

On using Foreflight for flight planning

There are several limitations on using foreflight for flight planning. Specifically, Foreflight is set up to flight plan an average or typical flight you may commonly fly. You can only set up one set of performance parameters which clearly cannot accommodate all the various flight conditions you might be flying. The fuel burn and flight times are only reasonable approximations if the conditions of the flight are similar to those you have programmed. If the flight conditions are significantly different, then you will have to re-program new flight parameters. Additionally, foreflight does not determine what pressure altitude and temperature you will be departing, flying at altitude, nor landing. Foreflight does not have access or incorporate the performance charts in your POH at the lower subscription levels.

Regarding flight training for a check ride, pilot applicants are required to understand the principles of flight planning including using the performance charts to calculate specific performance measures. I typically require students to use a paper flight log and show all their calculations from the performance charts. You can quickly determine which concepts or performance calculations they are having difficulty with. Additionally, in an exam, the DPE can clearly see the student understands the concepts quickly and can save them a lengthy interrogation explaining the concepts. Once the student has made the manual calculations, I take them through foreflight or their other applications and demonstrate the shortcomings and magnitude of errors. Listed below are several that I have found, I am sure there are more “gotch ya’s” in the programming.

Foreflight characteristics, limitations, and potential traps:

- 1) Make sure you have the correct time of departure (TOD) in the MAP page to get correct winds aloft for the trip, otherwise the calculations default to current winds aloft.
- 2) If you want to determine magnetic headings (MH) and courses not corrected for winds aloft, then make sure the TOD is about 2 weeks into the future or disconnect from WIFI and Cellular service.
- 3) Note that the MH provided on very long legs include corrections for a) magnetic variation, b) winds aloft averaged over the entire segment and 3) magnetic change in course flying a “great circle”. The winds aloft on legs greater than 50 nm are averaged over the entire leg. Consequently, this average cannot be used with confidence for determining WCA, MH, Ground speed on longer legs.
- 4) Update your aircraft performance profile for each flight for more accurate flight planning and fuel burn. This may require consulting aircraft performance charts
- 5) Foreflight cannot accurately determine Fuel, Time, Distance to top of climb, nor can it reliably determine fuel burn in descent, these are estimated from limited rudimentary static data points the pilot provides in the aircraft profile. Additionally, foreflight does not accommodate starting altitude, temperature, pressure altitude, gross weight, and variable climb performance through climb.

- 6) Regarding Departure procedures listed under airport, Departures only lists named ODPs and departure procedures. Unnamed ODPs (text only) are listed in the “take-off minimums” (ODP and diverse vector area) section of the Terminal Procedures. A good example is the un-named ODP for runway 8 at KRIL. It is recommended this section be consulted departing an unfamiliar airport.
- 7) To demonstrate converting True Course (TC), to True Heading (TH), Magnetic Course (MC), Magnetic Heading (MH), Wind Correction Angle (WCA), Magnetic Variation using foreflight requires some “reverse engineering.” These concepts are more easily demonstrated on paper VFR sectionals with a plotter and E6B. However, if the ETD is put far in the future (to remove wind correction), and short segments (less than 50 nm) are planned, the provided MH can be used to calculate/demonstrate the TC and TH. Then the charted magnetic variation and winds aloft determined and applied. Using the VFR charts in foreflight the lines of longitude and latitude can be used along with the “ruler” function to help demonstrate these concepts.