

## VFR Cross Country Flight Plan Guide

### *Evening before flight*

Gather appropriate, up to date charts and flight publications. Sectional/Terminal charts, AFD, etc.

1. Spread out charts and eyeball approximate route of flight considering the following:
  - Route: Try to choose a direct route, but make sure there are easily identified checkpoints along the route. A good checkpoint like an airport is better than direct over an area without checkpoints.
  - Airspace: Avoid restricted airspace and MOA's. Plan for clearance through class B, C, & D airspace.
  - Terrain: Make sure you don't have terrain along your proposed route that is higher than the aircraft's service ceiling. For safety make sure you have at least 2000 foot obstacle/terrain clearance.
  - Airports: Make sure there are appropriate (runway lengths & available services) airports for needed, planned or unplanned stops.
  - Emergencies: In case of an in-flight emergency make sure there are suitable landing sites (on and off airport) along the route of flight.
2. Use plotter and pencil to draw intended route of flight. Draw lightly as the exact route may need to be adjusted. You may find it helpful to mark out the route with removable highlighter tape, to allow for minor course changes without adding clutter to the chart.
3. Enter the departure airport above the first "Checkpoint" box, on both the left and right side of the Navigation Planner, so you will be able to see where the flight begins after the form is folded in half.
4. The first checkpoint should be an easily identifiable from the departure airport, ideally near the "Top of Climb", or the point at which the airplane reaches it's initial cruising altitude. This point is determined from the climb performance charts in the POH.
5. Identify and mark an "X" at each checkpoint along the route. It is easier to see the course if a highlighter is used as well, with a line across the course line at each "X". The "X" should be consistent (i.e. center of an airport, base of a VFR checkpoint flag, etc. - note: rivers do not normally make a good checkpoint as they can dry in the summer months!) The check points should be evenly spaced along the route if possible. The distance between checkpoints depends on the overall length of the flight. For example a 50 NM flight should have checkpoints approximately every 10 - 15 miles, and a 250 NM flight should have checkpoints approximately every 30 - 40 miles. Ideally, you want to see the next, and previous checkpoint (if you were to turn around) halfway between the checkpoints.

Begin to fill in the Navigation Planner, and other information on the flight planning form.

1. In the "Checkpoint" column **[1]** enter a name for each checkpoint you identified. If the checkpoint is identified by a Radio Nav Aid (VOR, NDB, cross radials, etc.), enter each Nav Aid name, Frequency, Morse code identifier, and Omni Bearing Selector setting, and note whether there will be a "To" or "From" indication on the notes line. If the route follows a road, river, etc., note that in the provided space.
2. Use plotter to find the "True Course" you'll fly to each checkpoint and enter the value in column **[2]**. Use longitude lines and try to measure the True Course near the midpoint of the leg
3. Use the chart to find the Magnetic Variation for each leg and enter that information in the "Mag Var" column **[3]**. If the variation is not a whole number (i.e. 13° 30") either round up or down but be consistent for the whole flight plan.
4. Determine the "Mag Course" column **[4]** for your route by adding or subtracting column **[3]** from column **[2]**.

5. Enter the altitude you plan to fly to each checkpoint and enter that information in the "Altitude" column [5] boxes. Magnetic Course: 0-179 fly odd-thousand plus 500', 180-359 fly even-thousand plus 500'

6. Measure the distance between checkpoints and enter it in "Distance - Leg" column [6]. Make sure you use the correct scale (Sectional or VFR Terminal) on the plotter.

7. "True Air Speed" column [7] can be found using performance charts from the POH, or by using the "Performance Data" tables at the bottom of the page. Don't forget climb speed is slower on the first leg.

If communications are required (transitioning airspace, flight following, etc.) enter who you will need to contact and the frequency in the provided boxes, or the notes sections.

### *Day of the flight*

Get weather briefing (DUAT or FSS), including winds and temperatures aloft forecast and NOTAM's for the route of flight. Record notes in the spaces provided or on a blank sheet of paper.

8. Enter "Wind Dir" column [8] from the wind aloft forecasts for each leg of the flight.

9. Enter "Wind Speed" column [9] from the wind aloft forecasts for each leg of the flight.

Use the E6B wind side for Ground Speed (GS), Wind Correction Angle (WCA) for each leg.

10. Enter "Est GS" column [10] using the wind side of the E6B for calculations.

11. Enter "WCA" column [11] using the wind side of the E6B. It is best to fill both [10] and [11] for each checkpoint before moving on to the next checkpoint.

12. Enter the Compass Error column [12] from the information found in the aircraft.

13. Enter the "Mag Heading" column [13] by adding [4] and [11] and [12].

Use the E6B rate side for Estimated Time Enroute (ETE) [15], and Fuel Used [16].

Based on the briefing and discussion with your instructor, determine if the current and forecast conditions exceed your limitations/experience and make a go/no-go decision.

File flight plan with FSS or DUAT

### *During the flight*

1. Follow all checklists. Make sure to note the time of departure from the airport. You may find it easier to also start a stopwatch for timing each leg.

2. After clearing the airport area, activate the flight plan with the local FSS by radio, before contacting the local ATC for flight following service.

3. Remember to record time at each checkpoint, compare the time to your planned time (Est TE), and recalculate GS and fuel burn if there is a significant difference from your planned time.

4. Upon arrival at the destination airport, **DON'T FORGET TO CLOSE THE FLIGHT PLAN**, either by radio (if possible) or by phone.