Refer to FAR 61.153 and 61.159 for qualification for test

PRETEST BRIEFING

- 1. Put the applicant at ease (small talk, etc.)
- 2. Advise applicant of available comfort facilities
- 3. Confirm type of practical test or retest
- 4. Provide casual overview of the test
- 5. Collect/Verify required documents
- **IACRA Application** FAA Form 8710-1, Airman Certificate and/or Rating Application ___
- Photo/signature I.D. (Note type on 8710-1 and return) ____
- Pilot Certificate (Verify vs I.D. & FAA Form 8710-1 and return) ___
- at least 3rd Class Medical (note limitations) ____
- Knowledge test results required _____

• Logbook or GROUND training records (Verify that the applicant meets all requirements and appropriate endorsements) **No Endorsements for Initial Test**___

• Aircraft documents (Verify location & scheduled availability)

6. Verify that required equipment (hood, etc.) is available

7. Verify that applicant is aware of PTS requirements and tolerances

- 8. Advise the applicant that:
- FAA Practical Test IAW the ATP PTS
- Will be using a Plan of Action (Used to organize the Practical Test)
- Will be taking notes for the debrief
- Perfection is not the standard
- Oral questioning will continue throughout the test
- Three possible outcomes are:
- o Temporary airman certificate
- o Notice of disapproval of application
- o Letter of Discontinuance
- 9. Any Questions?
- 10. Collect Fee
- 11. Announce "THE TEST HAS BEGUN!"

Special Emphasis Items:

- 1. positive aircraft control;
- 2. procedures for positive exchange of flight controls;
- 3. stall/spin awareness;
- 4. special use airspace and other airspace areas;
- 5. collision avoidance procedures;
- 6. wake turbulence and low level wind shear
- avoidance procedures;
- 7. runway incursion avoidance and good cockpit discipline during taxi operations;
- 8. land and hold short operations (LAHSO);
- 9. controlled flight into terrain (CFIT);

10. aeronautical decision making (ADM)/risk management; and

11. crew resource management/single-pilot resource management (CRM/SRM) to include automation management;

12. recognition of wing contamination to icing;13. adverse effects of wing contamination in icing conditions during takeoff, cruise, and landing phases of flight;

14. icing procedures of information published by the manufacturer, within the AFM, that is specific to the type of aircraft;

15. traffic awareness, "See and Avoid" concept.

SECTION 1—PREFLIGHT PREPARATION CONTENTS: AREA OF OPERATION I. PREFLIGHT PREPARATION A. EQUIPMENT EXAMINATION B. PERFORMANCE AND LIMITATIONS

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: EQUIPMENT EXAMINATION

REFERENCES: AC 20-29, AC 20-117, AC 91-43, AC 91-51, AC 91-74, AC 120-60, AC 135-17, 14 CFR part 61; POH; AFM.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge appropriate to the airplane; its systems and components; its normal,

abnormal, and emergency procedures; and uses the correct terminology with regard to the following items a. landing gear—extension/retraction system(s); indicators,

float devices, brakes, antiskid, tires, nose-wheel steering, and shock absorbers.

b. powerplant—controls and indications, induction system, carburetor and fuel injection, turbocharging, cooling, fire detection/protection, mounting points, turbine wheels, compressors, deicing, anti-icing, and other related components.

c. propellers—type, controls, feathering/unfeathering, autofeather, negative torque sensing, synchronizing, and synchrophasing.

d. fuel system—capacity; drains; pumps; controls; indicators; crossfeeding; transferring; jettison; fuel grade, color and additives; fueling and defueling procedures; and fuel substitutions, if applicable.

e. oil system—capacity, grade, guantities, and indicators.

f. hydraulic system—capacity, pumps, pressure, reservoirs, grade, and regulators.

g. electrical system—alternators, generators, battery, circuit breakers and protection devices, controls,

indicators, and external and auxiliary power sources and ratings.

h. environmental systems—heating, cooling, ventilation, oxygen and pressurization, controls, indicators, and regulating devices.

i. avionics and communications—autopilot; flight director; Electronic Flight Instrument Systems (EFIS); Flight Management System(s) (FMS); Doppler Radar; Inertial Navigation Systems (INS); Global Positioning System/ Wide Area Augmentation System/Local Area Augmentation System (GPS/WAAS/LAAS); VOR, NDB, ILS, GLS, RNAV systems and components; traffic (MLS deleted) awareness/warning/avoidance systems, terrain awareness/warning/alert systems; other avionics or communications equipment, as appropriate; indicating devices; transponder; and emergency locator transmitter.

j. ice protection-anti-ice, deice, pitot-static system

protection, propeller, windshield, wing and tail surfaces.

k. crewmember and passenger equipment—oxygen system, survival gear, emergency exits, evacuation procedures and crew duties, and quick donning oxygen mask for crewmembers and passengers.

I. flight controls—ailerons, elevator(s), rudder(s), control tabs, balance tabs, stabilizer, flaps, spoilers, leading edge flaps/slats and trim systems.

m. pitot-static system with associated instruments and the power source for the flight instruments.

2. Exhibits satisfactory knowledge of the contents of the POH or AFM with regard to the systems and components listed in paragraph 1 (above); the Minimum Equipment List (MEL)and/or configuration deviation list (CDL), if appropriate; and the operations specifications, if applicable.

B. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: 14 CFR parts 1, 61, 91; AFD; POH; AFM; AIM; AC 20-117, AC 91-51, AC 91-74, AC 91-79, AC 120-27; AC 120-60, AC 135-17 FAA-H-8083-1, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25. Objective. To determine that the applicant:

1. Éxhibits satisfactory knowledge of performance and limitations, including a thorough knowledge of the adverse effects of exceeding any limitation.

2. Demonstrates proficient use of (as appropriate to the airplane) performance charts, tables, graphs, or other data relating to items, **such as—**

a. accelerate-stop distance.

b. accelerate-go distance.

c. takeoff performance—all engines and with engine(s) inoperative.

d. climb performance including segmented climb

performance with all engines operating—with one or more engine(s) inoperative, and with other engine malfunctions as may be appropriate.

e. service ceiling-all engines, with engines(s) inoperative, including drift down, if appropriate.

f. cruise performance.

g. fuel consumption, range, and endurance.

h. descent performance.

i. landing distance.

j. land and hold short operations (LAHSO).

k. go-around from rejected landings (landing climb).

I. other performance data (appropriate to the airplane).

3. Describes (as appropriate to the airplane) the airspeeds used during specific phases of flight.

4. Describes the effects of meteorological conditions upon performance characteristics and correctly applies these factors to a specific chart, table, graph, or other performance data.

5. Computes the center-of-gravity location for a specific load condition (as specified by the examiner), including adding, removing, or shifting weight.

6. Determines if the computed center-of-gravity is within the forward and aft center-of-gravity limits, and that lateral fuel balance is within limits for takeoff and landing.

7. Demonstrates adequate knowledge of the adverse effects of airframe icing during pre-takeoff, takeoff, cruise and landing phases of flight and corrective actions.

8. Demonstrates adequate knowledge of procedures for wing contamination recognition and adverse effects of airframe icing during pre-takeoff, takeoff, cruise, and landing phases of flight.

9. Demonstrates good planning and knowledge of procedures in applying operational factors affecting airplane performance.

10. Demonstrates knowledge of the stabilized approach procedures and the decision criteria for go-around or rejected landings.

SECTION 2—PREFLIGHT PROCEDURES, INFLIGHT MANEUVERS, AND POSTFLIGHT PROCEDURES

CONTENTS:

AREAS OF OPERATION

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- **B. POWERPLANT START**
- C. TAXIING
- F. PRE-TAKEOFF CHECKS

III. TAKEOFF AND DEPARTURE PHASE

- A. NORMAL AND CROSSWIND TAKEOFF
- E. INSTRUMENT TAKEOFF
- F. POWERPLANT FAILURE DURING TAKEOFF
- G. REJECTED TAKEOFF
- H. DEPARTURE PROCEDURES

IV. INFLIGHT MANEUVERS

- A. STEEP TURNS
- B. APPROACHES TO STALLS
- C. POWERPLANT FAILURE—MULTIENGINE AIRPLANE
- D. POWERPLANT FAILURE—SINGLE-ENGINE AIRPLANE
- E. SPECIFIC FLIGHT CHARACTERISTICS
- F. RECOVERY FROM UNUSUAL ATTITUDES

V. INSTRUMENT PROCEDURES

A. STANDARD TERMINAL ARRIVAL/FLIGHT MANAGEMENT SYSTEM PROCEDURES

- **B. HOLDING**
- C. PRECISION APPROACHES (PA)
- D. NONPRECISION APPROACHES (NPA)
- E. CIRCLING APPROACH
- F. MISSED APPROACH

VI. LANDINGS AND APPROACHES TO LANDINGS

A. NORMAL AND CROSSWIND APPROACHES AND LANDINGS

B. LANDING FROM A PRECISION APPROACH

C. APPROACH AND LANDING WITH (SIMULATED) POWERPLANT FAILURE—

MULTIENGINE AIRPLANE

D. LANDING FROM A CIRCLING APPROACH

- H. REJECTED LANDING
- I. LANDING FROM A NO FLAP OR A NONSTANDARD FLAP APPROACH

VII. NORMAL AND ABNORMAL PROCEDURES

A. NORMAL AND ABNORMAL PROCEDURES

VIII. EMERGENCY PROCEDURES

A. EMERGENCY PROCEDURES

IX. POSTFLIGHT PROCEDURES

- A. AFTER-LANDING PROCEDURES
- F. PARKING AND SECURING

PREFLIGHT BRIEFING

- 1. Profile of flight test
- 2. Pilot in Command (14 CFR § 61.47)
- 3. Emergencies actual and simulated
- Engine failure T.O. and landing Other emergencies Feathering
- 4. Transfer of controls (if applicable)
- 5. Collision avoidance (methods)
- Looking for reported traffic
- Clearing the area before maneuvers
- 6. First preflight weight and balance VFR/IFR option
- 7. Advise that oral questioning will continue Perfection is not the standard
- 8. Testing with Plan of Action will continue IAW PTS
- 9. Will continue taking notes
- 10. Continue/discontinue if task is unsatisfactory
- 11. Answer any questions
- 12. Advise applicant to return aircraft documents to the aircraft
- 13. Begin flight test

PREFLIGHT INSPECTION (uses approved or MFG's checklist)

POWERPLANT START (uses approved or MFG's checklist)

TAXIING (observes lines, markings, ATC taxi instructions)

□ PRE-TAKEOFF CHECKS (uses approved or MFG's checklist)

□ REJECTED TAKEOFF (less than 50% V_{MC})

NORMAL AND CROSSWIND TAKEOFF heading, $\pm 5^{\circ}$, airspeed (V-speed), ± 5 knots (combine with ITO)

□INSTRUMENT TAKEOFF (IMC by 100 Feet), heading, ±5°, airspeed (V-speed), ±5 knots

POWERPLANT FAILURE DURING TAKEOFF heading, $\pm 5^{\circ}$, airspeed (V-speed), ± 5 knots Visual (Not less than 400 feet AGL)(combines with Instrument Takeoff)

DEPARTURE PROCEDURES (turn to heading, climb to altitude, track to VOR or GPS route. Airspeed ±10 knots, headings ±10°, altitude ±100 feet accurately tracks a course, radial, or bearing.

STEEP TURNS 45° bank ±5°. Airspeed ±10 knots, headings ±10°, altitude ±100 feet

 \Box APPROACHES TO STALLS One in the <u>takeoff configuration</u> One in a <u>clean cruise configuration</u>. One in a <u>landing configuration</u> (One of these approaches to a stall must be accomplished while in a turn using a bank angle of 15 to 30°)

□ POWERPLANT FAILURE—MULTIENGINE AIRPLANE <u>OR</u> POWERPLANT FAILURE—SINGLE-ENGINE AIRPLANE Attempt to restart, Airspeed ±10 knots, headings ±10°, altitude ±100 feet (Must be feathered AMEL)(not less than 3000 feet AGL or MFG's recommended altitude)

SPECIFIC FLIGHT CHARACTERISTICS - N/A unless by FSB report

RECOVERY FROM UNUSUAL ATTITUDES Nose high and Nose low, Full Panel, VMC conditions

STANDARD TERMINAL ARRIVAL/FLIGHT MANAGEMENT SYSTEM PROCEDURES Cross XX fix at XX Altitude, Slow to XX Knots (as directed by Examiner)

 \Box HOLDING (Follows appropriate entry procedures, ±10 knots, headings ±10°, altitude ±100 feet, accurately track)

□ PRECISION APPROACHES (PA) 2 required. 1/4 Scale LOC and G/S, airspeed ±5 knots. For multiengine airplanes at least <u>one manually controlled</u> precision approach must be accomplished with a simulated failure of one powerplant. The simulated powerplant failure should occur before initiating the final approach segment and must continue to touchdown or throughout the missed approach procedure.

□ NONPRECISION APPROACHES (NPA) 2 required. 1/4 Scale or 5° Bearing lateral, airspeed ±5 knots, MDA -0/+100. Must accomplish at least two nonprecision approaches (one of which must include a procedure turn or, in the case of an RNAV approach, a Terminal Arrival Area (TAA) procedure) in simulated or actual weather conditions. At least one nonprecision approach must be flown without the use of autopilot and without the assistance of radar vectors.

 \Box CIRCLING APPROACH airspeed ±5 knots, MDA -0/+100, maintains Vis Criteria during circle until in a position......Flown IMC to MDA, then visual conditions

 \square MISSED APPROACHES - 2 required. Airspeed ±5 knots, Altitudes ±100, Accurate tracking, One complete published missed approach must be accomplished. AMEL a missed approach must be accomplished with one engine inoperative

□ NORMAL AND CROSSWIND APPROACHES AND LANDINGS Stabilized approach airspeed/ V-speed within ±5 knots. Bring A/C to a Stop

LANDING FROM A PRECISION APPROACH Maintains G/S to threshold, Stabilized approach airspeed/ V-speed within ±5 knots. Bring A/C to a Stop (combined with Normal Landing)

□ APPROACH AND LANDING WITH (SIMULATED) POWERPLANT FAILURE— MULTIENGINE AIRPLANE (combined with Precision Approach with one engine inop) Maintains G/S to threshold, Stabilized approach airspeed/ V-speed within ±5 knots. Bring A/C to a Stop

LANDING FROM A CIRCLING APPROACH (combined with Circling Approach) at least a 90° change of direction. Angle of bank 30° max. Bring A/C to a Stop

 \Box REJECTED LANDING (from 50 feet AGL or over threshold) positive rate of climb and airspeed/V-speed within ±5 knots.

LANDING FROM A NO FLAP OR A NONSTANDARD FLAP APPROACH (combine with Approach and Landing One engine inop)

NORMAL AND ABNORMAL PROCEDURES (combined with powerplant failure)

EMERGENCY PROCEDURES (emergency descent)

AFTER-LANDING PROCEDURES (uses checklist to configure for taxi)

□ PARKING AND SECURING (proper shutdown and securing of A/C)

POST - FLIGHT

1. General

- Reaffirm outcome
- · Allow applicant some time to self
- Prepare temporary cert /disapproval notice/letter of discontinuance
- Offer to sign applicant's logbook

2. Temporary Airman Certificate

- Establish a positive atmosphere
- Highlight above average performance
- Debrief using the plan of action
- Have applicant review and sign temporary airman certificate
- Examiner signs and issues temporary airman certificate (unless IACRA)
- •IACRA Examiner punches hole in Plastic Pilot Cert @ Hologram
- Advise of duration 120 days
- · Ensure applicant has proper documents
- Verify that you have the proper documents
- Brief flight instructor of applicant's performance

3. Disapproval Notice

- Establish a positive atmosphere
- · Highlight above average performance as well as deficient tasks
- Debrief using the plan of action
- Use PTS to explain reasons for disapproval
- Do not criticize the flight instructor
- Be alert for Denial, Anger, Bargaining, or Depression
- Issue disapproval notice
- Advise re-test credit for satisfactorily completed items is 60 days
- Remind about 141 Certificate expiration, if applicable
- Ensure applicant has proper documents
- Verify that you have the proper documents (IACRA= None)
- Brief flight instructor of applicant's performance

Flight portion of test PTS references follow:

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

REFERENCES: 14 CFR parts 61, 91; POH/AFM; AC 20-29, AC 20-117, AC 61-84, AC 91-43, AC-51, AC 91-74, AC 120-27, AC 120-60, AC 135-17.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the preflight inspection procedures, while explaining briefly—

a. the purpose of inspecting the items which must be checked.

b. how to detect possible defects.

c. the corrective action to take.

2. Exhibits satisfactory knowledge of the operational status of the airplane by locating and explaining the significance and importance of related documents, **such as**——

a. airworthiness and registration certificates.

b. operating limitations, handbooks, and manuals.

c. minimum equipment list (MEL), if appropriate.

d. weight and balance data.

e. maintenance requirements, tests, and appropriate records applicable to the proposed flight or operation; and maintenance that may be performed by the pilot or other designated crewmember.

3. Uses the appropriate checklist to ensure completion of checklist items in a timely manner and as

recommended by the manufacturer or approved method to inspect the airplane externally and internally.

4. Verifies the airplane is safe for flight by emphasizing (as appropriate) the need to look at and explain the purpose of inspecting items, **such as**——

a. powerplant, including controls and indicators.

b. fuel quantity, grade, type, contamination safeguards, and servicing procedures.

c. oil quantity, grade, and type.

d. hydraulic fluid quantity, grade, type, and servicing procedures.

e. oxygen quantity, pressures, servicing procedures, and associated systems and equipment for crew and passengers.

f. hull, landing gear, float devices, brakes, steering system, winglets, and canards.

g. tires for condition, inflation, and correct mounting, where applicable.

h. fire protection/detection systems for proper operation, servicing, pressures, and discharge indications.

i. pneumatic system pressures and servicing.

j. ground environmental systems for proper servicing and operation.

k. auxiliary power unit (APU) for servicing and operation.

I. flight control systems including trim, spoilers, and leading/ trailing edge.

m. anti-ice, deice systems, servicing, and operation.

n. installed and auxiliary aircraft security equipment, as appropriate.

5. Coordinates with ground crew and ensures adequate clearance prior to moving any devices, **such as**— door, hatches, and flight control surfaces.

6. Complies with the provisions of the appropriate operations specifications, if applicable, as they pertain to the particular airplane and operation.

7. Demonstrates proper operation of all applicable airplane systems.

8. Notes any discrepancies, determines if the airplane is airworthy and safe for flight, or takes the proper corrective action, and acknowledges limitations imposed by MEL/CDL items.

Checks the general area around the airplane for hazards to the safety of the airplane and personnel.
Ensures that the airplane and surfaces are free of ice, snow, and has satisfactory knowledge of deicing

procedures, if icing conditions were present or ice was found.

B. TASK: POWERPLANT START

REFERENCES: 14 CFR part 61; POH/AFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the correct powerplant start procedures including the use of an auxiliary power unit (APU) or external power source, starting under various atmospheric conditions, normal and abnormal starting limitations, and the proper action required in the event of a malfunction.

2. Ensures the ground safety procedures are followed during the before-start, start, and after-start phases.

3. Ensures the use of appropriate ground crew personnel during the start procedures.

4. Performs all items of the start procedures by systematically following the approved checklist procedure in a timely manner and as recommended by the manufacturer for the before-start, start, and after-start phases.5. Demonstrates sound judgment and operating practices in those instances where specific instructions or checklist items are not published.

C. TASK: TAXIING

REFERENCES: 14 CFR part 61; POH/AFM; AC 91-73, AC 120-57, AC 120-74.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of safe taxi procedures (as appropriate to the airplane including push-back or powerback, as may be applicable).

2. Demonstrates proficiency by maintaining correct and positive airplane control.

3. Maintains proper spacing on other aircraft, obstructions, and persons.

4. Accomplishes the applicable checklist items or ensures all required checks as required by the appropriate checklist items are accomplished in a timely manner and as recommended by the manufacturer, and performs recommended procedures.

5. Maintains desired track and speed.

6. Complies with instructions issued by ATC (or the examiner simulating ATC).

7. Observes runway hold lines, localizer and glide slope critical areas, buoys, beacons, and other surface control markings and lighting.

8. Maintains constant vigilance and airplane control during taxi operation to prevent runway incursion.

F. TASK: PRE-TAKEOFF CHECKS

REFERENCES: 14 CFR part 61; POH/AFM; AC 91-74, AC 120-60, AC 120-117.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the pre-takeoff checks by stating the reason for checking the items outlined on the approved checklist and explaining how to detect possible malfunctions.

2. Divides attention properly inside and outside cockpit.

3. Ensures that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the approved checklist.

4. Explains, as may be requested by the examiner, any normal or abnormal system-operating characteristic or limitation; and the corrective action for a specific malfunction.

5. Determines if the airplane is safe for the proposed flight or requires maintenance.

6. Determines the airplane's takeoff performance, considering such factors as wind, density altitude, weight, temperature, pressure altitude, and runway/ condition and length.

7. Determines airspeeds/V-speeds and properly sets all instrument references, configures flight director and autopilot controls, and navigation and communications equipment to properly fly the aircraft in accordance with the ATC clearance.

8. Reviews procedures for emergency and abnormal situations, which may be encountered during takeoff, and states the corrective action required of the pilot in command and other concerned crewmembers.

9. Obtains and correctly interprets the takeoff and departure clearance as issued by ATC.

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE

A. TASK: NORMAL AND CROSSWIND TAKEOFF

REFERENCES: 14 CFR part 61; POH/AFM; FAA-H-8083-3; AC 20-117, AC 91-54, AC 91-74.

NOTE: VMC maneuver.

Objective. To determine that the applicant:

1. Exhibits knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the airplane) airspeeds, configurations, and emergency/abnormal procedures.

2. Notes any surface conditions, obstructions, aircraft cleared for LAHSO, or other hazards that might hinder a safe takeoff.

3. Verifies and correctly applies correction for the existing wind component to the takeoff performance.

4. Performs or ensures all required pre-takeoff checks as required by the appropriate checklist items are accomplished in a timely manner and as recommended by the manufacturer.

5. Aligns the airplane on the runway centerline or clear of obstacles and vessels on s as appropriate.

6. Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway, if appropriate, prior to initiating and during the takeoff.

Adjusts the powerplant controls as recommended by the FAA-approved guidance for the existing conditions.
Monitors powerplant controls, settings, and instruments during takeoff to ensure all predetermined parameters are maintained.

9. Adjusts the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff segment.

10. Performs the required pitch changes and, as appropriate, performs or calls for and verifies the accomplishment of, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/V-speeds within the tolerances established in the POH or AFM.

11. Uses the applicable noise abatement and wake turbulence avoidance procedures, as required.

12. Accomplishes, or calls for and verifies the accomplishment of, the appropriate checklist items in a timely manner and as recommended by the manufacturer.

13. Maintains the appropriate climb segment airspeed/V-speeds.

14. Maintains the desired heading, $\pm 5^{\circ}$, and the desired airspeed (V-speed), ± 5 knots (of the appropriate V-speed range).

F. TASK: PRE-TAKEOFF CHECKS

REFERENCES: 14 CFR part 61; POH/AFM; AC 91-74, AC 120-60, AC 120-117.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the pre-takeoff checks by stating the reason for checking the items

outlined on the approved checklist and explaining how to detect possible malfunctions.

2. Divides attention properly inside and outside cockpit.

3. Ensures that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the approved checklist.

4. Explains, as may be requested by the examiner, any normal or abnormal system-operating characteristic or limitation; and the corrective action for a specific malfunction.

5. Determines if the airplane is safe for the proposed flight or requires maintenance.

6. Determines the airplane's takeoff performance, considering such factors as wind, density altitude, weight, temperature, pressure altitude, and runway/ condition and length.

7. Determines airspeeds/V-speeds and properly sets all instrument references, configures flight director and autopilot controls, and navigation and communications equipment to properly fly the aircraft in accordance with the ATC clearance.

8. Reviews procedures for emergency and abnormal situations, which may be encountered during takeoff, and states the corrective action required of the pilot in command and other concerned crewmembers.

9. Obtains and correctly interprets the takeoff and departure clearance as issued by ATC.

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE

A. TASK: NORMAL AND CROSSWIND TAKEOFF

REFERENCES: 14 CFR part 61; POH/AFM; FAA-H-8083-3; AC 20-117, AC 91-54, AC 91-74.

NOTE: VMC maneuver.

Objective. To determine that the applicant:

1. Exhibits knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the airplane) airspeeds, configurations, and emergency/abnormal procedures.

2. Notes any surface conditions, obstructions, aircraft cleared for LAHSO, or other hazards that might hinder a safe takeoff.

3. Verifies and correctly applies correction for the existing wind component to the takeoff performance.

4. Performs or ensures all required pre-takeoff checks as required by the appropriate checklist items are accomplished in a timely manner and as recommended by the manufacturer.

5. Aligns the airplane on the runway centerline or clear of obstacles and vessels on s as appropriate.

6. Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway, if appropriate, prior to initiating and during the takeoff.

Adjusts the powerplant controls as recommended by the FAA-approved guidance for the existing conditions.
Monitors powerplant controls, settings, and instruments during takeoff to ensure all predetermined parameters are maintained.

9. Adjusts the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff segment.

10. Performs the required pitch changes and, as appropriate, performs or calls for and verifies the accomplishment of, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/V-speeds within the tolerances established in the POH or AFM.

11. Uses the applicable noise abatement and wake turbulence avoidance procedures, as required.

12. Accomplishes, or calls for and verifies the accomplishment of, the appropriate checklist items in a timely manner and as recommended by the manufacturer.

13. Maintains the appropriate climb segment airspeed/V-speeds.

14. Maintains the desired heading, $\pm 5^{\circ}$, and the desired airspeed (V-speed), ± 5 knots (of the appropriate V-speed range).

E. TASK: INSTRUMENT TAKEOFF

REFERENCES: 14 CFR part 61; POH/AFM; AIM; FAA-H-8083-15, FAA-H-8261-1; AC 20-117, AC 91-74, AC 135-17.

Objective. To determine that the applicant:

1. Exhibits knowledge of an instrument takeoff with instrument meteorological conditions (IMC) simulated at or before reaching an altitude of 100 feet AGL.

2. Takes into account, prior to beginning the takeoff, operational factors which could affect the maneuver, such as Takeoff Warning Inhibit Systems or other airplane characteristics, runway length, surface conditions, wind, wake turbulence, icing conditions, obstructions, and other related factors that could adversely affect safety.

3. Completes the appropriate checklist items in a timely manner and as recommended by the manufacturer in a single pilot airplane, to ensure that the airplane systems applicable to the instrument takeoff are operating properly.

4. Sets the applicable avionics and flight instruments to the desired setting prior to initiating the takeoff.

5. Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway, if appropriate, prior to initiating and during the takeoff.

6. Transitions smoothly and accurately from visual meteorological conditions (VMC) to actual or simulated instrument meteorological conditions (IMC).

7. Maintains the appropriate climb attitude.

8. Complies with the appropriate airspeeds/V-speeds and climb segment airspeeds.

9. Maintains desired heading within ±5° and desired airspeeds within ±5 knots.

10. Complies with ATC clearances and instructions issued by ATC (or the examiner simulating ATC).

F. TASK: POWERPLANT FAILURE DURING TAKEOFF

NOTE: In a multiengine airplane certificated under 14 CFR part 23, (for which no V1, VR, or V2 speeds are published) the failure of the most critical powerplant should be simulated at a point after reaching a minimum of VSSE and, if accomplished in the aircraft, at an altitude not lower than 400 feet AGL, giving consideration to local atmospheric conditions, terrain, and aircraft performance available.

APPLICANT NOTE: Expect this task to be combined with normal Task A, and/or Task E at examiner's discretion.

REFERENCES: 14 CFR part 61; POH/AFM; FAA-H-8083-3, FSB Report.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the procedures used during powerplant failure on takeoff, the appropriate reference airspeeds, and the specific pilot actions required.

Takes into account, prior to beginning the takeoff, operational factors which could affect the maneuver, such as— Takeoff Warning Inhibit Systems or other airplane characteristics, runway length, surface conditions,

wind, wake turbulence, visibility, precipitation, obstructions, and other related factors that could adversely affect safety.

3. Completes required checks prior to starting takeoff to verify the expected powerplant performance. Performs all required pre-takeoff checks as required by the appropriate checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer.

4. Aligns the airplane on the runway.

5. Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway, if appropriate, prior to initiating and during the takeoff.

6. Adjusts the powerplant controls as recommended by the FAA-approved guidance for the existing conditions.

7. Single-engine airplanes—establishes a power-off descent approximately straight-ahead, if the powerplant failure occurs after becoming airborne and before reaching an altitude where a safe turn can be made.

9. Maintains (**in a multiengine airplane**), after a simulated powerplant failure and after a climb has been established, the desired heading within $\pm 5^{\circ}$, desired airspeed within ± 5 knots, and, if appropriate for the airplane, establishes a bank of approximately 5°, or as recommended by the manufacturer, toward the operating powerplant.

10. Maintains the airplane alignment with the heading appropriate for climb performance and terrain clearance when powerplant failure occurs.

G. TASK: REJECTED TAKEOFF

REFERENCES: 14 CFR part 61; FAA-H-8083-3; AC 120-62; POH/AFM.

Objective. To determine that the applicant understands when to reject or continue the takeoff and:

1. Exhibits satisfactory knowledge of the technique and procedure for accomplishing a rejected takeoff after powerplant/system(s) failure/warnings, including related safety factors.

2. Takes into account, prior to beginning the takeoff, operational factors, which could affect the maneuver, **such as**— Takeoff Warning Inhibit Systems or other airplane characteristics, runway length, surface conditions, wind, visibility, precipitation, obstructions, and aircraft cleared for LAHSO that could affect takeoff performance and could adversely affect safety.

3. Aligns the airplane on the runway centerline or clear of obstacles and vessels on s.

4. Performs all required pre-takeoff checks as required by the appropriate checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer.

5. Adjusts the powerplant controls as recommended by the FAA approved guidance for the existing conditions.

6. Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway.

7. Aborts the takeoff if, in a single-engine airplane the powerplant failure occurs prior to becoming airborne, or in a multiengine airplane, the powerplant failure occurs at a point during the takeoff where the abort procedure can be initiated and the airplane can be safely stopped on the remaining runway/stopway. If a flight simulator is not used, the powerplant failure must be simulated before reaching 50 percent of VMC.

8. Reduces the power smoothly and promptly, if appropriate to the airplane, when powerplant failure is recognized.

9. Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, maintaining positive control in such a manner as to bring the airplane to a safe stop.

10. Accomplishes the appropriate powerplant failure or other procedures and/or checklists to ensure completion of checklist items in a timely manner and as recommended by the manufacturer, as set forth in the POH or AFM.

H. TASK: DEPARTURE PROCEDURES

REFERENCES: 14 CFR part 61; AC 90-100; POH/AFM; AIM; FAA-H-8261-1, FAA-H-8083-15.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits satisfactory knowledge of DPs, En Route Low and High Altitude Charts, FMSP, and related pilot/controller responsibilities.

2. Uses the current and appropriate navigation publications for the proposed flight.

3. Selects, configures, and uses the appropriate communications frequencies, navigation and systems displays; selects and identifies the navigation aids and routes necessary to properly fly the assigned ATC clearance.

4. Performs the appropriate checklist items in a timely manner and as recommended by the manufacturer.

5. Establishes communications with ATC, using proper phraseology and advises ATC when unable to comply with a clearance or restriction.

6. Complies, in a timely manner, with all instructions and airspace restrictions.

7. Exhibits adequate knowledge of two-way radio communications failure procedures.

8. Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, clearance, or as directed by the examiner.

9. Maintains the appropriate airspeed within ± 10 knots, headings within $\pm 10^{\circ}$, altitude within ± 100 feet; and accurately tracks a course, radial, or bearing.

10. Conducts the departure phase to a point where, in the opinion of the examiner, the transition to the en route environment is complete.

IV. AREA OF OPERATION: INFLIGHT MANEUVERS

A. TASK: STEEP TURNS

REFERENCES: 14 CFR part 61; FAA-H-8083-3; FSB Report; POH/AFM.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits knowledge of steep turns (if applicable to the airplane) and the factors associated with performance; and, if applicable, wing loading, angle of bank, stall speed, pitch, power requirements, and over-banking tendencies.

2. Selects an altitude recommended by the manufacturer, training syllabus, or other training directive, but in no case lower than 3,000 feet AGL.

3. Establishes the recommended entry airspeed.

4. Rolls into a coordinated turn of 180° or 360° with a bank of at least 45°. Maintains the bank angle within ±5° while in smooth, stabilized flight.

5. Applies smooth coordinated pitch, bank, and power to maintain the specified altitude within ± 100 feet and the desired airspeed within ± 10 knots.

6. Rolls out of the turn (at approximately the same rate as used to roll into the turn) within $\pm 10^{\circ}$ of the entry or specified heading, stabilizes the airplane in a straight-and-level attitude **or**, at the discretion of the examiner, reverses the direction of turn and repeats the maneuver in the opposite direction.

7. Avoids any indication of an approaching stall, abnormal flight attitude, or exceeding any structural or operating limitation during any part of the maneuver.

B. TASK: <u>APPROACHES</u> TO STALLS

REFERENCES: 14 CFR part 61; FAA-H-8083-3; FSB Report; POH/AFM.

THREE approaches to stall are required, as follows (unless otherwise specified by the FSB Report):

1. One in the takeoff configuration (except where the airplane uses only zero-flap takeoff configuration) or approach (partial) flap configuration.

2. One in a clean cruise configuration.

3. One in a landing configuration (landing gear and landing flaps set).

CAUTION: Avoid deep stalls which are termed as "virtually unrecoverable" in airplanes, and "tip stalls" in swept wing airplanes.

One of these approaches to a stall must be accomplished while in a turn using a bank angle of 15 to 30°.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions exhibits satisfactory knowledge of the factors, which influence stall characteristics, including the use of various drag configurations, power settings, pitch attitudes, weights, and bank angles. Also, exhibits adequate knowledge of the proper procedure for resuming normal flight.

2. Selects an entry altitude that is in accordance with the AFM or POH, but in no case lower than an altitude that will allow recovery to be safely completed at a minimum of 3,000 feet AGL.

3. Observes the area is clear of other aircraft prior to accomplishing an approach to a stall.

4. While maintaining altitude, slowly establishes the pitch attitude (using trim or elevator/stabilizer), bank angle, and power setting that will induce a stall.

5. Announces the first indication of an impending stall (**such as**— buffeting, stick shaker, decay of control effectiveness, and any other cues related to the specific airplane design characteristics) and initiates recovery (using maximum power or as directed by the examiner).

6. Recovers to a reference airspeed, altitude and heading with minimal loss of altitude, airspeed, and heading deviation.

7. Demonstrates smooth, positive control during entry, approach to a stall, and recovery.

C. TASK: POWERPLANT FAILURE—MULTIENGINE AIRPLANE

REFERENCES: 14 CFR part 61; POH/AFM.

NOTE: The feathering of one propeller must be demonstrated in any multiengine airplane (or simulator/qualified FTD) equipped with propellers (includes turboprop), unless the airplane is an exception by the type rating and airplane certification (see page 13 of this document). The propeller must be safely feathered and unfeathered while airborne. In a multiengine jet airplane (or simulator/qualified FTD), one engine must be shut down and a restart must be demonstrated while airborne. Feathering or shutdown should be performed only under conditions and at such altitudes (no lower than 3,000 feet AGL) and in a position where a safe landing can be made on an established airport in the event difficulty is encountered in unfeathering the propeller or restarting the engine. At an altitude lower than 3,000 feet AGL, simulated engine failure will be performed by setting the powerplant controls to simulate zero-thrust.

In the event the propeller cannot be unfeathered or the engine air started during the test, it should be treated as an emergency.

Objective. To determine that the applicant:

1. Exhibits knowledge of the flight characteristics and controllability associated with maneuvering with powerplant(s) inoperative (as appropriate to the airplane).

2. Maintains positive airplane control. Establishes a bank of approximately 5°, if required, or as recommended by the manufacturer, to maintain coordinated flight, and properly trims for that condition.

3. Sets powerplant controls, reduces drag as necessary, correctly identifies and verifies the inoperative powerplant(s) after the failure (or simulated failure).

4. Maintains the operating powerplant(s) within acceptable operating limits.

5. Follows the prescribed airplane checklist to ensure completion of checklist items in a timely manner and as recommended by the manufacturer, and verifies the procedures for securing the inoperative powerplant(s).6. Determines the cause for the powerplant(s) failure and if a restart is a viable option.

7. Maintains desired altitude within ± 100 feet, when a constant altitude is specified and is within the capability of the airplane.

8. Maintains the desired airspeed within ±10 knots.

9. Maintains the desired heading within $\pm 10^{\circ}$ of the specified heading.

10. Demonstrates proper powerplant restart procedures (if appropriate) in accordance with FAA-approved procedure/checklist or the manufacturer's recommended procedures and pertinent checklist items.

D. TASK: POWERPLANT FAILURE—SINGLE-ENGINE AIRPLANE

REFERENCES: 14 CFR part 61; FAA-H-8083-3; POH/AFM.

NOTE: No simulated powerplant failure will be given by the examiner in an airplane when an actual touchdown cannot be safely completed, should it become necessary.

Objective. To determine that the applicant:

1. Exhibits knowledge of the flight characteristics, approach and forced (emergency) landing procedures, and related procedures to use in the event of a powerplant failure (as appropriate to the airplane).

2. Maintains positive control throughout the maneuver.

3. Establishes and maintains the recommended best glide airspeed, ±5 knots, and configuration during a simulated powerplant failure.

4. Selects a suitable airport or landing area, which is within the performance capability of the airplane.

5. Establishes a proper flight pattern to the selected airport or landing area, taking into account altitude, wind, terrain, obstructions, and other pertinent operational factors.

6. Follows the emergency checklist items appropriate to the airplane to ensure completion of checklist items in a timely manner and as recommended by the manufacturer.

7. Determines the cause for the simulated powerplant failure (if altitude permits) and if a restart is a viable option.

8. Uses configuration devices, **such as—** landing gear and flaps in a manner recommended by the manufacturer and/or approved by the FAA.

E. TASK: SPECIFIC FLIGHT CHARACTERISTICS

REFERENCES: 14 CFR part 61; FSB Reports; POH/AFM.Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of specific flight characteristics appropriate to the specific airplane, as

identified by FSB Reports, **such as—** Dutch Rolls for certain aircraft.

2. Uses proper technique to enter into, operate within, and recover from specific flight situations.

F. TASK: RECOVERY FROM UNUSUAL ATTITUDES

REFERENCES: 14 CFR part 61; FSB Reports; FAA-H-8083-15; POH; AFM.

Objective. To determine that the applicant:

1. Exhibits knowledge of recovery from unusual attitudes.

2. Recovers from nose-high banked and/or level unusual attitudes, using proper pitch, bank, and power techniques.

3. Recovers from nose-low banked and/or level unusual attitudes, using proper pitch, bank, and power techniques.

V. AREA OF OPERATION: INSTRUMENT PROCEDURES

NOTE: TASKS B through F are not required if the applicant holds a private pilot or commercial pilot certificate and is seeking a type rating limited to VFR.

A. TASK: STANDARD TERMINAL ARRIVAL/FLIGHT MANAGEMENT SYSTEM PROCEDURES

REFERENCES: 14 CFR part 61; POH/AFM; AIM; En Route Low and High Altitude Charts; Profile Descent Charts; STARs/FMSPs; Standard Instrument Approach Procedure Charts (SIAP);

FAA-H-8261-1; AC 61-134, AC 90-100.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits adequate knowledge of En Route Low and High Altitude Charts, STARs/FMSPs, Instrument Approach Procedure Charts (IAP), and related pilot and controller responsibilities.

2. Uses the current and appropriate navigation publications for the proposed flight.

3. Selects and correctly identifies all instrument references, flight director and autopilot controls, displays, and navigation and communications equipment associated with the arrival.

4. Performs the airplane checklist items to ensure completion of checklist items appropriate to the arrival in a timely manner and as recommended by the manufacturer.

5. Establishes communications with ATC, using proper phraseology.

6. Complies, in a timely manner, with all ATC clearances, instructions, and restrictions. Advises ATC if unable to comply with ATC clearances or instructions.

7. Exhibits satisfactory knowledge of two-way communications failure procedures.

8. Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, ATC clearance, or as directed by the examiner.

9. Adheres to airspeed restrictions and adjustments required by regulations, ATC, the POH, the AFM, or the examiner.

10. Establishes, where appropriate, a rate of descent consistent with the airplane operating characteristics and safety.

11. Maintains the appropriate airspeed/V-speed within ± 10 knots, but not less than VREF, if applicable; heading $\pm 10^{\circ}$: altitude within ± 100 feet; and accurately tracks radials, courses, and bearings.

12. Complies with the provisions of the Profile Descent, STAR, and other arrival procedures, as appropriate.

B. TASK: HOLDING

REFERENCES: 14 CFR part 61; POH/AFM; AIM; En Route Low and High Altitude Charts; STARs; FMSP; Standard Instrument Approach Procedure Charts (SIAP).

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits knowledge of holding procedures for standard and nonstandard, published and nonpublished holding patterns.

If appropriate, demonstrates satisfactory knowledge of holding endurance, including, but not necessarily limited to, fuel on board, fuel flow while holding, fuel required to alternate, etc.

2. Changes to the recommended holding airspeed appropriate for the airplane and holding altitude, so as to cross the holding fix at or below maximum holding airspeed.

3. Recognizes arrival at the clearance limit or holding fix.

4. **Follows appropriate entry procedures** for a standard, nonstandard, published, or nonpublished holding pattern.

5. Complies with ATC reporting requirements.

6. Uses the proper timing criteria required by the holding altitude and ATC or examiner's instructions.

7. Complies with the holding pattern leg length when a distance measuring equipment (DME) distance is specified.

8. Uses the proper wind-drift correction techniques to accurately maintain the desired radial, track, courses, or bearing.

9. Arrives over the holding fix as close as possible to the "expect further clearance" time.

10. Maintains the appropriate airspeed/V-speed within ± 10 knots, altitude within ± 100 feet, headings within $\pm 10^{\circ}$; and accurately tracks radials, courses, and bearings.

11. Selects and correctly identifies required instrument navigation aids, flight director and autopilot controls, navigation equipment displays associated with the holding clearance and expected clearance, as appropriate.

C. TASK: PRECISION APPROACHES (PA)

REFERENCES: 14 CFR part 61; POH/AFM; AIM; Standard Instrument Approach Procedure Charts (SIAP); FAA-H-8261-1, FAA-H-8083-15.

NOTE: **Two precision approaches**, utilizing NAVAID equipment for centerline and glideslope guidance, **must be accomplished** in simulated or actual instrument conditions **to DA/DH**. At least one approach must be flown manually without the use of an autopilot.

The second approach may be flown via the autopilot, if appropriate, and if the DA/DH altitude does not violate the authorized minimum altitude for autopilot operation. Manually flown precision approaches may use raw data displays or may be flight director assisted, at the discretion of the examiner.

If the aircraft is equipped with advanced flight instrument displays, the raw data approach should be flown by reference to the backup instrumentation as much as is possible with the airplane's configuration.

For multiengine airplanes at least one manually controlled precision approach must be accomplished with a simulated failure of one powerplant. The simulated powerplant failure should occur before initiating the final approach segment and must continue to touchdown or throughout the missed approach procedure. As the markings on localizer/glideslope indicators vary, a one-quarter scale deflection of either the localizer, or glide slope indicator is when it is displaced one-fourth of the distance that it may be deflected from the on glide slope or on localizer position.

NOTE: A stabilized approach is characterized by a constant angle, constant rate of descent approach profile ending near the touchdown point, where the landing maneuver begins.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the precision instrument approach procedures with all engines operating, and with one engine inoperative.

2. Accomplishes the appropriate precision instrument approaches as selected by the examiner.

3. Establishes two-way communications with ATC using the proper communications phraseology and techniques, or, directs co-pilot/safety pilot to do so, as appropriate for the phase of flight or approach segment.

4. Complies, in a timely manner, with all clearances, instructions, and procedures.

5. Advises ATC anytime the applicant is unable to comply with a clearance.

6. Establishes the appropriate airplane configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions.

7. Completes the airplane checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer, appropriate to the phase of flight or approach segment, including engine out approach and landing checklists, if appropriate.

8. Prior to beginning the final approach segment, maintains the desired altitude ± 100 feet, the desired airspeed within ± 10 knots, the desired heading within $\pm 5^{\circ}$; and accurately tracks radials, courses, and bearings.

9. Selects, tunes, identifies, and monitors the operational status of ground and airplane navigation equipment used for the approach, or correctly programs and monitors the RNAV equipment to display the proper course/track.

10. Applies the necessary adjustments to the published DA/DH and visibility criteria for the airplane approach category as required, **such as**—

a. Notices to Airmen, including Flight Data Center (FDC) Procedural NOTAMs.

b. Inoperative airplane 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 predetermined rate of descent at the point where the electronic glideslope begins, which approximates that required for the airplane to follow the glideslope.

12. Maintains a stabilized final approach, from the precision final approach fix to DA/DH, allowing no more than one-quarter scale deflection of either the glideslope or localizer indications, and maintains the desired airspeed within ±5 knots.

13. A missed approach or transition to a landing must be initiated at DA/DH.

14. Immediately initiates and executes the missed approach when at the DA/DH, if the required visual references for the runway are not unmistakably visible and identifiable.

15. Transitions to a normal landing approach (missed approach for seaplanes) only when the airplane is in a position from which a descent to a landing on the runway can be made at a normal rate of descent using normal maneuvering.

16. Maintains localizer and glide slope within one-quarter-scale deflection of the indicators during the visual descent from DA/DH to a point over the runway where the glideslope must be abandoned to accomplish a normal landing.

D. TASK: NONPRECISION APPROACHES (NPA)

REFERENCES: 14 CFR part 61; POH/AFM; ÀIM; Śtandard Instrument Approach Procedure Charts (SIAP); FAA-H-8261-1, FAA-H-8083-15; AC 90-94.

NOTE: The applicant must accomplish at least two nonprecision approaches (one of which must include a procedure turn or, in the case of an RNAV approach, a Terminal Arrival Area (TAA) procedure) in simulated or actual weather conditions. At least one nonprecision approach must be flown without the use of autopilot and without the assistance of radar vectors. (The yaw damper and flight director are not considered parts of the autopilot for purpose of this part). The examiner will select nonprecision approaches that are representative of the type that the applicant is likely to use. The choices must utilize two different types of navigational aids. Some examples of navigational aids for the purpose of this part are: NDB, VOR, LOC, LDA, GPS, or RNAV.

NOTE: One approach should be flown with reference to backup or "fail down" instrumentation or navigation display depending on the aircraft's avionics configuration.

NOTE: The requirements for conducting a GPS approach for the purpose of this test are explained on pages 13 and 14 of the Introduction.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of nonprecision approach procedures representative of those the applicant is likely to use.

2. Accomplishes the nonprecision instrument approaches selected by the examiner.

3. Establishes two-way communications with ATC as appropriate to the phase of flight or approach segment and uses proper communications phraseology and techniques.

4. Complies with all clearances issued by ATC.

5. Advises ATC or the examiner any time the applicant is unable to comply with a clearance.

6. Establishes the appropriate airplane configuration and airspeed, and completes all applicable checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer.

7. Maintains, prior to beginning the final approach segment, the desired altitude ± 100 feet, the desired airspeed ± 10 knots, the desired heading $\pm 5^{\circ}$; and accurately tracks radials, courses, and bearings.

8. Selects, tunes, identifies, and monitors the operational status of ground and airplane navigation equipment used for the approach.

9. Applies the necessary adjustments to the published Minimum Descent Altitude (MDA) and visibility criteria for the airplane approach category when required, **such as**——

a. Notices to Airmen, including Flight Data Center Procedural NOTAMs.

b. Inoperative airplane and ground navigation equipment.

c. Inoperative visual aids associated with the landing environment.

d. National Weather Service (NWS) reporting factors and criteria.

10. Establishes a rate of descent that will ensure arrival at the MDA (at, or prior to reaching, the visual descent point (VDP), if published) with the airplane in a position from which a descent from MDA to a landing on the intended runway can be made at a normal rate using normal maneuvering.

11. Allows, while on the final approach segment, not more than quarter-scale deflection of the Course Deviation Indicator (CDI) or $\pm 5^{\circ}$ in the case of the RMI or bearing pointer, and maintains airspeed within ± 5 knots of that desired.

12. Maintains the MDA, when reached, within -0, +50 feet to the missed approach point.

13. Executes the missed approach at the missed approach point if the required visual references for the

intended runway are not unmistakably visible and identifiable at the missed approach point.

14. Executes a normal landing from a straight-in or circling approach when instructed by the examiner.

E. TASK: CIRCLING APPROACH

REFERENCES: 14 CFR part 61; POH/AFM; AIM; Standard Instrument Approach Procedure Charts (SIAP); FAA-H-8261-1, FAA-H-8083-15.

APPLICANT NOTE: Expect this task to be combined with other tasks to include Area VI, Task C. Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of circling approach categories, speeds, and procedures to a specified runway.

2. In simulated or actual instrument conditions to MDA, accomplishes the circling approach selected by the examiner.

3. Demonstrates sound judgment and knowledge of the airplane maneuvering capabilities throughout the circling approach.

4. Confirms the direction of traffic and adheres to all restrictions and instructions issued by ATC.

5. Descends at a rate that ensures arrival at the MDA at, or prior to, a point from which a normal circle-to-land maneuver can be accomplished.

6. Avoids descent below the appropriate circling MDA or exceeding the visibility criteria until in a position from which a descent to a normal landing can be made.

7. Maneuvers the airplane, after reaching the authorized circling approach altitude, by visual references to maintain a flightpath that permits a normal landing on a runway that requires at least a 90° change of direction, from the final approach course, to align the aircraft for landing.

8. Performs the procedure without excessive maneuvering and without exceeding the normal operating limits of the airplane (the angle of bank should not exceed 30°).

9. Maintains the desired altitude within -0, +100 feet, heading/ track within $\pm 5^{\circ}$, the airspeed/V-speed within ± 5 knots, but not less than the airspeed as specified in the POH or the AFM.

10. Uses the appropriate airplane configuration for normal and abnormal situations and procedures.

11. Turns in the appropriate direction, when a missed approach is dictated during the circling approach, and uses the correct procedure and airplane configuration.

12. Performs all procedures required for the circling approach and airplane control in a smooth, positive, and timely manner.

F. TASK: MISSED APPROACH

REFERENCES: 14 CFR part 61; POH/AFM; AIM; Standard Instrument Approach Procedure Charts (SIAP); FAA-H-8083-15, FAA-H-8261-1.

NOTE: The applicant must perform two missed approaches with one being from a precision approach (ILS, MLS, or GLS). One complete published missed approach must be accomplished. Additionally, in multiengine airplanes, a missed approach must be accomplished with one engine inoperative (or simulated inoperative). The engine failure may be experienced anytime prior to the initiation of the approach, during the approach, or during the transition to the missed approach attitude and configuration.

Descending below the MDA or continuing a precision approach below DH/DA as appropriate, unless the runway environment is in sight is considered unsatisfactory performance. However, even if the missed approach is properly initiated at DA/DH, most airplanes descend below DA/DH because of the momentum of the airplane transitioning from a stabilized approach to a missed approach. This descent below DA/DH is not considered unsatisfactory, as long as the precision approach was not continued below DA/DH. Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of missed approach procedures associated with standard instrument approaches to include reference to standby (backup or fail down) instruments.

2. Initiates the missed approach procedure promptly by the timely application of power, establishes the proper climb attitude, and reduces drag in accordance with the approved procedures.

3. Reports to ATC, beginning the missed approach procedure.

4. Complies with the appropriate missed approach procedure or ATC clearance.

5. Advises ATC any time the applicant is unable to maneuver the airplane to comply with a clearance.

6. Follows the recommended airplane checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer appropriate to the go-around procedure for the airplane used.

7. Requests clearance, if appropriate, to the alternate airport, another approach, a holding fix, or as directed by the examiner.

8. Maintains the desired altitudes ± 100 feet, airspeed ± 5 knots, heading $\pm 5^{\circ}$; and accurately tracks courses, radials, and bearings.

VI. AREA OF OPERATION: LANDINGS AND APPROACHES TO LANDINGS

NOTE: Notwithstanding the authorizations for the combining of maneuvers and for the waiver of maneuvers, the applicant must **make at least three actual landings (one to a full stop).** These landings must include the types listed in this AREA OF OPERATION; however, **more than one type may be combined where appropriate (i.e., crosswind and landing from a precision approach or landing with simulated powerplant failure, etc.).** For all landings, touchdown should be 500 to 3,000 feet past the runway threshold, **not to exceed one-third of the runway length, with the runway centerline between the main landing gear.**

A. TASK: NORMAL AND CROSSWIND APPROACHES AND LANDINGS

REFERENCES: 14 CFR part 61; POH/AFM; FAA-H-8083-3.

NOTE: In an airplane with a single powerplant, unless the applicant holds a commercial pilot certificate, he or she must accomplish three accuracy approaches and spot landings from an altitude of 1,000 feet or less,

with the engine power lever in idle and 180° of change in direction. The airplane must touch the ground in a normal landing attitude beyond and within 200 feet of a designated line or point on the runway. <u>At least</u> one landing must be from a forward slip.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of normal and crosswind approaches and landings including recommended approach angles, airspeeds, V-speeds, configurations, performance

limitations, wake turbulence, LAHSO, and safety factors (as appropriate to the airplane).

2. Establishes the approach and landing configuration appropriate for the runway and meteorological conditions, and adjusts the powerplant controls as required.

3. Maintains a ground track that ensures the desired traffic pattern will be flown, taking into account any obstructions and ATC or examiner instructions.

- 4. Verifies existing wind conditions, makes proper correction for drift, and maintains a precise ground track.
- 5. Maintains a stabilized approach and the desired airspeed/ V-speed within ± 5 knots.
- 6. Accomplishes a smooth, positively controlled transition from final approach to touchdown.
- 7. Maintains positive directional control and crosswind correction during the after-landing roll.

8. Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to **bring the airplane to a safe stop.**

9. Completes the applicable after-landing checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer.

B. TASK: LANDING FROM A PRECISION APPROACH

REFERENCES: 14 CFR part 61; POH/AFM; AIM; FAA-H-8083-15.

NOTE: If circumstances beyond the control of the applicant prevent an actual landing, the examiner may accept an approach to a point where, in his or her judgment, a safe landing and a full stop could have been made, and credit given for a missed approach.

APPLICANT NOTE: Expect other tasks to be combined with this task (to include Area VI, Task C for multiengine airplanes).

Objective. To determine that the applicant:

1. Exhibits awareness of landing in sequence from a precision approach.

2. Considers factors to be applied to the approach and landing **such as—** displaced thresholds, meteorological conditions, NOTAMs, and ATC or examiner instructions.

3. Uses the airplane configuration and airspeed/V-speeds, as appropriate.

4. Maintains, during the final approach segment, glide slope and localizer indications within applicable standards of deviation, and the recommended airspeed/V-speed ±5 knots.

5. Applies gust/wind factors as recommended by the manufacturer, and takes into account meteorological phenomena **such as—** wind shear, microburst, and other related safety of flight factors.

6. Accomplishes the appropriate checklist items to ensure timely completion of checklist items in a timely manner and as recommended by the manufacturer or approved method.

7. Transitions smoothly from simulated instrument meteorological conditions (IMC) at a point designated by the examiner, maintaining positive airplane control.

8. Accomplishes a smooth, positively controlled transition from final approach to touchdown.

9. Maintains positive directional control and crosswind correction during the after-landing roll.

10. Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the airplane to a safe stop after landing.

11. Accomplishes the appropriate after-landing checklist items to ensure completion of after-landing checklist items in a timely manner and as recommended by the manufacturer.

C. TASK: APPROACH AND LANDING WITH (SIMULATED) POWERPLANT FAILURE—MULTIENGINE AIRPLANE

REFERENCES: 14 CFR part 61; POH/AFM; FAA-H-8083-3.

In other multiengine airplanes, the applicant must follow a procedure, which simulates the loss of 50 percent of available powerplants, the loss being simulated on one side of the airplane.

APPLICANT NOTE: Expect task to be combined with other tasks (to include Area V, Task E). May be limited by aircraft parameters under ambient conditions at examiner's discretion.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the flight characteristics and controllability associated with maneuvering to a landing with powerplant(s) inoperative (or simulated inoperative) including the controllability factors associated with maneuvering, and the applicable emergency procedures.

2. Maintains positive airplane control. Establishes a bank of approximately 5°, if required, or as recommended by the manufacturer, to maintain coordinated flight, and properly trims for that condition.

3. Sets powerplant controls, reduces drag as necessary, correctly identifies and verifies the inoperative powerplant(s) after the failure (or simulated failure).

4. Maintains the operating powerplant(s) within acceptable operating limits.

5. Follows the prescribed airplane checklist to ensure timely completion of checklist items in a timely manner and as recommended by the manufacturer, and verifies the procedures for securing the inoperative powerplant(s).

6. Proceeds toward the nearest suitable airport.

7. Maintains, prior to beginning the final approach segment, the desired altitude ± 100 feet, the desired airspeed ± 10 knots, the desired heading $\pm 5^{\circ}$; and accurately tracks courses, radials, and bearings.

8. Establishes the approach and landing configuration appropriate for the runway or landing area, and meteorological conditions; and adjusts the powerplant controls as required.

9. Maintains a stabilized approach and the desired airspeed/ V-speed within ±5 knots.

10. Accomplishes a smooth, positively controlled transition from final approach to touchdown.

11. Maintains positive directional control and crosswind corrections during the after-landing roll.

12. Uses spoilers, prop reverse, thrust reversers, wheel brakes, and other drag/braking devices, as

appropriate, in such a manner to bring the airplane to a safe stop after landing.

13. Accomplishes the appropriate after-landing checklist items to ensure completion of after-landing checklist items in a timely manner and as recommended by the manufacturer.

D. TASK: LANDING FROM A CIRCLING APPROACH

REFERENCES: 14 CFR part 61; POH/AFM; AIM; FAA-H-8083-15.

APPLICANT NOTE: Expect task to be combined with other tasks (to include previous task, Task C for multiengine aircraft.)

Objective. To determine that the applicant:

1. Exhibits knowledge of a landing from a circling approach.

2. Selects, and complies with, a circling approach procedure to a specified runway.

3. Considers the environmental, operational, and meteorological factors, which affect a landing from a circling approach.

4. Confirms the direction of traffic and adheres to all restrictions and instructions issued by ATC.

5. Descends at a rate that ensures arrival at the MDA at, or prior to, a point from which a normal circle-to-land maneuver can be accomplished.

6. Avoids descent below the appropriate circling MDA or exceeding the visibility criteria until in a position from which a descent to a normal landing can be made.

7. Accomplishes the appropriate checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer or approved method.

8. Maneuvers the airplane, after reaching the authorized circling approach altitude, by visual references, to maintain a flight path that requires at least a 90° change of direction, from the final approach course, to align the aircraft for landing.

9. Performs the maneuver without excessive maneuvering and without exceeding the normal operating limits of the airplane.

The angle of bank should not exceed 30°.

10. Maintains the desired altitude within +100, -0 feet, heading within ±5°, and approach airspeed/V-speed within ±5 knots.

11. Uses the appropriate airplane configuration for normal and abnormal situations and procedures.

12. Performs all procedures required for the circling approach and airplane control in a timely, smooth, and positive manner.

13. Accomplishes a smooth, positively controlled transition to final approach and touchdown or to a point where in the opinion of the examiner that a safe full stop landing could be made.

14. Maintains positive directional control and crosswind correction during the after-landing roll.

15. Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to **bring the airplane to a safe stop**.

16. Accomplishes the appropriate after-landing checklist items to ensure completion of after-landing checklist items in a timely manner and as recommended by the manufacturer, after clearing the runway in a timely manner and as recommended by the manufacturer.

H. TASK: REJECTED LANDING

REFERENCES: 14 CFR part 61; AIM; POH/AFM; FSB Report; FAA-H-8083-3.

NOTE: The maneuver may be combined with instrument, circling, or missed approach procedures, but instrument conditions need not be simulated below 100 feet above the runway. This maneuver should be initiated approximately 50 feet above the runway or landing area and approximately over the runway threshold or as recommended by the FSB Report.

For those applicants seeking a VFR only type rating in an airplane not capable of instrument flight, and where this maneuver is accomplished with a simulated engine failure, it should not be initiated at speeds or altitudes below that recommended in the POH.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of a rejected landing procedure including the conditions that dictate a rejected landing, the importance of a timely decision, LAHSO considerations, the recommended airspeed/V-speeds, and also the applicable "clean-up" procedure.

2. Makes a timely decision to reject the landing for actual or simulated circumstances and makes appropriate notification when safety-of-flight is not an issue.

3. Applies the appropriate power setting for the flight condition and establishes a pitch attitude necessary to obtain the desired performance.

4. Retracts the wing flaps/drag devices and landing gear, if appropriate, in the correct sequence and at a safe altitude, establishes a positive rate of climb and the appropriate airspeed/V-speed within ±5 knots.

5. Trims the airplane as necessary, and maintains the proper ground track during the rejected landing procedure.

6. Accomplishes the appropriate after-landing checklist items to ensure timely completion of checklist items, in accordance with approved procedures.

7. Reports reject to ATC in a timely manner, after executing reject procedures.

I. TASK: LANDING FROM A NO FLAP OR A NONSTANDARD FLAP APPROACH

REFERENCES: 14 CFR part 61; FSB Report; POH/AFM; FAA-H-8083-3.

NOTE: This maneuver need not be accomplished for a particular airplane type if the Administrator has determined that the probability of flap extension failure on that type airplane is extremely remote due to system design. The examiner must determine whether checking on slats only and partial-flap approaches are necessary for the practical test. However, probability of asymmetrical flap failures should be considered in this making this determination.

Objective. To determine that the applicant:

1. Exhibits knowledge of the factors, which affect the flight characteristics of an airplane when full or partial flaps, leading edge flaps, and other similar devices become inoperative.

2. Uses the correct airspeeds/V-speeds for the approach and landing.

3. Maintains the proper airplane pitch attitude and flightpath for the configuration, gross weight, surface winds, and other applicable operational considerations.

4. Uses runway of sufficient length for the zero or nonstandard flap condition.

5. Maneuvers the airplane to a point where a touchdown at an acceptable point on the runway and a safe landing to a full stop could be made.

6. After landing, uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner **to bring the airplane to a safe stop.**

VII. AREA OF OPERATION: NORMAL AND ABNORMAL PROCEDURES

A. TASK: NORMAL AND ABNORMAL PROCEDURES

REFERENCES: 14 CFR part 61; POH/AFM; FSB Report.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the normal and abnormal procedures of the systems, subsystems, and devices relative to the airplane type (as may be determined by the examiner); knows immediate action items to accomplish, if appropriate, and proper checklist to accomplish or to call for, if appropriate.

2. Demonstrates the proper use of the airplane systems, subsystems, and devices (as may be determined by the examiner) appropriate to the airplane, **such as—**

a. powerplant.

b. fuel system.

c. electrical system.

d. hydraulic system.

e. environmental and pressurization systems.

f. fire detection and extinguishing systems.

g. navigation and avionics systems to include backup (fail down) modes and procedures.

h. automatic flight control system, electronic flight instrument system, and related subsystems to include

backup (fail down) modes and procedures.

i. flight control systems.

j. anti-ice and deice systems.

k. airplane and personal emergency equipment.

I. other systems, subsystems, and devices specific to the type airplane, including make, model, and series.

VIII. AREA OF OPERATION: EMERGENCY PROCEDURES

A. TASK: EMERGENCY PROCEDURES

REFERENCES: 14 CFR part 61; POH/AFM.

Objective. To determine that the applicant:

1. Exhibits satisfactory knowledge of the emergency procedures (as may be determined by the examiner) relating to the particular airplane type.

2. Demonstrates the proper emergency procedures (as must be determined by the examiner) relating to the particular airplane type, **such as**—

a. emergency descent (maximum rate).

- b. inflight fire and smoke removal.
- c. rapid decompression.
- d. emergency evacuation.
- e. airframe icing.

f. others (as may be required by the AFM).

3. Demonstrates the proper procedure for any other emergency outlined (as determined by the examiner) in the appropriate approved AFM to include demonstration of flight by reference to standby flight instruments.

IX. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER-LANDING ROCEDURES

REFERENCE: POH/AFM.

Objective. To determine that the applicant:

1. Exhibits knowledge of safe after landing, taxi, ramping, anchoring, docking, and mooring procedures, as appropriate.

2. Demonstrates proficiency by maintaining correct and positive control. In airplanes equipped with float devices, this includes water taxiing, approaching a buoy, sailing, and docking.

3. Maintains proper spacing on other aircraft, obstructions, and persons.

4. Accomplishes the applicable checklist items to ensure completion of checklist items in a timely manner and as recommended by the manufacturer and performs the recommended procedures.

5. Maintains the desired track and speed.

6. Complies with instructions issued by ATC (or the examiner simulating ATC).

7. Observes runway hold lines, localizer and glide slope critical areas, and other surface control markings and lighting to prevent a runway incursion.

8. Maintains constant vigilance and airplane control during the taxi operation.

F. TASK: PARKING AND SECURING

REFERENCE: POH/AFM.

Objective. To determine that the applicant:

1. Demonstrates knowledge of the parking, and the securing airplane procedures.

2. Demonstrates knowledge of the airplane forms/logs to record the flight time/discrepancies.

3. Demonstrates knowledge of any installed and auxiliary aircraft security equipment, as appropriate.