

How to plan a Cross Country Trip

Pre-Weather Planning

- A. Determine your departure and destination points
- B. Determine your set heading point (SHP). Pick one that is VERY easy to find visually from your aircraft (usually 5-15NM from the departure aerodrome to allow time for climb etc.)
- C. Draw your TRUE TRACKs (from A/D to SHP and SHP to ARRIVAL POINT and/or DESTINATION) on your VNC, then determine your TRUE TRACKs using your plotter.
- D. Determine Variation from the VNC
- E. Measure the lines using your plotter (remember to use NAUTICAL MILES)
- F. Determine MEF (from your VNC) and +1000'
- G. Calculate your MAGNETIC HEADING for the climb, MAGNETIC TRACK (TT + Variation) for the cruise portion(s), and determine your PLANNED ALTITUDE
- H. Choose Checkpoints - Choose points that will be easily identifiable from the air and that are around 10-20NM apart
- I. Measure the distances between checkpoints
- J. Calculate the distance to go from each checkpoint
- K. Read about your destination aerodrome in the CFS. Draw an airport diagram that includes the aerodrome identifier, runway configuration, lengths & widths of runways, elevation, your expected approach angle, and any important notes regarding special procedures at the aerodrome
- L. Write down the applicable frequencies at your arrival and departure aerodromes. Use CFS
- M. Add in known fuel variables: a). TAXI & TAKE OFF (**1.1G** from POH 6-2a), b). PATTERN (**10mins ~1G** from POH 6-4 75% power avg 6gph ~1gal in 10min), c). Reserve (Day VFR: 30mins ~ 4G; Night VFR: 45mins ~ 6.5G); AVFTCI Reserve: **1hr ~ (8G)** *all numbers for C172M

Now it is time to check the weather! Print out a weather package that includes NOTAMs, PIREPs, SIGMETs, METARs, TAFs, the entire set of GFAs (Both Weather and Icing & Turbulence), and FDs for your departure aerodrome, arrival aerodrome and all stations in between

Post-Weather Planning

1. Determine your Altimeter Setting (from the METARs). You can average them for the cruise portion if both destination and departure have them
2. Determine your pressure altitude at the planned altitude using the altimeter setting determined in step 1.

3. Determine the OAT at cruising altitude as determined from FDs (averaged if possible, remember the average lapse rate)
4. Determine your upper winds using the FDs. If your trip includes more than 1 FD you can use the average of the two. Remember, FDs like all printed winds are in degrees TRUE. Average your winds when possible. For example, the FDs offer winds at 3000' and 6000', if you were traveling at 4500' average the two. Use these winds for the cruise portion(s)
5. Using the weather package determine an appropriate cruising altitude. Minimum altitude is MEF +1000' ... then on MAGNETIC TRACKS of 000°-179° you will fly at odd thousand altitudes +500', and between 180°-359° even thousand altitudes +500' (for VFR flights). Update your planned altitude if changed
6. Using your pressure altitude determine power setting using your POH. Note your RPM setting, fuel burn in GPH, and TAS
7. Calculate your TRUE HEADING using your whiz wheel
8. Calculate your MAGNETIC HEADING by adding true heading and VARIATION (remember West is best, East is least)
9. Remember when using the ASA-E6B-CIRC whiz wheel, TAS may change due to a strong crosswind... add the changed TAS here so you can calculate your GROUND SPEED in the next step (if using other types of flight computers use TAS from POH)
10. Calculate GROUND SPEED using whiz wheel
11. Calculate CAS using the whiz wheel
12. Determine IAS using POH
13. determine a) how much distance, b) how many minutes, c) and how much fuel it will take to climb to your cruising altitude
14. Subtract the distance flown to top of climb (TOC) from distance to SHP
15. Based on your planned ground speed (GS) and distance from TOC to SHP calculate time using your whiz wheel
16. Calculate your TIME(s) based on your planned GS and distances using your whiz wheel
17. Calculate your FUEL USED based on your planned fuel burn using your whiz wheel
18. Calculate your Total Time (13b+15+16+Mb)
19. Calculate your Total Fuel Used (13c+17+Ma+Mb)
20. Calculate your Total Fuel Required (19+Mc)
21. Add your Estimated Time En-route (ETE) (16)
22. Calculate your estimated time to your 1st checkpoint based on your estimated GS and distance to that 1st checkpoint using your whiz wheel
23. Fill out Compass Heading, HOBBS, and Time