Contact Stage Stan Notes

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

GENERAL NOTES

These notes are written with flight-side operations in mind. Your Contact simulator events primarily focused on checklist execution, ground procedures and bold-face recall. The sims prepare you to fly in the aircraft as a safe crew member; the Contact flights teach you how we fly the aircraft and serve as a foundation to your development as a critically-thinking, operationally competent NFO.

- Preparation is key!
  - Chapters five and six of the FTI aren't really addressed during the sims. They will be in the flight and the procedures must be memorized for training to be effective. There isn't time in the air to guess what kind of heading the turn pattern needs to be started from, you just need to know.
- Ask questions.
  - The place to start will always be the SOURCE material (FTI, NATOPS, SOP, etc.), but if something isn't clear to you, ask your (or any) instructor to help make things make sense. Asking another student is fine but you need to realize that they may not always have the right gouge.
- MASTER WARNING/MASTER CAUTION lights
  - Other than during the lamp test and engine shutdown, all MASTER WARNING and MASTER CAUTION lights should acknowledged by both you and your IP. Let your IP be the one to punch them out and then be prepared to offer the appropriate bold-face procedures or recommended course of action if your IP asks.
- Always bring: your kneeboard, a secured writing instrument, PCL, blue brains, helmet, gloves, ear plugs, and a bag (or two) for airsickness.
  - Recommend bringing your helmet bag to carry everything out to the plane. Walking to the plane with a lot of loose items can easily lead to FOD on the flight line.
  - Try to bring the simplest form of pen or pencil you can. Mechanical pens and pencils (especially the erasers) can come apart and when they do those pieces can be nearly impossible to find (and secure) in the aircraft, especially when you're strapped in.
- PUBLICATIONS: Throughout your flying career you will be required to carry flight publications which are essential to flight safety and mission accomplishment. For the Contact stage these publications are: NATOPS manual, PCL, IFG and a VFR sectional chart.
  - It is your responsibility to ensure all your publications are current and have the latest changes incorporated. The NATOPS department can provide assistance with incorporating NATOPS and PCL changes.
  - Failure to have updated publications is grounds for a Ready Room Unsat.

GROUND OPERATIONS

- General

  - Make sure you get plenty of practice doing the aircraft exterior pre-flight before C4001! Only doing/seeing the pre-flight during FAM-0 is not enough and is unacceptable.
  - Continue to practice your checklist flow even after finishing C2003. Three runs in the sim isn't enough to get you proficient- you need to put in some extra time at home or (even better) in the static trainer.
    - Make sure the IP gives you a response on the "both" items, they are important and need to agree between the front and rear cockpits.
    - When running the checklist you should not be referring to checklists to figure out the proper action and response, this must be memorized. We refer to checklist to make sure that we are completing all items in the proper order.

  - When you have controls, every time the aircraft will be sitting in one spot for a while, set the parking brake and tell your instructor that you set it. If your IP has the controls and the aircraft comes to a stop, ask if he/she would like you to set the parking brake.
- Taxi
  - Have an idea of your expected taxi route prior to calling ground for taxi. Read back the taxi instructions ground gives you and give your IP a timely taxi brief. As soon as the taxi brief is done you can go right into the instrument checklist without delay.
  - Recommend checking clear "left, right and above" when crossing any runways, even if they are inactive.
- Over-speed governor check
  - The parking brake, although set, is not strong enough to keep the airplane from moving during this check; make sure your feet are applying plenty of pressure to the brakes throughout.
  - After selecting "PMU – Off", allow the ITT to stabilize prior to advancing the PCL.
  - Remember, the goal is to get NP to 100% initially. 30% torque isn't a magic number, just gouge to get you in the ballpark. On cooler days greater than 30% torque will be required to get there, on warmer days less.
  - When you "PCL Advance" just bump it up about 5% (to about 35%)and bring it back to IDLE while monitoring NP, once at IDLE report NP stable at 100%. The common tendency is to advance the PCL excessively and leave it at the high setting while saying the response
- Line-up checks
  - Once cleared for take-off or cleared to lineup and wait, read back the clearance, check final to ensure there isn't any traffic in the groove, verbalize that it is clear and begin the line-up checklist immediately. It is recommended that you memorize the Line-up Checklist to keep your scan outside the cockpit while you are taxiing onto the runway.

THE GENERAL PRIORITIES

- Aviate, Navigate, Communicate, then Checklists is the general order of priorities for all aviators for all phases of flying.
  - AVIATE. The most important for any aviator. KEEP THE PLANE FLYING. Think of aviate as:

        - Emergency procedures
        - Safety of flight issues
        - Altitude and airspeed
    - NAVIGATE
        - Keep the nose pointed in the right direction. A few examples:
            - Are we headed to a suitable airfield during a simulated EP?
            - Are we complying with ATC instructions to get us into our MOA block?
            - Once established in our MOA block, do we need to make a turn to keep ourselves in the block (remember the MOA has vertical boundaries as well so altitude control can sometimes play a part in this).
    - COMMUNICATE. This goes for both in the aircraft between crewmembers and outside with ATC.
        - In the sims there wasn't anybody else on the radio. This is definitely not the case in the aircraft.
            - Every radio call for ATC isn't necessarily for you- listening up for your callsign is important.
                - Technique – every time a "new conversation" begins on the radio the ATC controller will lead off with the callsign of the aircraft they are talking to; so whenever that "new conversation" starts pause whatever you are doing or saying. If you hear your callsign it's time to listen up and do your best to comprehend what ATC is telling you. If it's not your callsign you can probably continue on with what you were doing.
            - ATC is expecting a timely response from you.
                - If you delay your response to ATC (because you were trying to write down everything they told you, you didn't know how to respond, etc.) they are probably going to assume you didn't hear them and call again. The time they are waiting for you is time lost on the radio that they can't keep us (and others) safe in the sky. Do your best to copy down the key pieces of information (e.g. headings, altitudes, squawks, etc.) and read them back; if you have trouble let your instructor know right away!
                    - Recommend first responding to ATC immediately while dialing in the new frequency, then write down the headings, altitudes, etc. that they gave you.
            - There are other aircraft on the same frequency as you.
                - In addition to listening for your callsign, you don't want to interrupt somebody else's transmission. Every time you switch to a new frequency (e.g. checking in with departure on Button 6) don't begin your call as soon as the frequency changes over. Wait a couple of seconds to see if anyone else is talking; it

can be very frustrating to have someone else start cutting in on the radios. When you are confident you won't be cutting anyone off, go ahead and make your check-in call.

- Practice your radio calls at home! Work on keeping them concise and comfortable ("comfortable" doesn't mean unprofessional).
  - Radio comms can be really challenging, but be patient and try not to let yourself get discouraged/frustrated. They will get better with experience.

- Communication within the aircraft (i.e. between crewmembers) is even more important than communication with ATC.
  - Being able to hear ATC is important, so make sure the radio volume knobs are set high enough so you can clearly hear everything ATC is telling you. Being able to hear your IP is even more important than being able to hear ATC, so the volume for the ICS should always be set higher than your radios.
    - In the Contact phase, listening to two radios and your IP can be overwhelming. Recommend only listening to one radio at a time. Whenever you switch between the UHF and VHF radio pull out on the new and push in on the old. This can also help prevent you from accidentally transmitting over the wrong radio; if you can't hear yourself going out, you're either transmitting over the wrong radio or don't have the correct knob pulled out.
- LIVEATC.NET – This website is a phenomenal tool to help train your ear to the aviation "language". Go to http://www.liveatc.net and search "KNPA" under the LiveATC Audio Streams. There is a composite live feed titled "**KPNS/KNPA Del/Gnd/Twr/App"** that you use to hear your peers (and yourself) talk on the radio with.

- CHECKLISTS
  - Checklists are important and should be accomplished as soon as circumstances allow, assuming the aviating, navigating and communicating are all taken care of.
  - There are four checklists that are worth memorizing because they are used in time-sensitive and task saturating phases of flight. Recommend memorizing all steps and responses for the following:
    - Line-Up checklist
    - Operations checklist
    - Pre-Stall and Aerobatic checklist
    - Before Landing checklist
- Example of keeping the priorities straight: post-takeoff and initial climb-out.
  - We have just finished the after takeoff checklist and are climbing on runway heading. Tower has already switched us to Button 6 so we need to talk to them. Our departure instructions were to begin a turn to heading 150 1 DME past the TACAN and level off at 3,000'. We need to get our first

operations checklist relatively soon after taking off. We have three tasks we need to accomplish, which one should we do first?

- Priority 1 – Aviate
  - Keep the airplane climbing in the 140-180 KIAS, ~8˚ nose up attitude. Keep the airplane climbing to our lead point for the level-off (in this case roughly 2,800' if we were instructed to climb and maintain 3,000'). Trimming the aircraft will be a huge help in keeping the "aviating" under control.
- Priority 2 – Navigate
  - Keep an eye on the DME off needle #1. At 1.0 DME start a 30˚ AOB turn to heading 150. Remember to lead the roll-out on the turn with approximately 1/3 of the AOB.
  - If at any time while working on the navigating, priority 1 starts to get away from us (e.g. airspeed gets excessively fast or slow, we cease our climb prior to our level-off altitude or begin descending, we hit our lead point for the level-off, etc.), we need to go back to aviating and fix it! Once the aviating is taken care of, we can come back to the second priority, navigating.
- Priority 3 – Communicate
  - Once the aviating and navigating are squared away (or at least mostly squared away), then we can worry about checking in with ATC. Be prepared for them to come right back to you with instructions (e.g. new headings, altitudes, asking you to "say your request", etc.). Make sure you're ready to respond to their instructions before making your check-in call.
- Priority 4 – Checklists
  - With the airplane trimmed up, going the right airspeed, at the right altitude (or comfortably established in the climb to the altitude ATC has cleared you to), pointed in the right direction, and we are finished with our initial check-in with ATC, we are finally ready to take care of any checklists that may need completing (e.g. operations checklist, climb checklist, etc.).
  - If at any point any of the other three priorities start to fall off, we pause our checklist, fix the other three priorities (in order if more than one is off) and then return to the checklist later.

- We are operating in the real-world on these flights and won't be able to hold off certain things (like communicating with ATC) indefinitely so don't be surprised or discouraged if your IP pushes you on some of these things. It is ok and even expected to a certain extent.

HIGH WORK

- General
  - Operations Checks – a good technique is to do one of these after every maneuver
  - Area management
    - Keep the GPS map in your scan on the EHSI. On the way to the area it is important to know which block you are going to. You can zoom out on the map's scale to see the entire outline. Compare this picture to the MOA diagram in your blue brains and you shouldn't have any trouble identifying your assigned block.
      - If you see you are getting close to a border and need to make a turn to stay in your block, direct/make the turn! You are expected to do this even during a maneuver.
        - Some simple planning/foresight can usually help you avoid having to make a turn for area management during a maneuver.
          - Starting a level speed change when you're 3/4 through a MOA block won't leave you enough time to complete the maneuver without a turn for area management; consider continuing straight ahead a little closer to the edge of your area, turning around and then commencing the maneuver with your entire block ahead of you.
- The 3 Cs
  - Recommend using this technique out of the FTI for every maneuver in the high work.
    - Example: even though some maneuvers like the level speed change (LSC), don't require a clearing turn, addressing all 3 Cs every time established a good habit pattern for yourself and reduces the chance that you'll forget the clearing turn on the maneuvers that require them (like stalls and spins).
- Turn Pattern
  - Don't forget these are supposed to be started on a cardinal heading
- Level Speed Change (LSC)
  - Give a 5-10 KIAS buffer once below 150 KIAS before bringing the gear down (i.e. 145-140 KIAS)
    - The FTI tells you to "initiate the Before landing Checklist", this doesn't mean you need to finish it here, only "initiate"; it's ok to pause the landing checklist here (take care of the aviating and stabilize the aircraft at 120 KIAS first before finishing the checklist).
      - Memorizing the Before Landing Checklist is highly encouraged
  - Leading the power addition to ~31% by about 5-10 KIAS will allow you to make a smooth power addition and stabilize fairly closely to 120 KIAS
    - The FTI tells you what nose attitude to set to maintain altitude, make sure you know what that is!

It is not "nose on the horizon", if you do that the airplane will descend and you will pick up speed.

- Power Off Stall (POS)
  - Remember the clearing turn is built into this maneuver
    - Set 4-6% (remember we're trying to simulate a feathered prop during this maneuver) and immediately roll into your 45˚ AOB clearing turn (fight to keep your altitude, it will require more than 1 g)
    - If you complete the turn and still aren't slowed to 125 KIAS, hold onto your altitude until just a couple of knots prior and then let the nose fall
  - For the glide, putting the EADI's aircraft reference symbol ("W") somewhere between 2.5˚ nose low and on the horizon usually works pretty well. Try not to chase the airspeed too much.
    - Once you're relatively stable at 125 KIAS, allow the VSI to stabilize (since it lags) and cross-check it BEFORE raising the nose 8-10˚ (FTI says looking for 1100-1300 FPM, but sometimes you may see a little bit higher).
    - Recommend taking a mental snapshot of the nose attitude in the glide prior to raising the nose, it will give you a reference point for the recovery.
- Approach Turn Stall (ATS)
  - If you are in the normal cruise configuration, remember that you have a procedure that gets you to the downwind configuration that the ATS requires (level speed change)
- Spin
  - Recommend not looking outside during the maneuver
  - Recommend practicing your callouts at home when you chair-fly (use actual numbers); altitude decreasing ~200' per run-through on the scan, simulate AOA being pegged 18+ units, airspeed increase 5 knots or so each time through, full needle deflection and repeat until your airspeed reaches the 120-135 KIAS range
    - This can make it easier to get the words out during the actual spin if you've rehearsed what you'd like to say
    - Recommend simplifying your calls as much as possible
      - Instead of saying "Altitude – eighteen-thousand-two-hundred" consider "eighteen-two". If you only say altitudes in that format during the scan there's no need to preface it with the word "altitude".

LANDING PATTERN

- Although Navy OLF procedures are fair game, it is more common to conduct "low work" (i.e. landing pattern and PPELs) at either tower controlled fields or non-tower controlled civilian fields in the local area. Regardless whether the field has a control tower or not, the pattern and procedures remain the same.
- Entry to the field will often be via High Key for a PPEL; the sequence below takes us from main-mount touchdown off of a PPEL or regular touch-and-go.
  - For a tower controlled field the general flow will be:
    1) "PCL MAX"
    2) "85 Knots, ROTATE"
    3) "110, Flaps UP"
    4) "120, Power 60-70%"

5) If tower has not given you "closed traffic", call tower and request downwind. "Tower, KATT 6XX, request downwind". Tower will say "Left/right downwind approved" or give you other instructions.
6) At 400' AGL (with proper spacing on your interval) start the turn downwind: 30° AOB, 120 KIAS, climbing to pattern altitude.
7) In the turn commence the Before Landing Checklist:
    a. Defog - OFF
    b. Engine instruments - CHECKED
    c. Gear - 3 DOWN AND LOCKED
        i. Get dual concurrence from the other cockpit
    d. Brakes - CHECKED
    e. HOLD CHECKLIST
8) 50' prior to pattern altitude set power ~31% and level off at pattern altitude.
9) Check wingtip spacing, should be ~¾ (where blue/orange meets the white on leading edge)
10) Approaching abeam, "Tower, KATT XXX, abeam, 3 down and locked, touch-and-go." Tower will say something like "KATT XXX, winds are XXX at XX, cleared for the option RWY XX" You must reply "KATT XXX, cleared for the option RWY XX"
    a. There are many different techniques for making the abeam call; some will substitute the "abeam" with "180" or "midfield" depending on where they happen to be in the pattern while making the call. Check with your IP for their recommended technique.
    b. Highly recommend starting this "conversation" at mid-field downwind so when the 3 way comm is complete you are at the ABEAM and ready to execute/direct the 4 Ts. It is very difficult to make the radio call and do the 4 Ts simultaneously.
11) At the ABEAM position start your 4 T's
    a. TRANSITION - Power ~15%, Flaps T/O
        i. Try not to get bogged down getting exactly 15%, set something "close enough" and move on to the rest of the 4 T's, after they're completed you can sweeten up the power setting.
    b. TRIM - 115 KIAS
        i. Since you reduced power you must lower the nose for 115 KIAS; a good technique is the EADI "W" on the horizon
    c. TURN - Turn to 30° AOB

i. Don't cheat yourself here, if you don't go all the way to 30° you will overshoot final and make it harder on yourself.

ii. Don't delay this turn unless traffic or tower directs you to. If you delay you will end up getting low and "dragging it in"

d. TALK- "Gear down, Flaps T/O [get dual concurrence on the flap setting here], speed brake retracted, Before Landing Checklist Complete"

12) In the turn scan the airspeed to make sure you're at 115 KIAS, your EADI for correct angle of bank, and altitude. Start looking outside also to see how your turn is coming along.

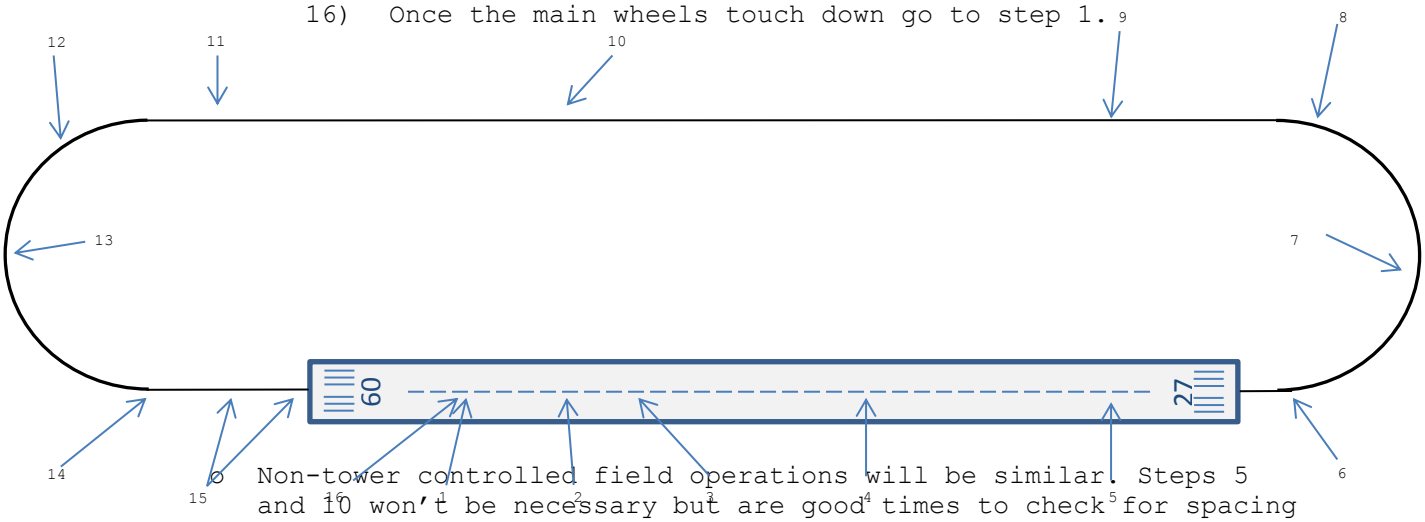
13) At the 90, you should be ½ pattern altitude and through 90 degrees of the turn i.e. perpendicular to extended centerline. At this point you should look outside more than inside and start intercepting the extended centerline (imaginary line that extends over the ground from runway centerline. Approach lights in the grass are good reference point)

14) Put the airplane on top of the extended centerline, point the nose at the piano keys and down runway centerline while crosschecking your airspeed.

15) On final, slow to 105 knots. Once you feel ground rush at about 50' AGL, start your flare by taking a little power off and pulling a little on the stick; then again, little power off and pull a little on the stick, keep repeating until the main wheels touch down.

a. A common tendency is to start flaring too high and pull too much nose up causing the airplane to climb and get slow…don't do that.

16) Once the main wheels touch down go to step 1.



o Non-tower controlled field operations will be similar. Steps 5 and 10 won't be necessary but are good times to check for spacing on your interval and make your CTAF radio calls. Your IP will help you develop these calls.

- Be sure to chair-fly yourself through the landing pattern multiple times. The smoother it flows on deck, the easier it will be in the air.

EMERGENCY PROCEDURE TRAINING IN THE AIRCRAFT

- **It is not enough to only know the information in the PCL. You are responsible to know the information in the NATOPS manual. For instance there is a whole page worth of information regarding engine failure in flight that is not included in the PCL. It is expected that you execute procedures from the PCL with the "background" knowledge contained in the NATOPS.**
- **When executing emergency procedures in the aircraft you must be able to do more than just recite the boldface. You must execute the action or ensure that your pilot executes the action. For example simply stating "ZOOM/GLIDE 125 kts" following an engine failure while letting the nose fall through to a steep descent angle is not enough, you must fly the aircraft and make your airspeed 125 kts.**
- **When executing emergency procedures you need to carry them through to a logical conclusion. For example do not stop at "PEL Execute" during a chip light, you need to execute the PEL. Let the IP stop you if they don't want you to continue.**

- **ELP, PPELs and simulated Forced Landings** Knowing the bold-face cold is very important for these but the phrase "turn, climb, clean" can be a helpful technique to get things moving in the right direction while you are working through it.
  - Turn – turn to the nearest suitable airfield
    - Where is the nearest airfield? Can we glide there if the engine fails (remember 2:1 glide ratio is no-wind, and only works at 125 KIAS, clean, with a feathered prop)?
  - Climb – zoom/glide (see NATOPS for definition) if the engine fails or "climb or accelerate to intercept ELP" for a PEL. You need to determine the altitude to climb up to based on weather and distance to the nearest suitable airfield using the 2:1 glide ratio. If weather prevents a climb to the determined altitude then you will both "climb and accelerate" to intercept ELP. Begin by climbing as high as weather will allow, level off (accelerate) and determine how far you can glide. This will be your altitude minus high key altitude of 3,000ft, multiplied by 2. Example, 6,000ft of altitude-3,000ft high Key=3,000ft of altitude to glide with times 2 for a distance of 6NM. This is the distance from the field where you will start to glide down to high key.
  - Clean – gear, flaps and speed brake – UP
- The ELP profile is the same for a PEL and a forced landing. How we fix things if we deviate from the profile is what changes. The FTI addresses a variety of techniques for managing energy during the profile (especially when we are heading to the field and will show up above profile), so make sure you understand them (if they aren't making sense don't hesitate to ask an IP for help). You need to have a solid game plan for how to lose excess altitude, aimlessly turning the aircraft without a plan will rarely result in a positive outcome.
  - PEL – below profile
    - Power is available, but we don't know for long, so we need to use it while we have it. If we're low we use the power from the engine to get back on profile. Use the power to

positively get back on profile. A common mistake is to add a little power and "drag" the aircraft around the ELP.

- Forced landing – below profile
  - If we get below profile on a forced landing we no longer have the luxury of using power to get back on. This is where we need to utilize the techniques presented in the FTI for corrections for "low energy" (consider low energy to be below profile).

RTB

- Getting in plenty of ops checks during the high-work is relatively easy, but things can be much busier and more non-stop during the low-work. When you leave your outlying field to RTB it has probably been a while since the last ops check. Recommend getting one in during the transit back.
- Try to get ATIS early when returning for course rules. If you aren't hearing anything right away don't panic. You may not have the proper radio knob pulled out, the field may be in the process of switching over to the next hour's ATIS (often somewhere around five minutes before the hour) or our altitude may be too low to receive the radio transmission clearly. More altitude, getting closer or disabling the radio squelch may help with the altitude issue.
- After you have ATIS get the recovery brief finished right away so you can focus on finding KJKA (Jack Edwards), checking in with ATC and directing us through the course rules.
  - You don't want to have your head down reading your blue-brains when flying course rules, since the airspace is busy (i.e. we need to be watching out for traffic) and we need to be looking outside to see our visual checkpoints.
- Expect to come back to KNPA for the break, and be prepared to talk to tower and help look for traffic. Your IP will likely handle the flying.
- A good technique after exiting the runway is to complete the first two items of the after landing checklist, call ground for taxi, then complete the rest of the checklist while taxiing.
- We only run the Full Stop Taxi/Taxi Back checklist if we are going to takeoff again.
- After exiting the taxiway into the line, you will switch to button 19 to report the aircraft status to base. After calling "KATT 6XX in and up (or down)" it is not necessary to switch back to button 3. The ramp is a non-movement area, meaning that ground clearance is not required to taxi there. The SDO may have more questions for you and button 19 should be monitored until shutdown.
- Make sure you're heading back inside with every single piece of gear you took with you to go fly, FOD is bad.

NIGHT CONTACT

Contacting the nearest FSS should be done as an exposure item.