

NFOTS (1542.163D) ONAV Stan Notes

16 April 2024

***** THESE STAN NOTES ARE MEANT TO SUPPLEMENT THE FTI. STUDENTS ARE STILL RESPONSIBLE FOR KNOWING FTI, NATOPS, AND CNAF CONTENT *****

Planning:

- Bring strip charts and un-winded Jet Logs for all routes (ONAV 1-5, MAX) to every flight event. Have them readily accessible in the aircraft in case weather requires an in-flight route change. You're encouraged to bring wind corrected Jet Logs for your planned routes.
- If you plan to do alternate routes (West 1/2, East 1/2), check out the route strip charts from the SDO and make jet logs in the JMPS lab.
- Plan for both VFR and IFR departures, but expect to use VFR procedures to get to your route unless weather requires IFR.
- Make sure your mandatory ICPs are on your IP's Jet Log as well as yours.
- Verify all route altitudes on the Jet Log and ONAV Strip chart against the ONAV planning guide.
- For the route brief, use a pen or pencil as your "pointer." This is standard military briefing professionalism, and allows your IP to see the strip chart while you brief it without your hand in the way. Follow the route description format on the "Conduct" page in the brief, and emphasize hazards and altitude changes. To brief the turnpoint descriptions, use the "Turnpoint Imagery" files under the "ONAV" tab on the VT-10 Training Resources page or in the Box app on your iPad. However, brief your route off your strip chart, NOT YOUR IPAD (VFR Sectionals and TPCs on the iPad do not have Time Stamps, Info Boxes, or CHUM/VOD updates)!
- Do not plan route entries that go through Restricted Areas or towered airspace. If you are doing ONAV 2 or MAX, plan your route entry/exit to deconflict with the Pelican and Area 2F working areas.
- For Joker fuel, your MCFs at each point will serve as your Joker fuels throughout the event. These are designed to account for your route and any other planned training objectives (aerobatics, PEL, approaches) that you are planning to accomplish. You will not have a singular Joker fuel like you did in FAM stage.

Ground Ops:

- Set up the GPS with the preset ONAV route flight plan for your planned route. Be sure to select DIRECT TO your first desired Waypoint, as the GPS will most likely cycle to KNPA since that's where you currently are. Set the display to "Super Nav 5" and call "Programmed and Set". Set up the RMU as appropriate for the specific departure airfield.

In Flight:

- If taking off VFR, Tower will not switch you to Departure until you are airborne and they are certain you are clear of traffic, so DO NOT automatically switch to Departure rolling onto the runway out of habit.
- Cancel advisories - Once clear of Class C (above 4,200' or outside 10nm) AND able to proceed VMC.
- HATT brief - Start visually navigating to PT A. If clouds are present near your route or altitude, make a recommendation to your IP to help avoid these unexpected obstacles.
- If taking off IFR and you encounter actual IMC conditions, take note of the base of the clouds. Knowing the base of the clouds will give you an idea of how much you need to descend before canceling IFR with approach, which is normally done prior to TRADR.

- ATIS/Weather near route – As early as time allows, obtain ATIS/AWOS from an airport near the route. The key information to obtain is the correct altimeter setting, as some routes cross each other at 500' spacing
- 4 Minutes Prior – If airspace allows, descend to route altitude and switch to BTN 18 for ONAV Common. Use the HDG bug to navigate the plane to a direct entry for the 1st leg. Note: Direct entries are the preferred method, but ensure you have a plan to visually acquire your first point via funneling or limiting features and maneuver according to the FTI for “2 minute prior” positioning.
- 2 Minutes Prior - Set HDG bug to the wind COMPENSATED heading you plan for the first leg, as opposed to waiting until the Wings Level call.
- Say “Contact” upon visually acquiring the turnpoint. Say “Tally” upon visually acquiring the target.
- Be ready to find a backup ICP along with your chosen mandatory one per each leg. Crossing features, such as roads or power lines make excellent “Time Gates” and should be used often, especially if you have a timing correction in. If you see that you’re back “On Time”, take out the correction and move on.
- LOOK OUTSIDE! After the 2 minutes to turnpoint call, scan outside for the point. It becomes very difficult to see points within 45 seconds prior as they go under the aircraft.
- AVIATE, Navigate, Communicate - just because your hands aren’t on the controls doesn’t mean you aren’t responsible for collision avoidance. Visually clear ALL turns.
- After the IP calls off route on BTN 18, give a HATT brief for the next phase of flight and configure the UHF, VHF and navigation accordingly (GPS to FP1 for South MOA/WAHOO blocks if proceeding to aerobatics or FP2 for North MOA if transiting the airspace).
- Review aerobatic maneuvers, as Precision Aerobatics are a required item in this stage.

Terminal Area / Recovery:

- Be advised: Transitioning between phases is where students tend to stagnate and get behind, so be assertive in getting set up for the next thing!
- Be sure to review your approach procedures/skills (you’ll be surprised at how much you forget in a week, especially after studying an entirely new topic), and plan to be vectored to final by the IP if commencing an approach VFR to a non-towered field.
- Communication procedures also tend to deteriorate after completing ONAV ground school. The communications on the front side of the flight are light, but it ramps up towards the end, so practice your ATC calls prior to the flight and stay ahead with the RMU.
- Review Course Rules, as you may not have seen them since FAM.
- Review contact ELP/PEL procedures as you will be given some simulated emergencies on these flights.

Supplemental ONAV Procedures

*****THE FOLLOWING OUTLINES NEW OR CHANGED PROCEDURES THAT WILL BE RELEASED IN A FUTURE ONAV FTI. IN THE INTERIM, AIRCREWS SHALL REFERENCE THIS DOCUMENT AS A SUPPLEMENT TO THE VNAV FTI*****

Standard Timing Corrections

- Two Standard Timing Corrections:
 - Normal: 10% of 180 = 18, round up to 20 knots.
 - Double: 20% of 180 = 36, round up to 40 knots.
 - The double (or 40-knot) correction is allowed in **two** instances: □ Total assessed timing error is more than 60 seconds, or
- On the IP-to-Target leg.

Wind Manipulation

- 1. Perceived Winds:
 - Look at the forecast winds.
 - Break the winds into components.
 - Determine compensations for headings and airspeeds needed to remain on course and time.
- 2. Apparent Winds:
 - Update winds while airborne using apparent winds:
 - Apparent winds are determined by:
 - Time deviations.
 - Course deviations.

Breaking Forecast Winds into Components

- When putting winds in the CDI, move the TAIL of the green needle to the forecasted winds (i.e. the reciprocal heading from the forecasted winds will be in the CSW).
- A flight computer (or “whiz wheel”) can be used to “pre-flight” the winds. But only a CDI or Wind-T can be used airborne.

Turnpoint Analysis

- This call requires three pieces of information:
 - Mark abeam position (“Fix”).
 - Effect of turn geometry (“Assess”).
 - Corresponding correction (“Correct”).
 - Turn Analysis.
 - (Fix) Marked 1.0 NM Left of course.
 - (Assess) Turned 55° Left.
 - Half the distance/same side.
 - Now, 0.5NM left of course.
 - (Correct) Turn 10° Right: 315°.
 - Time-in: 25+30.
 - Time-out: 26+30.

Time Analysis

- This call requires three pieces of information:
 - Time of MOT (“Fix”).
 - Effect of turn geometry (“Assess”).
 - Corresponding correction (“Correct”).
 - Time Analysis.
 - (Fix) 5” **Late** AND 1.0 nm **Left** of course.
 - (Assess) Turned 55° **Left (Inside** the turn).
 - 60° turn = 9” for EACH half mile.
 - 1.0 NM abeam doubles the time (9” x 2 = 18”).
 - **18” Early** for TP geometry.
 - **5” Late** for MOT time.
 - **13” Early** overall.
 - (Correct) Slow down 20 knots for 130”, or 2’+10”.
 - Set 165 KIAS (current compensated airspeed is 185 KIAS).
 - Time-in: 25+45.
 - Time-out: 27+55.
- Timing Analysis with a “double-down” call.
 - (Fix) 10” **Late** AND 2.0 nm **Right** of course.
 - (Assess) Turned 90° **Right (Inside** the turn).
 - 90° turn = 10” for EACH half mile.
 - There are 4 half miles in 2.0 NM (10” x 4 = 40”).
 - **40” Early** for TP geometry.
 - **10” Late** for MOT time.
 - **30” Early** overall.
 - (Correct) Slow down 20 knots for 300”, or 5’+00”.
 - Since we are: On the target leg AND compensating for a headwind,
 - We can “double-down” 40 knots for half the time (or 150”).
- Set 150 KIAS (current compensated airspeed is 190 KIAS).
- Time-in: 31+15.
- Time-out: 33+45.
- Wind Considerations Call Examples:
 - *“Wind Considerations – “Remain as preflighted.”*
 - *“We were 1 nm left of the turnpoint; so, there was an additional (apparent) 10 knots from the right. We originally compensated for 10 knots from the left; so, there was no overall crosswind.”*
 - *“We were 5 seconds late; so, there is an additional (apparent) 5 knots of headwind over the 10 knot headwind we compensated for. Overall, the true winds are out of the North at 15 knots.”*
 - *“Based on these new winds, we should crab right 6°; so, the new corrected heading is 321° (until the correction times out). We have a 10-knot headwind; so, the new compensated airspeed is 180 knots. Set corrected airspeed 160” (until the correction times out).*