +10/-5 knots.
8. Maintains the specified angle of bank, not to exceed 30° in level flight, +0/- 10° ; maintains the specified angle of bank, not to exceed 20° in climbing or descending flight, +0/- 10° ; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

B. TASK: POWER-OFF STALLS

NOTE: No stall shall be performed with one engine throttled or inoperative and the other engine(s) developing effective power.

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-off stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-off stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the recommended altitude, whichever is higher.
3. Establishes a stabilized approach in the approach or landing configuration, as specified by the examiner.
4. Transitions smoothly from the approach or landing attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank, $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first physical indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the seaplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

C. TASK: POWER-ON STALLS

NOTE: No stall shall be performed with one engine throttled or inoperative and the other engine(s) developing effective power.

REFERENCES: AC 61-21; AC 61-67; Pilot's Operating Handbook, FAA-Approved AirplaneFlight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to power-on stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-on stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the recommended altitude, whichever is higher.
3. Establishes the takeoff or climb configuration, airspeed, and power as specified by the examiner.
4. Transitions smoothly from the takeoff or climb attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first physical indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power as appropriate, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the seaplane.
8. Retracts the flaps to the recommended setting; retracts the landing gear, if retractable, after a positive rate of climb is established; accelerates to V_Y before the final flap retraction; returns to the altitude, heading, and airspeed specified by the examiner.

D. TASK: SPIN AWARENESS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant exhibits knowledge of the elements related to spin awareness by explaining:

1. Flight situations where unintentional spins may occur.
2. The technique used to recognize and recover from unintentional spins.
3. The recommended spin recovery procedure for the seaplane used for the practical test.

IX. AREA OF OPERATION: BASIC INSTRUMENT MANEUVERS

A. TASK: STRAIGHT-AND-LEVEL FLIGHT

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight-and-level flight.
2. Maintains straight-and-level flight solely by reference to instruments using proper instrument cross-check and interpretation, and coordinated control application.
3. Maintains altitude, ± 200 feet (60 meters); heading, $\pm 20^\circ$; and airspeed, ± 10 knots.

B. TASK: CONSTANT AIRSPEED CLIMBS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight constant airspeed climbs.
2. Establishes the climb configuration specified by the examiner.
3. Transitions to the climb pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates climbs solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

C. TASK: CONSTANT AIRSPEED DESCENTS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed descents.
2. Establishes the descent configuration specified by the examiner.
3. Transitions to the descent pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.
4. Demonstrates descents solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

D. TASK: TURNS TO HEADINGS

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during turns to headings.
2. Transitions to the level-turn attitude using proper instrument cross-check and interpretation, and coordinated control application.
3. Demonstrates turns to headings solely by reference to instruments; maintains altitude, ± 200 feet (60 meters); maintains a standard rate turn and rolls out on the assigned heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

E. TASK: RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

REFERENCES: AC 61-21, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to attitude instrument flying during unusual attitudes.
2. Recognizes unusual flight attitudes solely by reference to instruments; recovers promptly to a stabilized level flight attitude using proper instrument cross-check and interpretation and smooth, coordinated control application in the correct sequence.

**F. TASK: RADIO COMMUNICATIONS, NAVIGATION
SYSTEMS/FACILITIES, AND RADAR SERVICES**

REFERENCES: AC 61-21, AC 61-23, AC 61-27.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications, navigation systems/facilities, and radar services available for use during flight solely by reference to instruments.
2. Selects the proper frequency and identifies the appropriate facility.
3. Follows verbal instructions and/or navigation systems/facilities for guidance.
4. Determines the minimum safe altitude.
5. Maintains altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

X. AREA OF OPERATION: EMERGENCY OPERATIONS

A. TASK: EMERGENCY DESCENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an emergency descent.
2. Recognizes the urgency of an emergency descent.
3. Establishes the recommended emergency descent configuration and airspeed, maintains that airspeed, ± 5 knots.
4. Demonstrates orientation, division of attention, and proper planning.
5. Follows the appropriate emergency checklist.

B. TASK: MANEUVERING WITH ONE ENGINE INOPERATIVE

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

NOTE: The feathering of one propeller shall be demonstrated in multiengine seaplanes equipped with propellers which can be safely feathered and unfeathered in flight. An appropriately equipped seaplane shall be provided by the applicant. The maneuver shall be performed at altitudes, in areas, and from positions where safe landings can be readily accomplished, in the event difficulty is encountered in unfeathering and/or restarting. A propeller that cannot be unfeathered during the practical test shall be treated as an emergency.

At altitudes lower than 3,000 feet (920 meters) above the surface, simulated engine failure shall be performed by throttling the engine back to idle and then establishing zero thrust.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to maneuvering with one engine inoperative.
2. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.

4. Establishes the recommended best engine inoperative airspeed.
5. Banks toward the operating engine as required for best performance, trims the airplane, and maintains control.
6. Attempts to determine the reason for the engine malfunction, if appropriate.
7. Feathers the propeller of the inoperative engine.
8. Monitors the operating engine and makes adjustments as necessary.
9. Follows the appropriate emergency checklist to verify procedures for securing the inoperative engine and turns toward the nearest suitable seaplane base/airport.
10. Demonstrates coordinated flight with one engine inoperative (propeller feathered), including—
 - a. straight-and-level flight.
 - b. turns in both directions.
 - c. descents to assigned altitudes.
 - d. climbs to assigned altitudes, if the seaplane is capable of climbing under the existing conditions.
11. Divides attention between coordinated control, the flightpath, and orientation.
12. Demonstrates engine restart in accordance with recommended procedures.
13. Completes all appropriate checklists.
14. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, ± 10 knots.
15. Maintains the specified angle of bank, $\pm 10^\circ$; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

C. TASK: ENGINE INOPERATIVE – LOSS OF DIRECTIONAL CONTROL DEMONSTRATION

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

NOTE: Seaplanes with normally aspirated engines will lose power as altitude increases because of the reduced density of the air entering the induction system of the engines. This loss of power will result in a V_{MC} lower than the stall speed at higher altitudes. Also, some seaplanes have such an effective rudder that even at sea level V_{MC} is lower than stall speed. For these seaplanes, a demonstration of loss of directional control may be safely conducted by limiting rudder travel to simulate maximum available rudder. Limiting rudder travel should be accomplished at a speed well above the power-off stall speed (approximately 20 knots). This will avoid the hazards of stalling one wing with maximum allowable power applied to the engine on the other wing. In the event of any indication of stall prior to loss of directional control, recover to the entry airspeed. The demonstration should then be accomplished with the rudder travel limited at a higher airspeed.

Do not perform this maneuver by increasing the pitch attitude to a high angle with both engines operating and then reducing power on the critical engine. This technique is hazardous and may result in loss of seaplane control.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine inoperative loss of directional control by explaining the—
 - a. meaning of the term “critical engine.”
 - b. effects of density altitude on the V_{MC} demonstration.
 - c. effects of seaplane weight and center of gravity on control.
 - d. reasons for variations in V_{MC} .
 - e. relationship of V_{MC} to stall speed.
 - f. reasons for loss of directional control.
 - g. indications of loss of directional control.
 - h. importance of maintaining the proper pitch and bank attitude, and the proper coordination of controls.
 - i. loss of directional control recovery procedure.
 - j. engine failure during takeoff including planning, decisions, and single-engine operations.

2. Exhibits skills in performing an engine inoperative-loss of directional control demonstration—
- a. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
 - b. Configures the seaplane at V_{SSE}/V_{YSE} as follows:
 - (1) Landing gear retracted.
 - (2) Flaps set for takeoff.
 - (3) Cowl flaps set for takeoff.
 - (4) Trim set for takeoff.
 - (5) Propellers set to high RPM.
 - (6) Power on the operating engine set to takeoff or maximum available power.
 - c. Establishes a single engine climb attitude with the airspeed at approximately 10 knots above V_{SSE} .
 - d. Establishes a bank toward the operating engine, as required for best performance.
 - e. Increases the pitch attitude slowly to reduce the airspeed, at approximately 1 knot per second, while applying rudder to maintain directional control until full rudder is applied. The examiner may reserve the option to block the airplane rudder pedal to simulate maximum available rudder while still at a higher than actual V_{MC} airspeed.
 - f. Recognizes and announces the first indication of loss of directional control, stall warning or buffet.
 - g. Recovers promptly by simultaneously reducing power sufficiently on the operating engine while decreasing the angle of attack as necessary to regain airspeed and directional control with a minimum loss of altitude. Recovery **SHOULD NOT** be attempted by increasing the power on the simulated failed engine.
 - h. Recovers within 20° of the entry heading.
 - i. Accelerates to V_{XSE}/V_{YSE} , as appropriate, +10/-5 knots, during the recovery.

D. TASK: ENGINE FAILURE DURING TAKEOFF BEFORE V_{MC} (SIMULATED)

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

NOTE: Engine failure shall be accomplished before reaching 50 percent of the calculated V_{MC} .

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine failure on takeoff before V_{MC} .
2. Closes throttles smoothly and promptly after simulated engine failure.
3. Maintains directional control and applies braking as necessary.

E. TASK: ENGINE FAILURE AFTER LIFT-OFF (SIMULATED)

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual, Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to engine failure after lift-off.
2. Recognizes engine failure promptly, maintains control, and utilizes the recommended emergency procedure. Engine failure simulation shall be done at or above 100 feet (30 meters) AGL and at or above V_Y .
3. Lands the seaplane if within the capabilities of the seaplane or continues the takeoff.
4. Reduces drag, identifies and verifies the inoperative engine after simulated engine failure.
5. Simulates feathering the propeller of the inoperative engine.
6. Establishes V_{YSE} ; if obstructions are present, establishes V_{XSE} or $V_{MC} + 10$, whichever is greater, until obstructions are cleared, then transitions to V_{YSE} .
7. Banks toward the operating engine as required for best performance, trims the seaplane, and maintains control.
8. Monitors the operating engine and makes adjustments as necessary.
9. Recognizes the seaplane's performance capabilities. If a climb is not possible at V_{YSE} , maintains V_{YSE} and returns to the departure seaplane base/airport for a landing or initiates an approach to the most suitable landing area available.

10. Secures the inoperative engine, if appropriate.
11. Maintains heading, $\pm 10^\circ$, and airspeed, $+10/-5$ knots.
12. Completes the appropriate emergency checklist.

**F. TASK: APPROACH AND LANDING WITH AN
INOPERATIVE ENGINE (SIMULATED)**

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an approach and landing with an inoperative engine.
2. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
4. Simulates feathering the propeller of the inoperative engine.
5. Establishes the recommended best engine inoperative airspeed, $+10/-5$ knots.
6. Banks toward the operating engine as required for best performance, trims the seaplane, and maintains control.
7. Monitors the operating engine, and makes adjustments as necessary.
8. Considers the wind conditions, landing surface, and obstructions, and selects the most suitable touchdown point.
9. Establishes the recommended best engine inoperative approach and landing configuration, and airspeed.
10. Maintains a stabilized approach and the recommended approach airspeed, $+10/-5$ knots of V_{YSE} until landing is assured.
11. Makes smooth, timely, and correct control application during the roundout and touchdown.
12. Contacts the water in the correct pitch attitude.
13. Maintains crosswind correction and directional control throughout the approach and landing.
14. Completes the appropriate emergency checklist.

G. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to system and equipment malfunctions appropriate to the seaplane provided for the flight test.
2. Analyzes the situation and takes appropriate action for simulated emergencies, such as—
 - a. partial power loss.
 - b. engine roughness or overheat.
 - c. carburetor or induction icing.
 - d. loss of oil pressure.
 - e. fuel starvation.
 - f. electrical system malfunction.
 - g. flight instruments malfunction.
 - h. landing gear or flap malfunction.
 - i. water rudder malfunction.
 - j. inoperative trim.
 - k. inadvertent door or window opening.
 - l. structural icing.
 - m. smoke/fire/engine compartment fire.
 - n. any other emergency appropriate to the seaplane used for the practical test.
3. Follows the appropriate emergency checklist.

H. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency equipment and survival gear appropriate to the seaplane used for the practical test, by explaining—
 - a. location in the seaplane.
 - b. method of operation or use.
 - c. servicing requirements.
 - d. method of safe storage.
 - e. equipment and survival gear appropriate for operation in various climates and topographical environments.
2. Follows the appropriate emergency checklist.

XI. AREA OF OPERATION: MULTIENGINE OPERATIONS

A. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: AC 61-21, AC 61-23, AC 61-84, AC 91-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

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, if available from the manufacturer, to determine performance and the adverse effects of exceeding limitations.
2. Computes weight and balance, including adding, removing, and shifting weight. Determines if the weight and center of gravity will remain within limits during all phases of flight.
3. Demonstrates use of the appropriate performance charts, tables, and data including cruise, range, and endurance.
4. Calculates climb performance and service ceilings – all engines, single-engine, as appropriate.
5. Determines the effects of atmospheric conditions on the seaplane's performance.
6. Determines whether the computed performance is within the seaplane's capabilities and operating limitations.

B. TASK: OPERATION OF SYSTEMS

REFERENCES: AC 61-21, AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the seaplane provided for the flight test by explaining at least three of the following:

1. Primary flight controls and trim.
2. Flaps, leading edge devices, and spoilers.
3. Powerplants.
4. Propellers.
5. Landing gear, if applicable.
6. Floats or hull design.
7. Water rudders.
8. Fuel, oil, and hydraulic systems.
9. Electrical system.
10. Pitot-static system, vacuum/pressure system and associated flight instruments.

11. Environmental system.
12. Deicing and anti-icing systems.
13. Avionics system.

C. TASK: ENGINE INOPERATIVE PRINCIPLES OF FLIGHT

REFERENCES: AC 61-21; AC 61-23; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant exhibits knowledge of the elements related to engine inoperative principles of flight by explaining:

1. The meaning of the term "critical engine."
2. The reasons for variation in V_{MC} , for loss of directional control and indications of the approaching loss.
3. The relationship of V_{MC} to stall speed, including a determination of whether a V_{MC} demonstration can be safely accomplished.
4. The effects of weight and center-of-gravity location.
5. The effects of density altitude.
6. Procedures for engine failure on takeoff prior to V_{MC} , after liftoff, during cruise, and on approach to land.
7. Procedures for engine shutdown, securing, and restart.

XII. AREA OF OPERATION: NIGHT OPERATIONS

NOTE: If an applicant does not meet the aeronautical experience requirements of FAR Section 61.109(a)(2), the applicant's certificate shall bear the limitation "Night Flying Prohibited."

A. TASK: NIGHT PREPARATION

REFERENCES: AC 61-21, AC 61-23, AC 67-2; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

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

1. Physiological aspects of night flying including the effects of changing light conditions, coping with illusions, and how the pilot's physical condition affects visual acuity.
2. Lighting systems identifying seaplane bases/airports, runways, taxiways and obstructions, and pilot controlled lighting.
3. Seaplane lighting systems.
4. Personal equipment essential for night flight.
5. Night orientation, navigation, and chart reading techniques.
6. Safety precautions and emergencies peculiar to night flying.

B. TASK: NIGHT FLIGHT

NOTE: The examiner shall orally evaluate element 1 and at least one of the elements, 2 through 6.

REFERENCES: AC 61-21, AC 67-2; AIM, Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to night flight.
2. Inspects the interior and exterior of the seaplane with emphasis on those items essential for night flight.
3. Taxies and accomplishes the before takeoff check adhering to good operating practice for night conditions.
4. Performs takeoffs and climbs with emphasis on visual references.
5. Navigates and maintains orientation under VFR conditions.
6. Approaches, lands, and taxies, adhering to good operating practices for night conditions.
7. Completes all appropriate checklists.

XIII. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to after-landing procedures.
2. Taxies to the parking/refueling area using the proper wind control technique and obstacle avoidance procedures.
3. Completes the appropriate checklist.

B. TASK: ANCHORING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to anchoring.
2. Selects a suitable area for anchoring, considering seaplane movement, water depth, tide, wind, and weather changes.
3. Uses an adequate number of anchors and lines of sufficient strength and length to ensure the seaplane's security.

C. TASK: DOCKING AND MOORING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to docking and mooring.
2. Approaches the dock or mooring buoy in the proper direction, considering speed, obstructions, current, and wind.
3. Docks or moors the seaplane using lines of sufficient strength and length to ensure the seaplane's security.
4. Departs the dock or mooring buoy in a manner that does not endanger persons or vessels in the area.

D. TASK: BEACHING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to beaching.
2. Selects a suitable area for beaching, considering water depth, tide, current, and wind.
3. Approaches the beach in the proper direction and at a safe speed, considering the beach condition.
4. Beaches and secures the seaplane in a manner that will protect it from the harmful effect of wind, waves, and changes in water level.
5. Departs the beach in a safe manner considering wind, current, traffic, and hazards.

E. TASK: RAMPING

REFERENCES: AC 6-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to ramping.
2. Approaches the ramp in the proper direction and at a safe speed, considering current and wind.
3. Ramps the seaplane at the proper speed, in the proper attitude.
4. Secures the seaplane on the ramp in a manner that will protect it from the harmful effect of wind, waves, and changes in water level.
5. Departs the ramp in a manner that does not endanger other persons or vessels in the area.

F. TASK: PARKING AND SECURING

REFERENCES: AC 61-21; Pilot's Operating Handbook, FAA-Approved Airplane Flight Manual; Seaplane Supplement.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to parking and securing procedures. This shall include an understanding of parking hand signals and deplaning passengers.
2. Parks the seaplane properly, into the wind if possible, considering other aircraft and the safety of nearby persons and property on the ramp.
3. Follows the recommended procedure for engine shutdown and securing the cockpit and the seaplane.
4. Performs a satisfactory postflight inspection.
5. Completes the appropriate checklist.