FLIGHT TEST GUIDE

HELICOPTER

Private
and
Commercial Pilot

REVISED
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FEDERAL AVIATION AGENCY

PREFACE

This guide has been published by the Federal Aviation Agency, to assist the helicopter pilot applicant in preparing for the private and commercial certification flight tests.

It is designed to give the helicopter pilot applicant information concerning applicable procedures and standards.

Both the flight instructor and the applicant should find the guide helpful in flight test preparation.

This revised edition supersedes the December 1961 edition and is issued as advisory circular 61-25.

CONTENTS

During air taxiing: commercial pilot—altitude within 2 to 5 feet above the surface, and groundspeed within 0 to 10 knots.

8. Vertical takeoff

Procedure. Demonstrate vertical takeoffs to a hover.

Standard of performance. Demonstrate the ability to smoothly apply collective pitch, and maintain proper control within the following limits:

Private pilot—heading within ±10°, and position within 10 feet of the designated spot on the surface.

Commercial pilot—heading within ±5°, and position within 5 feet of the designated spot on the surface.

9. Vertical landing

Procedure. Demonstrate vertical landings from a hover.

Standard of performance. Demonstrate the ability to make a smooth reduction in collective pitch control as necessary for a constant rate of descent; maintain a level attitude until contact with the surface is made within the following limits:

Private pilot—heading within ±10°, and descend vertically to a designated spot.

Commercial pilot—heading within ±5°, and descend vertically to a designated spot.

10. Normal departures from a hover

Procedure. Perform departures from a hover by obtaining the recommended autorotational airspeed before gaining any significant amount of altitude.

Standard of performance. Demonstrate the ability to make smooth increases in collective pitch control while utilizing proper cyclic control to reach the manufacturer's recommended autorotational airspeed prior to leaving the area

4. Helicopter loading including fuel, oil, and baggage capacities

Demonstrate knowledge of the approved weight and balance data for the helicopter furnished, and compute permissible fuel and payload distribution.

5. Helicopter preflight check

Use an orderly procedure in making the preflight check, preferably as recommended by the manufacturer. Know the significance of each item checked and overlook no obvious unairworthy item. Demonstrate knowledge of proper pilot remedial action for unairworthy conditions.

6. Preflight operations

Procedure. Perform engine starting, rotor engagement, warmup, runup, and helicopter control and equipment checks. Engine shutdown and rotor stopping will also be accomplished either at this stage or at the completion of the flight test.

Standard of performance. Conduct all preflight operations correctly and completely in accordance with an appropriate checklist. Exercise necessary safety precautions to avoid hazard to persons or property, and damage to the engine or rotor blades.

7. Taxiing

Procedure. Demonstrate air taxiing and surface taxiing if the helicopter is equipped for maneuvering on the surface.

Standard of performance. Maintain full control of the helicopter, avoid obstructions, and comply with local taxi rules and control tower instructions within the following limits:

During air taxiing: private pilot—altitude within 2 to 10 feet above the surface, and groundspeed within 0 to 10 knots.

of ground effect and adhere to the following limits:

Private pilot—heading within ±10°, and airspeed within ±5 knots of the best rate- or angle-of-climb speed, whichever is being used.

Commercial pilot—heading within ±5°, and airspeed within 5 knots of the best rate- or angle-of-climb speed, whichever is being used.

11. Normal approaches to a hover

Procedure. Make normal power approaches from traffic pattern altitude to a hover.

Standard of performance.

Private pilot—airspeed within ±5 knots of best approach speed with a moderate flare to a hover within a 50-foot diameter circle.

Commercial pilot—airspeed not to exceed 5 knots of best approach speed with a moderate flare to a hover within a 25-foot diameter circle.

12. Crosswind takeoffs and landings

Procedure. Demonstrate crosswind takeoffs and landings from a hovering position with wind from both the right and left.

Standard of performance. Wind velocity permitting, crosswind takeoffs to a hover and landings from a hover will be demonstrated with a 90° crosswind without undue sideloads on the landing gear while adhering to the following limits:

Private pilot—heading within ±10°, and position maintained within a 50-foot diameter circle.

Commercial pilot—heading within ±5°, and position maintained within a 25-foot diameter circle.

13. High altitude takeoff

Procedure. Demonstrate the technique necessary for rolling takeoffs in high altitude operations. These conditions will be simulated by allowing the applicant insufficient power to become airborne without forward speed to gain translational lift.

Standard of performance. Maintain complete control of the helicopter at all times while adhering to the following limits:

Private pilot—heading within ±10°.

Commercial pilot—heading within ±5°.

14. Roll-on landing

Procedure. Demonstrate roll-on landings as may be made necessary by such conditions as low air density, low power output, or high altitude. These landings should be accomplished from a shallow glide.

Standard of performance. A shallow glide should be used, maintaining at least the minimum autorotational airspeed until transitioning for a touchdown within the following limits:

Private pilot—heading within ±10°, maintain airspeed between minimum autorotational speed and 10 knots higher, and groundspeed at touchdown should be between 5 and 10 knots.

Commercial pilot—heading within ±5°, maintain airspeed between minimum autorotational speed and 5 knots higher, and groundspeed at touchdown should be between 5 and 10 knots.

15. Emergencies

A. Autorotative approaches

Procedure. The examiner will throttle the engine at cruising speed and at minimum autorotational speed. Autorotative approaches will be completed by the applicant with the engine throttled to predesignated areas through straight and 180° patterns.

Standard of performance.

Private pilot—airspeed between minimum autorotational speed and 10 knots higher; rotor r.p.m. within the manufacturer's limits; to a landing or hover within a 100-foot diameter circle.

Commercial pilot—airspeed between minimum autorotational speed and 5 knots higher; rotor r.p.m. within the manufacturer's limits; to a