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Barbados Civil Aviation Department

BCAD Document PLAC-053

FLIGHT INSTRUCTOR-INSTRUMENT SKILL TEST STANDARDS

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Subject: FLIGHT INSTRUCTOR – INSTRUMENT LICENCE SKILL TEST STANDARDS
BCAD Advisory Circular PLAC-053
Date: 07/10/30

FOREWORD

1. (1) The BCAD has developed skill test standards for airmen licences and ratings and these are published as BCAD PL Advisory Circulars (PLACs). This PLAC establishes the standards for the flight instructor licence skill tests for the instrument rating. BCAD inspectors and designated pilot flight test examiners shall conduct skill tests in compliance with these standards. Flight instructors and applicants should find these standards helpful in skill test preparation. Other PLACs have been developed for other airmen licences and can be obtained from the BCAD website: www.bcad.gov.bb.

(2) Terms, such as "shall" and "must" are directive in nature and when used in this document indicate that an action is mandatory. Guidance information is described in terms of "should" and "may" indicating the actions are desirable or permissive, but not mandatory.

(3) The BCAD gratefully acknowledges the valuable assistance provided by the FAA in the development of these skill test standards (STS).

(4) The Barbados Civil Aviation Regulations (BCARs) can be obtained from the Barbados Government printery, Bay Street, St. Michael Barbados. BCARS General Application& Personnel Licensing, cover the requirements for personnel licensing.

(5) This PLAC may be downloaded from the BCAD website at www.bcad.gov.bb. Subsequent changes to this PLAC will also be available on BCAD web site.

(6) Comments regarding this publication should be sent to:

The Barbados Civil Aviation Department,
Grantley Adams International Airport,
Christ Church
Barbados

E. A. Archer
Director of Civil Aviation

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PURPOSE

1. The purpose of this BCAD Advisory Circular (PLAC) is to prescribe the standards that shall be used by BCAD inspectors and designated flight test examiners when conducting flight instructor - instrument rating skill tests. Flight instructors are expected to use this document when preparing applicants for skill tests. Applicants should be familiar with this document and refer to these standards during their training.

GENERAL

2. (1) An applicant for a Barbados Flight Instructor licence is required under BCARS General Application and Personnel Licensing Regulations to demonstrate to the Authority through a skill test, his ability to perform as a pilot in command of an aircraft, the relevant procedures and manoeuvres prescribed by the BCARs, with a degree of competence appropriate to the privileges granted to the holder of a Flight Instructor Licence. This PLAC has been published by the BCAD to establish the standards for the Flight Instructor Licence skill test for the instrument rating. BCAD inspectors and designated flight test examiners shall conduct skill tests in compliance with these standards. Flight instructors and applicants should find these standards helpful in preparing students for the required skill test for a Barbados Flight Instructor Licence.

SKILL TEST STANDARDS CONCEPT

3. BCARS General Application& Personnel Licensing specifies the areas of operation in which knowledge and skill must be demonstrated by the applicant before the issue of a Flight Instructor licence or rating. The BCARs provide the flexibility to permit the BCAD to publish STSs containing the areas of operation and specific tasks in which pilot competency shall be demonstrated. The BCAD shall revise this STS whenever it is determined that changes are needed in the interest of safety. Adherence to the provisions of the BCARs and the STS is mandatory for the evaluation of flight instructor – instrument rating applicants**.**

SKILL TEST DESCRIPTION

4. (1) This BAC contains the STS for flight instructor – instrument rating. This includes the AREAS OF OPERATION and TASKS required for the issuance of an initial flight instructor—instrument rating and for the addition of other aircraft category ratings.

(2) AREAS OF OPERATION are phases of the skill test arranged in a logical sequence within each standard. They begin with preflight preparation and end with postflight procedures. The examiner may conduct the skill test in any sequence that results in a complete and efficient test; however, the ground portion of the skill test shall be accomplished before the flight portion.

(3) TASKS are titles of knowledge areas, flight procedures, or manoeuvres appropriate to an AREA OF OPERATION.

(4) The TASKS required for each additional aircraft category rating are shown in the Rating Task Table on page 16, if applicable.

(5) NOTE is used to emphasize special considerations required in the AREA OF OPERATION or TASK.

(6) 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 references. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications. Many of the publications listed are publications published by the Federal Aviation Administration of the United States (FAA), and adopted by BCAD in cooperation with the FAA. The most recent version of these references should be used. The STSs are based on the following references:

BCAR	General Application and Personnel Licensing
BCARS	Airworthiness
BCARS	Aircraft Instruments and Equipment
BCARS	Operations
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
FAA-S-8081-4	Instrument Rating Practical Test Standards
FAA-H-8083-1	Aircraft Weight and Balance Handbook
FAA-H-8083-3	Airplane Flying Handbook
FAA-H-8083-9	Aviation Instructors Handbook
FAA-H-8083-15	Instrument Flying Handbook
FAA-H-8083-21	Rotorcraft Flying Handbook
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
FAA-H-8261-1	Instrument Procedures Handbook
FAA AC 00-6	Aviation Weather
FAAAC 00-45	Aviation Weather Services
FAA AC 60-22	Aeronautical Decision Making
FAA AC 61-67	Stall and Spin Awareness Training
FAA AC 61-84	Role of Preflight Preparation
FAA AC 61-134	General Aviation Controlled Flight Into Terrain Awareness
FAA AC 90-42	Traffic Advisory Practices at Airports without Operating Control Towers
FAA AC 90-48	Pilot's Role in Collision Avoidance
FAA AC 90-66	Recommended Standard Traffic Patterns and Practices for Aeronautical Operations at Airports without Operating Control Towers
FAA AC 90-94	Guidelines for Using Global Positioning System Equipment for IFR En Route and Terminal Operations and for Nonprecision Instrument Approaches in the U.S. National Airspace System
FAA AC 91-13	Cold Weather Operations of Aircraft
FAA AC 91-55	Reduction of Electrical System Failures Following Aircraft Engine Starting
FAA AC 120-51	Crew Resource Management Training
AIP	Aeronautical Information Publication – Eastern Caribbean
AFD	Airport Facility Directory
AFM	BCAD Approved Aircraft Flight Manual
IAP	Instrument Approach Procedures

POH	Pertinent Pilot's Operation Handbooks
NOTAMS	Notices to Airmen
Other	En route Low Altitude Charts

(7) The Objective lists the important elements that must be satisfactorily performed to demonstrate competency in a TASK. The Objective includes:

(a) Specifically what the applicant should be able to do;
(b) The conditions under which the TASK is to be performed; and
(c) The acceptable standards of performance.

(8) The following abbreviations have the meanings shown:

ADF	Automatic Direction Finder
ADM	Aeronautical Decision Making
AIRMETS	Airman's Meteorological Information
APV	Approach with Vertical Guidance
ASOS	Automated Surface Observing System
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
ATS	Air Traffic Service
BCARS	Barbados Civil Aviation Regulations
CDI	Course Deviation Indicator
CFIT	Controlled Flight into Terrain
CRM	Crew Resource Management
DA	Decision Altitude
DH	Decision Height
DME	Distance Measuring Equipment
DP	Departure Procedure
FA	Area Forecast
FDC	Flight Data Centre
FIS	Flight Information System
FMS	Flight Management System
FSTD	Flight Simulation Training Device
GLS	GNSS Landing System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GPWS	Ground Proximity Warning System
IAP	Instrument Approach Procedure
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IPC	Instrument Proficiency Check
LAHSO	Land and Hold Short Operations
LCD	Liquid Crystal Display

LDA	Localizer-type Directional Aid
LED	Light Emitting Diode
LOC	ILS Localizer
LORAN	Long Range Navigation
MAP	Missed Approach Point
MDA	Minimum Descent Attitude
METAR	Aviation Routine Weather Report
MLS	Microwave Landing System
NAVAID	Navigational Aid
NDB	Non-Directional Beacon
NOTAM	Notice to Airmen
NPA	Nonprecision Approach
PA	Precision Approach
RAIM	Receiver Autonomous Integrity Monitoring
RMI	Radio Magnetic Indicator
RNAV	Area navigation
SAS	Stability Augmentation System
SDF	Simplified Directional Facility
SIGMETS	Significant Meteorological Advisory
SRM	Single Pilot Resource Management
STAR	Standard Terminal Arrival
STS	Skill Test Standards
SUA	Special Use Airspace
TA	Terminal Arrival
TAF	Terminal Area Forecast/ Aviation Terminal Forecast/ Aerodrome Forecast
TCAS	Traffic Alert and Collision Avoidance System
TFR	Temporary Flight Restriction
TIBS	Telephone Information Briefing Service
TIS	Time In Service
TWEB	Transcribed Weather Forecast
VDP	Visual Descent Point
VHF	Very High Frequency
VNAV	Vertical Navigation
VOR	Very High Frequency Ominidirectional Range

USE OF SKILL TEST STANDARDS

5. (1) The BCAD requires that all flight instructor skill tests be conducted in accordance with the appropriate flight instructor STS and the policies set forth herein. Applicants shall be evaluated in all tasks included in the areas of operation of the appropriate STS (unless otherwise noted).

(2) An applicant who holds flight instructor licence seeking an additional aircraft category rating and/or class rating at the flight instructor level, shall be evaluated in the areas of operation and tasks listed in the *Additional Rating Task Table*. At the discretion of the flight test examiner, an evaluation of the applicant's competence in the remaining areas of operation and tasks may be conducted.

(3) In preparation for each skill test, the flight test examiner shall develop a written "plan of action." The "plan of action" shall include all tasks in each area of operation, unless noted otherwise. If the elements in one task have already been evaluated in another task, they need not be repeated. For example, the "plan of action" need not include evaluating the applicant on complying with markings, signals, and clearances at the end of the flight, if that element was sufficiently observed at the beginning of the flight. **Any task selected for evaluation during a skill test shall be evaluated in its entirety.**

(4) The flight test examiner is not required to follow the precise order in which the areas of operation and tasks appear in this document. The flight test examiner may change the sequence or combine tasks with similar Objectives to have an orderly and efficient flow of the skill test..

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

(6) The flight instructor applicant shall be prepared in **all** knowledge and skill areas and demonstrate the ability to instruct effectively in **all** TASKS included in the AREAS OF OPERATION of the appropriate skill test standard. Throughout the flight portion of the skill test, the examiner shall evaluate the applicant's ability to demonstrate and simultaneously explain the selected procedures and manoeuvres, and to give flight instruction to students at various stages of flight training and levels of experience.

(7) The term “instructional knowledge” means the “what,” “why,” and “how” of a subject matter topic, procedure, or manoeuvre. It also means that the flight instructor applicant's discussions, explanations, and descriptions should follow the recommended teaching procedures and techniques explained in FAA-H-8083-9, Aviation Instructor's Handbook.

(8) 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 shall 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 BCAD considers their frequency of occurrence justification for their inclusion in the TASK Objectives.

(9) The examiner shall place special emphasis on the applicant's demonstrated ability to teach precise aircraft control and sound judgment in aeronautical decision-making. Evaluation of the applicant's ability to teach judgment shall 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 shall also emphasize the evaluation of the applicant's demonstrated ability to teach spatial disorientation, wake turbulence and low-level wind shear avoidance, checklist usage, positive exchange of flight controls, and any other directed special emphasis areas.

(10) An applicant shall be expected to perform TASK H in AREA OF OPERATION VI, Recovery from Unusual Flight Attitudes and TASK A in AREA OF OPERATION VIII, Non-precision Instrument Approach using a view-limiting device.

SPECIAL EMPHASIS AREAS

6. (1) Examiners and authorized instructors must place special emphasis upon areas of aircraft operation considered critical to flight safety. Among these are:

(a) positive aircraft control;
(b) positive exchange of the flight controls procedure (who is flying the aircraft);
(c) stall/spin awareness;
(d) collision avoidance;
(e) wake turbulence avoidance;
(f) land and hold short operations (LAHSO);
(g) controlled flight into terrain (CFIT);
(h) aeronautical decision making (ADM) and risk management;
(i) wire strike avoidance;
(j) checklist usage;
(k) temporary flight restrictions (TFR);
(l) special use airspace (SUA);
(m) aviation security; and
(n) other areas deemed appropriate to any phase of the skill test.

(2) Although these areas may not be specifically addressed under each TASK, they are essential to flight safety and will be evaluated during the skill test or proficiency check. In all instances, the applicant’s actions will be evaluated in accordance to the standards of the TASKs and the ability to use good judgment with reference to the special emphasis areas listed above.

(3) Emphasis on Attitude Instrument Flying and Partial Panel Skills.

(a) The BCAD is concerned about numerous fatal aircraft accidents involving spatial disorientation of instrument rated pilots. These pilots have attempted to control and manoeuvre their aircraft in clouds with inoperative gyroscopic heading and attitude indicators.

(b) 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 BCAD 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.

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

(d) AREA OF OPERATION VI requires the applicant to demonstrate the ability to teach basic instrument flight TASKs under both full panel and partial panel conditions. These TASKs are described in detail in FAA-H-8083-15, 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 basic instrument manoeuvres with both full panel and partial panel.

(e) Examiners should determine that the applicant demonstrates and fully understands the PRIMARY and SUPPORTING or the CONTROL and PERFORMANCE CONCEPT method of attitude instrument flying.

SKILL TEST PREREQUISITES: FLIGHT INSTRUCTOR - INSTRUMENT RATING

7. (1) An applicant for flight instructor - instrument rating skill test is required by BCARs (General Applications and Personnel Licence) NO:87 to:

(a) Age: Be less than 18 years of age.
(b) Medical fitness: hold Class 1 medical certificate as appropriate to the level of licence held;
(c) Language: Be able to read, speak, write, and understand the English language; and
(d) Licence: Hold at least a commercial pilot licence with an aircraft rating appropriate to the flight instructor rating sought;
(e) Knowledge: Have passed the appropriate flight instructor knowledge test(s) since the beginning of the 24th month before the month in which he or she takes the skill test;

(f) Fundamentals of Instruction: Have an endorsement from an authorized instructor on the fundamentals of instructing appropriate to the required knowledge test;
(g) Training: Obtain the applicable training and aeronautical experience prescribed for the instrument rating sought;
(h) Instructor Authorization: Obtain a written statement from an authorized flight instructor certifying that the applicant has been given flight training in preparation for the skill test within 60 days preceding the date of application. The statement shall also state that the instructor finds the applicant competent to pass the skill 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.

AIRCRAFT AND EQUIPMENT REQUIRED FOR THE SKILL TEST

8. (1) The flight instructor - instrument to provide an airworthy, certificated aircraft for use during the skill test. Its operating limitations must not prohibit the TASKS required on the skill test. Flight instruments are those required for controlling the aircraft without outside references. It must have fully functioning dual controls, except as specified by the DCA.

(2) The required radio equipment is that which is necessary for communications with air traffic control (ATC), and for the performance of AREA OF OPERATION VIII, INSTRUMENT APPROACH PROCEDURES. Global positioning system (GPS) equipment must be instrument certified and contain the current database. An APV approach shall not be used in lieu of the required precision approach.

(3) Modern technology has introduced into aviation a new method of displaying flight instruments, such as Electronic Flight Instrument Systems, Integrated Flight Deck Displays, and others. For the purpose of the practical test standards, any flight instrument display that utilizes liquid crystal display (LCD) of picture tube like displays will be referred to as “Electronic Flight Instrument Display.” Aircraft equipped with this technology may or may not have separate backup flight instruments installed. The abnormal or emergency procedure for loss of the electronic flight instrument display appropriate to the aircraft will be evaluated in the Loss of Primary Instruments TASK. The loss of the primary electronic instrument display must be tailored to failures that would normally be encountered in the aircraft. If the aircraft is capable, total failure of the electronic flight display, or a supporting component, with access only to the standby flight instruments or backup display, shall be evaluated.

(4) The applicant is expected to utilize an autopilot and/or flight management system (FMS), if properly installed during the practical test to assist in the management of the aircraft. The examiner is expected to test the applicant’s knowledge of the systems that are installed and operative during the oral and flight portions of the practical test. The applicant will be required to demonstrate the use of the autopilot and/or FMS while conducting the required TASK(s) in AREA OF OPERATION VIII, Instrument Approach Procedures.

(5)If the skill test is conducted in the aircraft, and the aircraft has an operable and properly installed GPS, the applicant must demonstrate GPS approach proficiency. If the applicant has contracted for training in an approved course that includes GPS training in the system that is installed in the airplane/simulator/flight training device (FTD) and the airplane/simulator/FTD used for the checking/testing has the same system properly installed and operable, the applicant must demonstrate GPS approach proficiency.

(6) The applicant is required to provide an appropriate view-limiting device that is acceptable to the examiner. This device shall be used during all testing that requires testing "solely by reference to instruments." This device must prevent the applicant from having visual reference to outside the aircraft, but not prevent the examiner from having visual reference outside the aircraft. A procedure should be established between the applicant and the examiner as to when and how this device should be donned and removed and this procedure briefed before flight.

FLIGHT INSTRUCTOR RESPONSIBILITY

9. (1) An appropriately rated flight instructor is responsible for training the flight instructor –instructor applicant to acceptable standards in all subject matter areas, procedures, and manoeuvres included in the TASKS within the appropriate skill test standard.

(2) Because of the impact of their teaching activities in developing safe, proficient pilots, flight instructors should exhibit a high level of knowledge, skill, and the ability to impart that knowledge and skill to students. Additionally, the flight instructor must certify that the applicant is:

(a) able to make a practical application of the fundamentals of instructing;
(b) competent to teach the subject matter, procedures, and manoeuvres included in the standards to students with varying backgrounds and levels of experience and ability;
(c) able to perform the procedures and manoeuvres included in the standards to the INSTRUMENT PILOT skill level[1] while giving effective flight instruction; and
(d) competent to pass the required skill 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.

(3) Throughout the applicant's training, the flight instructor is responsible for emphasizing the performance of and the ability to teach effective visual scanning, collision avoidance, and runway incursion avoidance procedures. These areas are covered, in part, in AP 90-48, Pilot's Role in Collision Avoidance; FAA-H8083-3, Aeroplane Flying Handbook; FAA-H-8083-25, Pilot's Handbook of Aeronautical Knowledge; and the Aeronautical Information

[1] The word "examiner" is used throughout the standards to denote either the BCAD inspector or BCAD designated pilot examiner who conducts an official skill test.

Manual.

EXAMINER RESPONSIBILITY

10. (1) The examiner[1] conducting the skill test is responsible for determining that the applicant meets the acceptable standards of teaching ability, knowledge, and skill in the selected TASKS. The examiner makes this determination by accomplishing an Objective that is appropriate to each selected TASK, and includes an evaluation of the applicant's:

(a) ability to apply the fundamentals of instructing;
(b) knowledge of, and ability to teach, the subject matter, procedures, and manoeuvres covered in the TASKS;
(c) ability to perform the procedures and manoeuvres included in the standards to the INSTRUMENT PILOT skill level while giving effective flight instruction; and
(d) ability to analyze and correct common errors related to the procedures and manoeuvres covered in the TASKS.

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

(3) During the flight portion of the skill test, the examiner shall act as a student during selected manoeuvres. This will give the examiner an opportunity to evaluate the flight instructor applicant’s ability to analyze and correct simulated common errors related to these manoeuvres. The examiner will also evaluate the applicant’s use of visual scanning and collision avoidance procedures, and the applicant’s ability to teach those procedures.

SATISFACTORY PERFORMANCE

11. (1) Satisfactory performance to meet the requirements for licence issue is based on the applicant's ability to safely apply-

(a) knowledge of the fundamentals of instructing;
(b) knowledge of the technical subject areas;
(c) knowledge of the flight instructor's responsibilities concerning the pilot licensing process;
(d) knowledge of the flight instructor's responsibilities concerning logbook entries and pilot licence endorsements;
(e) ability to demonstrate the procedures and manoeuvres selected by the examiner to the INSTRUMENT PILOT skill level while giving effective instruction; and
(f) competence in teaching the procedures and manoeuvres selected by the examiner.
(g) competence in describing, recognizing, analyzing, and correcting common errors simulated by the examiner; and
(h) knowledge of the development and effective use of a course of training, a syllabus, and a lesson plan.

UNSATISFACTORY PERFORMANCE

12. (1) 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 skill test is failed.

(2) 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 licence or rating sought. The test may 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 and TASKS satisfactorily performed; however, during the retest, and at the discretion of the examiner, any TASK may be re-evaluated, including those previously passed. Specific reasons for disqualification are:

(a) failure to perform a procedure or manoeuvre to the INSTRUMENT PILOT skill level while giving effective flight instruction;
(b) failure to provide an effective instructional explanation while demonstrating a procedure or manoeuvre (explanation during the demonstration must be clear, concise, technically accurate, and complete with no prompting from the examiner);
(c) any action or lack of action by the applicant which requires corrective intervention by the examiner to maintain safe flight; and
(d) failure to use proper and effective visual scanning techniques to clear the area before and while performing manoeuvres.

(3) When a notice of disapproval is issued, the flight test examiner shall record the applicant's unsatisfactory performance in terms of the area of operation and specific task(s) not meeting the standard appropriate to the skill test conducted. The area(s) of operation/tasks not tested and the number of skill test failures shall also be recorded. If the applicant fails the skill test because of a special emphasis area, the Notice of Disapproval shall indicate the associated task.

AERONAUTICAL DECISION MAKING AND RISK MANAGEMENT

13. (1) The examiner shall evaluate the applicant’s ability throughout the skill test to use good aeronautical decision making procedures in order to evaluate risks. The examiner shall accomplish this requirement by developing scenarios that incorporate as many TASKS as possible to evaluate the applicants risk management in making safe aeronautical decisions. For example, the examiner may develop a scenario that incorporates weather decisions and performance planning.

(2) The applicant’s ability to utilize all the assets available in making a risk analysis to determine the safest course of action is essential for satisfactory performance. The scenarios should be realistic and within the capabilities of the aircraft used for the skill test.

CREW RESOURCE MANAGEMENT (CRM)

14. (1) CRM refers to the effective use of all available resources: human resources, hardware, and information. Human resources include all groups routinely working with the cockpit crew or pilot who are involved with decisions that are required to operate a flight safely. These groups include, but are not limited to flight operations officers/dispatchers, cabin crewmembers, maintenance personnel, air traffic controllers, and weather services. CRM is not a single task, but a set of competencies that must be evident in all tasks in this STS as applied to either single pilot operations or crew. CRM competencies, grouped into three clusters of observable behaviour, are:

(a) COMMUNICATIONS PROCESSES AND DECISIONS

1. Briefing
2. Inquiry/Advocacy/Assertiveness
3. Self-Critique
4. Communication with Available Personnel Resources
5. Decision Making

(b) BUILDING AND MAINTENANCE OF A FLIGHT TEAM

1. Leadership/Followership
2. Interpersonal Relationships

(c) WORKLOAD MANAGEMENT AND SITUATIONAL AWARENESS

1. Preparation/Planning
2. Vigilance
3. Workload Distribution
4. Distraction Avoidance
5. Wake Turbulence Avoidance

(2) CRM deficiencies almost always contribute to the unsatisfactory performance of a TASK. Therefore, the competencies provide an extremely valuable vocabulary for debriefing. For debriefing purposes, an amplified list of these competencies, expressed as behavioural markers, may be found in FAA AC 120-51, Crew Resource Management Training, as amended. These markers consider the use of various levels of automation in flight management systems.

(3) The standards for each CRM competency as generally stated and applied are subjective. Conversely, some of the competencies may be found objectively stated as required operational procedures for one or more TASKS. Examples of the latter include briefings, radio calls, and instrument approach callouts. Whether subjective or objective, application of CRM competencies are dependent upon the composition of the crew.

HOW THE EXAMINER APPLIES CREW RESOURCE MANAGEMENT

15. (1) Examiners are required to exercise proper CRM competencies in conducting tests as well as expecting the same from applicants.

(2) Pass/Fail judgments based solely on CRM issues must be carefully chosen since they may be entirely subjective. Those Pass/Fail judgments which are not subjective apply to CRM-related procedures in FAA-approved operations manuals that must be accomplished, such as briefings to other crewmembers. In such cases, the operator (or the aircraft manufacturer) specifies what should be briefed and when the briefings should occur. The examiner may judge objectively whether the briefing requirement was or was not met. In those cases where the operator (or aircraft manufacturer) has not specified a briefing, the examiner shall require the applicant to brief the appropriate items from the following note. The examiner may then judge objectively whether the briefing requirement was or was not met.

(3) The majority of aviation accidents and incidents are due to resource management failures by the pilot/crew; fewer are due to technical failures. Each applicant shall give a crew briefing before each takeoff/departure and approach/landing. If the operator or aircraft manufacturer has not specified a briefing, the briefing shall cover the appropriate items, such as runway, SID/STAR/IAP, power settings, speeds, abnormals or emergency prior to or after takeoff, emergency return intentions, missed approach procedures, FAF, altitude at FAF, initial rate of descent, DH/MDA, time to missed approach, and what is expected of the other crewmembers during the takeoff/SID and approach/landing. If the first takeoff/departure and approach/landing briefings are satisfactory, the examiner may allow the applicant to brief only the changes, during the remainder of the flight.

SINGLE-PILOT RESOURCE MANAGEMENT

16. Single-Pilot Resource Management refers to the effective use of ALL available resources: human resources, hardware, and information. It is similar to Crew Resource Management (CRM) procedures that are being emphasized in multi-crewmember operations except that only one crewmember (the pilot) is involved. Human resources "...include all other groups routinely working with the pilot who are involved in decisions that are required to operate a flight safely. These groups include, but are not limited to: dispatchers, weather briefers, maintenance personnel, and air traffic controllers." Pilot Resource Management is not a single TASK; it is a set of skill competencies that must be evident in all TASKS in this skill test standard as applied to single-pilot operation.

APPLICANT'S USE OF CHECKLISTS

17. Throughout the skill test, the applicant is evaluated on the use of an appropriate checklist. Proper use is dependent on the specific task being evaluated. The situation may be such that the use of the checklist, while accomplishing elements of an Objective, would be either unsafe or unwise, especially in a single-pilot operation. In this case, a review of the checklist after the elements have been accomplished would be appropriate. Division of attention and proper visual scanning should be considered when using a checklist.

USE OF DISTRACTIONS DURING SKILL TESTS

18 Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. To evaluate the applicant's ability to utilize proper control technique while dividing attention both inside and/or outside the cockpit, the flight test examiner shall cause realistic distractions during the flight portion of the skill test to evaluate the applicant's ability to divide attention while maintaining safe flight.

POSITIVE EXCHANGE OF FLIGHT CONTROLS

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

(2) When the instructor wishes the student to take control of the aircraft, he or she will say, "You have the flight controls." The student acknowledges immediately by saying, "I have the flight controls." The flight instructor again says, "You have the flight controls." When control is returned to the instructor, follow the same procedure. A visual check is recommended to verify that the exchange has occurred. There should never by any doubt as to who is flying the aircraft.

ADDITIONAL RATING TASK TABLES

20. (1) The following table indicates the areas of operations required during a skill test for the addition of a flight instrument rating to an existing flight instructor licence with another aircraft category rating.

ADDITION OF A FLIGHT INSTRUCTOR INSTRUMENT RATING TO AN EXISTING FLIGHT INSTRUCTOR LICENCE				
AREAS OF OPER-ATION	Required TASKS are indicated by either YES, meaning that the TASK must be tested for the addition of a flight instructor instrument rating, or NO, meaning that the TASK does not have to be tested for the addition of a flight instructor instrument rating.			
	Flight Instructor Licence and Ratings Held			
	Aeroplane	**Helicopter or Gyroplane**	**Glider**	**Instrument Aeroplane or Instrument Helicopter**
I	N	N	N	N
II	A & C	A & C	A & C	C
III	B & C	B & C	B & C	C
IV	N	N	N	N
V	Y	Y	Y	N
VI	Y	Y	Y	Y
VII	Y	Y	Y	N
VIII	Y	Y	Y	* A or B
IX	Y	Y	Y	Y
X	Y	Y	Y	Y

*Combine with C, D, or E.

(2) The following table indicates areas of operation required for the skill test to renew or reinstate a flight instructor – instrument rating licence.

Renewal or Reinstatement of a Flight Instructor- Instrument Rating Licence	
REQUIRED AREAS OF OPERATION	**NUMBER OF TASKS**
I	0
II	1
III	1
IV	1
V	1
VI	2
VII	1
VIII	A OR B COMBINED WITH TASKS C, D, or E
IX	1

SECTION TWO

APPLICANT'S SKILL TEST CHECKLIST: FLIGHT INSTRUCTOR - INSTRUMENT RATING

APPOINTMENT WITH THE FLIGHT TEST EXAMINER:

FLIGHT TEST EXAMINER'S NAME: _____

LOCATION: _____

DATE/TIME: _____

I. ACCEPTABLE AIRCRAFT

- ☐ Aircraft Documents:
  - Airworthiness Licence
  - Registration Licence
  - Operating Limitations
- ☐ Aircraft Maintenance Records:
  - Logbook Record of Airworthiness Inspections and AD Compliance
  - Applicable Airworthiness Directives
- ☐ Pilot's Operating Handbook,
- ☐ BCAD Approved Flight Manual, appropriate to the aircraft category

II. PERSONAL EQUIPMENT

- ☐ Skill Test Standards
- ☐ Current Aeronautical Charts
- ☐ Computer and Plotter
- ☐ Flight Plan Form
- ☐ Flight Logs
- ☐ Current and Appropriate Flight Information Publications
- ☐ View-limiting Device
- ☐ Radiotelephony Licence

III. PERSONAL RECORDS

- ☐ Identification-Photo/Signature ID
- ☐ Pilot Licence Currently Held
- ☐ Current and Appropriate Medical Certificate
- ☐ Completed BCAD Form PL001, Application For Flight Crew Licence, Rating, Authorization or Validation Certificate with authorized instructor’s Signature (If applicable)
- ☐ Original Aviation Knowledge Test Report
- ☐ Pilot Logbook or Approved Training Organization (ATO) document containing an authorized instructor’s endorsement certifying the applicant is prepared for the required skill test.
- ☐ BCAD Form PL005, Notice of Denial (if applicable)
- ☐ Examiner's Fee (if applicable)

EXAMINER'S SKILL TEST CHECKLIST
FLIGHT INSTRUCTOR—INSTRUMENT

APPLICANT'S NAME_____

LOCATION _____

DATE/TIME _____

I. FUNDAMENTALS OF INSTRUCTING

- **A.** The Learning Process
- **B.** Human Behaviour
- **C.** The Teaching Process
- **D.** Teaching Methods
- **E**. Critique and Evaluation
- **F.** Flight Instructor Characteristics and Responsibilities
- **G.** Planning Instructional Activity
- **H.** Planning an Instructional Proficiency Check

II. TECHNICAL SUBJECT AREAS

- **A.** Aircraft Flight Instruments and Navigation Equipment
- **B.** Aeromedical Factors
- **C.** Regulations and Publications Related to IFR Operations
- **D.** Logbook Entries Related to Instrument Instruction

III. PREFLIGHT PREPARATION

- **A.** Weather Information
- **B.** Cross-Country Flight Planning
- **C.** Instrument Cockpit Check

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

- **A.** Manoeuvre Lesson

V. AIR TRAFFIC CONTROL CLEARANCES AND PROCEDURES

- **A.** Air Traffic Control Clearances
- **B.** Compliance with Departure, Enroute, and Arrival Procedures and Clearances

VI. FLIGHT BY REFERENCE TO INSTRUMENTS

A. Straight-and-Level Flight
B. Turns
C. Change of Airspeed in Straight-and-Level and Turning Flight
D. Constant Airspeed Climbs and Descents
E. Constant Rate Climbs and Descents
F. Timed Turns to Magnetic Compass Headings
G. Steep Turns
H. Recovery from Unusual Flight Attitudes

VII. NAVIGATION SYSTEMS

A. Intercepting and Tracking Navigational Systems and DME Arcs
B. Holding Procedures

VIII. INSTRUMENT APPROACH PROCEDURES

A. Non-Precision Instrument Approach
B. Precision Instrument Approach
C. Missed Approach
D. Circling Approach (Airplane)
E. Landing from a Straight-In Approach

IX. EMERGENCY OPERATIONS

A. Loss of Communications
B. Loss of Gyro Attitude and Heading Indicators
C. Engine Failure During Straight-and-Level Flight and Turns
D. Instrument Approach—One Engine Inoperative

X. POSTFLIGHT PROCEDURES

A. Checking Instruments and Equipment

AREAS OF OPERATION

I. FUNDAMENTALS OF INSTRUCTING

NOTE: The examiner shall select at least TASKs E, F, and G and one other TASK.

A. TASK: LEARNING PROCESS

REFERENCE: FAA-H-8083-9.

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

1. Learning theory.
2. Characteristics of learning.
3. Principles of learning.
4. Levels of learning.
5. Learning physical skills.
6. Memory.
7. Transfer of learning.

B. TASK: HUMAN BEHAVIOR AND EFFECTIVE COMMUNICATION

REFERENCE: FAA-H-8083-9.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to human behaviour and effective communication by describing:

1. Human behaviour—

    a. control of human behaviour.
    b. human needs.
    c. defense mechanisms.
    d. the flight instructor as a practical psychologist.

2. Effective communication—

    a. basic elements of communication.
    b. barriers of effective communication.
    c. developing communication skills.

C. TASK: TEACHING PROCESS

REFERENCE: FAA-H-8083-9.

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

1. Preparation of a lesson for a ground or flight instructional period.
2. Presentation methods.
3. Application, by the student, of the material or procedure that was presented.
4. Review and evaluation of student performance.

D. TASK: TEACHING METHODS

REFERENCE: FAA-H-8083-9.

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

1. Material organization.
2. The lecture method.
3. The cooperative or group learning method.
4. The guided discussion method.
5. The demonstration-performance method.
6. Computer-based training method.

E. TASK: CRITIQUE AND EVALUATION

REFERENCE: FAA-H-8083-9.

Objective. To determine that the applicant exhibits instructional knowledge of the elements of critique and evaluation by explaining:

1. Critique—

    a. purpose and characteristics of an effective critique.
    b. methods and ground rules for a critique.

2. Evaluation—

    a. characteristics of effective oral questions and what types to avoid.
    b. responses to student questions.
    c. characteristics and development of an effective written test.
    d. characteristics and uses of performance tests, specifically,
    e. the FAA practical test standards.

F. TASK: FLIGHT INSTRUCTOR CHARACTERISTICS AND RESPONSIBILITIES

REFERENCE: FAA-H-8083-9.

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

1. Aviation instructor responsibilities in—

    a. providing adequate instruction.
    b. establishing standards of performance.
    c. emphasizing the positive.

2. Flight instructor responsibilities in—

    a. providing student pilot evaluation and supervision.
    b. preparing practical test recommendations and endorsements.
    c. determining requirements for conducting additional training and endorsement requirements.

3. Professionalism as an instructor by—

    a. explaining important personal characteristics.
    b. describing methods to minimize student frustration.

G. TASK: PLANNING INSTRUCTIONAL ACTIVITY

REFERENCE: FAA-H-8083-9.

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

1. Developing objectives and standards for a course of training.
2. Theory of building blocks of learning.
3. Requirements for developing a training syllabus.
4. Purpose and characteristics of a lesson plan.

H. TASK: PLANNING AN INSTURMENT PROFICIENCY CHECK ACTIVITY

REFERENCES: FAA-S-8081-4; 14 CFR part 61.

Objective. To determine that the applicant exhibits instructional knowledge of the elements of planning an instrument proficiency check activity by describing:

1. The use of the instrument practical test standard in administering the check.
2. Required AREA OF OPERATIONS and TASKs for administering the check.
3. Requirement for a plan of action.
4. Use of scenarios in testing.
5. Required logbook endorsement.

II. TECHNICAL SUBJECT AREAS

NOTE: The examiner shall select TASKs A and D and at least one other TASK.

A. TASK: AIRCRAFT FLIGHT INSTRUMENTS AND NAVIGATION EQUIPMENT

REFERENCES: FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of aircraft.

1. Flight instrument systems and their operating characteristics to include—

    a. pitot-static system.
    b. attitude indicator.
    c. heading indicator/horizontal situation indicator/remote.
    d. magnetic indicator.
    e. magnetic compass.
    f. turn-and-slip indicator/turn coordinator.
    g. electronic flight instrument systems.

2. Navigation equipment and their operating characteristics to include—

    a. VHF omnirange (VOR).
    b. distance measuring equipment (DME).
    c. instrument landing system (ILS)
    d. marker beacon receiver/indicators.
    e. automatic direction finder (ADF).
    f. global positioning system (GPS).
    g. autopilot.

h. flight management system (FMS).
i. situational awareness tools, such as flight information service (FIS), traffic information service (TIS), and terrain awareness (TA).

3. Anti-ice/deicing and weather detection equipment and their operating characteristics to include—

a. airframe.
b. propeller or rotor.
c. air intake.
d. fuel system.
e. pitot-static system.
f. radar/lightening detection system.

B. TASK: AEROMEDICAL FACTORS

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

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to aeromedical factors by describing the effects, corrective action, and safety considerations of:

1. Hypoxia.
2. Hyperventilation.
3. Middle ear and sinus problems.
4. Spatial disorientation.
5. Motion sickness.
6. Alcohol and drugs.
7. Carbon monoxide poisoning.
8. Evolved gases from scuba diving.
9. Stress and fatigue.

C. TASK: REGULATIONS AND PUBLICATIONS RELATED TO IFR OPERATIONS

REFERENCES: 14 CFR parts 61, 91, 95, 97; FAA-H-8083-15; AIM.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to regulations and publications, (related to instrument flight and instrument flight instruction) their purpose, general content, availability, and method of revision by describing:

1. 14 CFR parts 61, 91, 95, and 97.
2. FAA-H-8083-15, Instrument Flying Handbook.
3. Aeronautical Information Manual.

4. Practical Test Standards.
5. Airport Facility Directory.
6. Standard Departures/Terminal Arrivals.
7. En Route Charts.
8. Standard Instrument Approach Procedure Charts.

D. TASK: LOGBOOK ENTRIES RELATED TO INSTRUMENT INSTRUCTION

REFERENCES: 14 CFR part 61; AC 61-65, AC 61-98.

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

1. Logbook entries or training records for instrument flight/instrument flight instruction or ground instruction given.
2. Preparation of a recommendation for an instrument rating practical test, including appropriate logbook entry.
3. Required endorsement of a pilot logbook for satisfactory completion of an instrument proficiency check.
4. Required flight instructor records.

III. PREFLIGHT PREPARATION

NOTE: The examiner shall select at least one TASK.

A. TASK: WEATHER INFORMATION

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

REFERENCES: AC 00-6, AC 00-45; FAA-S-8081-4; AIM.

Objective. To determine that the applicant exhibits instructional knowledge related to IFR weather information.

1. Sources of weather—

   a. AWOS, ASOS, and ATIS reports.
   b. PATWAS and TIBS.
   c. TWEB.

2. Weather reports and charts—

   a. METAR, TAF, FA, and radar reports.
   b. inflight weather advisories, including icing**.**
   c. surface analysis, weather depiction, and radar summary charts.
   d. significant weather prognostic charts.
   e. winds and temperatures aloft charts.

B. TASK: CROSS-COUNTRY FLIGHT PLANNING

REFERENCES: 14 CFR part 91; FAA-H-8083-15, FAA-S-8081-4; AIM.

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 for an IFR cross-country flight.
3. Selection and correct interpretation of the current and applicable en route charts, DPs, STARs, and standard instrument approach procedure charts.
4. Procurement and interpretation of the applicable NOTAM information.
5. Preparation and filing of an actual or simulated IFR flight plan.
6. Demonstrates adequate knowledge of GPS and RAIM capability, when aircraft is so equipped.

C. TASK: INSTRUMENT COCKPIT CHECK

REFERENCES: 14 CFR part 91; FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant exhibits instructional knowledge of an instrument cockpit check by describing the reasons for the check and the detection of defects that could affect safe instrument flight. The check shall include the following:

1. Communications equipment.
2. Navigation equipment.
3. Magnetic compass.
4. Heading indicator/horizontal situation indicator/radio magnetic indicator.
5. Attitude indicator.
6. Altimeter.
7. Turn-and-slip indicator/turn coordinator.
8. Vertical-speed indicator.
9. Airspeed indicator.
10. Outside air temperature.
11. Clock.
12. FMS.
13. Autopilot.
14. Determine database validity with GPS.

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

NOTE: The examiner shall select at least one manoeuvre from AREAS OF OPERATION VI through IX and ask the applicant to present a preflight lesson on the selected manoeuvre as the lesson would be taught to a student. Previously developed lesson plans from the applicant's library may be used.

A. TASK: MANEUVER LESSON

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4.

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

1. Using a lesson plan that includes all essential items to make an effective and organized presentation.
2. Stating the objective.
3. Giving an accurate, comprehensive, oral description of the manoeuvre, including the elements and associated common errors.
4. Using instructional aids, as appropriate.
5. Describing the recognition, analysis, and correction of common errors.

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

NOTE: The examiner shall select at least one TASK.

A. TASK: AIR TRAFFIC CONTROL CLEARANCES

REFERENCES: 14 CFR part 91; FAA-H-8083-15; FAA-S-8081-4.

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

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.

B. TASK: COMPLIANCE WITH DEPARTURE, EN ROUTE, AND ARRIVAL PROCEDURES AND CLEARANCES

REFERENCES: 14 CFR part 91; FAA-H-8083-15; FAA-S-8081-4; AIM.

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:

1. Selection and use of current and appropriate navigation publications.
2. Pilot and controller responsibilities with regard to departure procedures, en route low and high altitude charts, and STARs.
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.

VI. AREA OF OPERATION: FLIGHT BY REFERENCE TO INSTRUMENTS

NOTE: The examiner shall select TASK H and at least one other TASK. The applicant shall select either the primary and supporting or control and performance method for teaching this AREA OF OPERATION.

A. TASK: STRAIGHT-AND-LEVEL FLIGHT

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of teaching straight-and-level flight by describing—

    a. the relationship of pitch, bank, and power in straight-and-level flight.
    b. procedure using full panel and partial panel.
    c. coordination of controls and trim.

2. Exhibits instructional knowledge of common errors related to straight-and-level flight by describing—

   a. slow or improper cross-check during straight-and-level flight.
   b. improper power control.
   c. failure to make smooth, precise corrections, as required.
   d. uncoordinated use of controls.
   e. improper trim control.

3. Demonstrates and simultaneously explains straight-and-level flight from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to straight-and-level flight.

B. TASK: TURNS

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of teaching 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 for entry and recovery of a constant rate turn, including the performance of a half-standard rate turn.
   c. coordination of controls and trim.

2. Exhibits instructional knowledge of common errors related to turns by describing—

   a. improper cross-check procedures.
   b. improper bank control during roll-in and roll-out.
   c. failure to make smooth, precise corrections, as required.
   d. uncoordinated use of controls.
   e. improper trim technique.

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

TASK: CHANGE OF AIRSPEED IN STRAIGHT-AND-LEVEL

1. AND TURNING FLIGHT

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of teaching change of airspeed in straight-and-level flight and turns by describing—

   a. procedure using full panel and partial panel for maintaining altitude and changing airspeed in straight-and-level and turning flight.
   b. coordination of controls and trim technique.

2. Exhibits instructional knowledge of common errors related to changes of airspeed in straight-and-level and turning flight by describing—

   a. slow or improper cross-check during straight-and-level flight and turns.
   b. improper power control.
   c. failure to make smooth, precise corrections, as required.
   d. uncoordinated use of controls.
   e. improper trim technique.

3. Demonstrates and simultaneously explains changes of airspeed in straight-and-level and turning flight from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to changes of airspeed in straight-and-level and turning flight.

D. TASK: CONSTANT AIRSPEED CLIMBS AND DESCENTS

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of constant airspeed climbs and descents by describing—

   a. procedure using full panel and partial panel for an entry into a straight climb or climbing turn, from either cruising or climbing airspeed.
   b. a stabilized straight climb or climbing turn.
   c. a level-off from a straight climb or climbing turn, at either cruising or climbing airspeed.
   d. procedure using full panel and partial panel for an entry into a straight descent or descending turn from either cruising or descending airspeed.
   e. a stabilized straight descent or descending turn.
   f. a level-off from a straight descent or descending turn, at either cruising or descending airspeed.

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. improper correction of vertical rate, airspeed, heading, or rate-of-turn errors.
   c. uncoordinated use of controls.
   d. improper trim control.

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.

E. TASK: CONSTANT RATE CLIMBS AND DESCENTS

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of constant rate climbs and descents by describing—

   a. procedure using full panel and partial panel for an entry into a constant rate climb or descent.
   b. a stabilized constant rate straight climb or climbing turn, using the vertical speed indicator.
   c. a level-off from a constant rate straight climb or climbing turn.
   d. an entry into a constant rate straight descent or descending turn.
   e. a stabilized constant rate straight descent or descending turn using the vertical speed indicator.
   f. level-off from a constant rate straight descent or descending turn.

2. Exhibits instructional knowledge of common errors related to constant rate climbs and descents by describing—

   a. failure to use a proper power setting and pitch attitude.
   b. improper correction of vertical rate, airspeed, heading, or rate-of-turn errors.
   c. uncoordinated use of controls.
   d. improper trim control.

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.

F. TASK: TIMED TURNS TO MAGNETIC COMPASS HEADINGS

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; 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 and the clock.
   c. procedures using full panel and partial panel performing compass turns to a specified heading.

2. Exhibits instructional knowledge of common errors related to timed turns to magnetic compass headings by describing—

   a. incorrect calibration procedures.
   b. improper timing.
   c. uncoordinated use of controls.
   d. improper trim control.

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.

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

G. TASK: STEEP TURNS

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of steep turns by describing—

   a. procedure using full panel and partial panel for entry and recovery of a steep turn.
   b. the need for a proper instrument cross-check.
   c. roll-in/roll-out procedure.
   d. coordination of control and trim.

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. improper trim technique.

3. Demonstrates and simultaneously explains steep turns from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to steep turns.

H. TASK: RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

REFERENCES: FAA-H-8083-9, FAA-H-8083-15; 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. procedure using full panel and partial panel for recovery from nose-high and nose-low unusual flight attitudes.

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.

3. Demonstrates and simultaneously explains recovery from unusual flight attitudes, solely by reference to instruments, from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to recovery from unusual flight attitudes.

VII. AREA OF OPERATION: NAVIGATION SYSTEMS

NOTE: The examiner shall select TASKs A and B. If aircraft is not DME equipped, performance of DME arcs shall be tested orally.

A. TASK: INTERCEPTING AND TRACKING NAVIGATIONAL SYSTEMS AND DME ARCS

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of intercepting and tracking navigational systems and DME arcs by describing—

   a. tuning and identification of a navigational facility.
   b. setting of a selected course on the navigation selector or the correct identification of a selected bearing on the RMI.
   c. method for determining aircraft position relative to a facility.
   d. procedure for intercepting and maintaining a selected course.
   e. procedure for intercepting and maintaining a DME arc.
   f. procedure for intercepting a course or localizer from a DME arc.
   g. recognition of navigation facility or waypoint passage.
   h. recognition of navigation receiver or facility failure.

2. Exhibits instructional knowledge of common errors related to intercepting and tracking navigational systems and DME arcs by describing—

   a. incorrect tuning and identification procedures.
   b. failure to properly set the navigation selector on the course to be intercepted.
   c. failure to use proper procedures for course or DME arc interception and tracking.
   d. improper procedures for intercepting a course or localizer from a DME arc.

3. Demonstrates and simultaneously explains intercepting and tracking navigational systems and DME arcs from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to intercepting and tracking navigational systems and DME arcs.

B. TASK: HOLDING PROCEDURES

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of holding procedures by describing—

   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 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.

VIII. AREA OF OPERATION: INSTRUMENT APPROACH PROCEDURES

NOTE: The examiner shall select TASKs A and B, to be combined with TASK C, D, or E. At least one non-precision approach procedure shall be accomplished without the use of the gyroscopic heading and attitude indicators under simulated instrument conditions. Circling approaches are not applicable to helicopters.

NOTE: The requirements for conducting a GPS approach for the purpose of this test are explained on pages 9 and 10 of the Introduction.

A. TASK: NON-PRECISION INSTRUMENT APPROACH

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; IAP; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of a nonprecision instrument approach by describing—

   a. selection of the appropriate instrument approach procedure chart.
   b. pertinent information on the selected instrument approach chart.
   c. radio communications with ATC and compliance with ATC clearances, instructions 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 a non-precision instrument approach by describing—

   a. failure to have essential knowledge of the information on the instrument approach chart.
   b. incorrect communications procedures or noncompliance with ATC clearances or instructions.
   c. failure to accomplish checklist items.
   d. faulty basic instrument flying technique.
   e. inappropriate descent below the MDA.

3. Demonstrates and simultaneously explains a non-precision instrument approach from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to a non-precision instrument approach.

B. TASK: PRECISION INSTRUMENT APPROACH

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; IAP; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of a precision instrument approach by describing—

   a. selection of the appropriate instrument approach chart.
   b. pertinent information on the selected instrument approach 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, instructions, and procedures.
   e. appropriate aircraft configuration, airspeed, and checklist items.
   f. adjustments applied to the published DH/DA 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 a precision instrument approach by describing—

   a. failure to have essential knowledge of the information on the 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 application of DH/DA.

3. Demonstrates and simultaneously explains a precision instrument approach from an instructional standpoint.

4. Analyzes and corrects simulated common errors related to a precision instrument approach.

C. TASK: MISSED APPROACH

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; IAP; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of a missed approach procedure by describing—

   a. pertinent information on the selected instrument approach 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, instruction, 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 a missed approach by describing—

   a. failure to have essential knowledge of the information on the instrument approach chart.
   b. failure to recognize conditions requiring a missed approach.
   c. failure to promptly initiate a missed approach.

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 MDA prior to initiating a missed approach.

3. Demonstrates and simultaneously explains a missed approach from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to a missed approach.

D. TASK: CIRCLING APPROACH (Airplane)

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; IAP; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements of a circling approach by describing—

a. selection of the appropriate circling approach manoeuvre considering the maneuvering capabilities of the aircraft.
b. circling approach minimums on the selected instrument approach chart.
c. compliance with advisories, clearances instructions, and/or 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 a circling approach by describing—

a. failure to have essential knowledge of the circling approach information on the instrument approach chart.
b. failure to adhere to the published MDA and visibility criteria during the circling approach manoeuvre.
c. inappropriate pilot technique during transition from the circling manoeuvre to the landing approach.

3. Demonstrates and simultaneously explains a circling approach from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to a circling approach.

E. TASK: LANDING FROM A STRAIGHT-IN APPROACH

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; IAP; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements related to landing from a straight-in approach by describing—

    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 NOTAMs, 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 landing from a straight-in approach by describing—

    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.
    d. improper technique for wind shear, wake turbulence, and crosswind.
    e. failure to maintain positive aircraft control throughout the complete landing manoeuvre.

3. Demonstrates and simultaneously explains a landing from a straight-in approach from an instructional standpoint.
4. Analyzes and corrects simulated common errors related to landing from a straight-in approach.

IX. AREA OF OPERATION: EMERGENCY OPERATIONS

NOTE: The examiner shall select at least one TASK. The examiner shall omit TASKs C and D unless the applicant furnishes a multiengine airplane for the practical test, then TASK C or D is mandatory.

A. TASK: LOSS OF COMMUNICATIONS

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; IAP; AIM.

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

1. Recognition of loss of communications.
2. When to continue with flight plan as filed or when to deviate.
3. How to determine the time to begin an approach at destination.

B. TASK: LOSS OF GYRO ATTITUDE AND HEADING INDICATORS

REFERENCES: 14 CFR part 91; FAA-H-8083-9, FAA-H-8083-15; FAA-S-8081-4; IAP; AIM.

Objective. To determine that the applicant:

1. Exhibits instructional knowledge of the elements related to loss of gyro attitude and heading indicators by describing—

   a. recognition of inaccurate or inoperative gyro instruments.
   b. notification of ATC of gyro loss and whether able to continue with flight clearance.
   c. importance of timely transition from full to partial panel condition.

2. Exhibits instructional knowledge of common errors related to loss of gyro attitude and heading indicators by describing—

   a. slow to recognize inaccurate or inoperative gyro instruments.
   b. failure to notify ATC of situation.
   c. failure to adequately transition from full to partial panel condition.

3. Demonstrates and simultaneously explains loss of gyro attitude and heading indicators by conducting a non-precision instrument approach without the use of these instruments. (Use Task A,

AREA OPERATION VIII)

4. Analyzes and corrects common errors related to loss of gyro attitude and heading indicators.

C. TASK: ENGINE FAILURE DURING STRAIGHT-AND-LEVEL FLIGHT AND TURNS

REFERENCES: 14 CFR part 91; FAA-H-8083-9; FAA-S-8081-4; FAA-S-8081-12; FAA-S-8081-14; Aircraft Flight 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, solely by reference to instruments by describing—

   a. appropriate methods to be used for identifying and verifying the inoperative engine.
   b. technique for maintaining positive aircraft control by reference to instruments.
   c. importance of accurately assessing the aircraft's performance capability with regard to action that maintains altitude or minimum sink rate considering existing conditions.

2. Exhibits instructional knowledge of common errors related to engine failure during straight-and-level flight and turns, solely by reference to instruments by describing—

   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. failure to follow the prescribed checklist.
   f. failure to establish and maintain the recommended flight attitude for best performance.
   g. failure to maintain positive aircraft control while maneuvering.
   h. hazards of exceeding the aircraft's operating limitations.
   i. faulty basic instrument flying technique.

3. Demonstrates and simultaneously explains straight-and-level flight and turns after engine failure, solely by reference to instruments, from an instructional standpoint.

4. Analyzes and corrects simulated common errors related to straight-and-level flight and turns after engine failure, solely by reference to instruments.

D. TASK: INSTRUMENT APPROACH—ONE ENGINE INOPERATIVE

REFERENCES: 14 CFR part 91; FAA-H-8083-9; FAA-S-8081-4, FAA-S-8081-12, FAA-S-8081-14; Aircraft Flight 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—

    a. maintenance of altitude, airspeed and track appropriate to the phase of flight or approach segment.
    b. procedure if unable to comply with an ATC clearance or instruction.
    c. application of necessary adjustments to the published MDA and visibility criteria for the aircraft approach category.
    d. establishment and maintenance of an appropriate rate of descent during the final approach segment.
    e. 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.

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 chart.
    b. failure to use 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. failure to establish and maintain the proper flight attitude for best performance.

        (1) failure to maintain positive aircraft control.
        (2) faulty basic instrument flying technique.
        (3) inappropriate descent below the MDA or DH.
        (4) faulty technique during roundout and touchdown.

i. Demonstrates and simultaneously explains an instrument approach with one engine inoperative from an instructional standpoint.
j. Analyzes and corrects simulated common errors related to an instrument approach with one engine inoperative.

X. AREA OF OPERATION: POSTFLIGHT PROCEDURES

2. A. TASK: CHECKING INSTRUMENTS AND EQUIPMENT

REFERENCES: FAA-S-8081-4; Aircraft Flight Manual.

Objective. To determine that the applicant exhibits instructional knowledge of the elements related to checking instruments and equipment by describing:

1. Importance of noting instruments and navigation equipment for improper operation.
2. Reasons for making a written record of improper operation and/or calibration of instruments prior to next IFR flight.

APPENDIX

TASK VS. FLIGHT SIMULATION TRAINING DEVICE CREDIT

TASK VS. FLIGHT SIMULATION TRAINING DEVICE CREDIT

Use of Device. Examiners conducting the instrument rating skill tests with a flight simulation training device (FSTD) should consult appropriate documentation to ensure that the device has been approved for training, testing, or checking. The documentation for each device should reflect that the following activities have occurred:

1. The device must be evaluated, determined to meet the appropriate standards, and assigned the appropriate

Qualification level by the National Simulator Program Manager. The device must continue to meet qualification standards through continuing evaluations as outlined in the appropriate advisory circular (AP). For aeroplane flight training devices (FTDs), AP 120-45 (as amended), Aeroplane Flight Training Device Qualifications, will be used. For simulators, AP 120-40 (as amended), Aeroplane Simulator Qualification, will be used.

2.The BCAD must approve the device for training, testing, and checking the specific flight TASKS listed in this.appendix.

3.The device must continue to support the level of student or applicant performance required by this skill test.standard.

Use of Chart. Users of the following chart are cautioned that use of the chart alone is incomplete. The description and Objective of each TASK as listed in the body of the skill test standard, including all NOTEs, must also be incorporated for accurate simulation device use.

X	Creditable
A	Creditable if appropriate systems are installed and operating

NOTES:

1. Level 1 FSTDs that have been issued a letter authorizing their use by BCAD, may continue to be used only for those TASKS originally found acceptable. Use of Level 1, 2, or 3 FSTDs may not be used for aircraft requiring a type rating.

2. If a FSTD is used for the skill test, the instrument approach procedures conducted in that FSTD or simulator are limited to one precision and one nonprecision approach procedure.

3. Postflight procedures means, closing flight plans, checking for discrepancies and malfunctions, and noting them on a log or maintenance form.