

PRIVATE PILOT

I. AREA OF OPERATION: PREFLIGHT PREPARATION

D. TASK: CROSS-COUNTRY FLIGHT PLANNING

OBJECTIVE

To determine that the applicant:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a pre-planned VFR cross-country flight, as previously assigned by the examiner. On the day of the practical test, the final flight plan shall be to the first fuel stop, based on maximum allowable passengers, baggage, and / or cargo loads using real-time weather.
2. Uses appropriate and current aeronautical charts.
3. Properly identifies airspace, obstructions, and terrain features.
4. Selects easily identifiable en route checkpoints.
5. Selects most favorable altitudes considering weather conditions and equipment capabilities.
6. Computes headings, flight time, and fuel requirements.
7. Selects appropriate navigation systems / facilities and communication frequencies.
8. Applies pertinent information from NOTAM's, AF/D's, and other flight publications.
9. Completes a navigation log and simulates filing a VFR flight plan.

ELEMENTS

1. 14 CFR Part 91, Section 91.103: Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight, to include:
 - a. Weather reports and forecasts.
 - b. Fuel requirements.
 - c. Alternates available if the planned flight cannot be completed.
 - d. Known traffic delays.
 - e. Runway lengths at airports of intended use.
 - f. Takeoff and landing distance determinations.
2. Assemble the necessary material:
 - a. Appropriate current sectional charts and terminal area charts (TAC's).
 - b. Appropriate current Airport / Facility Directories (A/FD's).
 - c. Pilot Operating Handbook or FAA-Approved Airplane Flight Manual.
 - d. Flight computer or electronic calculator.
 - e. Plotter.
 - f. Flight log / flight plan form.
3. Get an outlook weather briefing (over 6 hours from departure), including local NOTAM's.
4. Study available information about each airport at which a landing is intended (in the appropriate current A/FD's).
5. Determine proper loading and center of gravity of the airplane (weight and balance data).
6. Determine takeoff and landing distances based on the calculated load.
7. Compare takeoff and landing distances with runway lengths at airports of intended use.
8. Check the POH / AFM fuel consumption charts to determine fuel burn at estimated altitude and power settings. Compare to estimated flight time to determine refueling points.
9. Start charting the course by drawing a straight line from each point of departure to the next point of arrival.
10. Check both sides of the course for hazards or special operational requirements, including:
 - a. Controlled airspace and special use airspace.
 - b. Hazardous terrain such as mountains, forests, swamps and large water masses.
 - c. Obstructions such as towers and antennae (note each maximum quadrant altitude).
11. Consider alternate airports and navigational aids along the route which could be useful.
12. If a more efficient or safer route can be found without significant detour, consider that route.
13. Select prominent checkpoints (large towns, other airports, major highways, lakes, rivers, etc.) 15 or 20 minutes apart and note them on the flight log.
14. With the plotter, determine the true course of each leg.
15. Add the variation to the true course to get the magnetic course and choose a VFR altitude well above all obstructions (MC 0°-179°: odd thousands + 500', MC 180°-359°: even thousands + 500').

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16. Measure the distance of each leg and the total distance of the course and note them on the flight log.
17. Get a standard weather briefing, including local NOTAM's.
18. Calculate the wind correction angle for each leg using a flight computer and note them on the flight log.
19. Starting with the true course, calculate the compass heading for each leg in three steps and note them on the flight log:
 - a. True heading = true course +/- wind correction angle ($TH = TC \pm WCA$).
 - b. Magnetic heading = true heading +/- variation ($MH = TH \pm VAR$).
 - c. Compass heading = magnetic heading +/- deviation ($CH = MH \pm DEV$).
20. Calculate the ground speed, resulting flight time and resulting fuel burn for each leg using a flight computer and note them on the flight log.
21. Fill out the flight plan form and file the flight plan with the Flight Service Station (FSS).
22. Consider the flight conditions and the area over which the flight will take place:
 - a. Bring white and red flashlights if flight is to take place at night.
 - b. Bring warm clothes if flight is over a mountain.
 - c. Bring water if flight is over a desert.

REFERENCES

1. 14 CFR Part 91, General Operating and Flight Rules.
2. AC 61-84, Role of Preflight Preparation.
3. AC 61-23 / FAA-H-8083-25, Pilot's Handbook of Aeronautical Knowledge, Chapter 14.
4. Navigation charts.
5. A/FD, Airport / Facility Directory.
6. AIM, Aeronautical Information Manual.
7. POH / AFM, Pilot Operating Handbook / FAA-Approved Airplane Flight Manual.