

PRIVATE PILOT

VII. AREA OF OPERATION: NAVIGATION

C. TASK: DIVERSION

OBJECTIVE

To determine that the applicant:

1. Exhibits knowledge of the elements related to diversion.
2. Selects an appropriate alternate airport and route.
3. Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate airport.
4. Maintains the appropriate altitude, +/-200 feet (60 meters), and heading, +/-15°.

ELEMENTS

1. If a pilot flies long enough, a diversion from a planned destination is inevitable.
2. The causes for diversions include unpredicted weather conditions, system malfunctions and poor pre-flight planning.
3. When situations warrant, a pilot must be able to safely and efficiently divert to an alternate destination.
4. Included in the pre-flight planning should be a check for:
 - a. Airports or suitable landing areas near the planned route of flight.
 - b. Navigational aids that can be used during a diversion.
5. Alternate airports and navigational aids should be used to execute a diversion.
6. Rough calculations should be used (relative to the detailed flight-planning methods used during the pre-flight planning) while flying the airplane and scanning for other traffic.
7. Consider the terrain before deciding on an alternate – the closest field might not be the safest.
8. The magnetic course to an alternate can be approximated using a straightedge (or finger) and a compass rose superimposed on an aeronautical chart.
9. After the final alternate selection, approximate the magnetic course to the alternate.
10. In an emergency, turn the airplane onto the approximated magnetic course immediately.
11. In a non-emergency with time available, try to start the diversion over a prominent ground feature.
12. Once established on course, note the location and time of diversion.
13. Use the winds aloft nearest the point of diversion to make rule-of-thumb adjustments to heading and groundspeed.
14. Using the new groundspeed, determine the arrival time to the alternate and the fuel consumption required.
15. Give priority to flying the airplane and scanning for traffic while diverting.
16. When determining an altitude to use while diverting, consider cloud heights, winds, terrain and radio reception.

REFERENCES

1. AC 61-23 / FAA-H-8083-25, Pilot's Handbook of Aeronautical Knowledge, Chapter 14.
2. AIM, Aeronautical Information Manual.