**VNAV Cross Country Planning Guide**

Please read through this planning guide carefully. This guide was made to give you guidance on exactly what you need to do in order to prepare for your cross country without extra effort since you likely have other flights to study for a swell. Pay special attention to anything that is underlined as those are common errors from the SMAs that came before you.

**General Guidance**

* Be safe; voice any concerns that you have early and often. The majority of recent TW5 mishaps have occurred during cross-country flights despite the fact that they are in the minority of the flight hours flown.
* If we do not have fun then we are not successful.
* Our flight will go as easily and efficiently in the air as we plan and brief it on the ground.
* Crewday/crewrest and fuel are your most precious resources. Make sure to show up to the brief well rested and please do not show up early.
* Unexpected weather and maintenance frequently cause last minute changes to the plan so stay flexible. As a reminder, any changes to the route of flight should be cleared with the chain of command.

**Example KNDZ Departure Timeline**

T-1:30 Start crewday clock by entering squadron spaces. Do not be early, even for the weight and balance.

T-1:30 Conduct NATOPS/ORM brief, check weather, complete weight and balance during brief.

T-1:00 Depart HT-18 for aircraft issue.

T-0:30 Startup

T-0:05 Call for taxi

T-0:00 Takeoff

**Products**

Work with your CCX partner and use the following as a checklist for flight planning. Bring the following completed products to the brief on Thursday. The flight brief is where decisions are disseminated, not made, so contact the IP in advance to settle any questions.

1. FLIPs
   1. VFR sectional/terminal charts and IFR Low Charts. Bring one set for both of you to share. I will bring my own EKB and you are both encouraged to bring your own as well.
   2. VFR sectional charts to cover everything east of the Mississippi River and South of the Mason-Dixon Line. Draw only the VNAV route per figures 1-6 and 1-9 of the Instrument FTI. Doghouses should not cover up any Airport, Communication, NAVAID, or other information that is necessary for navigating that leg of the route.
   3. IFR Low Charts to cover everything east of the Mississippi River and South of the Mason-Dixon Line.
   4. Approach plates to cover everything east of the Mississippi River and South of the Mason-Dixon Line.
2. Smart Pack – Kneeboard sized and stapled. Make one per crewmember. Place all documents that are too big for the smart pack in a blue folder from Admin and bring it to the brief. Use JMPS to make the route cards and please do not waste your time making handwritten jetlogs because you will not use them. Smartpack Order: Page 1 Cover page, Leg 1 Route Card, Leg 1 Airport Diagram, Leg 2 Route Card, Leg 2 Airport Diagram, etc. etc.
   1. Cover Page. Update the cover page for your mission/crew and any crews that are flying to the same destination as you.
      1. Title – self explanatory
      2. SLAP Column – Fill in sunset, end of evening nautical twighlight (EENT) moonrise, moonset, and percent illumination.
      3. Weight and Balance – Penciled in by individual pilots on the morning of departure.
   2. JMPS route cards for at least 1 leg, recommended for all legs.
   3. Airport diagrams for each airport.
      1. Highlight the FBO we are going to and place an “X” at the exact parking location on the diagram.
      2. Annotate the FBO frequency.
      3. Annotate the FBO name.
      4. Annotate GPU availability.
      5. Annotate loaner car availability.
      6. Annotate contract fuel availability.
      7. Annotate any ramp fees.
3. Flight Folder- We will get a folder from admin the day we depart when we pick up our orders. In it we will place:
   1. TDY Orders for each member of the crew. POC is Ricardo in Admin.
   2. NOTAMS and TFR map for the route of flight pulled within 24 hours of our departure time.
   3. GPS NOTAMS (search KGPS).
   4. Print out a list all military contract fuel locations along the route of flight. This needs to be easily readable because it will be our primary source of information in the event that we need to divert in flight due to bad weather or fuel. Refer to <http://www.airseacard.com/cgi-bin/fbo_locate>. Call FBO’s to verify contract fuel availability even if the website says that it is available.
   5. Current DD-175-1 from the SDO desk valid for our time of departure
   6. DD-1801
   7. Hotel Reservations/Rental Car as required

**Discuss Items**

Contact your IP for specific guidance on how to prioritize your discuss item study

**VNAV Navigation Tips (aka, techniques)**

1. The considerations for checkpoint selection are as follows: easily identifiable, minimize time of flight, refueling stops, airspace entry/exit/avoidance, and obstacle avoidance. Consider that an acceptable checkpoint during day, VFR operations may be unsafe or unusable at night or SVFR.
2. To ease GPS flight plan creation, plan your route using airports and VFR GPS checkpoints when possible (try for at least one every 50 miles). If you have to choose between a good checkpoint and a GPS checkpoint, choose a good checkpoint.
3. The most important checkpoints are the first and the last. The first gets you started on the route and the last guides you into your destination.
4. Identify channeling, intermediate, and limiting features during your planning that you can use to aid navigation during flight.
5. Identify which checkpoints will be primarily pilotage and which will be primarily dead reckoning.
6. Navigate from outside to inside, rotate the chart, and use the 100kt finger.
   1. Keep a diligent lookout for prominent and distinct features outside the helicopter. Ii is unlikely that every small road or powerline is on the chart, however, the larger highways and waterways will be depicted. Ensure your head is not constantly buried in the chart while the world flies by and have your copilot call out potential landmarks
   2. Rotate the chart in your hands so that your direction of travel is at the 12 o’clock position. This will allow landmarks on your right or left to be more easily correlated from the chart to outside and vice versa.
   3. 100kt finger – Use your finger to follow along the route as you fly. Update your finger position periodically when your location is not in doubt, especially over distinct features and checkpoints. Timing will also aid you.
7. “Talk-Ons” – Plan to navigate and manage NAVAIDs/radios while I fly the aircraft. Approaching any non-towered fields, expect to take that opportunity to talk on the radio and begin honing your CTAF calls. Provide directions to me using verbiage that does not require me to look inside the cockpit. For example, “Come right, I’ll call your rollout…rollout. See that plowed field at the one O’clock…fly to it. Our next checkpoint is the intersection of I-65 and some railroad tracks. The backup heading is 090 and leg timing is 9:58. The next intermediate feature that we will encounter is a pond with a windmill to the north around 2 minutes into the leg, please let me know when you see it.”