

FLIGHT INSTRUCTOR

Practical Test Standards

for

INSTRUMENT

- ***AIRPLANE***
- ***HELICOPTER***

MARCH 1990

FLIGHT STANDARDS SERVICE
Washington, DC 20591

FLIGHT INSTRUCTOR INSTRUMENT

Practical Test Standards

1990

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NOTE

Material in FAA-S-8081-9A, Flight Instructor - Instrument for Airplane and Helicopter Practical Test Standards will be effective March 1, 1990. All previous editions of this book will be obsolete as of this date.

FOREWORD

The Flight Instructor - Instrument (Airplane and Helicopter) Practical Test Standards book has been published by the Federal Aviation Administration (FAA) to establish the standards for the flight instructor certification and instrument rating practical tests for the airplane category and the rotorcraft category/helicopter class. FAA inspectors and designated pilot examiners will conduct practical tests in compliance with these standards. Flight instructors and applicants will find these standards helpful in practical test preparation.

D.C. Beaudette
Director, Flight Standards Service

INTRODUCTION

The Aviation Standards National Field Office of the FAA has developed this practical test book as a standard to be used by FAA inspectors and designated pilot examiners when conducting flight instructor - instrument (airplane) and flight instructor - instrument (helicopter) practical tests. Flight instructors are expected to use this book when preparing flight instructor 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 redesigning the practical test standards.

Comments regarding this publication should be directed to:

U.S. Department of Transportation
Federal Aviation Administration
Aviation Standards National Field Office
Operations Support Branch, AVN-130
P.O. Box 25082
Oklahoma City, OK 73125

Practical Test Standard Concept

Federal Aviation Regulations (FAR's) specify the areas in which knowledge and skill must be demonstrated by the applicant before the issuance of a flight instructor certificate with the associated category and class ratings. The FAR's provide the flexibility that permits the FAA to publish practical test standards containing specific TASKS in which competency must be demonstrated by the applicant before the issuance of a flight instructor certificate. The FAA will add, delete, or revise TASKS whenever it is determined that changes are needed in the interest of safety. Adherence to the provisions of the FAR's and the practical test standards is mandatory for the evaluation of flight instructor applicants.

Flight Instructor Responsibility

An appropriately rated flight instructor is responsible for training the flight instructor applicant to acceptable standards in **all** the subject matter areas, procedures, and maneuvers included in the TASKS within the appropriate 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, skill, and the ability to impart that knowledge and skill to students. The flight instructor must certify that the applicant:

1. is able to make a practical application of the fundamentals of instruction;
2. is competent to teach the subject matter, procedures, and maneuvers included in the standards to students with varying backgrounds and levels of experience and ability;
3. is able to perform the procedures and maneuvers included in the standards to at least the COMMERCIAL PILOT skill level (or, in the case of the Flight Instructor - Instrument applicant, to the INSTRUMENT PILOT skill level) while giving effective flight instruction; and
4. is competent to pass the required practical test for the issuance of the flight instructor certificate with the associated category and class ratings or the addition of a category and/or class rating to a flight instructor certificate.

Throughout the applicant's training, the flight instructor is responsible for emphasizing the performance of, and the ability to teach, effective visual scanning and collision avoidance procedures. These areas are covered in AC 90-48, Pilot's 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.

Examiner¹ Responsibility

The examiner who conducts the practical test is responsible for determining that the applicant meets acceptable standards of knowledge, skill, and teaching ability in the selected TASKS. The examiner makes this determination by accomplishing an ACTION that is appropriate to each selected TASK and includes an evaluation of the applicant's:

1. ability to apply the fundamentals of instruction;
2. knowledge of, and ability to teach, the subject matter, procedures, and maneuvers covered in the TASKS;
3. ability to perform the procedures and maneuvers included in the standards to at least the COMMERCIAL PILOT skills level (or in the case of the Flight Instructor - Instrument applicant, to the INSTRUMENT PILOT skill level) while giving effective flight instruction; and
4. ability to analyze and correct common errors related to the procedures and maneuvers covered in the TASKS.

It is intended that oral questioning be used at any time during the ground and/or flight portion of the practical test to determine that the applicant can instruct effectively and has a comprehensive knowledge of the TASKS and their related safety factors.

Throughout the flight portion of the practical test, the examiner will evaluate the applicant's use of visual scanning and collision avoidance procedures, and the applicant's ability to teach those procedures.

Flight Instructor Practical Test Book Description

This test book contains the practical test standards Flight Instructor - Instrument (Airplane and Helicopter). Other flight instructor practical test books include:

- | | |
|---------------|--|
| FAA-S-8081-6, | Flight Instructor - Airplane (Single-Engine and Multiengine) |
| FAA-S-8081-7, | Flight Instructor - Rotorcraft (Helicopter and Gyroplane) |
| FAA-S-8081-8, | Flight Instructor - Glider |

¹The word "examiner" is used throughout the standards to denote either the FAA inspector or FAA designated pilot examiner who conducts an official practical test.

The loose-leaf feature of this test book permits the revision of the basic publication by means of change pages. These pages will be prepared when required by changes in regulations, pilot certification procedures, and other areas related to safety upon which emphasis should be placed. Change pages will be made available for purchase through the Superintendent of Documents.

The Flight Instructor Practical Test Standards include the AREAS OF OPERATION and TASKS for the issuance of an initial flight instructor certificate and for the addition of category and/or class ratings to that certificate.

Initial Flight Instructor Certification

An applicant who seeks initial flight instructor certification will be evaluated in all AREAS OF OPERATION of the standards appropriate to the rating(s) sought. The evaluation will include at least one TASK in each AREA OF OPERATION and will always include the required TASKS.

NOTE: When administering a test based on FAA-S-8081-6, Sections 1 and 2, the TASKS appropriate to the class airplane (land or sea) used for the test should be included.

INITIAL CERTIFICATION

INITIAL CATERGORY AND/OR CLASS RATING(S) SOUGHT	APPLICABLE BOOK AND SECTION
ASE AME RH RG G IA IH	FAA-S-8081-6, Section 1 FAA-S-8081-6, Section 2 FAA-S-8081-7, Section 1 FAA-S-8081-7, Section 2 FAA-S-8081-8 FAA-S-8081-9 FAA-S-8081-9

LEGEND

ASE	Airplane Single-Engine
AME	Airplane Multiengine
RG	Rotorcraft Gyroplane
GP	Glider Powered
GNP	Glider Non-Powered
IAH	Instrument Airplane/Helicopter

Addition of Aircraft Category And/Or Class Ratings To A Flight Instructor Certificate

An applicant who holds a flight instructor certificate and seeks an additional aircraft category and/or class rating will be evaluated in at least the AREAS OF OPERATION and TASKS that are unique and appropriate to the rating(s) sought (see table at the beginning of each standard). At the discretion of the examiner, the applicant's competence in **all** AREAS OF OPERATION may be evaluated.

NOTE: When administering tests based on FAA-S-8081-6, Sections 1 and 2, the TASKS appropriate to the class airplane (land or sea) used for the practical test should be included.

ADDITION OF RATING(S)

FLIGHT INSTRUCTOR CERTIFICATE AND RATING(S) HELD	ADDITIONAL CATEGORY AND/OR CLASS RATING(S) SOUGHT	APPLICABLE BOOK AND SECTION
AME, RH, RG, G, IA, OR IH	ASE	FAA-S-8081-6, Section 1
ASE, RH, RG, G, IA, OR IH	AME	FAA-S-8081-6, Section 2
ASE, AME, RG, G, IA, OR IH	RH	FAA-S-8081-7, Section 1
ASE, AME, RH, G, IA, OR IH	RG	FAA-S-8081-7, Section 2
ASE, AME, RH, RG, IA, OR IH	G	FAA-S-8081-8
ASE, AME, RH, RG, G, OR IH	IA	FAA-S-8081-9
ASE, AME, RH, RG, G, OR IA	IH	FAA-S-8081-9

Flight Instructor Practical Test Standard Description

The AREAS OF OPERATION are phases of the practical test. In this practical test book, the first AREA OF OPERATION is Fundamentals of Instruction; the last is Instrument Flight - Multiengine Aircraft. However, the examiner may conduct the practical test in any sequence that results in a complete and efficient test.

The TASKS are knowledge areas, flight procedures, or maneuvers appropriate to an AREA OF OPERATION. The abbreviation(s) within parentheses immediately following a TASK refer to the category and/or class aircraft appropriate to that TASK. The meaning of each abbreviation follows:

- ASEL** Airplane, Single Engine Land
- AMEL** Airplane, Multiengine Land
- ASES** Airplane, Single Engine Sea
- AMES** Airplane, Multiengine Sea
- RH** Rotorcraft - Helicopter
- RG** Rotorcraft - Gyroplane
- G** Glider
- IA** Instrument - Airplane
- IH** Instrument - Helicopter

The REFERENCE identifies the publication(s) that describes the TASK. Descriptions of TASKS and maneuver tolerances are not included in the flight instructor standards because this information can be found in references listed for each TASK. Publications other than those listed may be used as references if their content conveys substantially the same meaning as the referenced publications. References listed in the four practical test books include the current revisions of the following publications:

FAR Part 61	Certification: Pilots and Flight Instructors
FAR Part 91	General Operating and Flight Rules
FAR Part 97	Standard Instrument Approach Procedures
NTSB 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 60-14	Aviation Instructor's Handbook
AC 61-13	Basic Helicopter Handbook
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	Hazards Associated with Spins in Airplanes Prohibited from Intentional Spinning
AC 61-84	Role of Preflight Preparation
AC 61-92	Use of Distractions During Pilot Certification Flight Tests
AC 61-94	Pilot Transition Course for Self-Launching or Powered Sailplanes (motorgliders)
AC 67-2	Medical Handbook for Pilots
AC 90-48	Pilots' Role in Collision Avoidance
AC 91-13	Cold Weather Operation of Aircraft
AC 91-23	Pilot's Weight and Balance Handbook
FAA-S-8081-1	Private Pilot Practical Test Standards
FAA-S-8081-2	Commercial Pilot Practical Test Standards
FAA-S-8081-4	Instrument Rating Practical Test Standards
AIM	Airman's Information Manual
IAP's	Instrument Approach Procedures (charts)
SID's	Standard Instrument Departures
STAR's	Standard Terminal Arrivals
AFD	Airport Facility Directory
NOTAM's	Notices to Airmen
	Pertinent Pilot Operating Handbooks and FAA-Approved Flight Manuals

Each TASK has an Objective. The examiner determines that the applicant meets the TASK Objective through the demonstration of competency in various elements of knowledge and/or skill. The Objectives of TASKS in certain AREAS OF OPERATION, such as Fundamentals of Instruction and Technical Subject Areas, include **only** knowledge elements. The Objectives of TASKS in the AREAS OF OPERATION that include elements of skill as well as knowledge also include common errors which the applicant must be able to describe, recognize, analyze, and correct.

The Objective of a TASK that involves pilot skill consists of four parts. Those four parts include determination that the applicant exhibits:

1. instructional knowledge of the elements of a TASK. This is accomplished through descriptions, explanations, and simulated instruction;
2. instructional knowledge of common errors related to a TASK, including their recognition, analysis, and correction;
3. the ability to demonstrate and simultaneously explain the key elements of a TASK. The TASK demonstration must be to the COMMERCIAL PILOT skill level (or, in the case of the Flight Instructor - Instrument applicant, to the INSTRUMENT PILOT skill level); the teaching techniques and procedures should conform to those set forth in AC 60-14, Aviation Instructor's Handbook; AC 61-21, Flight Training Handbook, and AC 61-27, Instrument Flying Handbook; and
4. the ability to analyze and correct common errors related to a TASK.

Use Of The Practical Test Standards Book

All of the procedures and maneuvers in the Private Pilot, Commercial Pilot, and Instrument Rating Practical Test Standards have been included in the Flight Instructor Practical Test Standards. However, to permit the completion of the practical test for initial certification within a reasonable timeframe, the examiner will select one or more TASKS in each AREA OF OPERATION. In certain AREAS OF OPERATION, there are **required** TASKS which the examiner must select.

The term "instructional knowledge" means the "what," "why," and "how" of a subject matter topic, procedure, or maneuver. It also means that the flight instructor applicant's discussions, explanations, and descriptions should follow the recommended teaching procedures and techniques explained in AC 60-14, Aviation Instructor's Handbook.

The FAA requires that all practical tests be conducted in accordance with the appropriate Flight Instructor Practical Test Standards and the policies set forth in the INTRODUCTION. The flight instructor applicant must be prepared to demonstrate the ability to instruct effectively in **all** TASKS included in the AREAS OF OPERATION of the appropriate practical test standards.

In preparation for the practical test, the examiner will develop a "plan of action." The "plan of action" for an initial certification test will include one or more TASKS in each AREA OF OPERATION and will **always** include the required TASKS. If the applicant is unable to perform a TASK listed in the "plan of action" due to circumstances beyond his/her control, the examiner may substitute another TASK from the applicable AREA OF OPERATION.

The "plan of action" for a test administered for the addition of an aircraft category and/or class rating to a flight instructor certificate will include the required AREAS OF OPERATION as indicated in the table at the beginning of each standard. The required TASKS appropriate to the rating(s) sought must also be included. Notes following the titles of most AREAS OF OPERATION direct the examiner to select **at least one** TASK. In a few instances, the notes identify **required** TASKS.

The applicant for a flight instructor certificate with an instrument rating will be expected to perform TASK K in Area of Operation VI (Recovery from Unusual Attitudes) and either TASK A or B in Area of Operation VIII (Nonprecision Instrument Approach) using a view-limiting device.

With the exception of the **required** TASKS, the examiner will not tell the applicant in advance which TASKS will be included in the "plan of action." The applicant should be well prepared in **all** knowledge and skill areas included in the standards. Throughout the flight portion of the practical test, the examiner will evaluate the applicant's ability to simultaneously demonstrate and explain procedures and maneuvers, and to give flight instruction to students at various stages of flight training and levels of experience.

The purpose for including common errors in certain TASKS is to assist the examiner in determining that the flight instructor applicant has the ability to recognize, analyze, and correct such errors. ***The examiner will not simulate any condition that may jeopardize safe flight or result in possible damage to the aircraft.*** The common errors listed in the TASK Objectives may or may not be found in the TASK

References. However, the FAA considers their frequency of occurrence justification for inclusion in the TASK Objectives.

The examiner will place special emphasis on the applicant's demonstrated ability to teach precise aircraft control and sound judgment in decision making. The evaluation of the applicant's ability to teach judgment will be accomplished by asking the applicant to describe the oral discussions and the presentation of practical problems that would be used in instructing students in the exercise of sound judgment. The examiner will also emphasize the evaluation of the applicant's demonstrated ability to teach stall/spin awareness, spatial disorientation, collision avoidance, checklist usage, use of distractions, and any other areas directed by future revisions of the standards.

Flight Instructor Practical Test Prerequisites

An applicant for a flight instructor initial certification practical test is required by the FAR's to:

1. have passed the appropriate flight instructor written test(s) since the beginning of the 24th month before the month in which he or she takes the practical test;
2. hold a commercial pilot or airline transport pilot certificate with an aircraft rating appropriate to the flight instructor rating sought;
3. hold an instrument rating if applying for an airplane or an instrument instructor rating;
4. have the prescribed aeronautical experience and instruction for a flight instructor certificate with the rating sought;
5. have reached the age of 18 years; and
6. have a logbook endorsement from a qualified flight instructor certifying that the applicant has been given flight instruction in the items required by FAR Section 61.187(a) and has been found to be competent to pass a practical test on those items.

An applicant holding a flight instructor certificate who applies for an additional rating on that certificate must:

1. hold an effective pilot certificate with ratings appropriate to the flight instructor rating sought;
2. have at least 15 hours as pilot in command in the category and class aircraft appropriate to the rating sought; and
3. have passed the written test prescribed for the issuance of a flight instructor certificate with the rating sought since the beginning of the 24th month before the month in which he or she takes the practical test.

Aircraft and Equipment Required For The Practical Test

The flight instructor applicant is required by FAR Section 61.45 to provide an airworthy, certificated aircraft for use during the practical test. This section further requires that the aircraft:

1. have fully functioning dual controls except as provided in FAR Section 61.45; and
2. be capable of performing all appropriate TASKS for the flight instructor rating sought and have no operating limitations which prohibit the performance of those operations.

Satisfactory Performance

The practical test is passed if, in the judgment of the examiner, the applicant demonstrates satisfactory performance with regard to:

1. knowledge of the fundamentals of instruction;
2. knowledge of the technical subject areas;
3. knowledge of the flight instructor's responsibilities concerning the pilot certification process;
4. knowledge of the flight instructor's responsibilities concerning logbook entries and pilot certificate endorsements;
5. ability to demonstrate the procedures and maneuvers selected by the examiner to at least the COMMERCIAL PILOT skill level (or in the case of the Flight Instructor - Instrument applicant, to the INSTRUMENT PILOT skill level) while giving effective flight instruction;
6. competence in teaching the procedures and maneuvers selected by the examiner;
7. competence in describing, recognizing, analyzing, and correcting common errors simulated by the examiner; and
8. knowledge of the development and effective use of a course of training, a syllabus, and a lesson plan.

Unsatisfactory Performance

If, in the judgment of the examiner, the applicant does not meet the standards of performance of any TASK performed, the applicable AREA OF OPERATION is considered unsatisfactory and; therefore, the practical test is failed. The examiner or applicant may discontinue the test at any time when 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. If the test is discontinued, the applicant is entitled to credit for only those AREAS OF OPERATION satisfactorily performed. However, during the retest

and at the discretion of the examiner, any TASK may be re-evaluated, including those previously considered satisfactory. Specific reasons for disqualification are:

1. failure to perform a procedure or maneuver to the COMMERCIAL PILOT skill level (or in the case of the Flight Instructor - Instrument applicant, to the INSTRUMENT PILOT skill level) while giving effective flight instruction;
2. failure to provide an effective instructional explanation while demonstrating a procedure or maneuver (explanation during the demonstration must be clear, concise, technically accurate, and complete with no prompting from the examiner);
3. any action or lack of action by the applicant which requires corrective intervention by the examiner to maintain safe flight;
4. failure to use proper and effective visual scanning techniques to clear the area before performing maneuvers.

Emphasis On Attitude Instrument Flying And Partial Panel Skills

The FAA is concerned about numerous fatal aircraft accidents involving spatial disorientation of instrument rated pilots who have attempted to control and maneuver their aircraft in clouds with inoperative gyroscopic heading and attitude indicators.

Many of the light aircraft operated in instrument meteorological conditions (IMC) are not equipped with dual, independent, gyroscopic heading or attitude indicators. In addition, many are equipped with only a single vacuum source. Therefore, the FAA has stressed that it is imperative for instrument rated pilots to acquire and maintain adequate partial panel skills and that they be cautioned not to be overly reliant upon the gyroscopic instruments.

FAA-S-8081-4A, Instrument Rating Practical Test Standards, and FAA-S-8081-9A, Flight Instructor - Instrument (Airplane and Helicopter) Practical Test Standards, place increased emphasis on basic attitude instrument flying and require the demonstration of partial panel, nonprecision instrument approach procedures. This practical test book, FAA-S-8081-9A, emphasizes these areas from an instructional standpoint.

AREA OF OPERATION VI requires the applicant to demonstrate the ability to teach the basic instrument flight TASKS under both full panel and partial panel conditions. These TASKS are described in detail in chapters V and VI of AC 61-27C, Instrument Flying Handbook. The TASKS require the applicant to exhibit instructional knowledge of attitude instrument flying techniques and procedures and to

demonstrate the ability to teach the basic instrument maneuvers with both full panel and partial panel.

The attitude instrument flying system of teaching is described in AC 61-27C and is recommended by the FAA because it requires specific knowledge and interpretation of each individual instrument during training. The Instrument Flight Instructor Lesson Guide in AC 61-27C also provides a course of training which is designed to develop the student's basic instrument flying skills.

Examiners will also determine that the applicant fully understands the PRIMARY AND SUPPORTING method of attitude instrument flying as it is presented in chapters V and VI of AC 61-27C, Instrument Flying Handbook.

**ADDITION OF AN INSTRUMENT RATING - AIRPLANE TO A
FLIGHT INSTRUCTOR CERTIFICATE**

REQUIRED AREAS OF OPERATION	FLIGHT INSTRUCTOR CERTIFICATE AND RATING HELD					
	IH	ASE	AME	RH	RG	G
I	NO	NO	NO	NO	NO	NO
II	NO	YES	YES	YES	YES	YES
III	NO	YES	YES	YES	YES	YES
IV	NO	YES	YES	YES	YES	YES
V	NO	YES	YES	YES	YES	YES
VI	YES	YES	YES	YES	YES	YES
VII	YES	YES	YES	YES	YES	YES
VIII	YES	YES	YES	YES	YES	YES
IX	YES	YES	YES	YES	YES	YES
X	YES*	YES*	YES*	YES*	YES*	YES*

*AREA OF OPERATION X applies only if a multiengine airplane is used for the practical test and the applicant holds a flight instructor certificate with a multiengine rating.

NOTE: If an applicant holds more than one rating on a flight instructor certificate and the table indicates both a "yes" and a "no" for a particular AREA OF OPERATION, the "no" entry applies. This is logical since the applicant has satisfactorily accomplished the AREA OF OPERATION on a previous flight instructor practical test. At the discretion of the examiner, the applicant's competence in all AREAS OF OPERATION may be evaluated.

ADDITION OF AN INSTRUMENT RATING - HELICOPTER TO A FLIGHT INSTRUCTOR CERTIFICATE						
REQUIRED AREAS OF OPERATION	FLIGHT INSTRUCTOR CERTIFICATE AND RATING HELD					
	IA	ASE	AME	RH	RG	G
I	NO	NO	NO	NO	NO	NO
II	NO	YES	YES	YES	YES	YES
III	NO	YES	YES	YES	YES	YES
IV	NO	YES	YES	YES	YES	YES
V	NO	YES	YES	YES	YES	YES
VI	YES	YES	YES	YES	YES	YES
VII	YES	YES	YES	YES	YES	YES
VIII	YES	YES	YES	YES	YES	YES
IX	YES	YES	YES	YES	YES	YES
X	YES*	YES*	YES*	YES*	YES*	YES*

*AREA OF OPERATION X applies only if a multiengine helicopter is used for the practical test.

NOTE: If an applicant holds more than one rating on a flight instructor certificate and the table indicates both a "yes" and a "no" for a particular AREA OF OPERATION, the "no" entry applies. This is logical since the applicant has satisfactorily accomplished the AREA OF OPERATION on a previous flight instructor practical test. At the discretion of the examiner, the applicant's competence in all AREAS OF OPERATION may be evaluated.

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APPLICANT'S PRACTICAL TEST CHECKLIST

APPOINTMENT WITH INSPECTOR OR EXAMINER:

NAME _____

TIME/DATE _____

ACCEPTABLE AIRCRAFT

- View-Limiting Device
- Aircraft Documents:
 - Airworthiness Certificate
 - Registration Certificate
 - Operating Limitations
- FCC Station License
- Aircraft Maintenance Records:
 - Airworthiness Inspections

PERSONAL EQUIPMENT

- Current Aeronautical Charts
- Computer and Plotter
- Flight Plan Form
- Flight Logs
- Current AIM

PERSONAL RECORDS

- Pilot Certificate
- Medical Certificate
- Completed FAA Form 8710-1, Airman Certificate and/or Rating Application
- AC Form 8080-2, Airman Written Test Report
- Logbook with Instructor's Endorsement
- Notice of Disapproval (if applicable)
- Approved School Graduation Certificate (if applicable)
- Examiner's Fee (if applicable)

**EXAMINER'S CHECKLIST
FLIGHT INSTRUCTOR-INSTRUMENT
(AIRPLANE AND HELICOPTER)**

APPLICANT'S NAME _____

EXAMINER'S NAME _____

DATE _____ **TYPE CHECK** _____

AREA OF OPERATION:

I. FUNDAMENTALS OF INSTRUCTION

- **A.** The Learning Process
- **B.** The Teaching Process
- **C.** Teaching Methods
- **D.** Evaluation
- **E.** Flight Instructor Characteristics and Responsibilities
- **F.** Human Factors
- **G.** Planning Instructional Activity

II. TECHNICAL SUBJECT AREAS

- **A.** Aircraft Flight Instruments and Navigation Equipment
- **B.** Aeromedical Factors
- **C.** Federal Aviation Regulations Related to Instrument Flight and Instrument Flight Instruction
- **D.** Publications Related to Instrument Flight and Instrument Flight Instruction
- **E.** Logbook Entries Related to Instrument Flight, Instrument Flight Instruction and Instrument Ground Instruction

III. PREFLIGHT PREPARATION

- **A.** Obtaining Weather Information
- **B.** Cross-Country Flight Planning
- **C.** Aircraft Anti-Icing and Deicing Systems
- **D.** Instrument Cockpit Check

**EXAMINER'S CHECKLIST
FLIGHT INSTRUCTOR-INSTRUMENT
(AIRPLANE AND HELICOPTER) (continued)**

IV. PREFLIGHT LESSON ON A MANEUVER TO BE PERFORMED IN FLIGHT

- Maneuver Lesson

V. AIR TRAFFIC CONTROL CLEARANCES AND PROCEDURES

- **A.** Air Traffic Control Clearances
- **B.** Compliance with Departure, En Route, and Arrival Procedures and Clearances
- **C.** Holding Procedures

VI. ATTITUDE INSTRUMENT FLYING AND BASIC INSTRUMENT MANEUVERS

- **A.** Fundamentals of Attitude Instrument Flying
- **B.** Pitch Control
- **C.** Bank Control
- **D.** Power Control
- **E.** Turns
- **F.** Constant Airspeed Climbs and Descents
- **G.** Constant Rate Climbs and Descents
- **H.** Timed Turns to Magnetic Compass Headings
- **I.** Steep Turns
- **J.** Change of Airspeed in Turns
- **K.** Recovery from Unusual Flight Attitudes

VII. NAVIGATION AIDS

- **A.** Intercepting and Tracking VOR/VORTAC Radials and DME Arcs
- **B.** Intercepting and Tracking NDB Bearings

**EXAMINER'S CHECKLIST
FLIGHT INSTRUCTOR-INSTRUMENT
(AIRPLANE AND HELICOPTER) (continued)**

VIII. INSTRUMENT APPROACH PROCEDURES

- **A.** VOR/VORTAC Instrument Approach Procedure
- **B.** NDB Instrument Approach Procedure
- **C.** LOC/LOC BC Instrument Approach Procedure
- **D.** ILS/MLS Instrument Approach Procedure
- **E.** Missed Approach Procedure
- **F.** Circling Approach Procedure
- **G.** Landings from Straight-In and Circling Approaches

IX. EMERGENCY OPERATIONS

- **A.** Systems and Equipment Malfunctions
- **B.** Emergency Equipment and Survival Gear

X. INSTRUMENT FLIGHT - MULTIENGINE AIRCRAFT

- **A.** Engine Failure During Straight-and-Level Flight and Turns
- **B.** Instrument Approach - One Engine Inoperative

I. AREA OF OPERATION: *FUNDAMENTALS OF INSTRUCTION*

NOTE: The examiner will select TASK E and at least one other TASK.

A. TASK: THE LEARNING PROCESS (IA and IH)

REFERENCE: AC 60-14.

Objective. To determine that the applicant exhibits instructional knowledge of the elements of the learning process by describing:

1. The definition of learning.
2. Characteristics of learning.
3. The practical application of the laws of learning.
4. Factors involved in how people learn.
5. Recognition and proper use of the various levels of learning.
6. Principles that are applied in learning a skill.
7. Factors related to forgetting and retention.
8. How transfer of learning affects the learning process.
9. How the formation of habit patterns affects the learning process.

B. TASK: THE TEACHING PROCESS (IA and IH)

REFERENCE: AC 60-14.

Objective. To determine that the applicant exhibits instructional knowledge of the elements of the teaching process by describing the:

1. Preparation for a lesson or an instructional period.
2. Presentation of knowledge and skills, including the methods which are suitable in particular situations.
3. Application, by the student, of the knowledge and skills presented by the instructor.
4. Review of the material presented and the evaluation of student performance and accomplishment.

C. TASK: TEACHING METHODS (IA and IH)

REFERENCE: AC 60-14.

Objective. To determine that the applicant exhibits instructional knowledge of the elements of teaching methods by describing:

1. The organization of a lesson, i.e., introduction, development, and conclusion.
2. The lecture method.
3. The guided discussion method.
4. The demonstration/performance method.
5. Programmed instruction.
6. Audio-visual instruction.

D. TASK: EVALUATION (IA and IH)

REFERENCE: AC 60-14.

Objective. To determine that the applicant exhibits instructional knowledge of the elements of evaluation by describing:

1. The purpose of evaluation.
2. The characteristics of effective oral questions.
3. Types of oral questions to avoid.
4. Responses to student questions.
5. Characteristics and development of effective written tests.
6. Characteristics and uses of performance tests, specifically, the FAA practical test standards.

E. TASK: FLIGHT INSTRUCTOR CHARACTERISTICS AND RESPONSIBILITIES (IA and IH)

REFERENCE: AC 60-14.

Objective. To determine that the applicant exhibits instructional knowledge of the elements of flight instructor characteristics and responsibilities by describing the:

1. Major considerations and qualifications which must be included in flight instructor professionalism.
2. Role of the flight instructor in dealing with student stress, anxiety, and psychological abnormalities.
3. Flight instructor's responsibility with regard to student pilot supervision and surveillance.
4. Flight instructor's authority and responsibility for endorsements and recommendations.
5. Flight instructor's responsibility in the conduct of the biennial flight review.

F. TASK: HUMAN FACTORS (IA and IH)

REFERENCE: AC 60-14.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to human factors by describing the:

1. Control of human behavior.
2. Development of student potential.
3. Relationship of human needs to behavior and learning.
4. Relationship of defense mechanisms to student learning.
5. Relationship of defense mechanisms to pilot decision making.
6. General rules which a flight instructor should follow during student training to ensure good human relations.

G. TASK: PLANNING INSTRUCTIONAL ACTIVITY
(IA and IH)

REFERENCE: AC 60-14.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to the planning of instructional activity by describing:

1. Development of a course of training.
2. Content and use of a training syllabus.
3. Purpose, characteristics, proper use, and items of a lesson plan.
4. Flexibility features of a course of training, syllabus, and lesson plan required to accommodate students with varying backgrounds, levels of experience, and ability.

II. AREA OF OPERATION: *TECHNICAL SUBJECT AREAS*

NOTE: The examiner will select TASK E and at least one other TASK.

A. TASK: AIRCRAFT FLIGHT INSTRUMENTS AND NAVIGATION EQUIPMENT (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4; Pilot's Operating Handbook or
FAA-Approved Flight Manual.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of aircraft flight instrument systems and their operating characteristics to include:
 - a. pitot static.
 - b. altimeter.
 - c. airspeed indicator.
 - d. vertical-speed indicator.
 - e. attitude indicator.
 - f. horizontal situation indicator.
 - g. magnetic compass.
 - h. turn-and-slip indicator and turn coordinator.
 - i. heading indicator.

2. Exhibits instructional knowledge of aircraft navigation equipment and their operating methods to include:
 - a. VHF omnirange (VOR).
 - b. distance measuring equipment (DME).
 - c. instrument landing system (ILS) and microwave landing system (MLS).
 - d. marker beacon receiver and indicators.
 - e. altitude encoding transponder.
 - f. automatic direction finding (ADF).

B. TASK: AEROMEDICAL FACTORS (IA and IH)

REFERENCES: AC 60-14, AC 61-21, AC 67-2.

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

1. How to obtain an appropriate medical certificate.
2. How to obtain a medical certificate in the event of a possible medical deficiency.
3. Hypoxia, its symptoms, effects, and corrective action.
4. Hyperventilation, its symptoms, effects, and corrective action.
5. Middle ear and sinus problems, their causes, effects, and corrective action.
6. Spatial disorientation, its causes, effects, and corrective action.
7. Motion sickness, its causes, effects, and corrective action.
8. The effects of alcohol and drugs, and their relationship to safety.
9. Carbon monoxide poisoning, its symptoms, effects, and corrective action.
10. The effect of nitrogen excesses during scuba dives and how this affects a pilot during flight.

C. TASK: FEDERAL AVIATION REGULATIONS (FAR'S) RELATED TO INSTRUMENT FLIGHT AND INSTRUMENT FLIGHT INSTRUCTION (IA and IH)

REFERENCES: FAR Parts 61, 91, 95, and 97.

Objective. To determine that the applicant exhibits instructional knowledge of FAR's related to instrument flight and instrument flight instruction by describing pertinent sections of:

1. FAR Part 61.
2. FAR Part 91.
3. FAR Part 95.
4. FAR Part 97.

D. TASK: PUBLICATIONS RELATED TO INSTRUMENT FLIGHT AND INSTRUMENT FLIGHT INSTRUCTION (IA and IH)

REFERENCES: AC 60-14, AC 61-27; AIM.

Objective. To determine that the applicant exhibits instructional knowledge of the publications related to instrument flight and instrument flight instruction by describing pertinent information in:

1. AC 61-27, Instrument Flying Handbook.
2. Airman's Information Manual.
3. Notices to Airmen.
4. Airport/Facility Directory.
5. Standard Instrument Departures.
6. Standard Terminal Arrivals.
7. En Route Low and High Altitude Charts.
8. Standard Instrument Approach Procedure Charts.

E. TASK: LOGBOOK ENTRIES RELATED TO INSTRUMENT FLIGHT, INSTRUMENT FLIGHT INSTRUCTION, AND INSTRUMENT GROUND INSTRUCTION (IA and IH)

REFERENCES: FAR Part 61; AC 60-14, AC 61-21, AC 61-65.

Objective. To determine that the applicant exhibits instructional knowledge of logbook entries related to instrument flight, instrument flight instruction, and instrument ground instruction by describing the:

1. Logbook entries for instrument flight.
2. Logbook entries for instrument flight instruction given.
3. Records of instrument ground instruction given.
4. Preparation of a recommendation for the instrument rating practical test, including the appropriate logbook entry.
5. Flight instructor records.

III. AREA OF OPERATION: ***PREFLIGHT PREPARATION***

NOTE: The examiner will select at least one TASK.

A. TASK: **OBTAINING WEATHER INFORMATION** (IA and IH)

REFERENCES: AC 00-6, AC 00-45, AC 60-14, AC 61-27; AIM; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to obtaining weather information, as applicable, by describing items such as:

1. Weather reports and forecasts.
2. Pilot and radar reports.
3. Surface analysis charts.
4. Radar summary charts.
5. Significant weather prognostics.
6. Winds and temperatures aloft.
7. Freezing level charts.
8. Stability charts.
9. Severe weather outlook charts.
10. Constant pressure charts.
11. Constant pressure prognostics.
12. Tables and conversion graphs.
13. SIGMET's and AIRMET's.
14. ATIS reports.

NOTE: Where current weather reports, forecasts, or other pertinent information is not available, this information will be simulated by the examiner in a manner which will adequately measure the applicant's competence.

B. TASK: CROSS-COUNTRY FLIGHT PLANNING

(IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of cross-country flight planning by describing the:

1. Regulatory requirements for instrument flight within various types of airspace.
2. Computation of estimated time en route and total fuel requirement based on such factors as:
 - a. power settings.
 - b. operating altitude or flight level.
 - c. wind.
 - d. fuel reserve requirements.
3. Selection and correct interpretation of the current and applicable en route charts, SID's, STAR's, and standard instrument approach procedure charts.
4. Procurement and interpretation of the applicable NOTAM information.
5. Determination that the computed and required performance is within the aircraft's capability and operating limitations.
6. Preparation and filing of an actual or simulated IFR flight plan.

C. TASK: AIRCRAFT ANTI-ICING AND DEICING SYSTEMS (IA and IH)

REFERENCES: FAR Part 61; AC 60-14, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of aircraft anti-icing and deicing systems by describing systems related to the:

1. Airframe.
2. Propeller or rotor.
3. Air intake.
4. Fuel system.
5. Pitot-static system.

D. TASK: INSTRUMENT COCKPIT CHECK (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of the instrument cockpit check, including instruments, avionics, and navigation equipment, by describing the reasons for the check and the detection of defects that could affect safe instrument flight. The check should include:

1. Radio communications equipment.
2. Radio navigation equipment, including at least the following:
 - a. VOR/VORTAC receiving equipment and aircraft logbook entry.
 - b. ADF receiving equipment.
 - c. ILS/MLS receiving equipment.
3. Magnetic compass.
4. Heading indicator.
5. Attitude indicator.
6. Altimeter.
7. Turn-and-slip indicator and turn coordinator.
8. Vertical-speed indicator.
9. Airspeed indicator.
10. Clock.

IV. AREA OF OPERATION: *PREFLIGHT LESSON ON A MANEUVER TO BE PERFORMED IN FLIGHT*

NOTE: The examiner will select at least one maneuver from AREAS OF OPERATION VI or VIII. The examiner will ask the applicant to present a preflight lesson on the selected maneuver as the lesson would be presented to a student.

TASK: MANEUVER LESSON (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of the selected maneuver by:

1. Stating the purpose.
2. Giving an accurate, comprehensive oral description, including the elements and common errors.
3. Using instructional aids, as appropriate.
4. Describing the recognition, analysis, and correction of common errors.

V. AREA OF OPERATION: *AIR TRAFFIC CONTROL CLEARANCES AND PROCEDURES*

NOTE: The examiner will select at least one TASK.

A. TASK: AIR TRAFFIC CONTROL CLEARANCES
(IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of air traffic control clearances by describing the:

1. Pilot and controller responsibilities to include tower, en route control, and clearance void times.
2. Correct and timely copying of an ATC clearance.
3. Correct and timely read-back of an ATC clearance, using standard phraseology.
4. Correct interpretation of an ATC clearance, and when necessary, request for clarification, verification, or change.
5. Setting of communication and navigation frequencies in compliance with an ATC clearance.
6. Compliance with an ATC clearance.

B. TASK: COMPLIANCE WITH DEPARTURE, EN ROUTE, AND ARRIVAL PROCEDURES AND CLEARANCES (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to compliance with departure, en route, and arrival procedures and clearances by describing the:

1. Selection and use of current and appropriate navigation publications.
2. Pilot and controller responsibilities with regard to SID's, En Route Low and High Altitude Charts, and STAR's.
3. Selection and use of appropriate communications frequencies.
4. Selection and identification of the navigation aids.
5. Accomplishment of the appropriate checklist items.
6. Pilot's responsibility for compliance with vectors and also altitude, airspeed, climb, descent, and airspace restrictions.
7. Pilot's responsibility for the interception of courses, radials, and bearings appropriate to the procedure, route, or clearance.
8. Procedures to be used in the event of two-way communications failure.

C. TASK: HOLDING PROCEDURES (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of holding procedures by describing the:
 - a. setting of aircraft navigation equipment.
 - b. requirement for establishing the appropriate holding airspeed for the aircraft and altitude.
 - c. recognition of arrival at the holding fix and the prompt initiation of the recommended FAA entry into the holding pattern.
 - d. timing procedure.
 - e. correction for wind drift.
 - f. use of DME in a holding pattern.
 - g. compliance with ATC reporting requirements.
2. Exhibits instructional knowledge of common errors related to holding procedures by describing:
 - a. incorrect setting of aircraft navigation equipment.
 - b. inappropriate altitude, airspeed, and bank control.
 - c. improper timing.
 - d. improper wind drift correction.
 - e. failure to recognize holding fix passage.
 - f. failure to comply with ATC instructions.
3. Demonstrates and simultaneously explains holding procedures from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to holding procedures.

**VI. AREA OF OPERATION: *ATTITUDE
INSTRUMENT FLYING AND BASIC
INSTRUMENT MANEUVERS***

NOTE: The examiner will select TASK K and at least one other TASK.

A. TASK: FUNDAMENTALS OF ATTITUDE INSTRUMENT FLYING (IA and IH)

REFERENCES: AC 60-14, AC 61-27.

Objective. To determine that the applicant exhibits instructional knowledge of the fundamentals of attitude instrument flying by describing:

1. The basic concept of attitude instrument flying.
2. Instrument cross-check, instrument interpretation, and aircraft control.
3. The terms: primary, supporting, direct indicating, and indirect indicating instruments.
4. The instruments used for pitch, bank, and power control.
5. Trim technique.

B. TASK: PITCH CONTROL (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of pitch control by describing:
 - a. attitude indicator, including adjustment, interpretation, errors, and proper use.
 - b. altimeter, including adjustment, interpretation, errors, and proper use.
 - c. vertical-speed indicator, including adjustment, interpretation, errors, and proper use.
 - d. airspeed indicator, including markings, interpretation, errors, and proper use.
 - e. trim technique.
2. Exhibits instructional knowledge of common errors related to pitch control by describing:
 - a. incorrect adjustment of pitch instruments.
 - b. incorrect interpretation of pitch instruments.
 - c. improper altitude corrections.
 - d. overcontrol (i.e., chasing the vertical-speed).
 - e. faulty trim technique.
3. Demonstrates and simultaneously explains pitch control from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to pitch control.

C. TASK: BANK CONTROL (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of bank control by describing the:
 - a. attitude indicator, including adjustment, interpretation, errors, and use.
 - b. heading indicator, including setting, interpretation, errors, and use.
 - c. turn coordinator (miniature aircraft¹), including characteristics, interpretation, errors, and use.
 - d. turn coordinator (ball instrument), including characteristics, interpretation, and use.
 - e. trim technique.
2. Exhibits instructional knowledge of common errors related to bank control by describing:
 - a. incorrect interpretation of bank instruments.
 - b. improper heading corrections.
 - c. faulty trim technique.
3. Demonstrates and simultaneously explains bank control from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to bank control.

¹If the aircraft used for the practical test has a turn needle, substitute turn needle for miniature aircraft of turn coordinator.

D. TASK: POWER CONTROL (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of power control by describing:
 - a. the effect of power changes.
 - b. the primary and supporting instruments when the airspeed is constant and during airspeed changes.
 - c. the approximate power setting and aircraft attitude for a particular airspeed and aircraft configuration.
 - d. the reason for overpowering and underpowering during an airspeed change.
 - e. the need for a cross-check.
 - f. the technique for simultaneously correcting airspeed and altitude.
 - g. trim technique.
2. Exhibits instructional knowledge of common errors related to power control by describing:
 - a. the use of incorrect power settings and aircraft attitudes for various airspeeds and aircraft configurations.
 - b. excessive variations of altitude and heading during airspeed changes.
 - c. abrupt or hesitant changes of power.
 - d. failure to achieve the desired airspeed.
 - e. faulty trim technique.
3. Demonstrates and simultaneously explains power control from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to power control.

E. TASK: TURNS (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of turns by describing:
 - a. the relationship of true airspeed and angle of bank to a standard rate turn.
 - b. technique and procedure using full panel and partial panel, including:
 - (1) primary and supporting pitch, bank, and power instruments during entry, stabilized turn, and roll-out.
 - (2) the performance of a half-standard rate turn.
 - c. coordination of controls.
 - d. trim technique.
2. Exhibits instructional knowledge of common errors related to turns by describing:
 - a. slow or improper cross-check during entry, stabilized turn, and roll-out.
 - b. erratic bank control during roll-in and roll-out.
 - c. failure to establish or maintain a standard rate turn or half-standard rate turn, as specified.
 - d. failure to make smooth, precise corrections, as required.
 - e. uncoordinated use of controls.
 - f. faulty trim technique.
3. Demonstrates and simultaneously explains turns from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to turns.

F. TASK: CONSTANT AIRSPEED CLIMBS AND DESCENTS (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of constant airspeed climbs and descents by describing:
 - a. an entry into a straight climb or climbing turn, from either cruising or climbing airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.
 - b. a stabilized straight climb or climbing turn, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.
 - c. a level-off from a straight climb or climbing turn, at either cruising or climbing airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.
 - d. an entry into a straight descent or descending turn from either cruising or descending airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.

- e. a stabilized straight descent or descending turn, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.

 - f. a level-off from a straight descent or descending turn, at either cruising or descending airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.
2. Exhibits instructional knowledge of common errors related to constant airspeed climbs and descents by describing:
- a. failure to use a proper power setting and pitch attitude.
 - b. failure to maintain a constant heading if a straight climb or descent is specified, or a standard rate turn if a climbing or descending turn is specified.
 - c. faulty technique in correcting airspeed, heading, or rate-of-turn errors.
 - d. uncoordinated use of controls.
 - e. faulty trim technique.
3. Demonstrates and simultaneously explains a constant airspeed climb and a constant airspeed descent from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to constant airspeed climbs and descents.

G. TASK: CONSTANT RATE CLIMBS AND DESCENTS
(IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of constant rate climbs and descents by describing:
 - a. an entry into a straight climb or climbing turn, from climbing airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.
 - b. a stabilized straight climb or climbing turn, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) the simultaneous correction of vertical speed and airspeed.
 - (4) trim technique.
 - c. a level-off from a straight climb or climbing turn, at climbing airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.
 - d. an entry into a straight descent or descending turn, from descending airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.

- e. a stabilized straight descent or descending turn, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) the simultaneous correction of vertical speed and airspeed.
 - (4) trim technique.
 - f. a level-off from a straight descent or descending turn, at descending airspeed, including:
 - (1) control technique.
 - (2) primary and supporting pitch, bank, and power instruments.
 - (3) trim technique.
2. Exhibits instructional knowledge of common errors related to constant rate climbs and descents by describing:
- a. use of inappropriate power setting.
 - b. failure to establish the appropriate climb or descent airspeed prior to entry.
 - c. failure to maintain a constant heading if a straight climb or descent is specified, or a standard rate turn if a climbing or descending turn is specified.
 - d. faulty technique in correcting vertical speed, airspeed, heading, or rate-of-turn errors.
 - e. uncoordinated use of controls.
 - f. faulty trim technique.
3. Demonstrates and simultaneously explains a constant rate climb and a constant rate descent from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to constant rate climbs and descents.

H. TASK: TIMED TURNS TO MAGNETIC COMPASS HEADINGS (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of timed turns to magnetic compass headings by describing:
 - a. operating characteristics and errors of the magnetic compass.
 - b. calibration of the miniature aircraft of the turn coordinator,² both right and left, using full panel.
 - c. techniques and procedures using full panel and partial panel.
 - (1) primary and supporting pitch, bank, and power instruments during entry, stabilized turn, and roll-out.
 - (2) use of the clock.
 - (3) performance of a standard rate and a half-standard rate turn.
 - (4) coordination of controls.
 - (5) trim technique.
2. Exhibits instructional knowledge of common errors related to timed turns to magnetic compass headings by describing:
 - a. incorrect calibration procedures.
 - b. failure to maintain altitude, airspeed, and desired rate of turn.
 - c. improper timing.
 - d. faulty technique when making small changes of heading.
 - e. uncoordinated use of controls.
 - f. faulty trim technique.

²If the aircraft used for the practical test has a turn needle, substitute turn needle for miniature aircraft of turn coordinator.

3. Demonstrates and simultaneously explains timed turns to magnetic compass headings from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to timed turns to magnetic compass headings.

I. TASK: STEEP TURNS (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of steep turns by describing:
 - a. entry technique and bank angle.
 - b. primary and supporting pitch, bank, and power instruments during entry.
 - c. decrease in vertical lift.
 - d. the need for a proper cross-check.
 - e. correction for improper pitch and bank attitudes.
 - f. precession of the horizon bar of the attitude indicator.
 - g. roll-out technique.
 - h. coordination of controls.
 - i. trim techniques.
2. Exhibits instructional knowledge of common errors related to steep turns by describing:
 - a. failure to recognize and make proper corrections for pitch, bank, or power errors.
 - b. failure to compensate for precession of the horizon bar of the attitude indicator.
 - c. uncoordinated use of controls.
 - d. faulty trim technique.
3. Demonstrates and simultaneously explains steep turns from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to steep turns.

J. TASK: CHANGE OF AIRSPEED IN TURNS (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of change of airspeed in turns by describing:
 - a. technique for maintaining altitude and a standard rate turn.
 - b. primary and supporting pitch, bank, and power instruments.
 - c. the reason for overpowering and underpowering during an airspeed change.
 - d. the need for a cross-check.
 - e. coordination of controls.
 - f. trim technique.
2. Exhibits instructional knowledge of common errors related to change of airspeed in turns by describing:
 - a. the use of inappropriate power settings and aircraft attitudes for various airspeeds and aircraft configurations.
 - b. excessive variations of altitude and rate of turn.
 - c. uncoordinated use of controls.
 - d. faulty trim technique.
3. Demonstrates and simultaneously explains change of airspeed in turns from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to change of airspeed in turns.

K. TASK: RECOVERY FROM UNUSUAL FLIGHT ATTITUDES (IA and IH)

REFERENCES: AC 60-14, AC 61-27;
FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of recovery from unusual flight attitudes by describing:
 - a. conditions or situations which contribute to the development of unusual flight attitudes.
 - b. use of instrument cross-check and interpretation.
 - c. application of the appropriate pitch, bank, and power corrections in the proper sequence to return the aircraft to a stabilized level flight attitude.
 - d. technique and procedure for recovery from nose-high and nose-low unusual flight attitudes.
 - e. why an unusual flight attitude should be accomplished primarily by reference to the airspeed indicator and turn indicator.
2. Exhibits instructional knowledge of common errors related to recovery from unusual flight attitudes by describing:
 - a. incorrect interpretation of the flight instruments.
 - b. inappropriate application of controls
 - c. failure to recognize when the aircraft is passing through a level flight attitude.
3. Demonstrates and simultaneously explains recovery from unusual flight attitudes from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to recovery from unusual flight attitudes.

VII. AREA OF OPERATION: *NAVIGATION AIDS*

NOTE: The examiner will select at least one TASK. If aircraft is not DME equipped, performance of DME arcs will be tested orally.

A. TASK: **INTERCEPTING AND TRACKING VOR/VORTAC RADIALS AND DME ARCS** (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of intercepting and tracking VOR/VORTAC radials and DME arcs by describing:
 - a. tuning and identification of a VOR/VORTAC facility.
 - b. setting of a selected radial on the course selector or the correct identification of a selected radial on the RMI.
 - c. method for determining aircraft position relative to a facility.
 - d. procedure for intercepting and maintaining a selected radial.
 - e. procedure for intercepting and maintaining a DME arc.
 - f. procedure for intercepting a radial or localizer from a DME arc.
 - g. recognition of VOR/VORTAC facility passage.
 - h. recognition of VOR/VORTAC receiver or facility failure.
2. Exhibits instructional knowledge of common errors related to intercepting and tracking VOR/VORTAC radials and DME arcs by describing the:
 - a. incorrect tuning and identification procedures.
 - b. failure to properly set the course selector on the radial to be intercepted.
 - c. failure to use proper procedures for radial or DME arc interception and tracking.
 - d. improper procedures for intercepting a radial or localizer from a DME arc.

3. Demonstrates and simultaneously explains VOR/VORTAC radial and DME arc interception and tracking from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to VOR/VORTAC radial and DME arc interception and tracking.

B. TASK: INTERCEPTING AND TRACKING NDB BEARINGS (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of intercepting and tracking NDB bearings by describing:
 - a. tuning and identification of an NDB facility.
 - b. determination of relative bearing of an NDB facility.
 - c. procedure for intercepting and tracking a magnetic bearing inbound to, or outbound from, an NDB facility.
 - d. recognition of NDB facility passage.
 - e. recognition of NDB receiver or facility failure.
2. Exhibits instructional knowledge of common errors related to intercepting and tracking NDB bearings by describing:
 - a. incorrect tuning and identification procedures.
 - b. failure to monitor facility signal.
 - c. failure to follow the procedure for the determination of a magnetic bearing to or from an NDB facility.
 - d. failure to follow procedure in the interception and tracking of a magnetic bearing.
3. Demonstrates and simultaneously explains NDB bearing interception and tracking from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to NDB bearing interception and tracking.

VIII. AREA OF OPERATION: *INSTRUMENT APPROACH PROCEDURES*

NOTE: The examiner will select at least TASKS A, B, C, or D combined with TASK E, F, or G. At least one nonprecision approach procedure will be accomplished without the use of the gyroscopic heading and attitude indicators. Circling approaches are not applicable to helicopters.

A. TASK: VOR/VORTAC INSTRUMENT APPROACH PROCEDURE (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14; AIM; FAA-S-8081-4; Instrument Approach Procedures (charts).

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of a VOR/VORTAC instrument approach procedure by describing the:
 - a. selection of the appropriate instrument approach procedure chart.
 - b. pertinent information on the selected instrument approach procedure chart.
 - c. radio communications with ATC and compliance with ATC clearances and procedures.
 - d. appropriate aircraft configuration, airspeed, and checklist items.
 - e. selection, tuning, identification, and determination of operational status of ground and aircraft navigation equipment.
 - f. adjustments applied to the published MDA and visibility criteria for the aircraft approach category.
 - g. maintenance of altitude, airspeed, and track, where applicable.
 - h. establishment and maintenance of an appropriate rate of descent during the final approach segment.
 - i. factors that should be considered in determining whether:

- (1) the approach should be continued straight-in to a landing;
 - (2) a circling approach to a landing should be made; or
 - (3) a missed approach should be performed.
2. Exhibits instructional knowledge of common errors related to VOR/VORTAC instrument approach procedures by describing:
 - a. failure to have essential knowledge of the information on VOR/VORTAC instrument approach procedure chart.
 - b. incorrect communications procedures or noncompliance with ATC clearances.
 - c. failure to accomplish checklist items.
 - d. faulty basic instrument flying technique.
 - e. inappropriate descent below the MDA.
3. Demonstrates and simultaneously explains a VOR/VORTAC instrument approach procedure from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to VOR/VORTAC instrument approach procedures.

B. TASK: NDB INSTRUMENT APPROACH PROCEDURE
(IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4; Instrument Approach Procedures (charts).

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of an NDB instrument approach procedure by describing the:
 - a. selection of the appropriate instrument approach procedure chart.
 - b. pertinent information on the selected instrument approach procedure chart.
 - c. selection, tuning, identification, and determination of operational status of ground and aircraft navigation equipment.

- d. radio communications with ATC and compliance with ATC clearances and procedures.
 - e. appropriate aircraft configuration, airspeed, and checklist items.
 - f. adjustments applied to the published MDA and visibility criteria for the aircraft approach category.
 - g. maintenance of altitude, airspeed, and track, where applicable.
 - h. establishment and maintenance of an appropriate rate of descent during the final approach segment.
 - i. factors that should be considered in determining whether:
 - (1) the approach should be continued straight-in to a landing;
 - (2) a circling approach to a landing should be made; or
 - (3) a missed approach should be performed.
2. Exhibits instructional knowledge of common errors related to NDB instrument approach procedures by describing:
- a. failure to have essential knowledge of the information on the NDB instrument approach procedure chart.
 - b. incorrect communications procedures or noncompliance with ATC clearances.
 - c. failure to accomplish checklist items.
 - d. faulty basic instrument flying technique.
 - e. inappropriate descent below the MDA.
3. Demonstrates and simultaneously explains an NDB instrument approach procedure from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to NDB instrument approach procedures.

C. TASK: LOC/LOC BC INSTRUMENT APPROACH PROCEDURE (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14; AIM; FAA-S-8081-4; Instrument Approach Procedures (charts).

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of a LOC/LOC BC instrument approach procedure by:
 - a. selection of the appropriate instrument approach procedure chart.
 - b. pertinent information on the selected instrument approach procedure chart.
 - c. radio communications with ATC and compliance with ATC clearances and procedures.
 - d. appropriate aircraft configuration, airspeed, and checklist items.
 - e. selection, tuning, identification, and determination of operational status of ground and aircraft navigation equipment.
 - f. adjustments applied to the published MDA and visibility criteria for the aircraft approach category.
 - g. maintenance of altitude, airspeed, and track, where applicable.
 - h. establishment and maintenance of an appropriate rate of descent during the final approach segment.
 - i. factors that should be considered in determining whether:
 - (1) the approach should be continued straight-in to a landing;
 - (2) a circling approach to a landing should be made; or
 - (3) a missed approach should be performed.

2. Exhibits instructional knowledge of common errors related to LOC/LOC BC instrument approach procedures by describing:
 - a. failure to have essential knowledge of the information on LOC/LOC BC instrument approach procedure chart.
 - b. incorrect communications procedures or noncompliance with ATC clearances.
 - c. failure to accomplish checklist items.
 - d. poor orientation on LOC BC relative to reverse needle sensing.
 - e. faulty basic instrument flying technique.
 - f. inappropriate descent below the MDA.
3. Demonstrates and simultaneously explains a LOC/LOC BC instrument approach procedure from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to LOC/LOC BC instrument approach procedures.

**D. TASK: ILS/MLS INSTRUMENT APPROACH
PROCEDURE (IA and IH)**

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4; Instrument Approach Procedures (charts).

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of an ILS/MLS instrument approach procedure by describing the:
 - a. selection of the appropriate instrument approach procedure chart.
 - b. pertinent information on the selected instrument approach procedure chart.
 - c. selection, tuning, identification, and determination of operational status of ground and aircraft navigation equipment.
 - d. radio communications with ATC and compliance with ATC clearances and procedures.
 - e. appropriate aircraft configuration, airspeed, and checklist items.
 - f. adjustments applied to the published DH and visibility criteria for the aircraft approach category.
 - g. maintenance of altitude, airspeed, and track, where applicable.
 - h. establishment and maintenance of an appropriate rate of descent to follow the glide slope.
 - i. factors that should be considered in determining whether:
 - (1) the approach should be continued straight-in to a landing;
 - (2) a circling approach to a landing should be made; or
 - (3) a missed approach should be performed.

2. Exhibits instructional knowledge of common errors related to ILS/MLS instrument approach procedures by describing:
 - a. failure to have essential knowledge of the information on the ILS/MLS instrument approach procedure chart.
 - b. incorrect communications procedures or noncompliance with ATC clearances.
 - c. failure to accomplish checklist items.
 - d. faulty basic instrument flying technique.
 - e. inappropriate descent below the DH.
3. Demonstrates and simultaneously explains an ILS/MLS instrument approach procedure from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to ILS/MLS instrument approach procedures.

E. TASK: MISSED APPROACH PROCEDURE (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4; Instrument Approach Procedures (charts).

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of a missed approach procedure by describing the:
 - a. pertinent information on the selected instrument approach procedure chart.
 - b. conditions requiring a missed approach.
 - c. initiation of the missed approach, including the prompt application of power, establishment of a climb attitude, and reduction of drag.
 - d. required report to ATC.
 - e. compliance with the published or alternate missed approach procedure.
 - f. notification of ATC if the aircraft is unable to comply with a clearance, restriction, or climb gradient.
 - g. performance of recommended checklist items appropriate to the go-around procedure.
 - h. importance of positive aircraft control.

2. Exhibits instructional knowledge of common errors related to missed approach procedures by describing:
 - a. failure to have essential knowledge of the information on the instrument approach procedure chart.
 - b. failure to recognize conditions requiring a missed approach procedure.
 - c. failure to promptly initiate a missed approach procedure.
 - d. failure to make the required report to ATC.
 - e. failure to comply with the missed approach procedure.
 - f. faulty basic instrument flying technique.
 - g. descent below the DH or MDA prior to initiating a missed approach.
3. Demonstrates and simultaneously explains a missed approach procedure from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to missed approach procedures.

F. TASK: CIRCLING APPROACH PROCEDURE (IA)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4; Instrument Approach Procedures (charts).

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of a circling approach procedure by describing the:
 - a. selection of the appropriate circling approach maneuver considering the maneuvering capabilities of the aircraft.
 - b. circling approach minimums on the selected instrument approach procedure chart.
 - c. compliance with advisories, instructions, and restrictions.
 - d. importance of flying a circling approach pattern that does not exceed the published visibility criteria.

- e. maintenance of an altitude no lower than the circling MDA until in a position from which a descent to a normal landing can be made.
2. Exhibits instructional knowledge of common errors related to circling approach procedures by describing the:
 - a. failure to have essential knowledge of the circling approach information on the instrument approach procedure chart.
 - b. failure to adhere to the published MDA and visibility criteria during the circling approach maneuver.
 - c. inappropriate pilot technique during the transition from the circling maneuver to the landing approach.
 3. Demonstrates and simultaneously explains a circling approach procedure from an instructional standpoint.
 4. Analyzes and corrects simulated common errors related to circling approach procedures.

G. TASK: LANDINGS FROM STRAIGHT-IN AND CIRCLING APPROACHES (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; AIM; FAA-S-8081-4; Instrument Approach Procedures (charts).

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements related to landings from straight-in and circling approaches by describing the:
 - a. effect of specific environmental, operational, and meteorological factors.
 - b. transition to, and maintenance of, a visual flight condition.
 - c. adherence to ATC advisories, such as NOTAM's, wind shear, wake turbulence, runway surface, and braking conditions.
 - d. completion of appropriate checklist items.
 - e. maintenance of positive aircraft control.

2. Exhibits instructional knowledge of common errors related to landings from straight-in and circling approaches by describing the:
 - a. inappropriate division of attention during the transition from instrument to visual flight conditions.
 - b. failure to complete required checklist items.
 - c. failure to properly plan and perform the turn to final approach during a circling approach.
 - d. improper technique for wind shear, wake turbulence, and crosswind.
 - e. failure to maintain positive aircraft control throughout the complete landing maneuver.
3. Demonstrates and simultaneously explains a landing from a straight-in or a circling approach from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to a landing from a straight-in or a circling approach.

IX. AREA OF OPERATION: *EMERGENCY OPERATIONS*

NOTE: The examiner will select at least TASK A.

A. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS (IA and IH)

REFERENCES: AC 60-14, AC 61-21;
FAA-S-8081-1; FAA-S-8081-2; Pilot's Operating
Handbook or FAA-Approved Airplane Flight
Manual; Helicopter Handbook or Manual.

NOTE: The examiner will not simulate a system or equipment malfunction in a manner that may jeopardize safe flight or result in possible damage to the airplane or helicopter.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to systems and equipment malfunctions, appropriate to the airplane or helicopter used for the practical test, by describing recommended pilot action for:

1. Smoke or fire, or both, during ground or flight operations.
2. Rough running engine, partial power loss, or sudden engine stoppage.
3. Propeller malfunction (airplane).
4. Loss of engine oil pressure.
5. Fuel starvation.
6. Engine overheat.
7. Electrical system malfunction.
8. Carburetor or induction icing.
9. Door or window opening in flight.
10. Inoperative or "runaway" trim.
11. Flap malfunction (airplane).
12. Hydraulic system malfunction.
13. Pressurization system malfunction (airplane).
14. Brake failure.
15. Landing gear malfunction.
16. Anti-torque system failure (helicopter).
17. Any other system or equipment malfunction.

B. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR (IA and IH)

REFERENCES: AC 60-14, AC 61-21; Pilot's Operating Handbook or FAA-Approved Airplane Flight Manual; Helicopter Handbook or Manual.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to emergency equipment and survival gear appropriate to the airplane or helicopter flown by describing:

1. Locations in the airplane or helicopter.
2. Purpose.
3. Method of operation or use.
4. Servicing.
5. Storage.
6. Equipment and gear appropriate for operation in various climates, over various types of terrain, and over water.

X. AREA OF OPERATION: *INSTRUMENT FLIGHT - MULTIENGINE AIRCRAFT*

NOTE: If this AREA OF OPERATION is tested, the examiner will select at least one TASK. The examiner will **omit** this AREA OF OPERATION if the applicant furnishes a multiengine airplane for the practical test but does not hold a flight instructor certificate with a multiengine rating. (Reference - FAR Section 61.195(b).)

A. TASK: ENGINE FAILURE DURING STRAIGHT-AND-LEVEL FLIGHT AND TURNS (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14; FAA-S-8081-1; FAA-S-8081-2; FAA-S-8081-4; Pilot's Operating Handbook or FAA-Approved Airplane Flight Manual; Helicopter Handbook or Manual.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements related to engine failure during straight-and-level flight and turns, while on instruments, by describing the:
 - a. prompt recognition of engine failure.
 - b. setting of engine controls, reduction of drag, and identification and verification of the inoperative engine.
 - c. establishment of the best engine inoperative airspeed and trim.
 - d. use of the prescribed checklist to verify the accomplishment of procedures for securing the inoperative engine.
 - e. establishment and maintenance of the recommended flight attitude, as required, for best performance.
 - f. technique for maintaining positive aircraft control by reference to instruments.
 - g. appropriate methods to be used for determining the reason for the malfunction.
 - h. importance of accurately assessing aircraft's performance capability with regard to action that assures a safe landing.

- i. maintenance of altitude or minimum sink rate, considering existing conditions.
 - j. importance of monitoring and properly adjusting the operating engine.
 - k. avoidance of flight contrary to the single-engine operating limitations of the aircraft.
2. Exhibits instructional knowledge of common errors related to engine failure during straight-and-level flight and turns, while on instruments, by describing the:
- a. failure to recognize an inoperative engine.
 - b. hazards of improperly identifying and verifying the inoperative engine.
 - c. failure to properly adjust engine controls and reduce drag.
 - d. failure to establish and maintain the best engine inoperative airspeed.
 - e. faulty trim technique.
 - f. failure to follow the prescribed checklist.
 - g. failure to establish and maintain the recommended flight attitude for best performance.
 - h. failure to maintain positive aircraft control while maneuvering.
 - i. hazards of exceeding the aircraft's operating limitations.
 - j. faulty basic instrument flying technique.
3. Demonstrates and simultaneously explains straight-and-level flight and turns after engine failure, while on instruments, from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to straight-and-level flight and turns after engine failure, while on instruments.

B. TASK: INSTRUMENT APPROACH - ONE ENGINE INOPERATIVE (IA and IH)

REFERENCES: FAR Parts 61 and 91; AC 60-14, AC 61-27; FAA-S-8081-1; FAA-S-8081-2; FAA-S-8081-4; Pilot's Operating Handbook or FAA-Approved Flight Manual; Helicopter Handbook or Manual.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements related to an instrument approach with one engine inoperative by describing the:
 - a. selection of the proper and current instrument approach procedure chart.
 - b. pertinent information that appears on the selected instrument approach procedure chart.
 - c. prompt recognition of engine failure.
 - d. adjustment of engine controls, reduction of drag, and identification and verification of the inoperative engine.
 - e. establishment and maintenance of best engine inoperative flight attitude and airspeed for best performance.
 - f. trim technique.
 - g. use of the prescribed checklist to verify the accomplishment of procedures for securing the inoperative engine.
 - h. accomplishment of checklist items and maintenance of altitude, airspeed, and track appropriate to the phase of flight or approach segment.
 - i. maintenance of positive aircraft control.
 - j. selection, tuning, identification, and confirmation of the operational status of the ground and aircraft navigation equipment to be used for the approach procedure.
 - k. establishment of radio communications with ATC, appropriate to the phase of flight or approach segment.
 - l. use of radio communications technique, procedure, and phraseology.
 - m. compliance with ATC clearances.

- n. procedure if unable to comply with an ATC clearance.
 - o. application of necessary adjustments to the published MDA and visibility criteria for the aircraft approach category.
 - p. establishment and maintenance of an appropriate rate of descent during the final approach segment.
 - q. factors that should be considered in determining whether:
 - (1) the approach should be continued straight-in to a landing; or
 - (2) a circling approach to a landing should be performed.
 - r. completion of a safe landing.
2. Exhibits instructional knowledge of common errors related to an instrument approach with one engine inoperative by describing:
- a. failure to have essential knowledge of the information that appears on the selected instrument approach procedure chart.
 - b. failure to use the proper communications procedures.
 - c. noncompliance with ATC clearances.
 - d. incorrect use of navigation equipment.
 - e. failure to identify and verify the inoperative engine and to follow the emergency checklist.
 - f. inappropriate procedure in the adjustment of engine controls and the reduction of drag.
 - g. inappropriate procedure in the establishment and maintenance of the best engine inoperative airspeed.
 - h. faulty trim technique.
 - i. failure to establish and maintain the proper flight attitude for best performance.

- j. failure to maintain positive aircraft control.
 - k. failure to accomplish checklist items.
 - l. faulty basic instrument flying technique.
 - m. inappropriate descent below the MDA or DH.
 - n. faulty technique during roundout and touchdown.
- 3. Demonstrates and simultaneously explains an instrument approach with one engine inoperative from an instructional standpoint.
 - 4. Analyzes and corrects simulated common errors related to an instrument approach with one engine inoperative.