

**USAF AERO CLUB
INSTRUCTOR STANDARDIZATION GUIDE**



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**USAF Aero Club
Flight Instructor Standardization Guide**

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FORWARD

Aero Club members come to us with widely differing flight experience; however, there is no guarantee they have ever been properly trained to fly general aviation aircraft. Assume nothing! Your job is to conduct a thorough checkout each and every time you fly with one of our members. We only get “a good look” at these pilots once a year and we can’t afford to cut corners.....not once! We’ve had mishaps resulting from the instructor pilot’s belief the member, in each case a highly experienced pilot, knew more about general aviation than they actually did.

The existence of the Aero Club is dependent on our safety record, which is a direct reflection of how well we conduct our training and checkout programs. Flight training is a complex business that is continuously evolving and our regulations and training programs need to evolve with them. We highly encourage your personal inputs to make these programs better. If you have any questions or concerns please call HQ AFSVA/SVPAR at DSN 487-4979 or 210-652-4979.

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CHAPTER 1

Pilot Checkouts

- H 1. The minimum requirements for standardization, aircraft make and model, instrument, night, and recurrency checkouts are shown in Table 1.1. All tasks indicated with an X must be evaluated by the instructor/examiner conducting the checkout. Additional tasks may be accomplished and evaluated at the discretion of the instructor/evaluator. The instructor/evaluator may elect to examine a task orally if he/she determines it is either unsafe or impractical to accomplish inflight. With the exception of the items in the “General Knowledge” section of Atch 1.1 item(s) that are evaluated orally shall be documented on the AF Form 1584, to include an explanation as to why these item(s) were not evaluated inflight.
2. Members must demonstrate proficiency in all evaluated tasks to the standards established in Attachment 1.2.
3. Refer to Table 1.3 for the appropriate action when the member fails to demonstrate the required proficiency on a checkout.
4. With the exception of the instrument checkout, at least three landings must be accomplished to complete any checkout.
5. “Recurrency Checks”, as defined in Table 1.1, are only required when pilots have not made 3 takeoffs and landings in a particular make and model aircraft in the previous 6 calendar months.
6. Items required to regain landing currency are at the discretion of the Chief Flight Instructor. Flight to regain landing currency alone, shall be documented in the pilot’s logbook (AF Form 1584 not required)
7. All dates shall be entered in DD MMM YY format, (eg. 12 Jan 97).
8. All documentation shall be completed in black or blue ink.

Written Testing

- H 1. All written/knowledge exams shall be documented on the AF Form 1584C.
- 2. The minimum passing score on any test is 80 percent. An instructor will correct the test to 100 percent and review all deficient areas with the member prior to flight. Members shall not retake written/knowledge tests until sufficient ground instruction has fully prepared the member for retesting. Annual standardization and instrument exams are valid until the end of the 12th month following the month in which the exam was taken.
- H 3. The Chief Flight Instructor shall review and revise all locally developed tests at least every 24 calendar months and document that review on the test cover sheet.
- 4. Questions should provide the member a self-paced study of all pertinent aspects of the subject material and flow sequentially from the source documents.
- H 5. Each aircraft open book examination shall cover pertinent aspects of the aircraft systems, procedures, and operating limits. Computing takeoff data, including weight and balance, takeoff, climb, cruise, and landing data shall be examined. Each aircraft closed book examination shall examine only the information on the reverse side of the AF Form 1584C.
- 6. Examinations issued by HQ AFSVA shall be used in lieu of locally developed examinations.
- H 7. The initial solo examination shall cover the applicable restrictions and requirements of AFMAN 34-232, FAR Parts 61 and 91, and the Aeronautical Information Manual.

Table 1.1: Checkout Requirements for Aero Club Pilots

	Checkout Type							
	Standardization		Make & Model		Instrument		Night	Recurrency
	SEL	MEL	SEL	MEL	SEL	MEL		
I. GENERAL KNOWLEDGE								
National Airspace System	X	X						
USAF Restrictions	X	X			X	X	X	
Aeromedical Factors	X	X			X	X	X	
Local Procedures	X	X			X	X	X	
Spin Awareness	X	X						X
Wake Turb. and Wind Shear Avoid.	X	X						
Engine Inop. Principles of Flight		X		X				X ₁
II. PREFLIGHT PREPARATION								
Certificates and Documents	X	X						
Weather Information	X	X			X	X		X
Cross-Country Flight Planning	X	X			X	X		
Performance and Limitations	X	X	X	X				X
Minimum Equipment List	X	X	X	X	X	X	X	
III. PREFLIGHT PROCEDURES								
Preflight Inspection	X	X	X	X	X	X	X	X
Cockpit Management	X	X	X	X	X	X	X	X
Engine Starting	X	X	X	X	X	X	X	X
Taxiing	X	X	X	X	X	X	X	X
Before Takeoff Check	X	X	X	X	X	X	X	X
IV. AIRPORT OPERATIONS								
Radio Comm. & ATC Light Signals	X	X	X	X	X	X	X	X
Traffic Patterns	X	X	X	X			X	X
Airport/Runway Markings/Lighting	X	X	X	X	X	X	X	X

Note 1: Must be accomplished if recurrency is given in a multi-engine aircraft

Table 1.1: Continued

	Checkout Type							
	Standardization		Make & Model		Instrument		Night	Recurrency
	SEL	MEL	SEL	MEL	SEL	MEL		
V. TAKEOFF, LAND., GO-AROUND								
Normal & Crosswind Takeoff/Climb	X	X	X	X	X	X	X	X
H Normal & Crosswind Approach/Landing (Includes No-Flap)	X	X	X	X	X	X	X ₂	X
Short-Field Takeoff/Climb	X	X	X	X				X
Short-Field Approach/Landing	X	X	X	X				X
Soft-Field Takeoff/Climb	X		X					X ₃
Soft-Field Approach/Landing	X		X					X ₃
Forward Slip To A Landing	X		X					
Go-Around	X	X	X	X			X	X
Landing From a Circling Approach					X	X		
VI. PERFORMANCE MANEUVERS								
Steep Turns	X	X	X	X	X	X		
VII. NAVIGATION								
Pilotage and Dead Reckoning	X	X					X	
Navigation Systems/Radar Services	X	X	X	X	X	X	X	
Diversion	X	X			X	X	X	
Lost Procedures	X	X					X	
Enroute Weather	X	X			X	X		
VIII. SLOW FLIGHT AND STALLS								
Maneuvering During Slow Flight	X	X	X	X				
Power-Off Stalls	X	X	X	X				X
Power-On Stalls	X	X	X	X				X

Note 2: At least one approach must be flown without the use of the landing light

Note 3: Required only for single engine land recurrency

Table 1.1: Continued

	Checkout Type							
	Standardization		Make & Model		Instrument		Night	Recurrency
	SEL	MEL	SEL	MEL	SEL	MEL		
IX. INSTRUMENT PROCEDURES								
Straight and Level Flight	X	X	X	X	X ₄	X ₄	X	
Constant Airspeed Climbs/Descents	X	X	X	X	X ₄	X ₄	X	
Timed Turns to Magnetic Headings					X ₄	X ₄		
Recovery from Unusual Attitudes	X	X	X	X	X ₄	X ₄	X ₆	
Radio Comm, Nav Systems	X	X	X	X	X	X	X	X
Holding					X	X		
VOR Instrument Approach Procedure					X ₅	X ₅		
NDB Instrument Approach Procedure					X ₅	X ₅		
ILS Instrument Approach Procedure					X ₅	X ₅		
Missed Approach Procedure					X ₅	X ₅		
Circling Approach Procedure					X	X		
Departure Stall					X	X		
X. EMERGENCY OPERATIONS								
Loss of Communications	X	X			X	X	X	
Emergency Descent	X	X	X	X	X	X	X	X
Emergency Approach and Landing	X	X	X	X				X
Systems and Equip. Malfunctions	X	X	X	X	X	X	X	X
Aborted Takeoff	X	X	X	X				
Engine Failure Before VMC		X		X				

Note 4: This task must be accomplished both full and partial panel (Primary Attitude and Heading Indicators simulated inoperative).

Note 5: At least one approach and missed approach must be flown partial panel.

Note 6: For the purpose of the night checkout, Unusual Attitudes shall be limited to ± 5 degrees of pitch and/or ± 15 degrees of bank.

Table 1.1: Continued

	Checkout Type							
	Standardization		Make & Model		Instrument		Night	Recurrency
	SEL	MEL	SEL	MEL	SEL	MEL		
X. Emergency Ops (Continued)								
Maneuvering with One Engine Inop		X		X		X		X ₁
Engine Inop: Loss of Control Demo		X		X				
Engine Inop: Visual Approach		X		X				X ₁
Engine Inop: Instrument Approach						X		
Emergency Equip and Survival Gear	X	X	X	X			X	X
XI. NIGHT OPERATIONS								
Night Preparation							X	
Night Flight							X	
XII. POSTFLIGHT PROCEDURES								
After Landing	X	X	X	X	X	X	X	X
Parking and Securing	X	X	X	X	X	X	X	X
XIII. GENERAL								
Visual Scanning/Collision Avoidance	X	X	X	X	X	X	X	X
Operation of Systems	X	X	X	X	X	X	X	X

Note 1: Must be accomplished if recurrency is given in a multi-engine aircraft

Table 1.2: Testing Requirements for Aero Club Pilots

PIC Status	Test Required	When
1. Member - PIC	a. Annual Standardization	<p>a. Prior to acting as PIC, and due by the end of the 12th calendar month thereafter</p> <p>NOTE: A student pilot that earns a Private Pilot Certificate in the Aero Club must take the Annual Standardization Test prior to exercising Private Pilot privileges in Aero Club aircraft.</p>
	b. Aircraft Make & Model	<p>b. Prior to acting as PIC in that aircraft make & model.</p> <p>NOTE: If a pilot has gone non-current in an aircraft make & model, the closed book portion of the aircraft written test must be reaccomplished prior to the recurrency checkout flight.</p>
	c. Annual Instrument	<p>c. Prior to exercising instrument privileges as PIC, and due by the end of the 12th calendar month thereafter.</p>
	d. Recurrency	<p>d. If a pilot has gone non-current in an aircraft make & model, the closed book portion of the aircraft written test must be reaccomplished prior to the recurrency checkout flight.</p>

Table 1.3: Required Actions for Complete, Incomplete, or Lack of Performance Checkouts

If	and the check is	then
1. The member satisfactorily completes all required maneuvers	any type of check	the check is complete. Complete and sign the AF Form 1584.
2. The member does not complete all required maneuvers	a. Initial Standardization b. Annual Standardization c. Aircraft Make & Model d. Initial Instrument	a. the check is incomplete and member cannot act as PIC of any Aero Club aircraft. b. the check is incomplete; however, the member may continue to exercise PIC privileges in any aircraft they are current and qualified until the end of the 12th calendar month after their preceding standardization check. c. the check is incomplete and member may not act as PIC in that make/model aircraft. d. the check is incomplete and the member may not exercise instrument privileges in any Aero Club aircraft.

Table 1.3 Continued

If	and the check is	then
	<p>e. Annual Instrument</p> <p>f. Night</p>	<p>e. the check is incomplete; however, the member may continue to exercise instrument privileges in any Aero Club aircraft in which they are current and qualified until the end of the 12th calendar month after the previous instrument check.</p> <p>f. the check is incomplete and the member may not act as PIC at night.</p>
<p>3. The member does not perform all areas to the required standards</p>	<p>a. Initial Standardization</p> <p>b. Aircraft Make & Model</p>	<p>a. the check is complete (Not Qualified) and the member cannot act as PIC of any Aero Club aircraft. (Note 1 applies)</p> <p>b. the check is complete (Not Qualified) and the member cannot act as PIC of that make/model aircraft. (Note 1 applies)</p> <p>If safety of flight or judgment factors, versus lack of proficiency, are the reason for the disqualification, the member may not act as PIC in any Aero Club aircraft. (Note 1 applies)</p>

USAF AERO CLUB STANDARDIZATION RECORD

PILOT'S NAME (Last, First, MI) Johnson, James A.	AIRMAN'S CERTIFICATE # 296423924
FLIGHT DETAILS	TYPE CHECK
AIRCRAFT MAKE AND MODEL C-172	STANDARDIZATION (<input type="checkbox"/> Initial <input type="checkbox"/> Annual) AIRCRAFT MAKE & MODEL
TOTAL TIME FLOWN DURING CHECKOUT 1.8	X INSTRUMENT (<input type="checkbox"/> Initial <input type="checkbox"/> Annual) NIGHT
INSTRUCTOR'S NAME (Last, First) Smith, Tom	INSTRUCTOR (<input type="checkbox"/> Initial <input type="checkbox"/> Annual) RECURRENCE
WRITTEN TESTS PASSED (<input type="checkbox"/> Open Book <input type="checkbox"/> Closed Book)	OTHER: (Specify)
REMARKS: (Use reverse if necessary) <input type="checkbox"/> PILOT IS QUALIFIED <input type="checkbox"/> PILOT IS NOT QUALIFIED (List details and restrictions below) <i>Mr. Johnson was unable to meet the checkout standards for the following maneuvers:</i> <ol style="list-style-type: none"> 1. Holding 2. NDB Approach <i>Tom Smith, CF99 01 Dec 96</i>	
<input type="checkbox"/> MEMBER COMPLETED A FLIGHT REVIEW IAW FAR 61.56	
<input type="checkbox"/> MEMBER COMPLETED AN INSTRUMENT COMPETENCY CHECK IAW FAR 61.57	
I certify that I have read and understand all applicable FAA and USAF regulations/directives pertinent to flying in USAF Aero Club aircraft. I believe I have been properly trained and that I am fully qualified to act as Pilot In Command in the capacity indicated.	
PILOT'S SIGNATURE	DATE (DD MMM YY)
I certify that I have administered an Aero Club checkout IAW the USAF Aero Club Instructor Guide and believe the named pilot is fully qualified to act as Pilot in Command in the capacity indicated.	
INSTRUCTOR'S SIGNATURE	DATE (DD MMM YY)
PRIVACY ACT STATEMENT	
AUTHORITY: 10 U.S.C., 8013 PRINCIPLE PURPOSE: To maintain record of pilot qualifications required by AFMAN 34-232. ROUTINE USE: Will be disclosed to appropriate federal or state agencies conducting accident investigations involving USAF Aero Club aircraft. DISCLOSURE: Disclosure of Airman's Certificate number is voluntary but lack of disclosure will result in denial of club privileges.	

AF FORM 1584 (TEST) DEC 96 PREVIOUS EDITIONS WILL NOT BE USED

**USAF AERO CLUB
PILOT CHECKOUT STANDARDS
November 1996**

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PILOT CHECKOUT STANDARDS CONCEPT

Pilot's desiring PIC privileges in USAF Aero Club aircraft must be evaluated according to the following Pilot Checkout Standards. While the majority of these items are taken directly from the FAA Private Pilot and Instrument Practical Test Standards, some have been modified to add clarity or emphasis. Those modified are shown in italics. Adherence to FARs, USAF Regulations, local procedures, and these Pilot Checkout Standards is mandatory for the checkout of Aero Club pilots.

PILOT CHECKOUT STANDARDS DESCRIPTION

AREAS OF OPERATION are phases of the Pilot Checkout.

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

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

References upon which this Pilot Checkout book is based include:

FAR Part 43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration
FAR Part 61	Certification: Pilots and Flight Instructors
FAR Part 91	General Operating and Flight Rules
FAR Part 97	Standard Instrument Approach Procedures
NTSB Part 830	Notification and Reporting of Aircraft Accidents and Incidents

AC 00-2	Advisory Circular Checklist
AC 00-6	Aviation Weather
AC 00-45	Aviation Weather Services
AC 61-21	Flight Training Handbook
AC 61-23	Pilot's Handbook of Aeronautical Knowledge
AC 61-27	Instrument Flying Handbook
AC 61-65	Certification: Pilots and Flight Instructors
AC 61-67	Stall Spin Awareness Training
AC 61-84	Role of Preflight Preparation
AC 67-2	Medical Handbook for Pilots
AC 90-48	Pilots' Role in Collision Avoidance
AC 91-23	Pilot's Weight and Balance Handbook
AC 120-51	Crew Resource Management Training
AIM	Aeronautical Information Manual
AFI 34-217	USAF Aero Club Program
AFD	Airport Facility Directory
AFMAN 34-232	USAF Aero Club Operations
NOTAM's	Notices to Airmen
POH	Pilot Operating Handbooks or FAA-Approved Flight Manuals

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

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

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

USE OF THE PILOT CHECKOUT STANDARDS

Pilots shall be evaluated in **ALL** TASKS included in each AREA OF OPERATION of the appropriate Pilot Checkout Standard.

The instructor/examiner may change the sequence or combine TASKS with similar Objectives to meet the orderly, efficient flow of a well-run checkout. However, the Objectives of all TASKS must be demonstrated and evaluated at some time during the checkout.

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

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

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

USE OF DISTRACTIONS DURING PILOT CHECKOUTS

Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. To strengthen this area of pilot training and evaluation, the instructor/examiner shall provide realistic distractions during the **flight** portion of the checkout. This will give the instructor/examiner a positive opportunity to evaluate the pilot's ability to divide attention, both inside and outside the cockpit, while maintaining safe flight.

PILOT'S USE OF CHECKLISTS

Throughout the Pilot Checkout Standard the pilot is evaluated on using the checklist. Its proper use is dependent on the specific TASK being evaluated. The situation may be such that the use of the checklist, while accomplishing the elements of the Objective, would be either unsafe or impractical, especially in a single-pilot operation. In this case, a review of the checklist, after the elements have been met, would be appropriate. In any case, use of the checklist must consider proper scanning and division of attention at all times.

STABILIZED APPROACH

The term “STABILIZED APPROACH” means that the aircraft is in a position where minimum input of all controls will result in a safe landing. Excessive control input at any point could be an indication of improper planning.

CREW RESOURCE MANAGEMENT (CRM)

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

MANUFACTURER'S RECOMMENDATION

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

SPECIFIED BY THE INSTRUCTOR/EXAMINER

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

INSTRUCTOR/EXAMINER RESPONSIBILITY

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

Instructors/examiners shall evaluate to the greatest extent practicable the pilot's correlative abilities rather than mere rote enumeration of facts throughout the Pilot Checkout.

Throughout the flight portion of the Pilot Checkout, the instructor/examiner shall evaluate the pilot's procedures for visual scanning, inflight collision avoidance, runway incursion avoidance, and positive exchange of flight controls.

SATISFACTORY PERFORMANCE

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

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

UNSATISFACTORY PERFORMANCE

Typical areas of unsatisfactory performance and grounds for disqualification are:

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

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PILOT CHECKOUT STANDARDS

I. AREA OF OPERATION: GENERAL KNOWLEDGE

A. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: FAR Parts 71, 91; Navigation Charts; AIM.

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

1. Basic VFR Weather Minimums – for all classes of airspace.
2. Airspace classes – their boundaries, pilot certification, and airplane equipment requirements for the following:
 - a. Class A
 - b. Class B
 - c. Class C
 - d. Class D
 - e. Class E
 - f. Class G
3. Special use airspace and other airspace areas.

B. TASK: USAF RESTRICTIONS

REFERENCES: AFI 34-217, AFMAN 34-232.

Objective. To determine the pilot exhibits knowledge of the USAF restrictions by explaining:

1. Limitations/restrictions in AFMAN 34-232

C. TASK: AEROMEDICAL FACTORS

REFERENCES: AC 61-21, AC 67-2; AIM.

Objective. To determine the pilot exhibits knowledge of the elements related to aeromedical factors by explaining:

1. The symptoms, causes, effects, and corrective actions of at least three of the following:
 - a. hypoxia.
 - b. hyperventilation.
 - c. middle ear and sinus problems.
 - d. spatial disorientation.
 - e. motion sickness.
 - f. carbon monoxide poisoning.
 - g. stress and fatigue.
2. The effects of alcohol and over-the-counter drugs.
3. The effects of nitrogen excesses during scuba dives upon a pilot or passenger in flight.

D. TASK: LOCAL PROCEDURES

REFERENCES: Standard Operating Procedures

Objective. *To determine the pilot exhibits knowledge of local procedures by explaining:*

1. *Local departure and arrival routing.*
2. *Restrictions and limitations found in Standardized Operating Procedures.*
3. *Aircraft maintenance reporting/documentation.*
4. *Host country flight restrictions.*

E. TASK: SPIN AWARENESS

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

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

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

F. TASK: WAKE TURBULENCE AND WIND SHEAR AVOIDANCE

REFERENCES: AC 61-21, AC 90-48, AC 90-23

Objective. *To determine the pilot exhibits knowledge of wake turbulence and wind shear avoidance by:*

1. *Explaining:*
 - a. *The aerodynamic forces that produce wake turbulence*
 - b. *Effects of crosswinds on wing tip vortices*
 - c. *The meteorological conditions that can cause wind shear*
2. *Applying knowledge of wake turbulence and wind shear to avoid:*
 - a. *Areas of possible wake turbulence encounters*
 - b. *Areas of jet engine exhaust*
 - c. *Areas of possible wind shear*

G. TASK: ENGINE INOPERATIVE PRINCIPLES OF FLIGHT

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

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

1. The meaning of the term "critical engine."

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

II. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

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

Objective. To determine the pilot:

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

B. TASK: WEATHER INFORMATION

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

Objective. To determine the pilot:

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

C. TASK: CROSS-COUNTRY FLIGHT PLANNING

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a preplanned VFR cross-country flight near the maximum range of the airplane, as previously assigned by the examiner. The final flight plan shall include real-time weather to the first fuel stop, with maximum allowable passenger and baggage loads.
2. Uses appropriate, current aeronautical charts.
3. Plots a course for the intended route of flight.
4. Identifies airspace, obstructions, and terrain features.
5. Selects easily identifiable enroute checkpoints.
6. Selects the most favorable altitudes, considering weather conditions and equipment capabilities.
7. Computes headings, flight time, and fuel requirements.

8. Selects appropriate navigation systems/facilities and communication frequencies.
9. Confirms availability of alternate airports.
10. Extracts and records pertinent information from NOTAM's, the Airport/Facility Directory, and other flight publications.
11. Completes a navigation log and simulates filing a VFR flight plan.
12. *Explains relationship of enroute altitudes to Single Engine Service Ceilings (AMEL Only)*

D. TASK: PERFORMANCE AND LIMITATIONS

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to performance and limitations by explaining the use of charts, tables, and data, if available from the manufacturer, to determine performance, including takeoff, climb, cruise, range, and endurance, and the adverse effects of exceeding limitations.
2. Computes weight and balance, including adding, removing, and shifting weight. Determines if the weight and center of gravity will remain within limits during all phases of flight.
3. Describes the effects of atmospheric conditions on the airplane's performance.
4. Demonstrates the use of the appropriate performance charts, tables, and data including takeoff, cruise, range, and endurance.
5. Calculates takeoff and climb performance, accelerate-stop and accelerate-go distances. (For AMEL, calculates service ceilings)
6. Determines whether the computed performance is within the airplane's capabilities and operating limitations.

E. TASK: MINIMUM EQUIPMENT LIST

REFERENCE: FAR Part 91.

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

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

III. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

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

Objective. To determine the pilot:

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

B. TASK: COCKPIT MANAGEMENT

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

Objective. To determine the pilot:

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

C. TASK: ENGINE STARTING

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

Objective. To determine the pilot:

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

D. TASK: TAXIING

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

Objective. To determine the pilot:

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

E. TASK: BEFORE TAKEOFF CHECK

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to the before takeoff check. This shall include the reasons for checking each item and how to detect malfunctions.
2. Positions the airplane properly considering other aircraft, wind, and surface conditions.
3. Divides attention inside and outside the cockpit.
4. Ensures that engine temperature and pressure are suitable for run-up and takeoff.
5. Accomplishes the before takeoff check and confirms that the airplane is in safe operating condition.
6. Reviews takeoff performance airspeeds, takeoff distances, emergency procedures, and the departure procedure.
7. Assures no conflict with traffic prior to taxiing into takeoff position.
8. Completes the appropriate checklist.

IV. AREA OF OPERATION: AIRPORT OPERATIONS

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

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

Objective. To determine the pilot:

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

B. TASK: TRAFFIC PATTERNS

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

Objective. To determine the pilot:

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

C. TASK: AIRPORT AND RUNWAY MARKINGS AND LIGHTING

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

Objective. To determine the pilot:

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

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

A. TASK: NORMAL AND CROSSWIND TAKEOFF AND CLIMB

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

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

Objective. To determine the pilot:

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

B. TASK: NORMAL AND CROSSWIND APPROACH AND LANDING

H NOTE: If a crosswind condition does not exist the checkout cannot be completed. Landing without flaps extended will also be evaluated.

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to a normal and crosswind approach and landing.
2. Considers the wind conditions, landing surface, and obstructions, and selects the most suitable touchdown point.
3. Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.

4. Maintains a stabilized approach and the recommended approach airspeed, or in its absence, not more than $1.3 V_{SO}$, +10/-5 knots, with gust factor applied.
5. Makes smooth, timely, and correct control application during the roundout and touchdown.
6. Touches down smoothly at the approximate stalling speed, at or within 400 feet (120 meters) beyond a specified point, with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
7. Maintains crosswind correction and directional control throughout the approach and landing.
8. Completes the appropriate checklist.

C. TASK: SHORT-FIELD TAKEOFF AND CLIMB

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to a short-field takeoff and climb.
2. Positions the flight controls for the existing wind conditions; sets the flaps as recommended.
3. Clears the area; taxies into the takeoff position so as to allow maximum utilization of available takeoff area and aligns the airplane on the runway centerline.
4. Advances the throttle smoothly to takeoff power.
5. Rotates at the recommended airspeed, lifts off and accelerates to the recommended obstacle clearance airspeed or V_X .
6. Establishes the pitch attitude for the recommended obstacle clearance airspeed, or V_X , and maintains that airspeed, +10/-5 knots, until the obstacle is cleared, or until the airplane is 50 feet (20 meters) above the surface.
7. After clearing the obstacle, accelerates to V_Y , establishes the pitch attitude for V_Y , and maintains V_Y , +10/-5 knots, during the climb.

8. Retracts the landing gear, if retractable, and flaps after a positive rate of climb is established.
9. Maintains takeoff power to a safe maneuvering altitude.
10. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
11. Complies with noise abatement procedures.
12. Completes the appropriate checklist.

D. TASK: SHORT-FIELD APPROACH AND LANDING

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

Objective. To determine the pilot:

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

E. TASK: SOFT-FIELD TAKEOFF AND CLIMB

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to a soft-field takeoff and climb.
2. Positions the flight controls for the existing wind conditions and so as to maximize lift as quickly as possible; sets the flaps as recommended.
3. Clears the area; taxis onto the takeoff surface at a speed consistent with safety and aligns the airplane without stopping while advancing the throttle smoothly to takeoff power.
4. Establishes and maintains the pitch attitude that will transfer the weight of the airplane from the wheels to the wings as rapidly as possible.
5. Lifts off and remains in ground effect while accelerating to V_Y .
6. Establishes the pitch attitude for V_Y and maintains V_Y , +10/-5 knots, during the climb.
7. Retracts the landing gear, if retractable, and flaps after a positive rate of climb is established.
8. Maintains takeoff power to a safe maneuvering altitude.
9. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
10. Complies with noise abatement procedures.
11. Completes the appropriate checklist.

F. TASK: SOFT-FIELD APPROACH AND LANDING

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to a soft-field approach and landing.

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

G. TASK: FORWARD SLIP TO A LANDING

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

Objective. To determine the pilot:

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

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

H. TASK: GO-AROUND

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

Objective. To determine the pilot:

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

I. TASK: LANDING FROM A CIRCLING APPROACH

REFERENCES: FAR Parts 61, 91; AC 61-27; AIM

Objective: To determine the pilot:

1. Exhibits adequate knowledge of the elements related to the pilot's responsibilities, and the environmental, operational, and meteorological factors which affect a landing from a circling approach.
2. Transitions at the MDA to a visual flight condition, allowing for safe visual maneuvering and a normal landing.
3. Adheres to all ATC (or instructor/examiner) advisories such as: NOTAMs, wind shear, wake turbulence, runway surface, braking conditions, and other operational considerations.
4. Completes appropriate checklist items for the pre-landing and landing phase.
5. Maintains positive aircraft control throughout the complete landing maneuver.

VI. AREA OF OPERATION: PERFORMANCE MANEUVER

A. TASK: STEEP TURNS

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to steep turns.
2. Selects an altitude that will allow the task to be performed no lower than 1,500 feet (460 meters) AGL (ASEL) or 3,000 feet (920 meters) AGL (AMEL).
3. Establishes V_A or the recommended entry speed for the airplane.
4. Rolls into a coordinated 360° turn; maintains a 45° bank, $\pm 5^\circ$; and rolls out on the entry heading, $\pm 10^\circ$.
5. Performs the task in the opposite direction, as specified by the instructor/examiner.

6. Divides attention between airplane control and orientation.
7. Maintains the entry altitude, ± 100 feet (30 meters), and airspeed, ± 10 knots.

VII. AREA OF OPERATION: NAVIGATION

A. TASK: PILOTAGE AND DEAD RECKONING

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

Objective. To determine the pilot:

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

B. TASK: NAVIGATION SYSTEMS AND RADAR SERVICES

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to navigation systems and radar services.

2. Selects and identifies the appropriate navigation system/facility.
3. Locates the airplane's position using radials, bearings, or coordinates, as appropriate.
4. Intercepts and tracks a given radial or bearing, if appropriate.
5. Recognizes and describes the indication of station passage, if appropriate.
6. Recognizes signal loss and takes appropriate action.
7. *Correctly enters an appropriate facility/fix and properly interprets the aircraft position relative to the desired course shown on a LORAN, VOR RNAV, or GPS display.*
8. Uses proper communication procedures when utilizing ATC radar services.
9. Maintains the appropriate altitude, ± 200 feet (60 meters).

C. TASK: DIVERSION

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

Objective. To determine the pilot:

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

D. TASK: LOST PROCEDURES

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to lost procedures.
2. Selects the best course of action when given a lost situation.

3. Maintains the original or an appropriate heading and climbs, if necessary.
4. Identifies the nearest concentration of prominent landmarks.
5. Uses navigation systems/facilities and/or contacts an ATC facility for assistance, as appropriate.
6. Plans a precautionary landing if deteriorating weather and/or fuel exhaustion is imminent.

E. TASK: ENROUTE WEATHER

REFERENCES: AC 00-6, AC 00-45, AC 61-21, AC 61-84, AIM

Objective. *To determine that the pilot:*

1. *Exhibits knowledge of the sources of enroute weather information by describing:*
 - a. *Enroute Flight Advisory Service (EFAS)*
 - b. *Hazardous inflight Weather Advisory Service (HIWAS)*
 - c. *ATIS and AWOS*
2. *Utilizes at least one source of enroute weather information inflight.*

VIII. AREA OF OPERATION: SLOW FLIGHT AND STALLS

A. TASK: MANEUVERING DURING SLOW FLIGHT

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to maneuvering during slow flight.

2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL for ASEL; 3,000 feet (920 meters) AGL for AMEL, or the recommended altitude, whichever is higher.
3. Stabilizes the airspeed at $1.2 V_{S1}$, +10/-5 knots.
4. Accomplishes coordinated straight-and-level flight and level turns, at bank angles and in configurations, as specified by the examiner.
5. Accomplishes coordinated climbs and descents, straight and turning, at bank angles and in configurations as specified by the examiner.
6. Divides attention between airplane control and orientation.
7. Maintains the specified altitude, ± 100 feet (30 meters); the specified heading, $\pm 10^\circ$; and the specified airspeed, +10/-5 knots.
8. Maintains the specified angle of bank, not to exceed 30° in level flight, +0/- 10° ; maintains the specified angle of bank, not to exceed 20° in climbing or descending flight, +0/- 10° ; rolls out on the specified heading, $\pm 10^\circ$; and levels off from climbs and descents within ± 100 feet (30 meters).

B. TASK: POWER-OFF STALLS

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to power-off stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-off stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL for ASEL; 3,000 feet (920 meters) AGL for AMEL, or the recommended altitude, whichever is higher.
3. Establishes a stabilized approach in the approach or landing configuration, as specified by the instructor/examiner.
4. Transitions smoothly from the approach or landing attitude to the pitch attitude that will induce a stall.

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

C. TASK: POWER-ON STALLS

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to power-on stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery from a power-on stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL for ASEL; 3,000 feet (920 meters) AGL for AMEL, or the recommended altitude, whichever is higher.
3. Establishes the takeoff or departure configuration, airspeed, and power as specified by the examiner.
4. Transitions smoothly from the takeoff or departure attitude to the pitch attitude that will induce a stall.
5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.

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

IX. AREA OF OPERATION: BASIC INSTRUMENT MANEUVERS

A. TASK: STRAIGHT-AND-LEVEL FLIGHT

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

Objective. To determine the pilot:

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

B. TASK: CONSTANT AIRSPEED CLIMBS/DESCENTS

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to attitude instrument flying during straight, constant airspeed climbs and descents.
2. Establishes the climb/descent configuration specified by the instructor/examiner.
3. Transitions to the climb/descent pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated control application.

4. Demonstrates climbs solely by reference to instruments at a constant airspeed to specific altitudes in straight flight.
5. Levels off at the assigned altitude and maintains that altitude, ± 200 feet (60 meters); maintains heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.

C. TASK: TIMED TURNS TO MAGNETIC COMPASS HEADINGS

REFERENCES: FAR 61, AC 61-27.

NOTE: If the aircraft has a turn and slip indicator, the phrase “miniature aircraft of the turn coordinator” applies to the turn needle.

Objective. To determine the pilot:

1. Exhibits knowledge of the elements and procedures relating to calibrating the miniature aircraft of the turn coordinator, the operating characteristics and errors of the magnetic compass, and the performance of timed turns to specified compass headings.
2. Establishes indicated standard rate turns, both right and left.
3. Applies the clock correctly to the calibration procedure.
4. Changes the miniature aircraft position, as necessary, to produce a standard rate turn.
5. Makes timed turns to specified magnetic compass headings.
6. Maintains altitude within , ± 200 feet (60 meters); *maintains a standard rate turn and rolls out on the assigned heading, $\pm 20^\circ$; maintains airspeed, ± 10 knots.*

D. TASK: RECOVERY FROM UNUSUAL FLIGHT ATTITUDES

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

Objective. To determine the pilot:

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

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

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

Objective. To determine the pilot:

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

F. TASK: HOLDING PROCEDURES

REFERENCES: FAR Parts 61, 91; AC 61-27; AIM

NOTE: Any reference to DME will be disregarded if the aircraft is not so equipped.

Objective: To determine the pilot:

1. Exhibits adequate knowledge of the elements related to holding procedures.
2. Changes to the holding airspeed appropriate for the altitude or aircraft when 3 minutes or less from, but prior to arriving at the holding fix.
3. Uses an entry procedure that ensures the aircraft remains within the holding pattern airspace for a standard, nonstandard, published, or nonpublished holding pattern.
4. Recognizes arrival at the holding fix and initiates prompt entry into the holding pattern.
5. Complies with ATC reporting requirements.

6. Uses the proper timing criteria, where applicable, as required by altitude or ATC instructions.
7. Complies with pattern leg lengths when a DME distance is specified.
8. Uses proper wind correction procedures to maintain the desired pattern and to arrive over the fix as close as possible to a specified time.
9. Maintains the airspeed within 10 knots; altitude within 100 feet (30 meters); headings within 10 degrees; and tracks a specified course, radial, or bearing.

G. TASK: VOR/VORTAC INSTRUMENT APPROACH PROCEDURE

REFERENCES: FAR Parts 61, 91; AC 61-27; Standard Instrument Approach Procedure Chart; AIM.

Objective. To determine the pilot:

1. Exhibits adequate knowledge of the elements related to a VOR/VORTAC instrument approach procedure.
2. Selects and complies with the appropriate VOR/VORTAC instrument approach procedure to be performed.
3. Established two-way communications with ATC, as appropriate, to the phase of flight or approach segment, and uses proper radio communications phraseology and technique.
4. Selects, tunes, identifies, and confirms the operational status of navigation equipment to be used for the approach procedure.
5. Complies with all clearances issued by ATC or the examiner.
6. Recognizes if heading indicator and/or attitude indicator is inaccurate or inoperative, advises controller, and proceeds with approach.
7. Advises ATC or examiner anytime the aircraft is unable to comply with a clearance.
8. Establishes the appropriate aircraft configuration and airspeed considering turbulence and wind shear, and completes the aircraft checklist items appropriate to the phase of the flight.
9. Maintains, prior to beginning the final approach segment, altitude within 100 feet (30 meters), heading within 10° and allows less than a full-scale deflection of the CDI or within 10° in the case of an RMI, and maintains airspeed within 10 knots.

10. Applies the necessary adjustments to the published MDA and visibility criteria for the aircraft approach category when required, such as:
 - a. FDC and Class II NOTAMs
 - b. inoperative aircraft and ground navigation equipment
 - c. inoperative visual aids associated with the landing environment
 - d. National Weather Service (NWS) reporting factors and criteria
11. Establishes a rate of descent and track that will ensure arrival at the MDA prior to reaching the MAP with the aircraft continuously in a position from which descent to a landing on the intended runway can be made at a normal rate using normal maneuvers.
12. Allows, while on the final approach segment, no more than a three-quarter-scale deflection of the CDI or within 10° in case of an RMI, and maintains airspeed within 10 knots.
13. Maintains the MDA, when reached, within +100 feet (30 meters), -0 feet to the MAP.
14. Executes the missed approach procedure when the required visual references for the intended runway are not distinctly visible and identifiable at the MAP.
15. Executes a normal landing from a straight-in or circling approach when instructed by the examiner.

H. TASK: NDB INSTRUMENT APPROACH PROCEDURE

REFERENCES: FAR Parts 61, 91; AC 61-27; Standard Instrument Approach Procedure Chart; AIM.

Objective. To determine the pilot:

1. Exhibits adequate knowledge of the elements related to an NDB instrument approach procedure.
2. Selects and complies with the appropriate NDB instrument approach procedure to be performed.
3. Establishes two-way communications with ATC, as appropriate to the phase of flight or approach segment, and uses proper radio communications phraseology.

4. Selects, tunes, identifies, confirms, and monitors the operational status of ground and aircraft navigation equipment to be used for the approach procedure,.
5. Complies with all clearances issued by ATC or the instructor/examiner.
6. Recognizes when heading indicator and/or attitude indicator is inaccurate or inoperative, advises controller, and proceeds with approach.
7. Advises ATC or the examiner anytime the aircraft is unable to comply with a clearance.
8. Establishes the appropriate aircraft configuration and airspeed considering turbulence and wind shear, and completes the aircraft checklist items appropriate to the phase of flight.
9. Maintains, prior to beginning the final approach segment, the altitude within 100 feet (30 meters), heading and bearing within 10°, and airspeed within 10 knots.
10. Applies the necessary adjustments to the published MDA and visibility criteria for the aircraft approach category when required, such as:
 - a. FDC and Class II NOTAMs
 - b. inoperative aircraft and group navigation equipment
 - c. inoperative visual aids associated with the landing environment
 - d. National Weather Service (NWS) reporting factors and criteria
11. Establishes a rate of descent and track that will ensure arrival at the MDA prior to reaching the MAP with the aircraft continuously in a position from which descent to a landing on the intended runway can be made at a normal rate using normal maneuvers.
12. Maintains, while on the final approach segment, a deviation of not more than 10° from the specified bearing, and maintains airspeed within 10 knots.
13. Maintains the MDA, when reached, within +100 feet (30 meters), -0 feet to the MAP.
14. Executes the missed approach procedure when the required visual references for the intended runway are not distinctly visible and identifiable at the MAP.
15. Executes a normal landing from a straight-in or circling approach when instructed by ATC or the examiner.

I. TASK: ILS INSTRUMENT APPROACH PROCEDURE

REFERENCES: FAR Parts 61, 91; AC 61-27; Standard Instrument Approach Procedure Chart; AIM.

Objective. To determine the pilot:

1. Exhibits adequate knowledge of the elements of an ILS approach procedure.
2. Selects and complies with the appropriate ILS instrument approach procedures to be performed.
3. Establishes two-way communications with ATC, as appropriate to the phase of flight or approach segment, and uses proper radio communications phraseology and technique.
4. Selects, tunes, identifies, and confirms the operational status of ground and aircraft navigation equipment to be used for the approach procedure.
5. Complies with all clearances issued by ATC or the examiner.
6. Advises ATC or examiner anytime the aircraft is unable to comply with a clearance.
7. Establishes the appropriate aircraft configuration and airspeed, considering turbulence and wind shear, and completes the aircraft checklist items appropriate to the phase of flight.
8. Maintains, prior to beginning the final approach segment, specified altitude within 100 feet (30 meters), heading on course within 10°, and airspeed within 10 knots.
9. Applies the necessary adjustments to the published DH and visibility criteria for the aircraft approach category when required, such as:
 - a. FDC and Class II NOTAMs.
 - b. inoperative aircraft and ground navigation equipment.
 - c. inoperative visual aids associated with the landing environment.
 - d. National Weather Service (NWS) reporting factors and criteria.
10. Establishes an initial rate of descent at the point where the electronic glide slope is intercepted, which approximates that required for the aircraft to follow the glide slope.

11. Allows, while on the final approach segment, no more than three-quarter-scale deflection of either the localizer or glide slope indications, and maintains the specified airspeed within 10 knots.
12. Avoids descent below the DH before initiating a missed approach procedure or transitioning to a normal landing approach.
13. Initiates immediately the missed approach procedure when, at the DH, the required visual references by the intended runway are not distinctly visible and identifiable.
14. Transitions to a normal landing approach when the aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers.

J. TASK: MISSED APPROACH PROCEDURES

REFERENCES: FAR Parts, 61, 91; AC 61-27; Standard Instrument Approach Procedure Chart; AIM.

Objective. To determine the pilot:

1. Exhibits adequate knowledge of the elements related to missed approach procedures associated with standard instrument approaches.
2. Initiates the missed approach promptly by applying power, establishing a climb attitude, and reducing drag in accordance with the aircraft manufacturer's recommendations.
3. Reports to ATC beginning the missed approach procedure.
4. Complies with the published or alternate missed approach procedure.
5. Advises ATC or examiner anytime the aircraft is unable to comply with a clearance, restriction, or climb gradient.
6. Follows the recommended checklist items appropriate to the go-around procedure.
7. Requests, if appropriate, ATC clearance to the alternate airport, clearance limit, or as directed by the examiner.
8. Maintains the recommended airspeed within 10 knots; heading, course, or bearing within 10°, and altitude(s) within 100 feet (30 meters) during the missed approach procedure.

K. TASK: CIRCLING APPROACH PROCEDURE

REFERENCES: FAR Parts 61, 91; AC 61-27; Standard Instrument Approach Procedures Chart; AIM.

Objective. To determine the pilot:

1. Exhibits adequate knowledge of the elements related to a circling approach procedure.
2. Selects and complies with the appropriate circling approach procedure considering turbulence and wind shear and considering the maneuvering capabilities of the aircraft.
3. Confirms the direction of traffic and adheres to all restrictions and instructions issued by ATC and the examiner.
4. Does not exceed the visibility criteria or descend below the appropriate circling altitude until in a position from which a descent to a normal landing can be made.

L. DEPARTURE STALL

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to power-on stalls. This shall include an understanding of the aerodynamics of a stall which occurs as a result of uncoordinated flight. Emphasis shall be placed upon recognition of and recovery at the first indication of a stall.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL for ASEL; 3,000 feet (920 meters) AGL for AMEL, or the recommended altitude, whichever is higher.
3. Establishes the configuration, airspeed, and power as specified by the instructor/examiner.
4. Transitions smoothly to the pitch attitude that will induce a stall.

5. Maintains a specified heading, $\pm 10^\circ$, if in straight flight; maintains a specified angle of bank not to exceed 20° , $+0/-10^\circ$, if in turning flight, while inducing the stall.
6. Recognizes and announces the first aerodynamic indications of the oncoming stall, i.e., buffeting or decay of control effectiveness.
7. Recovers promptly after a stall occurs by simultaneously decreasing the pitch attitude, applying power as appropriate, and leveling the wings to return to a straight-and-level flight attitude with a minimum loss of altitude appropriate for the airplane.

X. AREA OF OPERATION: EMERGENCY OPERATIONS

A. LOSS OF COMMUNICATIONS

REFERENCES: Far Parts 61, 91; AIM

Objective. To determine the pilot exhibits adequate knowledge of the elements related to applicable loss of communications procedures to include:

1. Recognizing loss of communication.
2. *Procedures to reestablish communications*
3. *Options if loss of communication occurs during VMC.*
4. *Procedures if loss of communications occurs during IMC.*

B. TASK: EMERGENCY DESCENT

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

Objective. To determine the pilot:

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

C. TASK: EMERGENCY APPROACH AND LANDING

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

Objective. To determine the pilot:

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

D. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to system and equipment malfunctions appropriate to the airplane provided for the flight test.
2. Analyzes the situation and takes the appropriate action for simulated emergencies, such as—
 - a. partial or complete power loss
 - b. engine roughness or overheat
 - c. carburetor or induction icing
 - d. loss of oil pressure
 - e. fuel starvation
 - f. electrical system malfunction

- g. flight instruments malfunction
- h. landing gear or flap malfunction
- i. inoperative trim
- j. inadvertent door or window opening.
- k. structural icing
- l. smoke/fire/engine compartment fire
- m. any other emergency appropriate to the airplane provided for the checkout

3. Follows the appropriate emergency checklist.

E. TASK: ABORTED TAKEOFF

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

Objective. *To determine the pilot:*

1. *Exhibits knowledge of the factors that would dictate aborting a takeoff including-*
 - a. *insufficient acceleration*
 - b. *directional control problems*
 - c. *aircraft malfunctions*
2. *Closes throttles smoothly and promptly after simulated engine failure.*
3. *Maintains directional control and applies braking as necessary.*

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

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

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

Objective. To determine the pilot:

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

G. TASK: MANEUVERING WITH ONE ENGINE INOPERATIVE

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

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

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to maneuvering with one engine inoperative.
2. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
4. Establishes the recommended best engine inoperative airspeed.
5. Banks toward the operating engine as required for best performance, trims the airplane, and maintains control.

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

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

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

NOTE: Airplanes with normally aspirated engines will lose power as altitude increases because of the reduced density of the air entering the induction system of the engines. This loss of power will result in a V_{MC} lower than the stall speed at higher altitudes. Also, some airplanes have such an effective rudder that even at sea level V_{MC} is lower than stall

speed. For these airplanes, a demonstration of loss of directional control may be safely conducted by limiting rudder travel to simulate maximum available rudder. Limiting rudder travel should be accomplished at a speed well above the power-off stall speed (approximately 20 knots). This will avoid the hazards of stalling one wing with maximum allowable power applied to the engine on the other wing. In the event of any indication of stall prior to loss of directional control, recover to the entry airspeed. The demonstration should then be accomplished with the rudder travel limited at a higher airspeed.

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to engine inoperative loss of directional control by explaining the:
 - a. meaning of the term “critical engine”
 - b. effects of density altitude on the V_{MC} demonstration
 - c. effects of airplane weight and center of gravity on control
 - d. reasons for variations in V_{MC} .
 - e. relationship of V_{MC} to stall speed
 - f. reasons for loss of directional control
 - g. indications of loss of directional control
 - h. importance of maintaining the proper pitch and bank attitude, and the proper coordination of controls
 - i. loss of directional control recovery procedure
 - j. engine failure during takeoff including planning, decisions, and single-engine operations
2. Exhibits skills in performing an engine inoperative-loss of directional control demonstration:
 - a. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the manufacturer's recommended altitude, whichever is higher

b. Configures the airplane at V_{SSE}/V_{SSE} as follows:

- (1) Landing gear retracted
- (2) Flaps set for takeoff
- (3) Cowl flaps set for takeoff
- (4) Trim set for takeoff
- (5) Propellers set for high RPM
- (6) Power on the critical engine reduced to idle
- (7) Power on the operating engine set to takeoff or maximum available power

- c. Establishes a single engine climb attitude with the airspeed at approximately 10 knots above V_{SSE} .
- d. Establishes a bank toward the operating engine, required for best performance
- e. Increases the pitch attitude slowly to reduce the airspeed, at approximately 1 knot per second, while applying rudder to maintain directional control until full rudder is applied
- f. Recognizes and announces the first indications of loss of directional control, stall warning or buffet
- g. Recovers promptly by simultaneously reducing power sufficiently on the operating engine while decreasing the angle of attack as necessary to regain airspeed and directional control with a minimum loss of altitude. Recovery SHOULD NOT be attempted by increasing the power on the simulated failed engine
- h. Recovers within 20° of the entry heading
- i. Accelerates to V_{XSE}/V_{YSE} , as appropriate, +10/-5 knots, during the recovery

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

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

Objective. To determine the pilot:

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

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

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

Objective. To determine the pilot:

1. Exhibits knowledge of the elements related to a published instrument approach with one engine inoperative (by reference to instruments).

2. Displays efficient cockpit management procedures throughout the approach.
3. Sets up for the approach by tuning and identifying the correct navigation frequencies and by selecting the correct course(s).
4. Communicates with the appropriate ATC facility and transmits using recommended phraseology.
5. Complies with an actual or simulated ATC IFR clearance, ATC advisories and instructions.
6. Recognizes engine failure, maintains control, and utilizes the recommended emergency procedure.
7. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine after simulated engine failure.
8. Establishes the recommended best engine inoperative airspeed.
9. Banks toward the operative engine as required for best performance, trims the airplane, and maintains control.
10. Establishes and maintains the recommended flight attitude and configuration for the best performance for all maneuvering necessary for the instrument approach procedure.
11. Attempts to determine the reason for the engine failure, if appropriate.
12. Simulates feathering the propeller of the inoperative engine.
13. Monitors the operating engine and makes adjustments as necessary.
14. Follows the checklist to verify procedures for securing the inoperative engine.
15. Maintains the specified altitude within ± 100 feet (30 meters) and the specified airspeed within ± 10 knots prior to reaching the final approach fix.
16. Establishes a rate of descent that will ensure arrival at the MDA or DH with the airplane in a position from which descent to a landing on the intended runway can be made, straight-in or circling.
17. Allows, while on the final approach course, no more than three-quarter-scale deflection of the localizer and glideslope indications, nor more than 10° deflection (full scale deflection) after intercepting the VOR or NDB final approach course.
18. Avoids exceeding the visibility criteria for the aircraft approach category when circling.
19. Completes a safe landing and all appropriate checklists.

K. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

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

Objective. To determine the pilot:

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

XI. AREA OF OPERATION: NIGHT OPERATIONS

A. TASK: NIGHT PREPARATION

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

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

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

B. TASK: NIGHT FLIGHT

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

Objective. To determine the pilot:

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

XII. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER LANDING

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

Objective. To determine the pilot:

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

B. TASK: PARKING AND SECURING

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

Objective. To determine the pilot:

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

XIII. AREA OF OPERATION: GENERAL

A. TASK: VISUAL SCANNING AND COLLISION AVOIDANCE

REFERENCES: AC 90-48

Objective. *To determine the pilot:*

1. *Exhibits knowledge of visual scanning and clearing techniques by demonstrating:*
 - a. *Good visual scanning techniques*
 - b. *Awareness of areas with high potential for traffic conflicts*
 - c. *Use of communications equipment and air traffic advisories to locate and avoid traffic conflicts*
 - d. *Correct traffic pattern entry procedures to minimize potential conflicts*

B. TASK: OPERATION OF SYSTEMS

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

Objective. To determine the pilot exhibits knowledge of the elements related to the operation of systems on the airplane provided for the flight test by *demonstrating use* of the following:

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

INSTRUCTOR/EXAMINER'S INFLIGHT AID

PILOT'S NAME: _____

DATE/TIME: _____

TYPE OF CHECK: _____

I. GENERAL KNOWLEDGE

- A. NATIONAL AIRSPACE SYSTEM
- B. USAF RESTRICTIONS
- C. AEROMEDICAL FACTORS
- D. LOCAL PROCEDURES
- E. SPIN AWARENESS
- F. WAKE TURBULENCE AND LOW LEVEL WIND
SHEAR AVOIDANCE
- G. ENGINE INOPERATIVE PRINCIPLES OF FLIGHT

II. PREFLIGHT PREPARATION

- A. CERTIFICATES AND DOCUMENTS
- B. WEATHER INFORMATION
- C. CROSS-COUNTRY FLIGHT PLANNING
- D. PERFORMANCE AND LIMITATIONS
- E. MINIMUM EQUIPMENT LIST

III. PREFLIGHT PROCEDURES

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

V. AIRPORT OPERATIONS

- **A.** RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS
- **B.** TRAFFIC PATTERNS
- **C.** AIRPORT AND RUNWAY MARKINGS AND LIGHTING

V. TAKEOFFS, LANDINGS, AND GO-AROUNDS

- **A.** NORMAL AND CROSSWIND TAKEOFF AND CLIMB
- **B.** NORMAL AND CROSSWIND APPROACH AND LANDING
- **C.** SHORT-FIELD TAKEOFF AND CLIMB
- **D.** SHORT-FIELD APPROACH AND LANDING
- **E.** SOFT-FIELD TAKEOFF AND CLIMB
- **F.** SOFT-FIELD APPROACH AND LANDING
- **G.** FORWARD SLIP TO A LANDING
- **H.** GO-AROUND
- **I.** LANDING FROM A CIRCLING APPROACH

VI. PERFORMANCE MANEUVER

- STEEP TURNS

VII. NAVIGATION

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

VIII. SLOW FLIGHT AND STALLS

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

X. INSTRUMENT PROCEDURES

- **A.** STRAIGHT-AND-LEVEL FLIGHT
- **B.** CONSTANT AIRSPEED CLIMBS AND DESCENTS
- **C.** TIMED TURNS TO MAGNETIC HEADINGS
- **D.** RECOVERY FROM UNUSUAL FLIGHT ATTITUDES
- **E.** RADIO COMMUNICATIONS, NAVIGATION SYSTEMS/FACILITIES, AND RADAR SERVICES
- **F.** HOLDING
- **G.** VOR INSTRUMENT APPROACH PROCEDURE
- **H.** NDB INSTRUMENT APPROACH PROCEDURE
- **I.** ILS INSTRUMENT APPROACH PROCEDURE
- **J.** MISSED APPROACH PROCEDURE
- **K.** CIRCLING APPROACH PROCEDURE
- **L.** DEPARTURE STALL

X. EMERGENCY OPERATIONS

- **A.** LOSS OF COMMUNICATIONS
- **B.** EMERGENCY DESCENT
- **C.** EMERGENCY APPROACH AND LANDING
- **D.** SYSTEMS AND EQUIPMENT MALFUNCTIONS
- **E.** ABORTED TAKEOFF
- **F.** ENGINE FAILURE DURING TAKEOFF BEFORE VMC (SIMULATED)
- **G.** MANEUVERING WITH ONE ENGINE INOPERATIVE
- **H.** ENGINE INOPERATIVE: LOSS OF CONTROL DEMONSTRATION
- **I.** ENGINE INOPERATIVE: VISUAL APPROACH
- **J.** ENGINE INOPERATIVE: INSTRUMENT APPROACH
- **K.** EMERGENCY EQUIPMENT AND SURVIVAL GEAR

XI. NIGHT OPERATIONS

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

XII. POSTFLIGHT PROCEDURES

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

XIII. GENERAL

- **A.** VISUAL SCANNING AND COLLISION AVOIDANCE
- **B.** OPERATION OF SYSTEMS

NOTES: