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Generic- Aircraft Type Rating Curriculum 85 Hours Instruction.

This is a generic type rating curriculum to develop a training program outline to meet the requirements of Regulation 68 of The Civil Aviation (Personnel Licensing) Regulations, 2017 as amended. This outline should be adopted to include specific data and characteristics of the aircraft for which the type rating is being issued.

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GROUND INSTRUCTION. Acceptable completion standards for each lesson and examinations should be established by the operator such as use of a pass/fail system or may prefer a minimum passing grade for written examinations.

SEGMENT 1- GENERAL OPERATIONAL SUBJECTS

OBJECTIVE:

The applicant will clearly understand operational requirements that are specific to the aircraft for which the type rating is required.

COMPLETION STANDARDS:

The applicant must be able to demonstrate knowledge and understanding of the subject by passing a written examination to acceptable standards.

NOTE: Items indicated by an asterisk (*) are instrument procedures that apply only to type ratings that are not restricted to VFR.

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Lesson #1- Introduction to the Aircraft and Operating Limitations (2 hours)

A. Objective: The applicant will become familiar with the aircraft's history, background, operating limitations, and general characteristics.

B. Content:

1. Introduction and course overview.
2. General aircraft information - Manufacturer; other models; years of production; aircraft authorizations and specifications; equipment and furnishings; unique characteristics.
3. Operating limitations.
4. AFM/POH - General layout, content, and use.

Completion Standards: The applicant must be able to demonstrate, by oral testing and discussion, an understanding of the lesson content.

Lesson #2 - Weight and Balance (2 hours)

A. Objective:

The applicant will become familiar with the weight and balance limitations of the aircraft and be able to ensure the aircraft is properly loaded.

B. Content:

1. Computations of center of gravity (CG) location for specified load conditions, including adding, removing, or shifting weight.
2. Determining if the computed CG is within the forward, aft, and lateral (if applicable) limits for takeoff and landing.
3. Effects of fuel burn on CG.

C. Completion Standards: The applicant must be able to demonstrate proficiency in using the aircraft weight and balance charts to solve loading problems.

Lesson #3 - Adverse Weather Practices (2 hours)

A. Objective:

The applicant will become familiar with the manufacturer's recommended practices for operating in adverse weather conditions.

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B. Content (as applicable):

1. Operations in ice, slush, and snow.
2. Operations in turbulence.,
3. Operations in heavy precipitation.
4. Low level windshear encounter. a. Takeoff under suspected windshear. b. Suspected windshear approach.
5. Thunderstorm avoidance.
6. Thunderstorm precautions.
7. Cold weather precautions.
8. Low visibility operations.

C. Completion Standards: The applicant must be able to demonstrate, by oral testing and discussion, knowledge of the manufacturer's recommended adverse weather practices.

Lesson #4 - Aerodynamics, Performance, MEL, and Configuration Deviation List (CDL) (3 hours)

A. Objective:

The applicant will become familiar with the aerodynamic, performance characteristics, limitations, and MEL/CDL for the aircraft.

B. Content (as applicable):

1. Review of aerodynamic fundamentals.
2. Airflow-Airfoils; wing type; aerodynamic effect of spoilers, speed brakes, flaps, slats, and other configurations.
3. Low/high-speed aerodynamics and stability.
4. Recommended airspeeds during specific phases of flight.
5. Stall/spin characteristics and limitations.
6. Performance charts, tables, tabulated data, and other related AFM/POH information - Accelerate-stop/accelerate-go distance; takeoff performance, with all engines and with engine(s) inoperative; climb performance, with all engines and with engine(s) inoperative; cruise performance; fuel consumption, range, and endurance; descent performance; and other performance data (appropriate to the aircraft).
7. Normal, abnormal, and emergency performance characteristics.

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8. Meteorological and weight-limiting performance factors (e.g., temperature, pressure, contaminated runways, precipitation, climb/runway limits).
9. Inoperative equipment performance mitigators (e.g., MEL/CDL, inoperative antiskid).
10. Special operational conditions (e.g., unpaved runways and high-altitude airports).
11. Other information found in the approved AFM/POH on the aircraft's aerodynamics, performance, and limitations.

C. Completion Standards: The applicant must be able to demonstrate use of the aircraft's performance charts to determine aircraft performance and limitations during all flight regimes. The applicant must also be familiar with a permitted inoperative component MEL/CDL as it affects aircraft operation.

Lesson #5 - Segment 1 Written Examination

The applicant must be able to pass the written examination on material covered during Segment 1.

SEGMENT 2 - AIRPLANE SYSTEMS AND COMPONENTS

OBJECTIVE: The applicant will understand the aircraft system components, limitations, relevant controls, actuators, announcers, and procedures for various system configurations.

COMPLETION STANDARDS: The applicant must be able to demonstrate knowledge of the aircraft's systems and components by passing a written examination to acceptable standards.

Lesson #6 - Fuel and Oil Systems (3 hours)

A. Objective:

The applicant will become familiar with the fuel and oil systems, including AFM/POH normal operating procedures.

B. Content (as applicable):

1. Fuel system-Tank location(s) and venting systems; capacity; drains; pumps; distribution; fuel injectors, carburetors or fuel control; fuel heat; controls; indicators; cross feeding; transferring; fuel grade, color, and additives; fueling and defueling procedures; emergency substitutions; fuel jettison system.
2. Oil system - Capacity; grade; quantities; indicators.

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3. AFM/POH normal procedures, limitations, and operational considerations.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the aircraft's fuel and oil systems.

Lesson #7 - Powerplant(s) (3 hours)

A. Objective:

The applicant will become familiar with the components and operation of the powerplant(s).

B. Content (as applicable):

1. Powerplant - Type and thrust/horsepower; controls and indicators; induction system; fuel injection/carburetion/fuel control; exhaust and turbocharging; cooling; fire detection/protection; mounting points; turbine wheels; compressors; other applicable components (thrust reversers, engine synchronizer).
2. Propellers-Type; controls; allowable wear; feathering/unfeathering; auto feather negative torque sensing; synchronizing and synchrophasing.
3. Ignition system.
4. AFM/POH normal operating procedures and limitations.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the powerplant structure and operation.

Lesson #8 - Electrical System (2 hours)

A. Objective:

The applicant will become familiar with the electrical systems and their operation.

B. Content (as applicable):

1. Fundamentals of AC/DC electricity.
2. AC/DC power; battery/emergency bus; alternators; generators; fuses; circuit breakers and current limiters; controls; indicators; external ground power; auxiliary power unit (APU).
3. Normal AFM/POH operation and limitations of electrical power system units.

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C. Completion Standards:

The applicant must be able to demonstrate, by oral testing and discussion, knowledge and understanding of the electrical power systems, operation and limitations.

Lesson #9 - Hydraulic System (2 hours)

A. Objective:

The applicant will become familiar with the hydraulic system and its operation and limitations.

A. Content (as applicable):

1. Principles of hydraulics.
2. System construction features - Capacity; pumps; pressure; reservoirs; fluid grade; regulators and accumulators.
3. Use of hydraulics - Systems and subsystems.
4. Normal AFM/POH operation and limitation of hydraulic system.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the hydraulic systems.

Lesson #10 - Landing Gear and Brakes (2 hours)

A. Objective:

The applicant will become familiar with the landing gear and brake system, its operation and limitations.

B. Content (as applicable):

1. Landing gear system - Indicators; tires; nosewheel steering; skids; shocks.
2. Breaks - Components; operation.

C. Completion Standards: The applicant must be able to demonstrate knowledge, understanding and the operation of landing gear, brake systems and their limitations.

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Lesson #11- Pneumatics System (1 hour)

- A. **Objective:** The applicant will become familiar with the pneumatic systems, their operation and limitations.
- B. **Content** (as applicable):
1. Principles of pneumatics.
 2. Description of system elements - Engine-driven pumps; bleed-air sources, routing, venting, and controlling; pressure limiting devices.
 3. AFM/POH normal operating procedures and limitations.
- C. **Completion Standards:** The applicant must be able to demonstrate knowledge and understanding of the airplane's pneumatic system, its operation and limitations.

Lesson #12 - Environmental Systems (3 hours)

- A. **Objective:** The applicant will become familiar with the environmental systems and their operation.
- B. **Content** (as applicable):
1. Heating; cooling; ventilation.
 2. Air conditioning.
 3. Pressurization-Components; controls; indicators; regulating devices; system operation; emergency pressurization.
 4. AFM/POH normal operating procedures and limitations.
- C. **Completion Standards:** The applicant must be able to demonstrate knowledge and understanding of the environmental systems and their operation.

Lesson #13 - Flight Controls (4 hours)

- A. **Objective:**
- The applicant will become familiar with and be able to operate the flight control systems.
- B. **Content** (as applicable):

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1. Primary flight controls (yaw, pitch, and roll devices).
2. Secondary flight controls (leading/trailing edge devices, flaps, trim, spoilers, speed brakes, and damping mechanisms).
3. Associated devices such as stall or speed warning devices.
4. AFM/POH normal operating procedures and limitations.

C. Completion Standards: The applicant will be able to operate, demonstrate knowledge, and understand the flight control systems and their limitations.

Lesson #14 - Ice and Rain Protection (2 hours)

A. Objective:

The applicant will become familiar with and be able to operate the airplane's ice protection systems.

B. Content (as applicable):

1. Ice detection.
2. Anti-ice/deice systems.
3. AFM/POH normal operating procedures and limitations.

C. Completion Standards: The applicant will be able to demonstrate knowledge and understanding of the airplane's ice protection systems and their limitations.

Lesson #15 - Fire and Overheat Protection (2 hours)

A. Objective:

The applicant will become familiar with the fire and overheat protection systems, their operation and limitations.

B. Content (as applicable):

1. Fire and overheat sensors, loops, modules, or other means of providing visual and/or aural indications of fire or overheat detection.
2. Automatic extinguishing systems.
3. Power sources necessary to provide detection of fire and overheat conditions in engines, APU, cargo bay/wheel well, cockpit, cabin, and/or lavatories.

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C. Completion Standards: The applicant will be able to demonstrate knowledge and understanding of the fire/overheat protection systems and their limitations.

Lesson #16 - Flight Instruments (2 hours)

A. Objective:

The applicant will become familiar with the location, operation and limitations of the flight instruments.

B. Content (as applicable):

1. Panel arrangement.
2. Pilot static system and instruments - Operation of the system, including drains, pilot heat, and alternate static sources; airspeed indicator bug settings, including markings; altimeter; vertical speed indicator.
3. Vacuum system and instruments - Operation of the system, including gauges and malfunction indications; attitude indicator; heading indicator; turn and slip indicator.
4. Electrically operated instruments -Turn and bank coordinator; attitude indicator; radio altimeter.
5. Magnetic compass - Errors in and use of magnetic compass system.
6. Air data computer.
7. Stall avoidance and warning systems.

C. Completion Standards: The applicant will be able to demonstrate knowledge and understanding of the flight instrument systems and their position on the panel.

Lesson #17 - Navigation Equipment and Display Systems (4 hours)

A. Objective:

The applicant will become familiar with and be able to operate the navigation equipment and display systems.

B. Content (as applicable):

1. Aircraft transponders, radio altimeters, electronic flight instrumentation system (EFIS), or computer-generated displays of aircraft position and navigation information.
2. Navigation receivers - VOR, NDB, RNAV, LORAN-C, GPS, DME, marker beacon.
3. Inertial navigation systems (INS) - Functional displays, fault indications, comparator systems.

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4. Flight director (FD).
5. Weather detection systems - Stormscope, radar.
6. Traffic collision and avoidance system (TCAS).
7. Flight management system (FMS).
8. Low-altitude windshear system.

C. Completion Standards: The applicant must demonstrate knowledge and operation of the airplane's navigation equipment and display systems.

Lesson #18 - Auto flight (2 hours)

A. Objective:

The applicant will become familiar with and be able to operate the airplane's auto flight system.

B. Content (as applicable): Autopilot/autothrottle - Interface with aircraft flight director and navigation systems, including automatic approach tracking, autoland, and automatic fuel or performance management systems.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the autoflight system.

Lesson #19 - Communications Equipment (1 hour)

A. Objective:

The applicant will become familiar with and be able to operate the airplane's communications equipment.

B. Content (as applicable):

VHF/HF radios; audio panels; interphone and passenger address systems; voice recorder; ARINC communications addressing and reporting system.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the airplane's communications systems and equipment.

Lesson #20 - Miscellaneous and Review (2 hours)

A. Objective:

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The applicant will become familiar with the systems and components which have been covered and review Segment 2.

B. Content (as applicable):

1. All other systems included in the approved AFM/POH (e.g., stability augmentation devices, squat switch systems, drag chute).
2. Review any problem areas from Segment 2 in preparation for the segment examination.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the material covered during this segment to pass the written Segment 2 examination to acceptable standards.

Lesson #21- Segment 2 Written Examination

The applicant must be able to pass the written examination on material covered during Segment 2.

SEGMENT 3 - AIRCRAFT-SPECIFIC EMERGENCY TRAINING

OBJECTIVE:

The applicant will become familiar with emergency and abnormal procedures associated with aircraft systems, structural design, and operational characteristics.

COMPLETION STANDARDS: The applicant will have successfully completed Segment 3 when able to demonstrate knowledge and understanding of the emergency and abnormal procedures specified in the approved AFM/POH by passing a written examination.

Lesson #22 - Emergency Equipment (2 hours)

A. Objective:

The applicant will become familiar with the location and use of emergency equipment.

B. Content (as applicable):

1. Survival gear.
2. Oxygen equipment and supply.
3. Emergency exits and escape slides.
4. Fire extinguisher(s).
5. Life vests and other personal flotation device(s).

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6. Other emergency equipment.

C. Completion Standards: The applicant must be able to demonstrate knowledge of the location and use of the airplane's emergency equipment.

Lesson #23 - Abnormal and Emergency Procedures (4 hours)

A. Objective:

The applicant will become familiar with the abnormal and emergency procedures in the AFM/POH.

B. Content (as applicable):

1. Abnormal starting procedures, including knowledge of external power source usage, abnormal starting limitations, and the proper corrective action required in the event of a malfunction.
2. Powerplant failure under circumstances, including but not limited to, prior to rotation, during climb out, during cruise flight, during approach, and in instrument meteorological conditions (IMC).
3. Rapid decompression and emergency descent.
4. Ditching and evacuation procedures.
5. Electrical failure.
6. Failure of navigation or communications equipment.
7. Hydraulic failure.
8. Landing gear and flap systems failure or malfunction.
9. In-flight fire.
10. Smoke control and removal.
11. Ice and rain protection.
12. Anti-icing or deicing system failure or malfunction.
13. Runaway stabilizer/trim.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the abnormal and emergency procedures.

Lesson #24 - Segment 3 Written Examination

The applicant must be able to pass the written examination on material covered during Segment 3. REVIEW AND FINAL EXAMINATION

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Lesson #25 - Review (3 hours)

A. Objective:

The applicant will be prepared to successfully complete the final examination.

B. Content:

All material covered during Segments 1-3.

C. Completion Standards: The applicant must be able to demonstrate knowledge and understanding of the material covered during ground training that is applicable to the aircraft.

Lesson #26 - Final Examination

SEGMENT 4 - SYSTEMS INTEGRATION TRAINING

OBJECTIVE:

The applicant will be able to operate the simulator or training device and understand the interrelation between the aircraft's systems and normal, abnormal, and emergency procedures.

COMPLETION STANDARDS: The applicant will have successfully completed Segment 4 when able to demonstrate proficiency, by performing the maneuvers and procedures on the simulator/training device portion of the practical test.

Lesson #27 - Cockpit Familiarization and Use of Checklists (2 hours)

A. Objective:

The applicant will become familiar with the crew briefing, cockpit layout, checklists, and normal operating procedures and will be able to fly the aircraft, maintaining attitude and orientation.

B. Content:

1. Preflight familiarization.
2. Introduction - Cockpit familiarization.

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- a) Airplane systems operation and location of systems indicators, gauges, and warning devices.
- b) Activation of airplane system controls and switches.
- c) Use of checklists - Safety checks, cockpit preparation, checklist sequence.

3. Flight.

- a) Normal procedures.
- b) Pre-takeoff checks, crew briefing, as appropriate to the airplane type.
- c) Normal or crosswind takeoffs-Knowledge of airspeeds, configurations, and emergency procedures recommended by the manufacturer for existing conditions. Following takeoff, performance of required pitch changes, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/Vspeeds within the tolerances established in the AFMIPPOH.
- d. Airspeed /V-speed control.
- d) Straight and level cruise flight.
- e) Climbs.
- f) Descents.
- g) Level, climbing, and descending turns.
- h) In-flight pressurization control.
- i) Approach to landing and landings. (1) Appropriate configurations. (2) Normal or crosswind landings.

4. Postflight critique and preview of next lesson.

C. Completion Standards: At the completion of this lesson, the applicant shall demonstrate familiarity with the airplane checklists and normal operating procedures.

Lesson #28 - Flight Maneuvers and Display Systems (2 hours)

A. Objective:

The applicant will continue cockpit orientation and will review basic in-flight maneuvers and approaches (if applicable).

B. Content (as applicable):

- 1. Preflight discussion.
- 2. Introduction - Display systems operation (weather radar and other EFIS displays).
- 3. Flight.
 - a) Review of previous lesson.
 - b) Normal takeoffs.

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- c) Slow flight.
- d) Approach to stalls and recovery. For the purpose of this maneuver, the required approach to a stall is reached when there is a perceptible buffet or other response (stall warning or stick shaker, depending on the airplane devices) to the initial stall entry.
- (1) Takeoff configuration.
- (2) Clean configuration.
- (3) Landing configuration.
- e) Steep turns.
- f) Unusual attitudes.
- g) Normal ILS approaches (coupled and manual).
- 4. Postflight critique and preview of next lesson.

C. Completion Standards: The applicant shall demonstrate competency in performing the maneuvers and procedures contained in this lesson to levels consistent with the PTS.

Lesson #29 - Flight Operations and Use of Autopilot (3 hours)

A. Objective:

The applicant will review instrument procedures (if applicable) and further develop the skills required for normal flight operations.

B. Content (as applicable):

1. Preflight discussion.
2. Introduction - Autoflight operation (autopilot, flight director, normal and abnormal indications and annunciators lights).
3. Flight.
 - a) Review of previous lesson.
 - b) Instrument Departure Procedure (DP) and Standard Terminal Arrival Routes (STAR).
 - c) Adherence to simulated air traffic control (ATC) clearances and to airspeed restrictions and adjustments required by regulations or the AFM/POH.
 - d) Use of autoflight system.
 - e) Performance of checklist items appropriate to the area of arrival.
 - f) Establishment, where appropriate, of a rate of descent consistent with the aircraft operating characteristics and safety.
 - g) Holding, including entering, maintaining, and leaving holding patterns. *
 - h) Instrument approaches. *
- (1) Precision approaches.

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- (2) Nonprecision approaches, including circling approaches at the authorized minimum circling approach altitude.
- (3) Missed approaches from precision and nonprecision approaches, including circling approaches.
- 4 Postflight critique and preview of next lesson.

C. Completion Standards: The applicant shall demonstrate competence in performing the maneuvers and procedures contained in this lesson to levels consistent with the required standards.

Lesson #30 - Emergency Procedures (2 hours)

A. Objective:

The applicant will practice the emergency procedures recommended in the approved AFM/POH. The applicant will demonstrate proper knowledge of the flight characteristics and controllability associated with maneuvering with powerplant(s) inoperative as appropriate to the airplane, including control of airspeed, configuration, direction, altitude, and attitude.

B. Content (as applicable):

1. Preflight discussion.
2. Introduction.
3. Flight.
 - a. Review of previous lesson.
 - b. Emergency procedures checklist familiarization.
 - c. Start malfunctions.
 - d. Instrument takeoff (simulated IMC at 100 feet).*
 - e. Powerplant failure(s) in flight.
 - f. In-flight fire.
 - g. Rapid decompression emergency procedures.
 - h. ILS approach with a simulated failure of one powerplant. The failure should occur before initiating the final approach course and must continue to touchdown or through the missed approach procedure. *
4. Postflight critique and preview of next lesson.

C. Completion Standards: The applicant shall display a complete understanding of emergency and abnormal procedures as recommended by the manufacturer in the AFM/POH.

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Lesson #31 - Normal/Abnormal Flight Operations Review; Use of Navigation Systems (2 hours)

A. Objective:

The applicant shall develop skills in normal flight operations and in abnormal flight situations with selected system malfunctions and gain skill in operating the airplane's navigation systems.

B. Content (as applicable):

1. Preflight discussion.
2. Introduction - Navigation systems.
 - a) Preflight and operation of applicable receivers.
 - b) Onboard navigation systems.
 - c) Flight plan information input and retrieval.
3. Flight.
 - a) Review of previous lesson.
 - b) Cold weather operation.
 - c) Rejected takeoff.
 - d) Climb to and cruise at high altitude, both with and without autopilot.
 - e) Use of navigation systems.
 - f) Ice and rain protection system operation and malfunction procedures.
 - g) Fuel systems malfunction.
 - h) Engine(s) inoperative landing from an ILS.*
 - i) Engine(s) inoperative nonprecision approach, circle to land.*
4. Postflight critique and preview of next lesson.

C. Completion Standards: The applicant shall display complete understanding of the airplane's navigation systems and of emergency and abnormal procedures as recommended by the manufacturer.

Lesson #32 - Normal/Abnormal Flight Operations (2 hours)

A. Objective:

The applicant shall further develop skills in normal and abnormal flight operations.

B. Content (as applicable):

1. Preflight discussion.

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2. Flight.

- a) Review of previous lesson.
- b) Hot weather operation.
- c) Takeoff with engine failure after VI and before V2.
- d) Inadvertent overspeed recovery procedures.
- e) Turbulence penetration.
- f) Hydraulic system malfunction.
- g) Flight control malfunctions.
- h) Emergency gear extension.
- i) No flap approach and landing.
- j) Precision and nonprecision instrument approaches (normal and engine(s) inoperative).*

3. Postflight critique and preview of next lesson.

C. Completion Standards: The applicant shall demonstrate understanding of and proficiency in the aircraft's normal, abnormal, and emergency procedures to PTS standards.

Lesson #33 - Line Oriented Flight Training (LOFT) (2 hours)

A. Objective:

The applicant shall be able to conduct a cross-country flight using the airplane's available equipment. During the flight, the instructor shall evaluate the applicant's proficiency level in the maneuvers and procedures covered during the course as well as during earlier training (high-altitude enroute procedures, etc.). The instructor should identify and correct any maneuvers that may require additional instruction.

B. Content (as applicable):

1. Preflight discussion.
2. Introduction - Flight planning.
 - a. Performance limitations (meteorological, weight, and MEL items).
 - b. Required fuel loads.
3. Flight.
 - a) Preflight planning.
 - b) Instrument Departure Procedure (DP).
 - c) Compliance with manufacturer's recommendations for power settings; airspeeds; rate of climb; configuration.
 - d) Adherence to actual or simulated ATC clearances (including assigned radials) and to air speed restrictions and adjustments required by regulations or the AFM/POH.
 - e) Enroute.

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- (1) Appropriate use of oxygen and pressurization systems.
- (2) Proper use of available navigation facilities and appropriate enroute procedures.
- (3) Review of maneuvers and procedures from previous lessons, including simulated emergencies.
 - f) Standard Terminal Arrival Routes (STAR).
- (4) Performance of checklist items appropriate to the area arrival.
- (5) Establishment, where appropriate, of a rate of descent consistent with the aircraft operating characteristics and safety.
- (6) Manually controlled ILS approach with a simulated failure of one powerplant. The simulated failure should occur before initiating the final approach course and continue to touchdown or through the missed approach procedure.
- (7) Postflight critique and preview of practical test.

C. Completion Standards: The applicant shall be able to demonstrate competency in performing the maneuvers and procedures required for the practical test to levels consistent with acceptable standards.

Lesson #34 - Crew Resource Management (2 hours)

A. Objective:

The applicant will become familiar with Crew Resource Management (CRM) techniques and be able to facilitate the smooth flow of information and application of skills between flight and ground crew members and ATC resulting in a safe, organized flight.

B. Content:

1. Human physiology.
 - a) Rest, naps, and sleep.
 - b) Effects of drugs and alcohol.
 - c) Smoking.
 - d) other stresses, e.g., divorce, finance.
 - e) Eating habits.
 - f) Stress management.
2. Getting along with others.
 - a) Hazardous attitudes.
 - b) Communications skills.
3. Aeronautical decision making.
 - a) Risk assessment.
 - b) Risk management.

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- c) How to develop decision making skills.
- 4. Standard Operating Procedures (SOPs).
 - a) Use of checklists by the crew.
 - b) Challenge/No response.
 - c) Pilot flying vs. pilot not flying roles.
 - d) Abnormal/Emergency procedures.
 - e) First flight of the day. Critical situations.
- 5. CG. Deviations from the SOP.

C. Completion Standards: This lesson is complete when the applicant can demonstrate satisfactory knowledge on a written examination on the lesson subject matter.

SEGMENT 5 - FLIGHT INSTRUCTION

When the practical training is conducted in the simulator, the pilot should have not less than 30 hours in the simulator and 3 hours of actual flying time in the aircraft, or when making use of level D FSTD of the aircraft type sought, approved by the Authority, flying time required should be not less than 36 hours as per the requirement of regulation 68(3) of the Civil Aviation (Personnel Licensing) Regulations, 2017 as amended. The following time allocations are suggestions only and should be adjusted according to the applicant's ability, the type of airplane and equipment, and the type of operation.

OBJECTIVE:

The applicant shall apply the knowledge and skill acquired during ground training to the airplane.

COMPLETION STANDARDS: The applicant shall demonstrate proficiency in handling and operating the airplane by passing the flight portion of the practical test to levels consistent with the acceptable standards.

Lesson #35 - Introduction to the Airplane; Basic Maneuvers (4 hours)

A. Objective:

The applicant shall become familiar with the airplane and the local training environment and will be able to apply the knowledge gained from ground training to the operation of the airplane.

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B. Content:

1. Preflight discussion.
 2. Introduction.
 - a) Airplane documentation-Registration; airworthiness certificate; maintenance logs; MEL/CDL.
 - b) Preflight inspection - Complete visual inspection of interior and exterior, using appropriate checklist.
 - c) Flight.
 1. Prestart checklist.
 2. Control system checks.
 3. Normal starting procedures.
 4. Radio and electronic equipment check.
 5. Systems operations familiarization and additional checks described in the approved AFM/POH, checklists, or other approved material appropriate to the airplane type and type of flight.
 6. Taxiing.
 7. Pre-takeoff checks, crew briefing as appropriate to the airplane type.
 8. Normal or crosswind takeoffs.
 9. Airspeed/V-speed control.
 10. Straight and level cruise flight.
 11. Climbs.
 12. Descents.
 13. Level, climbing, and descending turns.
 14. Steep turns.
 15. Approach to stalls.
 - a) Takeoff configuration.
 - b) Clean configuration.
 - c) Landing configuration.
 16. Approach to landing and landings.
 - a) Appropriate configurations.
 - b) Normal or crosswind landings.
 17. Engine shutdown procedures.
- D. Postflight critique and preview of next lesson.

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- E. **Completion Standards:** At the completion of this lesson, the applicant shall demonstrate basic airmanship qualities and an understanding of flight characteristics of the aircraft.

Lesson #36 - Proficiency Training (4 hours)

A. Objective:

The applicant shall gain proficiency in takeoffs, landings, VFR patterns, and will begin instrument work, if applicable. This lesson should further acquaint the applicant with the local training area.

B. Content.

1. Preflight discussion.
2. Flight.
 - a) Review of previous lesson.
 - b) Practice takeoffs and landings to become proficient with power settings, airspeeds, and attitudes for flying a VFR pattern.
 - c) Takeoff with simulated IMC at or before reaching an altitude of 100 feet above the airport elevation. *
 - d) ILS to missed approach. *
 - e) ILS approach and landing. *
 - f) Non-precision approach to the circling minimum descent altitude (MDA), followed by a change in heading and the necessary visual maneuvering to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach. *

- C. Postflight critique and preview of next lesson.

- D. **Completion Standards:** At the completion of this lesson, the applicant must be able to perform the maneuvers contained in this lesson to PTS standards and takeoff and land without assistance from the instructor.

Lesson #37 - Emergency Procedures; Proficiency (4 hours)

A. Objective:

The applicant shall be able to perform emergency procedures that can be safely simulated in the airplane. Although not all emergencies can be safely simulated in the airplane, those that can should be practiced in accordance with the manufacturer's recommendations.

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B. Content (as applicable):

1. Preflight discussion.
2. Review of previous lessons.
3. Introduction - Emergency procedures review.
4. Flight.
 - a) Powerplant failure(s).
 - b) On takeoff roll, before reaching a specified airspeed/VI speed. The rejected takeoff should encompass using the recommended braking procedure; maintaining positive control; and accomplishing the appropriate powerplant failure procedures as recommended by the appropriate checklist.
 - c) In multiengine airplanes, on climb out with a simulated failure of the most critical powerplant at a point appropriate to the airplane type under the prevailing conditions and in normal cruise flight. The recovery procedures should be as specified in the AFM/POH and will include setting powerplant controls; reducing drag as necessary; correctly identifying and verifying the inoperative powerplant; maintaining positive aircraft control; attempting to determine the reason for the powerplant failure; and following the prescribed aircraft checklist to secure the inoperative engine. When the engine is shut down and feathered (if appropriate), the proper powerplant restart procedures should be followed in accordance with the manufacturer's recommended procedures and pertinent checklist items.
 - a. In single-engine airplanes, establishing and maintaining the recommended best glide airspeed; selecting a suitable airport or landing area that is within the performance capability of the aircraft; following the emergency checklist items appropriate to the aircraft; maintaining positive aircraft control throughout the maneuver; and using airplane configuration devices, such as landing gear and wing flaps, in a manner recommended by the manufacturer. Landings from a forward slip should be practiced, as should spot simulated emergency landings from 1,000 feet above ground level (AGL) with a 180° change of direction.
 - e. Runaway stabilizer.
 - f. Simulated loss of pressurization - Rapid decompression emergency procedures.
 - (1) Knowing the location and correct use of oxygen masks.
 - (2) Rapid descent.
 - g. Manually controlled ILS approach with a simulated failure of one powerplant. The simulated failure should occur before initiating the final approach course and must continue to touchdown or through the missed approach procedure. *
 - h. Zero-flap landing to simulate inoperable full or partial flaps, leading edge flaps, and other similar devices.
- C. Postflight critique and preview of next lesson.

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- D. **Completion Standards:** At the completion of this lesson, the applicant will be proficient in the manufacturer's recommended emergency procedures for the airplane and will be able to competently demonstrate their execution in a simulated emergency.

Lesson #38 - Night Checkout; Review (3 hours)

A. **Objective:**

The applicant will become familiar with night operations in the airplane.

B. **Content:**

1. Preflight discussion.
2. Review of previous lessons.
3. Introduction - Night flying.

C. **Flight:**

1. Night aircraft inspection.
2. Use of cockpit and cabin lights.
3. Airplane lights (navigation; strobe; recognition beacon; landing; taxi and logo).
4. Takeoff and landing practice, including a simulated electrical failure.
5. Recovery from unusual attitudes in cruise flight.
6. Multiple instrument approaches. *
7. Review of any areas needing additional work.

- D. Postflight critique and preview of practical test.

- E. **Completion Standards:** The applicant must be able to demonstrate the ability to accurately control all aspects of flying the airplane at night, including night emergency procedures.

SKILL (PRACTICAL) TEST

OBJECTIVE:

The applicant shall be able to demonstrate knowledge of operational proficiency in the airplane and its systems during the practical test.

CONTENT:

- A. Oral examination.

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B. Flight test.

1. Simulator/training device.

2. Airplane.

C. Evaluation and critique.

D. COMPLETION STANDARDS: The applicant shall demonstrate the proficiency required to pass the practical test.



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