

VFR Flight Planning

PAVE, IMSAFE

Pilotage and Dead Reckoning:

Weather Check – wx.beraut.com – 1800 wx brief

Lost procedures

Diversion to alternate procedure

Cross Country Planning Overview

The night before:

1. Verify you have current charts and Chart Supplement.
2. Obtain the departure and destination information from the Chart Supplement.
3. Draw the airports, runway length/width, runway numbers, pattern altitude, and traffic pattern on your nav log.
4. Note all frequencies to be used on your nav log.
5. Considerations when choosing a route.
 - Direct is the shortest and quickest route, but may not always be the best
 - Terrain
 - Navaids
 - Alternates
 - Airspace
 - Also take into account alternate/emergency airfields, etc.
6. Draw your course on the Sectional chart.
7. Measure your True Course.
8. Identify Top of Climb (TOC) and enter it on nav log.
9. Identify Top of Descent (TOD) based on Rate of Descent info and cruising altitude and TPA.
10. Identify Visual Checkpoints and mark them on the chart - about one every 10-20 miles is good.
11. Put the Checkpoints on your Navigation log.
12. Enter TOD on nav log.
13. Measure the distances between the checkpoints and enter that on the nav log.
14. Notate magnetic variation and compass deviation figures on your nav log.
15. Compute Weight and Balance with estimated fuel.
16. Get an outlook weather briefing from the FSS.
17. Emergency planning
 - What if you can't complete the flight as you planned it?
 - Enroute weather changes?
 - Lost communications plan?
 - What if you get lost?
 - Fuel emergency? Off airport landing?
 - Equipment emergency: what's your backup plan?

One hour before:

1. Obtain a standard weather briefing from the FSS.
2. Determine cruising altitude...
 1. Winds aloft
 2. Base of the clouds.
 3. Length of the trip
 4. Airspace requirements
 5. VFR Cruising altitude rules
3. Determine Wind Correction Angle (WCA) from Winds Aloft
4. Calculate True Headings (with WCA), Magnetic Headings (Variation), Compass Headings (Deviation)
5. Calculate True Airspeed, Ground Speed, Fuel Usage, RPM Settings from POH
6. Determine the Time between checkpoints.
7. Determine the Fuel used between checkpoints.
8. Determine if fuel is adequate for the trip, including reserves.
9. Update Weight and Balance with new fuel requirements.
10. Review any en-route ATC services.
11. Prepare and file a VFR flight plan.
12. Develop an alternate plan in case you can't complete this one.
13. Obtain logbook endorsement from your CFI if this is a solo cross country.
14. Work up a [Personal Minimums Checklist](#)
15. Very thorough pre-flight, especially checking oil and cleaning the windows.

After Take-off

Can open Flight Plan with FSS

As you fly each leg you'll note the Actual Time Enroute (in minutes past the hour) to compare with your estimates. You'll also calculate an Estimated Time of Arrival (in minutes past the hour). If the estimate and the actual vary significantly, you'll need to recalculate / estimate fuel consumption and Fuel Used.

Cross Country Training – In the Airplane

Private Pilot

- A couple of short cross-country flights, one day and one at night. The trip would be about 50nm from your airport. You'll plan and fly these just like any cross-country to get familiar with cross-country planning.
- A solo cross country, day, to the same airport.
- A training cross-country to 2 different airports, at least one of them a controlled airport.
- A solo, "long" cross-country to meet the requirements.

Information to provide when calling FSS for Weather Briefing. 800-992-7433

Can use 800wxbrief-FSS-briefing.pdf form on flight planning page for writing down input from briefer

Type of flight planned; e.g., VFR or IFR	VFR, Student Pilot
Aircraft's tail number	Nxxxxx
Aircraft type	Cessna 172/?? or C152/A or other. (/G GPS and Mode C transponder, /U Mode C transponder, /A Mode C transponder with
Departure Airport	KWVI Watsonville
Route of flight	Direct or waypoint, airport, etc..
Destination	KKIC - Mesa del ray
Flight altitude(s)	5500 or 7500
Estimated Time of Departure (ETD)	Hh:mm
Estimated Time Enroute (ETE)	xx mins

1. Terms

A. Navigation Terminology

- i. True Course – The direction of flight as measured on a chart clockwise from true North
- ii. True Heading – The direction the longitudinal axis of the airplane points with respect to true North
 - a. True heading equals true course plus or minus any wind correction angle
- iii. Magnetic Course – True course corrected for magnetic variation
- iv. Magnetic Heading – Magnetic Course corrected for wind (direction and speed)
- v. Compass Heading – Aircraft heading read from the compass
 - a. Derived by applying correction factors for variation, deviation, and wind to your true course
- vi. Deviation – Compass error due to magnetic disturbances from electrical/metal parts in the plane
 - a. The correction for this is displayed on a compass correction card near the magnetic compass
- vii. Variation – The angular difference between true north and magnetic north; isogonic lines on charts

B. Atmospheric Terminology

- i. Standard Pressure – 29.92" Hg (at sea level), Standard Temperature – 15° C/59°F (at sea level)

C. Altitude Terminology

- i. Indicated Alt – Altitude read directly from the altimeter after it's set to the current altimeter setting
- ii. Pressure Alt – Height above the standard pressure level of 29.92 in Hg - $1,000(29.92 - Alt) + Elev$
 - a. Obtained by setting 29.92 in the barometric pressure window and reading the altimeter
- iii. Density Alt – Pressure altitude corrected for nonstandard temperatures - $120(°C - 15°C) + PA$
 - a. The equation above is not exact
 - b. Directly related to an aircraft's takeoff, climb, and landing performance

D. Airspeed Terminology

- i. Indicated (IAS) – The speed of an aircraft as shown on the airspeed Indicator
- ii. True (TAS) – The speed at which an aircraft is moving relative to the surrounding air
 - a. Equal to CAS corrected for density altitude
- iii. Groundspeed (GS) – The speed of the aircraft in relation to the ground
 - a. Equal to TAS corrected for wind(tailwind/headwind)

2. Pilotage and Dead Reckoning

- A. Pilotage – Navigation by reference to landmarks or checkpoints
- B. Dead Reckoning – Navigation solely by computations based on time, airspeed, distance, and direction
- C. Except for flights over water, dead reckoning is usually used with pilotage.