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ADVISORY CIRCULAR

ANNUAL PILOT IN COMMAND PROFICIENCY CHECKS

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Initiated by: AFS-444

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SUBJECT: ANNUAL PILOT IN COMMAND PROFICIENCY CHECKS

1. PURPOSE. This advisory circular combines in one circular material relating to annual proficiency checks required for pilots in command (PIC) of civil aircraft type certificated for more than one required pilot crewmember other than those conducting operations subject to Parts 121, 123, 127, 133, 135, and 137 of the Federal Aviation Regulations (FARs).

2. RELATED PUBLICATIONS. FARs 61, 121, 123, 127, 135, and FAA Advisory Circulars AC 121-14, AC 61-65.

3. BACKGROUND. The use of complex aircraft in general aviation operations has notably increased during recent years. To assure a greater degree of safety, the FAA has adopted Amendment 61-60 on January 23, 1973, that requires the PIC proficiency checks described herein. A pilot option is included which provides for the performance of certain procedures and maneuvers in an airplane simulator or other training device. This was done to recognize the safety that can be achieved through the use of simulators and training devices, in lieu of airplane operations, for the demonstration of pilot proficiency.

4. INFORMATION. The following guidelines provide information for annual PIC proficiency checks, other acceptable proficiency or flight checks, the acceptability of airplane simulators and training devices, and FAA procedures for the designation of Proficiency Pilot Examiners (PPE).

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CHAPTER 1. ANNUAL PILOT IN COMMAND PROFICIENCY CHECKS

1. APPLICABILITY.

a. Effective November 1, 1974, before a person acts as PIC of an aircraft that is type certificated for more than one required pilot crewmember, he must have completed, since the beginning of the twelfth calendar month before the month he acts as PIC, one of the following proficiency or flight checks as prescribed in Section 61.58 of the FAR:

(1) A PIC PROFICIENCY CHECK given to him in accordance with the provisions for that check under FAR Parts 121, 123, 127 or 135;

(2) A MILITARY PROFICIENCY CHECK required for PIC and instrument privileges in an aircraft which the military requires to be operated by more than one pilot;

(3) A FLIGHT TEST required for the issuance of an aircraft type rating;

(4) AN INITIAL OR PERIODIC FLIGHT CHECK for the purpose of the issuance of a pilot examiner or check airman designation;

(5) FOR AN AIRPLANE, a proficiency or flight check in either an airplane that is type certificated for more than one required pilot crewmember, or in an approved simulator or training device, given to him by an FAA inspector or pilot examiner, and consisting of those maneuvers and procedures provided in paragraph 2b of this circular; or

(6) FOR OTHER AIRCRAFT, a proficiency or flight check in an aircraft that is type certificated for more than one required pilot crewmember, given to him by an FAA inspector or pilot examiner, which includes those maneuvers and procedures required for the issuance of a TYPE RATING in the aircraft used for the check.

b. Effective November 1, 1974, before a person acts as PIC of an aircraft that is type certificated for more than one required pilot crewmember, he must have completed within the previous 24 calendar months one of the proficiency or flight checks listed in paragraph 1a in the PARTICULAR TYPE aircraft in which he is to act as PIC.

c. A pilot who is PIC in more than one TYPE AIRCRAFT and completes the 24-month proficiency requirements in one TYPE AIRCRAFT simultaneously fulfills the 12-month proficiency requirements for other AIRCRAFT TYPES in which he is PIC qualified.

d. For flexibility in compliance, a pilot who takes the required proficiency check in the month before, or the month after, the month in which it is due, it is considered to be taken in the month it is due.

e. Section 61.58 of the FARs provides that for airplanes, the maneuvers and procedures required for proficiency and flight checks discussed in paragraph 1a may be performed in an airplane simulator or other training device if the simulator or training device is one that is approved by the FAA for the particular maneuver or procedure.

2. MANEUVERS AND PROCEDURES.

a. General. The proficiency check in airplanes required for each 24-month period must be accomplished in the TYPE airplane in which the pilot is to act as PIC. However, as indicated in the following Schedule of Maneuvers and Procedures, the PIC may elect to perform certain authorized maneuvers in a simulator or training device. In alternate 12-month periods in airplanes, the PIC has the option of performing all required maneuvers or procedures in simulators and training devices in lieu of in an airplane. Whether he chooses to use an airplane, simulator/training devices, or both, the required maneuvers/procedures are limited to those outlined in the schedule for the 12-month check. Provision for the use of simulators and training devices has been limited to proficiency checks in airplanes since such devices having the demonstrated capability for determining pilot proficiency for other kinds of aircraft are not readily available. Therefore, the proficiency checks required for other kinds of aircraft must include those maneuvers and procedures specified for the issuance of an original TYPE rating in the aircraft used for each 12-month check.

b. Schedule of Maneuvers and Procedures. In the following, whenever a maneuver or procedure is authorized to be performed in a nonvisual simulator, it may also be performed in a visual type or in an airplane. Similarly, when authorized in a training device, it may be performed in a visual or a nonvisual simulator or in an airplane.

For the purpose of this schedule, the following symbols mean:

A - Performance required in an airplane.

I - Performance required in simulated instrument conditions (Air or Ground).

N - Performance authorized in a nonvisual type simulator.

T - Performance authorized in an approved training device.

V - Performance authorized in a visual type simulator.

	12 MONTH	24 MONTH
(1) Preflight.		
(a) Equipment Check (oral or written). As a part of the proficiency check, the equipment check should be coordinated with the flight maneuvers portion but not performed during that portion of the check. The check covers:		
1 Airplane documents to be carried on board.		
2 Familiarization with the provisions of the approved Airplane Flight Manual.		
3 Flight planning procedures.		
(b) Inspection. The PIC should demonstrate -		
1 A visual inspection of the interior and exterior of the airplane, explaining the purpose for inspecting each item;		A
2 The use of the pre-start checklist, appropriate control system checks, starting procedures, radio and equipment checks prior to flight.	T	T
(c) Taxiing. This maneuver includes sailing or docking procedures where appropriate and in accordance with instructions issued by ATC or simulated by the person conducting the check.		A
(d) Powerplant Checks. Appropriate to the airplane used for the check.	T	T
(2) Takeoffs.		
(a) Normal. One normal takeoff which, for the purposes of this operation, begins when the airplane is taxied into position on the runway to be used.		A
(b) Crosswind. May be waived by the person conducting the check when, in his judgment, the maneuver is impractical or unsafe under existing conditions.		A

	12 MONTH	24 MONTH
(c) Powerplant Failure. One takeoff with simulated failure of the most critical powerplant:	N	N
1 At a point after V_1 and before V_2 that in the judgment of the person conducting the check is appropriate to the airplane type under prevailing conditions;		
2 At a point as close as possible after V_1 when V_1 and V_2 (or V_1 and V_r) are identical; or		
3 At the appropriate speed for nontransport category airplanes.		
(d) Instrument. One takeoff with instrument conditions simulated from an altitude of 100 feet above the runway elevation.	I-N	I-N
(3) Instrument Procedures.		
(a) Area Departures & Arrivals. During each of these procedures, the PIC should demonstrate the proper response to actual or simulated ATC instructions and the proper use of navigation facilities.	I-N	I-N
(b) Holding. Includes entering, maintaining and leaving holding patterns. This procedure may be performed in connection with Area Departures or Arrivals.	I-N	I-N
(c) Precision & Nonprecision Approaches. The PIC should demonstrate one each of the following:		
1 A normal ILS approach;	I-N	I-V
2 A nonprecision approach (ADF/VOR);	I-N	I-V
3 An approach with simulated failure of one powerplant (may be performed with 1 or 2.	I-N	I-V
Each approach should be performed according to procedures approved for the facility used. For the purpose of these procedures, the approach begins when the airplane is over the		

	12 MONTH	24 MONTH
initial fix for the procedure used or, as is frequently the case with vectoring by ATC, when cleared for the approach. In the case of a GCA procedure, the approach begins when turned over to the final approach controller. The approach ends when the airplane touches the runway or when transition to a missed approach is complete.		
(d) Missed Approach. Each PIC should demonstrate at least one complete missed approach procedure with simulated failure of one powerplant either continuing from the final approach or induced after the missed approach transition. These procedures may be performed independently or in conjunction with those described under (3)(c)1 or (3)(c)2. Note: Simulated powerplant failure should not be continued after the clean up procedure has been performed.	N	V
(4) Inflight Maneuvers.		
(a) Steep Turns. At least one turn in each direction involving a bank angle of 45 degrees and of 360 degrees duration.	I-N	I-N
(b) Stalls. For the purpose of this maneuver, the required stall is reached when there is a perceptible buffet or other response to initial stall entry. A stall demonstration is required in each of the following flight configurations: 1 Takeoff configuration (except in airplanes requiring zero flap for takeoff); 2 Clean configuration; 3 Landing configuration. At least one of the above maneuvers should be performed using a bank angle between 15° and 30°.	I-N	I-N

	12 MONTH	24 MONTH
(5) Approaches & Landings. At least three actual landings (one to a full stop) should be made. The types listed below should be included but may be combined where appropriate.		A
(a) Normal Landings.		A
(b) Landing in sequence out of an ILS Approach. For this maneuver, the landing may be discontinued at a point which, in the judgment of the person conducting the check, a full stop landing could be safely made.		A
(c) Crosswind Landing. May be waived if considered unsafe or impractical by the person conducting the check in existing conditions.		A
(d) Engine-out Landing. One approach maneuvering to a landing with the simulated failure of 50% of the available powerplants (failed powerplants on one side). In the case of three-engine airplanes, an approved procedure which simulates the failure of two engines should be used (center and one outboard).		V
(e) Rejected Landing. A rejected landing, including a normal missed approach procedure, that is rejected approximately 50 feet over the runway threshold. This maneuver may be combined with instrument approaches but instrument conditions need not be simulated below 200 feet above the surface.		V
(6) Normal & Abnormal Procedures. Each PIC should demonstrate the proper use of the systems and devices listed below which are appropriate to the type airplane as the person conducting the check finds necessary to determine the required proficiency:		
(a) Anti-icing & Deicing Systems.	N	N
(b) Auto-pilot Systems.	N	N
(c) Automatic or other Approach Aids.	N	N
(d) Stall Warning, Stall Avoidance, and Stability Augmentation Devices	N	N

	12 MONTH	24 MONTH
(e) Airborne Radar Devices.	N	N
(f) Hydraulic & Electrical System Failures.	T	T
(g) Landing Gear & Flap System Failures.	T	T
(h) Airborne Nav/Comm Equipment Failures.	N	N
(7) Emergency Procedures. Each applicant should demonstrate the proper use of as many systems and devices listed below as the person conducting the check finds are necessary to determine that the applicant has a practical knowledge of, and ability to perform, such procedures:	N	N
(a) Fire in Flight.		
(b) Smoke Control.		
(c) Rapid Decompression.		
(d) Emergency Descent.		
(e) Any other emergency procedures outlined in the appropriate approved airplane flight manual.		

(4) Control forces and degree of actuation control travel should correspond to that which would occur in the airplane under actual flight conditions.

(5) The rate of change of simulator instrument readings and of control forces should correspond to the rate of change which would occur on the airplane simulated under actual flight conditions for any given command for change applied to the controls, in the applied power, or in aircraft configurations.

(6) The effect of aerodynamic change for various combinations of drag and thrust normally encountered in flight should reasonably correspond to actual flight conditions. The effect of change in airplane attitude, thrust, drag, temperature, gross weight, center of gravity location and configuration should be included.

(7) Simulator systems should simulate the airplane systems operations both on the ground and in flight. Systems should be operative to the extent that normal operating procedures, abnormal procedures and emergency procedures can be effectively accomplished.

(8) There should be circuit breakers that affect procedures and functions resulting in observable cockpit indications.

(9) NAV/COM equipment should reasonably correspond to that installed in the airplane and should operate within the tolerances specified for the airborne equipment.

b. Performance. A simulator approved for all the authorized maneuvers and procedures for the PIC proficiency checks should be capable of the following performance capability:

(1) Prestart checklists, appropriate control system checks, starting procedures, radio and equipment checks;

(2) Powerplant checks;

(3) Takeoffs with engine out at any selected speed;

(4) Area departures, holding and arrivals;

(5) An ILS to a point where the landing is assured;

(6) An ADF and VOR approach with an engine failure;

(7) Steep turns to 45° of bank and stalls in takeoff, clean and landing configurations with 15° to 30° bank;

(8) An approach to landing with simulated failure of 50% of the available power on one side;

(9) A missed approach with an engine failure, during final approach or after transition to a missed approach;

(10) A no flap approach; and

(11) A rejected landing from a point approximately 50 feet above the landing runway.

c. Visual Systems. Where simulator approval with visual systems is requested for the performance of maneuvers and procedures authorized to be performed in a visual type simulator in the Schedule of Maneuvers and Procedures (paragraph 2b, Chapter 1), the visual attachments should enable the simulator to adequately demonstrate the capability to accomplish the evaluation objective. As required by the particular maneuver/procedure, the system should provide adequate maneuvering capabilities with acceptable fidelity in dynamic responses, picture quality, and correlation with airplane attitudes and position as displayed by the particular cockpit instrumentation.

d. Systems. The following system should function to the degree necessary to determine pilot proficiency throughout the performance of all the maneuvers and procedures demonstrated plus the emergency procedures outlined for the type airplane in the approved airplane flight manual.

(1) Anti-icing and de-icing systems;

(2) Automatic or other approach aids;

(3) Stall warning, avoidance and stability augmentation devices;

(4) Hydraulic and electric system failures;

(5) Landing gear and flap system failures; and

(6) Airborne NAV/COM equipment failure.

e. Function Standards. An approved simulator should meet all the standards under this subparagraph for functional accuracy, performance, and characteristics. These standards are presented as guidance material only and are not to be considered as the basis for approval of a simulator.

(1) Motion will be considered necessary for simulators approved for the Schedule of Maneuvers and Procedures under paragraph 2b (Chapter 1). Approval of simulators without motion will be limited to airplane simulation of instrument flight procedures only.

(2) Control forces should reasonably represent the airplane type simulated for static and dynamic longitudinal stability during climb, cruise, approach and landings. The simulator should return to trim within +/-10 from a speed within 15% of trim speed. The direction of the elevator force, pull or push, must be in the same direction as the airplane type simulated;

(3) Control forces and stick force per "G unit" should be within +/-8 lbs. or 25% of the encountered forces on the airplane;

(4) Rudder force limits should be +/-15 lbs. or +/-20%;

(5) Landing Gear operating time: +/-4 seconds;

(6) Wing flap operating time: +/-5 seconds;

(7) Takeoff acceleration time to V_1: +/-15%;

(8) Minimum control speed in flight: +/-10 kts.;

(9) Propeller feathering time: +/-4 seconds;

(10) Stall warning speeds, stick shaker and buffet onset: +/-10 kts.

(11) Calibration of Gyrocompass, turn & bank indicator in standard rate and 30° banked turns: +/-15%;

(12) Manifold pressure for given BMEP and RPM: +/-2 inches;

(13) N_1 & N_2 relationship, turbine engine, for given EPR: +/-3%;

(14) Speed Vs. thrust in level flight at cruise altitude: +/-10 kts.; 4%; or .04 Mach.;

(15) Climb performance: +/-15%;

(16) Roll/rate in operational configuration: +/-2 seconds or 25%.

CHAPTER 3. PROFICIENCY PILOT EXAMINERS (PPE)

5. GENERAL. As a general guideline, the FAA will designate PPEs to conduct the required PIC proficiency checks at locations which best serve the interests of the segment of the industry concerned and the FAA.

6. SELECTION AND DESIGNATION PROCEDURES. A register of qualified candidates for designation will be maintained by each FAA Flight Standards district office having responsibility for PPE services. When the need for such service has been established for a particular geographic area, the qualification records of the candidates will be reviewed for selection of the best qualified person for designation. When a person has been selected to serve as a PPE, a practical test of his aeronautical skill, knowledge, and familiarization appropriate to the type aircraft for which he is to be delegated proficiency check authority will be administered to the candidate. Upon satisfactory completion of the practical test, a certificate of authority appropriate to the TYPE aircraft will be issued.

Selection Prerequisites. Pilots who meet the selection criteria below are encouraged to submit, at any time, a full statement of their qualifications for designation on FAA Form 8400-2, Examiner Designation and Qualification Record (OMB 04-R0088).

a. A good record as a pilot and as a citizen of his local community.

b. Be willing to provide PIC proficiency checks upon reasonable requests for pilots within and outside his own organization.

c. Be at least 21 years of age.

d. Hold either an airline transport pilot certificate or a commercial pilot certificate with an instrument rating and type rating for the aircraft type authorized.

e. Have logged at least 2,000 hours as PIC, including 100 hours as PIC in each type aircraft for which an authorization is requested. At least 150 hours of instrument flight time, 50 hours of which must be in instrument weather conditions, must also be included.

7. RECORDING OF PROFICIENCY CHECKS. The PPE will endorse the applicant's logbook or flight record and make an entry in his examiner activity record to show successful completion of the proficiency check. These records should contain the following information:

   a. Name of applicant and his employer;

   b. Date, place, aircraft or ground device identification/type used in the proficiency check; and

   c. Name and authorization number of other PPE's whose certification has been accepted for parts of the proficiency check.

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