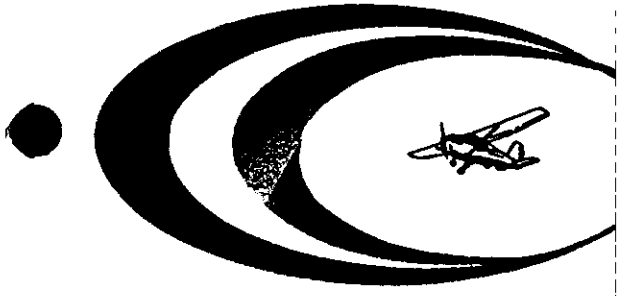
FLIGHT TEST GUIDE



PRIVATE PILOT
Airplane . . .
Single–Engine

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

FLIGHT TEST GUIDE

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REVISED
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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Flight Standards Service

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PREFACE

This Flight Test Guide has been prepared by the Flight Standards Service of the Federal Aviation Administration to assist the private pilot certificate applicant in preparing for his certification flight test.

It gives information concerning the procedures and maneuvers required by Part 61 of the Federal Aviation Regulations in the flight test required for a private pilot certificate. Both the applicant and his flight instructor should find the guide helpful in preflight test preparation.

This revised edition supersedes the edition dated 1966, and Advisory Circular No. 61–40, *Performance of Stalls on Pilot Flight Tests*, as it applies to private pilot flight tests.

CONTENTS

GENERAL INFORMATION

An applicant for a private pilot flight test is required by Section 61.21 of the Federal Aviation Regulations: (1) to have passed the private pilot written examination within 24 months before the date he takes the flight test, (2) to have the aeronautical experience required for a Private Pilot Certificate, (3) to hold a third class or better medical certificate, and (4) to have the written recommendation of an appropriately rated flight instructor.

The applicant is required by FAR 61.25 to provide a certificated airplane for the flight test. The airplane must be capable of, and its operating limitations must not prohibit, the flight maneuvers required in the test. The following equipment will be necessary for the completion of the procedures and maneuvers required by FAR 61.87 for the private pilot flight test:

1. Two-way radio suitable for voice communications with aeronautical ground stations.

2. A radio receiver suitable for the use of radio navigation facilities (may be the same radio used for communications).

3. A functioning gyroscopic turn indicator and sensitive altimeter (the use of full IFR instrumentation is preferred).

4. Fully functioning dual controls; except that by prearrangement the examiner is permitted to modify this requirement.

5. A suitable view-limiting device for simulating instrument flight conditions, which should be readily removable and installable in flight.

6. The approved Airplane Flight Manual for the airplane, if provided by the airplane owner; otherwise, the applicant will need at least an appropriate checklist.

The procedures and maneuvers required in the private pilot flight test are listed in FAR 61.87. This flight test guide is intended only to describe the procedures and maneuvers required by the Regulation, and the performance of each which will be acceptable to the examiner.*

The private pilot flight test is arranged in three phases: *Oral Operational Test*, *Basic Piloting Technique Test*, and *Cross-Country Test*. The failure of any required item constitutes the failure of the phase involved, and of the flight test. A flight test may be discontinued at any time by the examiner or the applicant, but in the event of failure or an incomplete test, credit will be allowed on subsequent reexamination for each successfully completed phase.

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*The word "examiner" is used in this Guide to denote either an FAA Inspector or a designated Pilot Examiner who conducts an official flight test.

The section on each procedure or maneuver contains three paragraphs, *Objective*, *Description*, and *Acceptable Performance:*

The *Objective* states briefly the purpose of the procedure or maneuver required on the flight test. It specifies the flight principles which the pilot must apply, and the piloting operations which he must perform properly to demonstrate that he has mastered the element of pilot qualification involved.

The *Description* explains the procedure or maneuver, and the means which have been found most effective in accomplishing and demonstrating its objectives. These descriptions must not be confused with the objectives. How one enters a stall, for example, is not so important as his demonstration of the ability to recognize stalls and to use the proper recovery techniques, which are the objectives of the maneuver.

The *Acceptable Performance* described includes the factors which are taken into account by the examiner in deciding whether the applicant has met the objectives of the procedure or maneuver. The airspeed, altitude, and heading tolerances are not hard-and-fast, but represent the performance expected in good flying conditions with a typical personal-type airplane. The practice of consistently exceeding these tolerances before corrective action is

initiated, however, is indicative of an unsatisfactory performance.

The applicant's performance will be evaluated by the examiner on the basis of the judgment, knowledge, accuracy, and smoothness displayed on the test. A competent performance of a flight maneuver is a performance in which the pilot is obviously the master of the airplane, and the successful completion of the maneuver is never seriously in doubt.

In the event a private pilot flight test is taken in a multiengine airplane, the *Description* and *Acceptable Performance* found in the FAA *Multiengine Flight Test Guide*, AC 61-4B, will be used for each required maneuver which is performed differently in multiengine airplanes, rather than those in this Guide.

PHASE I.

ORAL OPERATIONAL EXAMINATION

1. Airplane Registration, Airworthiness, and Equipment Documents

a. *Objective.* To determine that the applicant can identify and find the documents required in a certificated airplane.

b. *Description.* The applicant will be requested to present or point out in the airplane the aircraft registration, airworthiness records, Airplane Flight Manual (if required), equipment list, and weight and balance documents required to be carried in the airplane.

c. *Acceptable Performance.* The applicant should be able to identify, find, and explain the purpose and significance of each required item.

2. Airplane Logbooks and Airworthiness Inspection Reports

a. *Objective.* To determine that the applicant knows what airworthiness inspections are required for a certificated airplane, and what evidence of these inspections is acceptable for flight operations.

b. *Description.* The applicant will be required to present and explain the aircraft and engine logbooks, or other required airworthiness inspection reports.

c. *Acceptable Performance.* The applicant should be able to identify, find, and explain the significance, to a pilot, of the required inspection reports.

3. Airplane Performance, Range, and Operations

a. *Objective.* To determine that the applicant knows what performance data and operating information is important to the pilot, and can obtain them for the airplane to be used for the test.

b. *Description.* The applicant will be required to demonstrate a practical knowledge of the performance capabilities, approved operating procedures, and limitations for the airplane furnished. This includes power settings, placard speeds, range, fuel and oil requirements, the operation of aircraft systems and special equipment, critical performance speeds, and other emergency procedures.

He will be required to use the Airplane Flight Manual, if provided, for determining the effects of temperature, density altitude, wind, surface conditions, and gross weight on flight performance. He is expected to be familiar with the general effects of power settings and altitude on the cruising range, and to know the airspeeds for the best performance in the airplane used.

A practical knowledge of the control system; the fuel, lubrication, hydraulic, and electrical systems; and the operation of the supercharger(s), landing gear and flaps, radio, pressurization, heating, and

special emergency equipment will be expected.

c. *Acceptable Performance.* The inability to obtain essential pilot information which is available in the airplane, or a faulty knowledge of operating data or procedures is disqualifying.

4. Airplane Loading

a. *Objective.* To determine that the applicant can make practical, accurate determinations of permissible loading and load distribution in an airplane.

b. *Description.* The applicant will be required to apply the approved weight and balance data for the airplane used in the test to make practical computations of the permissible fuel and payload distribution. It is preferred that a loading graph or computer supplied with the airplane be used for this purpose, if available.

c. *Acceptable Performance.* The applicant should be able to make accurate determinations of permissible gross weight loadings, and load distribution within the gross weight.

5. Airplane Line Check

a. *Objective.* To determine that the applicant can make a practical determination of whether or not an airplane is ready for flight.

b. *Description.* The applicant will be expected to use an orderly procedure in conducting a preflight check of the airplane, preferably in accordance with a

checklist provided by the manufacturer or owner. This check covers the airplane's readiness for flight, including fuel and oil supply, the presence of all required equipment and documents, and its airworthiness so far as can be determined by external inspection.

c. *Acceptable Performance.* The applicant should know the significance of each item checked, and not overlook an obvious unairworthy condition. He should know the appropriate remedial action for a pilot to initiate for the correction of each unsatisfactory item detected.

6. Use of Radio for Voice Communication

a. *Objective.* To determine that the applicant can use two-way radio effectively for ground and flight communications.

b. *Description.* During his flight test, the applicant will be expected to use two-way radio for obtaining information, clearances, and making requests pertinent to the flight.

c. *Acceptable Performance.* Performance will be evaluated on the basis of the applicant's ability to determine and tune to the correct radio frequencies. The use of the proper radio procedures and phraseology is desired.

PHASE II.

BASIC PILOTING TECHNIQUE TEST

1. Preflight Operations

a. *Objective.* To determine that the applicant knows how to start and warm up the engine, and that he can determine the airplane's immediate readiness for flight.

b. *Description.* The applicant will be expected to use proper procedures in engine starting, warmup, and runup; the setting of aircraft systems and equipment; and the checking of the flight controls.

c. *Acceptable Performance.* Performance will be evaluated on the basis of the accuracy of the procedures used, and the throughness of the engine, systems, and airplane checks. The use of a checklist provided by the manufacturer or the airplane owner is recommended.

2. Taxiing, or Sailing and Docking

a. *Objective.* To determine that the applicant can maneuver the airplane expeditiously and safely on the surface.

b. *Description.* The demonstration of taxiing will include the operation of the airplane on the surface, the initial and continuing determination that the taxi path is clear of obstructions, and compli-

ance with local taxi rules and tower instructions.

Seaplane applicants will be required to demonstrate taxiing at slow speeds and on the step, sailing, docking, a simulated or actual approach to a buoy, and turns to downwind headings.

c. *Acceptable Performance.* Performance will be evaluated on the basis of the accuracy of taxi operations; safety consideration for other aircraft and personnel on ramps and taxiways; the use of the flight controls and brakes for steering; and the use of the water rudder, if the seaplane used is so equipped. Consideration will be given to the use of appropriate taxiing speeds, considering safety and the expeditious movement of airport traffic.

3. Normal and Crosswind Takeoffs and Landings

a. *Objective.* To determine that the applicant can make consistently safe takeoffs and landings under normally anticipated conditions.

b. *Description.* The applicant will be required to demonstrate normal and crosswind takeoffs and landings. If all takeoffs and landings must be made with sufficient crosswind to require the use of crosswind techniques, no separate demonstrations will be required. Normal takeoffs and landings will be made in compliance with the established traffic pattern for the airport used, or in accordance with control tower instructions. For safety, crosswind

takeoffs and landings must be performed with full consideration for other traffic, and in strict compliance with any crosswind component limitations for landings in the airplane used.

The applicant will be expected to use normal approach techniques, preferably with a progressive reduction in power until the throttle is closed on final approach when the applicant feels sure of reaching his desired touchdown point, or during the final flare for touchdown.

In airplanes equipped with flaps, at least one landing without flaps will be required, if permitted by the airplane's operating limitations, and a go-around from touchdown attitude not more than 3 feet above the runway with full flaps will be required.

The demonstration of at least one crosswind landing and takeoff subject to sufficient crosswind component to require the use of crosswind techniques will be required.

c. *Acceptable Performance.* Performance will be evaluated on the basis of takeoff and landing technique, judgment, observance of traffic patterns and control tower instructions, drift correction, coordination, power management, and smoothness. Excessive maneuvering, faulty operation of flight and aircraft system controls, and failure to observe the appropriate airspeeds will be disqualifying. The applicant will be expected to maintain prescribed traffic pattern altitudes within

100 feet, and climb and approach speeds within 5 knots on initial climb and final approach, and to touch down, in normal landing attitude, within the portion of the runway prescribed by the examiner.

4. Climbs, Level Flight, and Descents at Normal Speeds and Minimum Controllable Speeds

a. *Objective.* To determine the applicant's ability to maneuver an airplane safely, and to maintain flight control at marginally slow airspeeds.

b. *Description.* Climbs, descents, and level flight on straight courses and in 20° to 30° banked turns will be required at the best rate of climb speed, landing approach speed, or cruising speed, as appropriate. These may be demonstrated in conjunction with other maneuvers on the flight test, or separately.

The same flight maneuvers will also be required at minimum controllable airspeeds, with the power settings necessary to produce the climbs, descents, or level flight desired. The airspeed used is expected to be sufficiently slow so that any increase in the angle of attack by raising the nose slightly, or increasing the load factor would result in immediate indications of an imminent stall. Both cruising and landing configurations will be used. A stall warning indicator may be used for this demonstration only when such an indicator is required equipment for the airplane used for the test.

The smooth transition from cruising configuration and airspeed to straight and level flight at minimum controllable airspeed will also be required.

c. *Acceptable Performance.* The applicant will be expected to maintain an altitude within 100 feet of the assigned altitude and a heading within 10° of the assigned heading during his demonstration of maneuvering at normal airspeeds. During maneuvering at minimum controllable airspeed, he should use a power setting during level flight which will not result in a significant change in altitude (more than 100 feet per minute consistently) when level flight is called for, and maintain an airspeed within 5 knots of the desired speed. Any unrecognized unintentional stall will be disqualifying.

5. Stalls and Stall Recoveries

a. *Objective.* To determine that an applicant can recognize a partial stall, and make prompt, effective recoveries from partial and complete stalls encountered in all normally anticipated flight situations.

b. *Description.* The applicant will be required to perform recoveries from partial and full stalls entered from straight and turning flight, with at least 65 percent power, and with the engine idling. The flight test will emphasize the recovery from stalls entered from the three flight situations which have been found to be the most critical: takeoff and departure,

approaches to landings, and during accelerated maneuvers.

Takeoff and departure stalls are simulated from straight flight, and from approximately 15° to 20° constant banked turns in takeoff configuration with recommended takeoff power. To prevent an abnormally high pitch attitude before the stall, it is important to initiate a climb at liftoff speed and increase the angle of attack progressively until a stall occurs. The airspeed should not increase above liftoff speed after the climb is initiated until recovery is effected. The altitude should be noted at the time of assumed liftoff, and compared with the altitude at which recovery is effected.

Approach to landing stalls are performed from straight glides and moderately banked gliding turns in landing configuration, with gear extended and full flaps, and trim set. The demonstration is entered at landing approach speed, and the angle of attack is increased smoothly until a stall occurs or full back elevator is held without producing further stall development. Turns should continue at a constant angle of bank until the stall occurs. Recovery should be followed by a climbout in climb configuration to an altitude of at least 300 feet above the altitude at which full control effectiveness is regained.

Accelerated stalls are performed from a sustained bank of 45° or more by increasing the angle of attack at a constant altitude or moderate rate of climb until

a stall occurs. Power may be reduced below cruising to assist in increasing the angle of attack, but any decrease in the rate of climb or loss of altitude will defeat the purpose of the maneuver by relieving the load factor. The term "accelerated" has nothing to do with the rapidity with which a stall is induced. It denotes a stall which occurs at a higher than normal airspeed because the angle of attack is increased by the additional load factor (or "acceleration") which results from a steep turn or an abrupt maneuver. An airplane with an unaccelerated stalling speed of 50 knots, for example, will stall at approximately 60 knots in a sustained 45° bank.

Accelerated stalls should not be performed in other than acrobatic airplanes at speeds more than 1.25 times the unaccelerated stalling speed, nor with flaps extended, because of the extremely high structural loads which may result. Abrupt pitch changes in all flight maneuvers should be avoided in airplanes with extensions between the engine and propeller, because of the high gyroscopic loads involved.

The applicant will be asked to recover from all types of stalls in high-performance airplanes as soon as evidence of a stall is recognized. Such evidence may be uncontrollable pitching, buffeting, rapid decay of control effectiveness, or the application of full back elevator without producing further stall development. In light, trainer-type airplanes,

the examiner may ask the applicant to delay the initiation of stall recoveries until the nose has pitched down through cruising flight attitude. The applicant should control the attitude of the airplane to the maximum extent possible throughout the stall and recovery with the normal use of the flight controls.

Recovery is complete when the airplane regains straight and laterally level flight. All appropriate flight and power controls should be used during stall recoveries. Recoveries without the use of power will be expected when specifically directed by the examiner. The angle of attack is relieved by relaxation of the back force on the elevator control, or the application of forward force if necessary, and full control effectiveness is regained with the least loss of altitude consistent with safety. Special attention will be directed to the altitude necessary to recover from a stabilized high rate of descent with full back elevator control, if this condition develops in some flight situations in the airplane used.

c. *Acceptable Performance.* Throughout his stall recovery demonstrations, the applicant will be expected to use prompt and correct control applications to achieve the desired attitudes and maintain the desired heading. Consideration will be given to the applicant's positive action and smoothness. Failure to initiate corrective action on partial stalls before the nose pitches uncontrollably, indications of a secondary stall during recover-

ies, or diving to higher than cruising airspeed during recoveries will be disqualifying, as will any loss of control which makes it necessary for the examiner to take over to avoid a spin or exceeding the airspeed limitations of the airplane.

6. 720° Steep Turns about a Point

a. *Objective.* To determine that the applicant can maneuver an airplane safely with reference to objects on the ground.

b. *Description.* The applicant will be required to perform right and left turns of at least 720° duration about a point on the ground. A uniform radius about the point should be maintained by varying the bank to compensate for drift, with a bank of approximately 45° at the steepest point. The altitude maintained should not be lower than 500 feet above the highest obstruction.

The examiner may ask the applicant questions about objects on the ground to determine whether the applicant can operate the airplane properly while his attention is diverted.

c. *Acceptable Performance.* Performance will be evaluated on the basis of coordination and smoothness, drift correction, and altitude control. Significant changes in airspeed and altitude should result in prompt corrective action. Any prolonged cross-control condition, or the use of a dangerously slow airspeed will be disqualifying. The practice of consistently exceeding the following tolerances will be considered evidence of an unsatis-

factory performance: altitude variation —within 100 feet of starting altitude; airspeed—within 10 knots; recovery headings—within 20° of desired headings; and track—within 200 feet.

7. Stall Landings in Nosewheel Type Airplanes, or Wheel Landings in Tailwheel Type Airplanes

a. *Objective.* To determine that the applicant can make landings appropriate to special situations in the general configuration of airplane used for the test.

b. *Description.* At least one stall-type landing at minimum airspeed will be required if a nosewheel type airplane is used, or one wheel-type landing if a tailwheel type airplane is used. These may either be combined with the other landings required, or may be demonstrated separately.

Stall landings in nosewheel type airplanes are made from normal approaches flared just above the runway, touching down on the main wheels with the nosewheel well clear of the runway at, or very near, the power-off stalling speed.

Wheel landings in tailwheel type airplanes are made from normal approaches flared to cruise flight attitude just before the wheels touch the runway. The wheels are held in contact with the runway by slight forward force on the controls after touchdown, and the tailwheel is allowed to settle to the surface as speed is lost.

c. *Acceptable Performance.* Performance is evaluated on the basis of planning,

airspeed control, smoothness of touchdown, and directional control during rollout.

8. Short Field Takeoff and Power Approach and Landing

a. *Objective.* To determine that the applicant can use the proper technique for takeoffs and landings on a short field with a firm surface and surrounding obstructions.

b. *Description.* Takeoff is made with the prompt smooth application of power, and rotation is initiated just as the best angle of climb airspeed is reached, and that speed maintained until the altitude of assumed obstructions, usually 50 feet, is reached. The flap setting and airspeed prescribed in the Airplane Flight Manual are to be used.

Short field landings are made from the normal traffic pattern, adjusting the pitch attitude to control the airspeed and the power to control the angle of descent. The most effective airspeed for a short field approach is approximately 1.3 times the power-off stalling speed in landing configuration. Full flaps are used for the last segment of the approach, and moderate slips may be used in airplanes with or without flaps.

The applicant is not expected to steepen his approach slope after crossing the assumed obstruction. The flare for touchdown should result in little or no floating after the throttle is closed, if the proper approach speed has been maintained.

c. *Acceptable Performance.* Performance will be evaluated on the basis of planning, smoothness, and accuracy. Lift-off and climb are to be performed within 5 knots of the best angle of climb speed, and the final approach (from 100 feet above the surface) within 5 knots of the prescribed approach speed.

9. Soft Field Takeoff and Landing

a. *Objective.* To determine that the applicant can use the proper technique for takeoffs and landings on fields with soft or rough surfaces.

b. *Description.* The accepted technique assumes that the surface is covered with snow, mud, high grass, or loose rocks. The takeoff run is made with the wing at a relatively high angle of attack to lighten the load on the wheels as much as possible. The nosewheel or tailwheel is lifted clear of the surface as soon as possible.

The airplane is allowed to lift off at the minimum possible airspeed, and before climbing more than barely clear of the surface the angle of attack is slowly reduced to achieve the best angle of climb airspeed before further climb is initiated. The flap setting recommended by the Airplane Flight Manual is important.

The soft field landing is completed from a normal approach with touchdown at the slowest possible airspeed and a short landing roll. The nosewheel is held clear of the surface as long as possible during rollout. In tailwheel type airplanes, the

tailwheel is held solidly on the surface from the instant of touchdown.

c. *Acceptable Performance.* Performance will be evaluated on the basis of planning, airspeed control, smoothness, and accuracy of operations. The applicant is expected to lift off at not higher than the power-off stalling speed, and observe the normal climbout and approach speeds.

10. Slips, and a Slip to a Landing (three-control airplanes only)

a. *Objective.* To determine that the applicant can use slips safely and effectively, if a three-control airplane is used.

b. *Description.* The applicant will be required to demonstrate right and left slips at altitude, and at least one landing from a moderate slip. The slips at altitude will be expected to vary from gentle to the steepest in which the airplane will hold its heading and airspeed without buffeting. Slips will be required with and without flaps, unless prohibited by the airplane's operating limitations.

The required slip to a landing may be made in conjunction with other required landings, or separately.

c. *Acceptable Performance.* Performance will be evaluated on the basis of smoothness, attitude control, maintenance of the desired heading and track, and recovery at the appropriate altitude. Slips to landings are expected to be made into the wind.

11. Emergency Operation of Aircraft Equipment

a. *Objective.* To determine that the applicant knows, and can perform, the emergency operations appropriate to the airplane used.

b. *Description.* The demonstrations required under this section will necessarily vary with each type of airplane used for a flight test, and with the special equipment installed. The applicant will be required to demonstrate, or have a practical knowledge of, the emergency operation of all aircraft systems and special equipment installed.

Emergency operations, such as the manual extension of the retractable gear or replacing fuses, will be actually performed when practicable, but such items as the discharge of pressure fire extinguishers may be simulated.

c. *Acceptable Performance.* Performance will be evaluated on the basis of the applicant's knowledge of procedures, and his accuracy in their application.

12. Engine-out Emergencies (Multiengine airplanes only)

A private pilot flight test conducted in a multiengine airplane will include the engine-out emergency procedures described in Phase III of the *Multiengine Airplane Class or Type Rating Flight Test Guide*, AC 61-4B.

PHASE III

CROSS-COUNTRY FLIGHT

1. Cross-country Flight Planning

a. *Objective.* To determine that the applicant can effectively prepare for a cross-country flight in a reasonable period of time.

b. *Description.* Before takeoff for the flight test, the applicant will be requested to plan a cross-country flight to a point at least two hours' cruising range distance in the airplane to be used for the test. At least one intermediate stop should be included.

Planning is expected to include the procurement of pertinent available weather information; plotting a course on an aeronautical chart; establishing checkpoints and distances; and estimating flying time, headings, and fuel requirements. The *Airman's Information Manual*, if available, will be used as a reference for airport information and for NOTAM's. The use of a computer or wind vector diagrams for computing headings and ground speeds is desirable, but not required.

The flight planning required for the private pilot flight test is a practical demonstration of the preparation for an

actual cross-country flight, and not merely a classroom exercise.

c. *Acceptable Performance.* It is expected that all flight planning operations will be meaningful, applicable to the trip proposed, and accurate. The use of more than 30 minutes to plan a two-hour cross-country flight is indicative of an inadequate performance, unless delays are encountered in obtaining weather or other necessary information.

2. Cross-country Flying

a. *Objective.* To determine that the applicant can conduct safe, expeditious cross-country flights, using normally available aids and facilities.

b. *Description.* When requested by the examiner, the applicant will be expected to start out on the cross-country flight planned under item 1 of this Phase. The planned flight will be followed at least until the applicant establishes the compass heading required to stay on course, and can give a reasonable estimate of his ground speed. At this time, he may be requested to divert to an alternate airport of the examiner's choice, or the examiner may ask the applicant to select a suitable alternate. The use of radio aids to VFR navigation required by item 4 of this Phase may be combined with the cross-country demonstration.

The cross-country demonstration will include an approach and landing at an unfamiliar airport, when practicable.

c. *Acceptable Performance.* The cross-country flight will be evaluated on the basis of the applicant's ability to follow a designated course, correctly identify checkpoints, maintain heading and altitude, provide reasonable estimates of times over checkpoints, and plan alternate courses during flight.

The applicant will be expected to establish the compass heading necessary to hold his planned course within ten minutes, and thereafter hold this track within one mile and his altitude within 200 feet of the planned altitude. Using his observed time over checkpoints, he is expected to compute an estimated time of arrival for the first point of intended landing with an apparent error of not more than 10 minutes.

When requested to divert to an alternate, he will be expected to turn to his new course promptly, and to establish an appropriate heading within ten minutes. His approach to an unfamiliar airport will be evaluated on the basis of his compliance with the known traffic pattern, traffic directional markers, or control tower instructions, as available.

3. Cross-country Emergencies

a. *Objective.* To determine that the applicant can react promptly and correctly to emergencies which occur on cross-country flights.

b. *Description.* During the cross-country flight demonstration, the examiner

will simulate, or ask the applicant to simulate, various emergencies, such as imminent or partial power failure, being lost, encountering adverse or marginal weather, loss of visual reference to the ground, icing, or failure of the radio or electrical system.

c. *Acceptable Performance.* Performance will be evaluated on the basis of the applicant's ability to promptly analyze the situation and possible choices of action, his resourcefulness and planning, and the appropriateness of the action initiated. Emphasis will be directed to the consideration and application of normal remedies for the situation before emergency action is initiated.

4. Use of Radio Aids to VFR Navigation

a. *Objective.* To determine that the applicant can use common aeronautical radio facilities for assistance in VFR navigation.

b. *Description.* During his flight test, preferably on the cross-country portion, the applicant will be required to demonstrate the use of radio navigation facilities for VFR navigation. He may elect to use a VOR or low frequency range or ADF equipment in the airplane.

The applicant will be expected to tune in and identify a range station, and follow a radial or range leg. No orientation or radial interception procedure will be required. He will be expected to determine whether he is flying to or from the

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