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COMTRAWING SIX INSTRUCTION 3710.21B

From: Commander, Training Air Wing SIX

Subj: PRIMARY/INTERMEDIATE/ADVANCED FLIGHT INSTRUCTOR GUIDE
(FIG)

Ref: (a) OPNAVINST 3710.7 Series
(b) CNATRAININST 1500.4G
(c) CNATRAININST 3710.13 Series
(d) CNATRAININST 1542 Series
(e) All Flight Training Instructions (FTIs)
(f) FAA-H-8083-9

Encl: (1) Commander's Intent
(2) Primary/Intermediate T-6 FIG
(3) Intermediate Jet FIG
(4) Advanced Jet FIG

1. Purpose. To publish a comprehensive "Best Practices" guide detailing policies, techniques, and recommended procedures, in accordance with reference (a) through (f), for flight instructors within Training Air Wing (TRAWING) SIX.

2. Cancellation. COMTRAWINGSIXINST 3710.21A.

3. Scope. This instruction promulgates standardized instructional practices applicable to the safe, effective, and orderly conduct of instructional flight operations in a single compendium. In no case shall the FIG supersede directives of higher authority. It is not a substitute for the sound judgment of Mission Commanders and Instructor Pilots.

4. Action. All flight instructors shall be familiar with this instruction. Items annotated by "shall" are compulsory in nature.

5. Review. Annual review of this instruction is mandatory. Recommended changes are encouraged and should be forwarded in writing to the TRAWING SIX Standardization Office via the squadron Standardization Department.

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6. TRAWING SIX POC is the Wing Standardization Officer, COMM
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Commander 's Intent

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CHAPTER ONE - COMMANDER'S INTENT

100. MISSION. To train warriors and develop leaders. We will train and provide the world's finest Naval Flight Officers and Weapons Systems Officers for the United States and her Allies for the successful defense of their citizens and way of life.

101. VISION. We will accomplish our mission through superior preparation, ensuring those officers trained are better and more prepared than we were. We will extend ourselves as teachers to guarantee they receive the world's finest training. Our goal is to successfully produce quality aviators on time to their respective nations and services so they can act in their nation's defense.

102. SAFETY. Safety is a product of professionalism and integrity; quality training is what counts. It is expected that each Mission Commander (MC) and Instructor Pilot (IP) use Operational Risk Management (ORM), and Crew Resource Management (CRM) and apply common sense to all that we do. Every member of this Command is a valuable asset; this carries a huge responsibility that cannot be taken lightly. Do what is right and take care of yourselves and one another.

103. THE MISSION COMMANDER AND INSTRUCTOR PILOT

The MC and IP are a higher designation than instructor, with a tremendous increase in responsibility.

1. The MC/IP know that judgment and maturity are a large part of having wings.
2. The MC/IP is a leader, a mentor, and one who extends above and beyond to produce a better officer and a quality NFO/CSO.
3. The MC/IP is professional with the highest integrity.
4. The MC/IP leads by example: "If I do it, it's okay to do."
5. The MC/IP fully understands the Commander's Intent; leading, teaching, and flying with this intent.

CHAPTER TWO - PHILOSOPHY OF TRAINING

200. MISSION COMMANDER AND INSTRUCTOR PILOT RESPONSIBILITIES.

The MC/IP should arrive at each syllabus event ready to give the student the best possible instruction. Specifically:

1. Be completely familiar with the Multi-Service NFO Training System Curriculum (MNTS), and refer to it often. New MCs/IPs will need to use CHAPTER VIII, Course Training Standards (CTS) to ensure accurate grading when completing Aviation Training Forms (ATFs). MCs/IPs need to be familiar with CNATRAINST 1500.4G Training and Administration (TA) Manual and know that it is the single source document for policy, guidance and procedures in support of training Student Naval Flight Officers (SNFOs). If MNTS does not cover a matter, it is most likely addressed in the 1500.4G. The 1500.4G supersedes MNTS.

2. Be persistent in trying to complete the event(s). Avoid cancelling events early due to aircraft or weather issues. The MC/IP is expected to make every effort to execute their assigned schedule on time.

3. Arrive at the brief ready to explore discussion items in detail. It should be a point of pride that the MCs/IPs knowledge on any given topic is completely accurate, and not exhausted before the student's.

4. Establish and maintain the instructional "Flight Box." The Instructor and student(s) should progress from the brief to the flight as a team. The MC/IP is expected to accompany their student to Aircraft Issue, and participate in a full pre-flight, as required. "I'll meet you at the plane" is the catchphrase of a disinterested or distracted instructor.

5. Provide quality instruction in the air throughout the event. An MC/IP must be attuned to a student's strengths and weaknesses, and adapt their teaching technique to achieve the best results. The most effective MCs/IPs are demanding, engaged, and innovative in their instructional technique.

6. When confronted with unsatisfactory performance, the MC/IP should have no qualms grading the event as unsatisfactory.

7. Maintain the aircraft within safe parameters every moment of the syllabus event. The safety of aircraft and crew are the MCs/IPs paramount responsibility. It is the nature of flight training that Instructors routinely encounter and counteract airwork and headwork errors that, left unchecked, would end in

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disaster. A watchful instructor never truly gives up control of the mission or aircraft, and a student's failure to recognize an error does not absolve the MC/IP from his obligation to remain in complete control of the training event at all times.

201. STUDENT NAVAL FLIGHT OFFICER (SNFO) RESPONSIBILITIES.

SNFOs are responsible for their own training. They are expected to carry themselves as professional military officers. Their uniform and grooming standards should be in accordance with their service requirements. They should show up to the brief fully prepared to thoroughly discuss all briefing items. They should be physically and mentally prepared for the training event, with their "junk jackets" up to date with all sheets correctly filled out and previous gradesheets available for the instructor to review. SNFOs should be able to discuss any problem areas and strong points they have in training. UNSAT areas or those maneuvers that are not up to MIF must be discussed.

202. INSTRUCTION VS. EVALUATION

DEFINITIONS

Instruct - To teach, train. Give order or command.

Evaluate - To determine or fix the value of; determine the significance or worth.

1. Both of the above are required to transform a prospective SNFO into a Winged Aviator. MCs/IPs should instruct on all flights, to broaden the SNFO's knowledge. It is on the End of Block and Check Rides that evaluation must also take place. During these flights, SNFOs should be able to demonstrate their knowledge and ability to the MC/IP. However, if an SNFO is struggling during the evaluation flight, the MC/IP should return to instruction and allow another opportunity for the SNFO to succeed and show their ability.

2. Each SNFO is different. In order to train prospective NFOs, the MC/IP needs to be an effective, efficient, and diverse communicator. Some SNFOs will respond to the MCs/IPs established method of instruction and others will not. Therefore, the MC/IP should develop a 'tool box' of various teaching techniques that will allow them to be effective with any SNFO. MCs/IPs should seek out seasoned instructors to expand their knowledge and aid in other effective methods of instruction.

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3. Flight school is inherently tough and stressful. However, if an SNFO becomes overloaded or overwhelmed, instruction will be ineffective. The MC/IP must learn where that critical point is; some SNFOs will reach it much earlier than others. While the MC/IP should want every SNFO to succeed, he must award the UNSAT when the SNFO has failed to meet the minimum standard.

4. "Lead by example." MCs/IPs must provide leadership to prepare SNFOs for the next level - *the Fleet*. MCs/IPs are not only teaching the SNFOs how to fly, but are mentors as well, and must continue to develop the SNFO as an Officer. This should occur during the brief, flight, de-brief, and on and off-duty. Students have earned the privilege to be treated as professional military officers and should be held accountable.

203. PROCEDURE VS. TECHNIQUE

DEFINITIONS

Procedure - A particular way of accomplishing something; a series of steps followed in a regular definite order; a traditional or established way of doing things.

Technique - A method of accomplishing a desired aim.

1. While it is appropriate to teach both procedure and technique, the MC/IP needs to work within certain bounds. Remember, flight training is where the SNFOs get the base of knowledge and procedures that will guide them in the Fleet. The MC/IP must train in accordance with established and appropriate publications and standards. No MC/IP ever served his SNFO by challenging a requirement or exploiting a loophole in the rules.

2. So, what is this base of knowledge? It's simple: all the appropriate publications, such as the FTI, Aerodynamics, Systems, NATOPS, MNTS, OPNAV, and FAR/AIM. The most referenced pub is the FTI. MCs/IPs must teach and instruct per the FTI. How do they accomplish this? This is where individual technique comes in. We all may have different methods to accomplish a maneuver, teaching that method is fine so long as it fits into the procedure in the FTI. There will be many different techniques. In developing their own technique, the MC/IP should seek out perspectives from other instructors.

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"Demonstrate and talk about technique, but teach and grade by FTI."

A common feedback from SNFOs is that they believe they are graded on their ability to mimic a specific instructor's personal technique on a maneuver.

The MC/IP is obligated to emphasize when they are demonstrating personal technique, so the SNFO does not confuse it with FTI procedure.

204. DEFENSIVE POSTURING

1. Defensive posturing is the key to maintaining positive control of the training event and a means to avoid dangerous situations. Remember, the MC/IP is ultimately in command and the responsibility of the crew and aircraft lies with him. Sound judgment should always prevail. It can be a challenge to instruct SNFOs who are not proficient with the stage of training and also keep a vigorous lookout for safety of flight considerations. The MCs/IPs over-riding objective is to maintain the aircraft and mission execution in safe parameters.

2. An active defensive posture will help with safe mission execution while allowing SNFO development:

a. At all times the IP should guard the controls. This includes having feet on the rudder pedals, guarding the stick, and also attempting to guard gear and/or flaps to prevent an overspeed/cycle of levers.

b. At all times the MC should be actively engaged with the mission and backing the pilot up on aircraft parameters.

c. Pattern and low work is an especially dangerous time and the MC/IP should be especially vigilant here. Any quick movement of controls by the SNFO can be impossible to correct without proper posturing by the Instructor.

3. Even if the aircraft is within safe parameters, an instructor should not hesitate to take the controls when an SNFO is deviating from the instructor's personal comfort zone. Additionally, the MC should direct corrective actions if in a similar situation. If the MC/IP finds themselves asking the SNFO "*What are you doing?*" they are most likely late in executing corrective actions.

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205. CRM INSTRUCTION BY STAGE

1. The following common abbreviations are used: **DM**-Decision Making, **AS**-Assertiveness, **MA**-Mission Analysis, **CM**-Communication, **LD**-Leadership, **AF**-Adaptability/Flexibility, **SA**-Situational Awareness, or as a group **DAMCLAS** or **SADCLAM**.

2. Instructing CRM in the NFS training pipeline presents a unique challenge: incorporating the seven critical behavioral skills while also instructing the student on basic flight skills. Teaching methods for this requirement conflict at times but training can be successfully accomplished with the correct preparation.

3. Various training stages require emphasis on different CRM skills. For instance, the emphasis in the contact stage should be basic CM, DM, and SA while the emphasis shifts to MA and DM in more advanced syllabus stages. Instructors must decide how to adapt instructional techniques to maximize the benefit to the student. Rather than provide specific guidance on instructional technique, this section highlights specific skills to emphasize by stage. The MC/IP should tailor the instructional technique as he or she sees fit based on personal experiences. However, some general rules will apply:

a. Review the Training Time Out policy in the 1500.4. This will help ensure both the MC/IP and the SNFO are on the same page on any safety of flight/CRM issues.

b. Remind the students that although their flight training is geared toward the SNFO performing all of the crew's duties by themselves, that does not mean we are not there to help/teach.

c. During the brief, discuss the fact that in any out of the normal circumstance, i.e. emergency, the MC/IP and SNFO will use CRM to get the airplane/crew to a safe conclusion. Discuss individual responsibilities in those situations.

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CHAPTER THREE - MULTI-SERVICE NFO TRAINING SYSTEM CURRICULUM

300. OVERVIEW. The following is only a brief discussion of the MNTS and is not intended to replace reading and understanding it. MCs/IPs are responsible for studying and becoming completely familiar their respective CNATRAINST 1542 series instructions. One of the reasons MNTS was implemented was to provide more objectivity and consistency in SNFO evaluation. MNTS is very flexible and will allow MCs/IPs to tailor a flight.

301. CHAPTER I - GENERAL INSTRUCTIONS. CHAPTER I of the MNTS is extremely important and should be continually referenced to recall information. Most of the information in this chapter is utilized daily by Flight Operations; the MC/IP must also understand its inner workings. The following areas should be highlighted:

1. Unsatisfactory Performance. This section discusses at length when flights, briefs, and tests warrant an UNSAT and how an instructor documents the event. Refer to CNATRAINST 1500.4 for specific IPC and FPC criteria on page VII-18. There are three types of UNSATs: Flights/Simulators, Ready Room, and Academic.

a. Flights/Simulators: If the SNFO receives a 2 (Unable) or regresses (see para 3., below) the flight is UNSAT. When assigning grades, an instructor should not worry about which flight within the block or stage the SNFO has completed, or what effect a specific grade will have on an SNFO's progress. If the UNSAT is warranted, the MC/IP should give it, as there is no other way to track an SNFO's unsatisfactory performance.

NOTE

An exception to this rule exists if MIF on an item is 2/U, or if MIF is 3/F for the first time in that block and the SNFO scores a 2/U. In those instances, a grade of 2 is normal progression. The SNFO needs to achieve MIF by the end of the block.

b. Ready Room: If the SNFO is unprepared and his knowledge is unsatisfactory, then he warrants a Ready Room UNSAT. Tell the SNFO to report to their Class Advisor and Schedules Officer and inform them for scheduling purposes. The MC/IP must also inform schedules and/or Student Control so the squadron can re-schedule and brief the SNFO appropriately. The MC/IP must also tell the CDO, so that they can adjust their schedule and generate a zero time NAVFLIR to record the flight as incomplete

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UNSAT. Finally, the MC/IP must fill out an ATF using pink paper justifying the UNSAT in the GK or EP section only.

c. Academic: Academic (classroom) UNSATs seldom occur and rarely involve MCs/IPs. The SNFO must see their Class Advisor and STUCON.

2. Warm-ups and Breaks in Training. This section discusses the criteria and calculation for each and explains what flights do not require warm-ups. When a SNFO shows up for the brief, he/she should have his "junk jacket" available with all grade sheets. Along with checking for trends or difficulties, the MC/IP must verify the SNFO is not in a warm-up window. There are two types of warm-ups: Optional and Mandatory. The calculation is easy: subtract the Julian date of the last flight flown from the current Julian date. If the SNFO's last flight was 7 to 13 days prior, then the SNFO is in the optional warm-up window. If the SNFO's last flight was 14 or more days prior, then the SNFO is afforded a mandatory warm-up.

a. Optional warm-ups are not decided before the flight, they are based on the SNFOs performance in the brief and/or flight. If the MC/IP is going to award an optional warm-up, inform the CDO prior to doing the NAVFLIR so they can code the flight properly. If the SNFO is awarded the warm-up, the flight must be marginal or UNSAT, and make the appropriate comments. Warm-up grades do not affect an SNFO's final score.

b. When a mandatory warm-up is warranted, the Instructor must give the warm-up and make comments on the grade sheet as to how many days the SNFO has been out of cockpit. The next flight is an optional warm-up.

c. For additional guidance regarding warm-ups, refer to CHAPTER 1 of the MNTS, STUCON, or STAN.

3. Student Monitoring Status (SMS). This is briefly discussed MNTS; Squadron and Wing guidance provides greater detail, so refer to both.

4. Grading. CHAPTER I discusses grading rules. This is where the MC/IP will find grading criteria (1-5) defined. The MC/IP should use the following guidance when writing the ATF grade sheets.

a. It is imperative the MC/IP properly document every SNFO's flight performance. The ATF is the primary de-brief

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tool, and advises subsequent MCs/IPs regarding how to best focus follow-on training. An ATF should be completed as soon as possible after the flight, but no later than the SNFO's next brief. If the flight in question is the last flight flown (LFF) and the SNFO is selecting soon, then the MC/IP must finish the ATF immediately after the flight's completion.

b. After flight and de-brief, the SNFO should have a clear understanding of how well he or she has performed and areas where he or she needs to demonstrate improvement. There should be consistency between the MCs/IPs de-brief and the ATF write-up. If, after debriefing the flight as satisfactory, the MC/IP determines the SNFO's performance was in fact UNSAT, the MC/IP is obligated to notify the SNFO, OPS and STUCON as soon as possible. This allows the schedule to be adjusted as appropriate. For this reason, the MC/IP should be familiar with MIF and CTS in order to grade and de-brief correctly.

c. The MC/IP should remember that he or she and the SNFO are not the only ones reading the ATF. In fact, ATFs may be scrutinized all the way up the chain of command, and can be referenced in Training Review Boards, FNAEB Proceedings, Human Factors Boards, JAG and Mishap Investigations, and Congressional Inquiries. In part, reviewers will examine the grades and respective comments to identify instructor discrepancies or training deficiencies. The conscientious MC/IP will take the time to correctly complete the ATF the first time.

d. Below are some ATF comments that the Instructor must ensure to document.

(1) General Comments - This item must be completed on all ATFs. The MC/IP shall ensure appropriate comments are written here. Some examples are: where the flight was conducted, weather, overall performance or progression, trends, SNFO motivation, or attitude, subsequent flight profiles, weak areas to work on for next flight.

(2) Incomplete flight - If the MC/IP incompletes a flight, he or she must provide a written rationale on the ATF. Example: "Flight incomplete due to weather/maintenance/Crew availability."

(3) Graded Items - Any maneuver that is graded above or below MIF, especially a 2 or 5, should have a comment, unless 2 is MIF. Document the cause and effect and suggest ways to correct any problems.

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(4) (NG/1) "Not Graded" - An MC/IP shall mark "not graded" (NG/1) whenever he has demonstrated a maneuver or Special Syllabus Requirement (SSR) and the SNFO does not subsequently receive a grade. The MC/IP should not mark this block simply because he did not complete the maneuver during flight (i.e., Did Not Do).

(5) UNSAT flights - If the MC/IP grades a brief or flight as UNSAT, he must thoroughly document the reason(s) in the appropriate maneuver section(s) of the ATF. One-line sentences are insufficient - the MC/IP is obligated to provide as much detail as possible.

(a) UNSAT flights that do not otherwise keep a SNFO from progressing are printed on yellow paper.

(b) UNSAT flights that generate an IPC/FPC (including UNSAT IPCs or FPCs), are printed on pink paper.

(6) Flight time required comments - If the MC/IP exceeds +/- 0.3 hrs HR/X, he or she must document an appropriate reason in the General Comments section. Acceptable reasons include deviations for weather, maintenance, or ATC directions. Spending extra time with a struggling SNFO in order to achieve a minimally sufficient skill level is not appropriate; it is for that reason that the system has a grade of UNSAT.

5. Regression. Grading rules in CHAPTER I can be very confusing, especially regression rules; the MC/IP must review these areas when appropriate. Remember, the 1500.4 supercedes MNTS and regression rules are base on previous block MIF. Some regression is allowable to continue to the next flight, while other regression may generate an UNSAT. The following are instances of regression that allow the SNFO to continue training:

a. If previous block MIF is a 2/U, and current block MIF is a 3/F, the SNFO can get 2s all the way to the last flight in the block and not receive an UNSAT.

b. The following are instances where an UNSAT is warranted due to regression:

(1) SNFO gets more than two items graded 3/F on a flight where 4/G is required.

(2) SNFO gets an item graded 2/U where previous block MIF is a 3/F or 4/G.

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(3) SNFO gets a 3/F where a 4/G is required on two consecutive flights.

6. Complete/Incomplete Flights. CHAPTER 1 explains the completion of events.

a. Complete Flights

(1) Each flight in the MCG has a set time to complete the event, known as HR/X. All flights shall be planned to meet the HR/X to the maximum extent possible. The MC/IP can deviate +/- 0.3 hrs from HR/X without requiring comments on an ATF. If a flight exceeds +/- 0.3 hrs, the MC/IP must make comments in the General Comments section.

NOTE

An Instructor should not misinterpret this to mean they can regularly exceed HR/X: the MC/IP is obligated to make every effort to meet HR/X.

(2) Under MNTS, the MC/IP also has the flexibility to complete a flight without performing all graded items. In general, a flight is complete if the MC/IP is able to accomplish all high work or all low work. If an SNFO has had ample time to learn a task and subsequently flies a shorter event, do not incomplete the flight solely because of time. Use the following guidelines and call the event complete if:

(a) 75% of the event's flight time or items were for training;

(b) Sufficient events remain in block to adjust imbalance; and

(c) Individual maneuvers can still be accomplished in block.

b. Incomplete Flights. If the above cannot be met, then the flight is incomplete. The next flight should only use the time needed to complete those items that were not accomplished. If the remaining maneuvers can be done in a relatively short amount of time, then the MC/IP can complete that event and do the next event as well. When in doubt, the MC/IP should stop by STAN or the STUCON Office for guidance.

302. SNFO TRAINING. Other chapters of the MNTS detail the entire SNFO training syllabus. Actual chapter number varies dependent on the syllabus. Each training block discusses time

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requirements, prerequisites, syllabus notes and requirements, discussion items, and the block MIF. This is the area the MC/IP will reference most for all flights and required brief items.

303. CHAPTER VIII - COURSE TRAINING STANDARDS (CTS). CHAPTER VIII of the MNTS is the CTS matrix. This area lists each graded item and what is required to attain the CTS standard. This is another area that the MC/IP will reference daily to properly debrief SNFOs and document ATFs. Many new MCs/IPs get CTS and MIF confused. CTS is specific, standardized parameters for each maneuver. MIF is the grade or level of proficiency in that maneuver that an SNFO must achieve in a particular block of training. As the blocks progress, so does the MIF. The CTS "standard" in flight school is a proficiency of 4 (Good). The MC/IP is not grading to the MIF. The MC/IP must grade relative to the "standard" CTS, which is always equal to 4 (Good).

Grading example: The MIF in the I4200 Block (Instrument Navigation), 155B syllabus, for a **Point-to-Point** is a 3+ (Fair). When determining the appropriate grade, the Instructor should ask the following three questions:

Question 1) What does a 3+ mean? The plus (+) means that the maneuver is required and must be accomplished to a level of 3 (Fair) by the end of the I4200 block. In accordance with the MCG, a grade of 3 means the SNFO's performance may be "safe, but with limited proficiency. Deviations exceed CTS, detracting from performance. Corrections noticeably lag deviations, and may not be appropriate."

Question 2) What is the CTS for a Point-to-Point? In order to know this we must look at what a 4 ("the standard") is, as it defines CTS for the maneuver. A grade of 4 (Good) is: "within CTS. Deviations outside CTS are allowed, provided they are brief, minor, and do not affect safety of flight. Corrections must be appropriate and timely." The CTS expected behavior for a Point-to-Point is when the SNFO proceeds direct to an assigned fix using VOR/DME point-to-point procedures IAW FTI. Its specific standard is to expeditiously establish a correct initial heading, continuously update heading to avoid large (<20°) heading changes within two minutes prior, and arrive within two miles of the desired point.

Question 3) How should I grade? By examining what the CTS is for a Point-to-Point maneuver, the Instructor is able to determine if the SNFO is within the standard, above, or below:

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- If the SNFO has done the maneuver better than CTS, then they should receive a grade of 5 (Excellent).
- If the SNFO has done the maneuver to the criteria in **Question #2**, then they should receive a grade of 4; they are above the MIF for that block.
- If they are below the standard but fall in the general criteria of **Question #1** (safe, limited proficiency) then they should get a 3, which is MIF for that block.

If they are below the criteria of **Question #1** they are most likely a 2 (Unable/Unsafe) and below MIF for the block.

Primary & Intermediate T-6



Flight Instructor Guide

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CHAPTER ONE - SNFO CONTACT SYLLABUS FLIGHTS

**The information in this document reflects guidance from the CNATRAINST 1542.155B version of the MNTS and the TW-6 Contact Stage Manager.*

100. OVERVIEW. CNATRAINST 1542.155B CH-2 (MNTS), the NATOPS flight manual, OPNAVINST 3710.7, the Contact FTI, JPATS courseware, and Wing and Squadron SOPs provide the operating procedures and evaluation standards for this phase. The Standards of Conduct complement these instructions by providing methods for standardization among instructors by capturing best practices of instruction.

1. The goal of the Contact Stage is to expose the SNFO to basic flying and to teach him or her how to recite and apply procedures in a dynamic flying environment. This stage is the foundation for building crew resource management (CRM), airmanship, situational awareness (SA), and other skills that will last throughout one's military aviation career. The instructor should attempt to give the student as much "stick time" as possible, while realizing that those "stick skills" are not graded.

2. This guide provides a "working plan" for each contact flight. Since students are legally optioned for every maneuver in the 4000 block on their first flight, programming the first two flights will help the students and instructors to be on the same sheet of music in regards to expectations, without significantly affecting the flexibility of the syllabus. Students may plan their own C4003 and 4004 profiles based on remaining syllabus requirements and MIF completion.

3. The SNFO Curriculum requires that all maneuvers be demonstrated by the IP before the student performs the maneuver (pg I-17 of the MNTS guide). In addition, curriculum permits the IP to perform any item in the stage if it is pre-briefed for IP proficiency. Instructors can use this as a way to stay proficient with aerobatic maneuvers and adjust profiles for weather. However, use good judgment to ensure time is allotted for students to meet standards on all block maneuvers.

4. The following is a list of general considerations for the contact stage:

a. **Technique vs. Procedure:** Techniques and procedures must be properly differentiated. Key to distinguishing procedures from techniques is to identify their origin. CNATRA MNTS, NATOPS Flight manuals, JPATS courseware, FTIs, OPNAVINSTs, and Wing and Squadron SOPs all contain procedures. Any instructional method outside of these publications, while certainly useful, must be called a technique. This is especially important during this stage, as a student's lack of experience makes them much more prone to assimilate techniques as procedures.

b. **Publications check:** From time to time, a trend of "bad student pubs" arises. An outdated and/or missing flight pub is potential cause for a ready room unsat. Current FTI guidance (pg. 4-3 of the Contact FTI) only requires students to bring their PCL and in flight guide to the brief. However, their NATOPS flight manual should be readily accessible as well. Now is the time to ensure the student's PCL and flight manual are up to date with appropriate changes. Concerning the TW6 in flight guide, students should have all pages from all three enclosures- 1, 2B, and 3. Students should not be instructed to "only bring applicable pages" from the In-Flight Guide.

c. **Ejection seat/CFS: **Stress ejection seat/CFS safety!****
Thoroughly explain and demonstrate to students the proper handling of the ejection seat and CFS. Stress confirmation of ejection seat and CFS arming/de-arming. A good *technique* that stresses ejection seat/ CFS safety is to announce "TWO PINS, OFF, NORMAL, NORMAL" when approaching the cockpit area. Test student knowledge of both systems, to include familiarization with all notes, warnings, and cautions found in the NATOPS flight manual. Respect the seat!

d. **Exterior inspection:** Take the time to conduct a detailed exterior inspection. Ask various questions to test student knowledge. There is no requirement for the students to perform the exterior inspection from memory. However, the student should be able to perform this inspection expeditiously by the end of the block. Do not prevent the student from carrying their checklist during the exterior inspection if needed as a reference to ensure all items are completed. Checklist discipline is a fundamental principle of aviation and it is important to instill this principle early. Reference page

4-2 of the Contact FTI for more information on checklist usage.

e. Canopy and seat considerations: Ensure students do not lean against the canopy while it is closed, and that they do not place any gear on the canopy inside to avoid scratching. Quiz students on NATOPS flight manual cautions regarding raising and lowering the seat.

f. Strapping in: Students have practiced "strapping in" in the simulator. However, watch them complete their strap-in before you get in. Emphasize strapping in the same way every time. A common technique is to strap in from the bottom to the top, and to un-strap from the top to the bottom (in accordance with Emergency Ground Egress). Watch for the students forgetting the leg straps, D- ring, LPU lobes, G-suit zipper, harness leg straps, chinstrap, and visor and sleeves rolled down.

g. Taxiing: It is the IP's option to let the students taxi, but do not let them taxi in the line area or the ground run-up near other aircraft. Explain when nose wheel steering should and should not be used.

h. Ground crew considerations: Emphasize the importance of keeping hands clear from controls when ground crew approaches the aircraft.

i. Engine shutdown: Instruct the student on the proper time to open the canopy, since the checklist does not specify when. A good *technique* is to open the canopy immediately after PCL is placed to OFF, and then proceed with the remaining steps in the ENGINE SHUTDOWN CHECKLIST.

j. Leaving the aircraft: Prior to leaving the aircraft, the IP needs to ensure that both pins are properly installed. A good *technique* is to recite the challenge and response of "two pins off, normal, normal, solo," however, this technique does not fulfill the entire BEFORE LEAVING AIRCRAFT checklist, so ensure the student references their Trifold checklist or PCL to ensure completion of all steps.

101. C1001 CONTACT INDOCTRINATION (FAM-0)

1. It is important to remember that C1001 is usually the

student's first exposure to instructor pilots outside of the classroom environment. Impressionable minds are watching. First impressions say a lot.

2. A boldface/OPS limits exam is now required on C1001. See the MNTS for details, but the exam should be completed with 100% accuracy. If any items are missed, document it on the C1001 grade sheet, and ensure the student understands the significance of a "bad" grade. This is the time to enforce highest standards and prepare students for the flight line.

3. This event is programmed for three hours, and it will take at least three hours to cover all discussion items. Show students how to get a weather briefing and appropriate NOTAMs. Walk them through the squadron spaces. Show them the duty desk, student ready room, briefing spaces, their flight commander and scheduler office, gear issue, aircraft issue and lastly the static T-6 for exterior inspection and egress training. Ensure all their pubs have the appropriate and current ISS changes and ERRATA in place, and that their read files are signed off correctly. Detail what items are required for the brief, and feel free to give personal instructor expectations.

102. CONTACT 4001

1. Preflight: **Establish and maintain high standards immediately.** This is the student's first experience in military aviation and everything you do teaches them something. Be deliberate and realize that they notice how you approach and adhere to all directives, from OPNAVINST 3710.7, to the NATOPS flight manual, to Wing and Squadron SOPs.

2. Stress Emergency Procedures. Start with discussing the three rules for handling any airborne emergency. Then, make the student recite boldface without hesitation. Not recalling the boldface steps and/or limitations from memory is grounds for a Ready-Room unsat. After boldface items, have the student refer to their pocket checklist for the remainder of the non-boldface items. Ask them to explain why each EP step is taken to test their system knowledge. Discuss how different factors such as weather and CRM should be considered during emergency procedures.

3. Flight Profile:

- a. Basic Transitions
- b. Turn Pattern
- c. Level Speed Change
- d. Power Off Stall
- e. Approach Turn Stall
- f. Anti G straining maneuver
- g. Introduction to pattern work
- h. Course rules

4. **Airsickness:** Students often get airsick on their first couple of flights. Consideration should be given to not performing spins or abrupt maneuvering until later in the stage. Start with benign maneuvers like basic transitions and aircraft trim demonstrations. Progress to more challenging maneuvers as the student's tolerance to airsickness builds.

5. **The three Cs:** For level speed changes, turn patterns, power off stalls, approach turn stalls, and spins, the "3 C" concept is an excellent way for students to approach each maneuver and it ensures FTI standards are adhered to:

Example (Approach turn stall)

Configuration - 120 KIAS, gear down (downwind configuration)

Checklist - PRE STALLING, SPINNING, and AEROBATIC CHECKLIST and BEFORE LANDING CHECKLIST

Clearing Turn - 30 degree angle of bank, 180 degree turn

6. **Area Orientation:** Use Flight Plan 25 on the GPS and share with the student in basic terms how to stay in the MOA. Allot sufficient time for area familiarization, and point out as many divert fields as possible. On subsequent contact flights, challenge the student on identifying landmarks in Area One. Ensure the student can find Jack Edwards for the course rules.

7. **Course Rules:** When ready to return to base, emphasize the importance of planning for the recovery. Typically, the student

will not have enough situational awareness for "staying ahead of the airplane" on the first flight. However, by C4004, they should be directing the entire recovery sequence. Per the contact FTI, a recovery brief must be given after obtaining ATIS and prior to contacting approach. Students should have the course rules **memorized** for all runways, and should know the precise terminology for requesting course rules.

103. CONTACT 4002

1. Proposed Profile:

- a. Turn Pattern
- b. Level Speed Change
- c. Approach Turn Stall
- d. Spin
- e. Practice Precautionary Emergency Landing
- f. OLF Break Entry
- g. OLF Operations
- h. Pattern work to include no flap and landing flap landings

2. OLFs: Use of OLF airfields is recommended for both instructor proficiency and student exposure. Ensure you review the Joint FWOP (Fixed Wing Operating Procedures) and TW6 in flight guide for the most current instruction on OLF operations. Although it is technically a tower-controlled field, Choctaw may be used to demonstrate OLF procedures.

3. Turn Pattern: For the Turn Pattern, encourage students to use slow cruise for airspace requirements. Teach them to use outside references to complement the headings on the EHSI.

4. Spin: For spin entry, 16-16,500' MSL is recommended. If the aircraft descends to 12,500' and you are not steady state, take the controls and perform the OCF recovery. Do not go below the operational floor of the MOA.

5. Landing pattern - Reference Chapter 6 of the FTI. During each visit to the pattern, strive to show the student a minimum of five landings. Different flap settings are required by the SSRs anywhere in the 4002/3/4. Allow the students fly as much of the pattern as your comfort factor allows. Students are graded on the landing pattern procedures and there is no requirement for them to be able to conduct safe landings (MIF standard of 2+). Teach the students to become assertive in calling speed and altitude deviations and when to call a wave off.

6. EPs - Now is the time to instruct and evaluate student recall and execution of emergency procedures in a dynamic environment. Have the students fly the airplane as much as possible while reciting critical memory items, then take the controls as they "clean up" all noncritical EP items. During simulated emergencies, students are taught to verbalize steps that move switches or the PCL with "simulated." For example, "PMU Switch - Simulated, Off." In response to "PCL- Simulated, Off," **the IP** will set the power to 4-6% to simulate the feathered propeller condition.

7. Simulated Power Loss vs. Practice Precautionary Emergency Landing (PPEL): The MNTS specifies two specific events that culminate in intercepting an ELP- the simulated power loss, and the PPEL. Set up a simulated power loss to funnel students into an ELP via forced landing procedures. Set up an EP that directs "PEL Execute", i.e. CHIP light, oil system malfunction, etc. to introduce the ELP via PEL. Remember to take the controls NLT high key.

8. Standard Simulated EP Terminology: The following gives standard verbiage for introducing EPs to students. The idea is to present the simulated EP in a way that is not overly confusing, but not overly explicit. Once the student correctly diagnoses the emergency, they should execute critical memory items, and then reference the PCL.

a. **Engine Failure in Flight:** "N1 and torque rolling back to zero; decreasing ITT." After Engine Failure During Flight checklist, students should use the Immediate Airstart boldface for the attempted airstart. For PEL practice, assume airstart successful and turn to nearest suitable field.

b. **Compressor Stall:** "Loud bang accompanied by fluctuating torque, ITT, N1, and fuel flow; Flames and/or smoke from the exhaust stacks." The Flight Manual gives a more detailed discussion on what to expect during a compressor stall. It also gives guidance for distinguishing a compressor stall from an uncommanded power change/loss/prop feather: *Audible indications, which may include loud bangs, backfires, or engine sputtering, represent a major difference between a stall and an uncommanded power change/loss/prop feather, and may aid in diagnosing the malfunction. (NATOPS Flight Manual, p 3-20).* Allow the student to fully analyze the problem. The visible smoke and flames may cause the student to diagnose this problem as an engine fire, so be prepared to explain the difference.

c. **Uncommanded Power Changes/Loss of Power/Uncommanded Propeller Feather:**

(1) Although this EP may be caused by many different factors, the most basic concept to remember about this EP is that it *"should be used whenever uncommanded power changes occur, or the engine fails to produce expected power."* (NATOPS Flight Manual 3-18)

(2) Discuss possible causes of this malfunction: actual or faulty inputs to the PMU, oil/engine/fuel system contamination, propeller dump solenoid failure, or a loss of oil pressure to the propeller pitch control mechanism from a "prop sleeve touchdown"

(3) Then discuss the indications:

(a) For an uncommanded power change/loss of power, the most apparent indication will be an uncommanded reduction in power/thrust accompanied by lower than expected fuel flow, uncommanded decrease in N1, and high raw ITT on the alternate engine data display.

(b) Oil engine/fuel system contamination may have similar symptoms to engine rollback. In addition, the engine may experience power surges or uncontrollable loss of power.

(c) An uncommanded prop feather will be indicated by a loss of thrust accompanied by a rapid reduction in Np, high

torque, increase in propeller noise, and possible engine/airframe vibrations.

(d) A prop sleeve touchdown manifests itself with fluctuations in N_p , torque increasing, thrust decreasing, and engine vibrations. These fluctuations may be erratic but should be temporary, and may be accompanied by a CHIP light.

Suggested verbiage to introduce this scenario:

- "Loss of thrust, drop in fuel flow, drop in N_1 ."
- "Rapid reduction in N_p , high torque, an increase in propeller noise, loss of thrust, aircraft vibrations."
- "Fluctuating N_p , increased torque, decreased thrust, CHIP light."

104. CONTACT 4003

1. Proposed Profile:

- a. Turn Pattern and Level Speed Change if not to MIF
- b. Power Off Stall
- c. Approach Turn Stall
- d. Spin
- e. Simulated Power Loss
- f. Tower-controlled field operations

2. Tower-controlled field operations - Good options are KBFM and KPQL. If going to BFM via a high key entry, contact Mobile Approach (118.5) for coordination. Use KNPA as a last resort due to heavy congestion.

3. Simulated Power Loss: For setting up the simulated power loss, use standard verbiage for engine failure during flight and reduce the PCL as appropriate. Discuss how the three basic rules for handling all EPs are woven into the critical memory items:

a. Maintain Aircraft Control:

- (1) ZOOM/GLIDE - 125 KNOTS (MINIMUM)
- (2) PCL - OFF
- (3) INTERCEPT ELP

(4) During an engine failure, the first three steps are critical for maintaining aircraft control. Not performing these steps quickly can waste energy and decrease engine out glide range.

b. Analyze the situation and take proper action:

- (1) AIRSTART- ATTEMPT IF WARRANTED

(2) Discuss the conditions that would warrant or not warrant an airstart. The proper action at this point is one of three steps: airstart, forced landing, or ejection

c. Land as soon as conditions permit:

- (1) IF CONDITIONS DO NOT WARRANT AN AIRSTART:
- (2) FIREWALL SHUTOFF handle - PULL
- (3) Execute Forced Landing or Eject

(4) Discuss runway length needed and weather considerations. In your debrief, discuss how well CRM principles were used by the student during execution of the EP.

105. CONTACT 4004. Profile: Gator MOA, then tower controlled field or OLF. Work all remaining items that need to meet MIF and prep student for the check-ride by focusing on the required items for C4190 i.e. approach turn stall, spin, etc.

106. CONTACT 4101 (NIGHT FLIGHT)

1. Profile: Since aerobatics are prohibited at night, the night contact sortie has plenty of time for instructors to accomplish all required maneuvers while still having a lot of

time for night ELP and normal landing proficiency. Use this time wisely. Consider discussing instrument procedures, or possible giving a demonstration of an instrument approach.

2. Good airports for pilot controlled lighting (PCL) demonstrations are Dauphin Island or Fairhope (Sonny Callahan). Sherman Field Tower does a good job with the ALDIS lamp signals.

3. Demonstrate how to operate all the interior lighting. Emphasize increased ejection seat safety and awareness when handling seat pins. Ensure the student knows how to change out their visors prior to flight and that they do not try to change the visor in the plane, due to potential FOD.

107. CONTACT 4290

1. Profile: It is important to know exactly what maneuver items are required for this flight. Accomplish all "+" items in the MNTS, but feel free to accomplish optional items, like the level speed change, turn pattern, and the power off stall as well. Since the majority of the required items are "low work", consider accomplishing those items first for students with airsickness problems.

2. Aerobatics: Prior to aerobatics, accomplish a G-warm-up. The students are responsible for the geometric shape and entry parameters for all aerobatic maneuvers in the Contact FTI. Hold them responsible for this information. Brief the student on where to place hands during aerobatics, especially if doing inverted flight. Reference the inadvertent ejection of an F-14 back-seater during inverted flight. A good place to place their hands is along the canopy, on their knees, on their survival gear, or on the glareshield.

3. Big Picture: Look for solid procedural knowledge, flawless recall of critical memory EPs, a solid understanding of CRM, and general situational awareness.

CHAPTER TWO - SNFO INSTRUMENT SYLLABUS FLIGHTS

**The information in this document reflects guidance from the CNATRINST 1542.155B version of the MNTS and the TW-6 Instrument Stage Manager.*

200. OVERVIEW. The INAV phase is designed to build a student's instrument scan, situational awareness, crew coordination, and most importantly, navigation skills. Students should be quite competent with instrument procedures, turnpoint procedures and enroute math by INAV 4001. Expect problems with pacing/time management and terminal-area work. Additionally, the academic and simulator phases cannot adequately prepare them for our busy airspace and actual radio noise, so expect their comms to be a bit rough. The first time they see a true radar approach (GCA) will be during the flying phase.

1. INAV 4001-4190 are designed around structured routing. Fly these as "canned hops" to the max extent possible. Avoid major changes to your student's plan unless absolutely necessary and thoroughly briefed. Consideration should be given to flying precision and non-precision approaches back to back so your students can see the subtle differences between the two, i.e. PAR then ASR; ILS then LOC. Wear your instructor hat for the early rides and help your students put all of the pieces together. Save the evaluator hat until the check ride. Demand that they have their book knowledge and procedures cold in the prebriefs and debriefs. Cover MCG and daily discuss items thoroughly.

2. During INAV 4201-4490, start taking off the training wheels. Begin transitioning students from the canned environment and welcome them to the rest of the National Airspace System. If possible, make sure your students see Base Ops, especially at unfamiliar fields. Build upon their newly acquired instrument skills by increasing the complexity a little; drop-in approaches are required and out-and-ins and cross-countries are preferred. This is a good time for students to learn flexibility and adaptability as they deal with new controllers and new airspace. High-altitude approaches and low-altitude procedure turn course reversal techniques other than the 45/180 should be considered, but remember that your students have not discussed these types of approaches since Instrument academics. Be sure to thoroughly prebrief any approach type that they have not yet seen. Dust off the how to's for calculating descent and VSI rates for high altitude approaches and enroute descents. Lastly, if your students can handle the tempo, consider using max holding

airspeeds and flying initial approaches at speeds greater than 150KIAS. Challenge them to think through new situations using procedures and airmanship.

3. Demand improvement on every ride. There is no excuse for a student not knowing basic instrument procedures. Introduce new scenarios and challenge your students to "think outside the box" as they progress and mature in the instrument arena. Hold your students to CTS on end of block sorties and hook them if necessary. You will be doing them a favor. This block is the time to have fun while challenging your students to become sound instrument aviators.

201. FLIGHT LOGS/DD-175S

1. Students shall prepare flight logs/DD-175s for a primary and alternate route (preferably one East and one West). Not preparing an alternate constitutes a ready room down. There is no excuse for a poorly prepared flight log or DD-175. Computer-generated DD-175s are authorized, but computer-generated flight logs are NOT. By the time they reach I4001, they have prepared and turned in several flight logs and DD-175s, so mistakes should be minor and rare. Make a point to have your students start using GP Chapter 4 for their DD-175s instead of just their Flight Planning Supplement. On cross-country flights, take the time to show students how to file in person with Base Ops and over the phone with FSS. If possible, show them the difference between military and civilian flight plans.

202. WEATHER

1. Though it may be legal to fly, it may not be the best time for training. During the summer at Pensacola thunderstorms are abundant; if you are spending most of your flight diverting around storm cells, then your students are not getting the proper reinforcement for what they have learned in academics and the simulators. Remember, if you and your student are the only people walking to the plane, then you might want to rethink your plan.

2. On cross-country flights to military fields, show students where to find an actual military weather shop and how to get a DD-175-1 in person. At unfamiliar civilian fields, show them how to get a proper weather briefing from remote military facilities, FSS, or other sources.

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203. TEACHING STANDARDS

1. Techniques should complement procedures. Remember, techniques are good, but we grade procedure. Do not confuse the two. Always check the student's last grade sheet to see what they need work on and what the grading standards are for those items in that stage of their training. Make sure they meet the Course Training Standards in the back of the Master Curriculum Guide. On out-and-ins and cross-countries, it is a good idea to take a copy of your student's past gradesheets in order to make an informed decision about regression rules and to avoid incorrectly assessing a flight complete. If not, it will come back to bite you and the Squadron on a TRB - guaranteed!

2. Although instructors are encouraged to share different "techniques", techniques should simply complement the execution of procedures. Students are graded on procedures taught in academics and reinforced in the simulator phases of training.

3. For all maneuvers, your students should treat you as a sort of "voice-activated autopilot," unless you tell them not to. Their default should be to repeat controller instructions to you, even on GCA final; the option to remove this requirement is YOURS, not your student's. Brief your preferences as necessary, whether in the prebrief as a rule or in flight to alleviate comm clutter in busy radio traffic.

4. There is no excuse for a flight violation or a mishap due to instructor saturation. Do not give your students more room to make mistakes than you are willing to accept (i.e. no more than four miles off course, do not continue a gear up approach to a gear up landing, etc). Remember, YOU are still the aircraft commander.

204. I4001 - I4190

1. You cannot overstress ejection seat/CFS safety! Explain how to use the ISS and its importance.

2. On I4001, watch your students strap in. When they start the flying phase of Instruments, it has been several weeks since they have been in the cockpit. If they haven't practiced strapping in at least once before coming back to the plane, and/or they are taking a long time to strap in, chastise them appropriately in the debrief.

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3. Go over what items to bring to the brief: Junk Jacket, WX, NOTAMS, flight logs and DD-175s for a primary and alternate route. Also, go over what to bring into the aircraft and what NOT to bring. Emphasize that if they drop something in this aircraft, they probably will not be able to pick it up. This includes but is not limited to pens, pencils, whiz wheels, etc. DO NOT ALLOW YOUR STUDENTS TO WEAR THEIR WHIZ WHEELS AROUND THEIR NECKS!

4. If you intend to land at an airport (other than NPA) considered to be in the local area that is not on the "on-top" weather briefs, show your students how to adjust the canned weather brief to include your destination. The 350nm Round Robin weather brief includes multiple fields in the local area as alternates and is not intended to be used for out-and-in sorties. Emphasize to the students the need for a legal weather brief for their destination per OPNAV 3710.7 series.

5. Due to the lack of a TACAN in the T-6A, a VOR at NPA, and the requirement to navigate directly to a fix as the first point on departures out of NPA, students sometimes often do not have an opportunity to do a groundspeed check until late in the flight. If using the GPS is the only feasible way of navigating to the first fix of the route, the student should recognize that and be prepared to execute. Let them use the GPS CDI without groundspeed readout. You should also give your students the GPS CDI without groundspeed when en route to the first fix if they are flying a point-to-point after leveling off at cruise altitude and after setting IAS for desired TAS. If you do this:

a. First, make sure they have a good point-to-point heading. If they do not, make them concentrate on their point-to-point skills instead.

b. Do it only if they ask for it (obviously, let them know in the brief that this is an option).

c. Take the GPS away once the groundspeed check is complete and wind analysis is underway. If student hasn't completed the required math outside three-four min prior to the fix, then take away the GPS CDI and have them concentrate on the VOR point-to-point "rate game" (i.e., radials vs. DME).

6. Set aside time in the briefs to go over approach plates. Student inability to understand approach plates is typically a problem area throughout training, and the sooner they are grilled on it the better. Make sure they understand the little

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things (circling mins, how to ID the FAF, step down altitudes, etc.) that if not properly executed can get you violated or even killed. These issues are covered in academics, but continuing their education can only make them stronger.

7. Teach airmanship and mission-commander skills early. Drive it home that they are expected to be an active member of the crew. Advise them they are running the show and that if they are not busy during any portion of the flight, they are probably behind the airplane. Demand that they be assertive, directive Mission Commanders-in-training.

8. Discuss EP "what-if" scenarios, with the focus being emergencies in IMC. By the time they reach I4005 they should know that if you cannot see the runway, you probably should not be looking for high key. Emphasize that with very low ceilings, intercepting the ELP will not happen until short final; discuss the pros and cons of flying the glide slope with impending engine failure and bring those engine-out glide path ratios out of the Contact cobwebs. Stress the difference between expected VSI readings on normal ILS glide path and feathered-prop, best glide VSI. Talk about how to best set the crew up for success in an IMC PEL situation by conserving either kinetic energy (airspeed) or potential energy (altitude), and which method might be appropriate when.

9. Try to get at least two approaches per sortie; the more the better. In addition, students are thoroughly trained on holding procedures in academics. Plan time for plenty of holding practice. DO NOT do less than three turns in holding during a flight and call it good. If you do not have adequate time to do at least three turns in holding (entry orbit, no-wind orbit, wind-corrected orbit), you are setting your students up for failed check rides.

205. INSTRUMENT 4001

1. Discuss Items

a. High/Low Chart Symbolology: Review several commonly used symbols and explain how to use a legend.

b. Lost Communication Procedures: Break out the FIH and explain how to use it.

c. Emergency Engine Shutdown and Abort: Per NATOPS, preferably with a scenario.

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d. Procedure-Turn Approaches and VOR Approach: Have your student talk you through the procedures using an approach plate.

2. Recommended Approaches

a. Arcing, VOR Holding/VOR Approach, PAR and ASR.

b. This is the first time the student will have executed a true Radar/GCA approach. Patience and instruction will go a long way in the introduction to Radar Approaches. To the max extent practical, the Students should back up a Radar/GCA approach with an appropriate instrument approach for the runway in use to aid in developing situational awareness in the terminal area. If available, emphasis should be placed on choosing an RNAV/GPS approach as an opportunity to lay the groundwork for RNAV/GPS Approaches in the I4200 and I4300 blocks of training. Additionally, the GPS should be set up properly for radar vectors, utilizing the OBS function off the FAF with the final approach course dialed in.

3. **NOTES:**

a. The student's GPS will not be turned on unless it is the only feasible means of navigation, for an initial groundspeed check, as outlined in para 204.5, or to back up a GCA.

b. The Elapsed Timer (ET) on the clock will be used for ETA. Have the student conduct the time hack after the Departure brief and before calling tower. Normally, after an hour, you are inside the terminal area and ETA is not that important anymore. Keep in mind on long sorties you may have to rehack the mission clock.

c. Prep the student on NAVAID setup for departing KNPA. To the max extent practical, the EHSI at any point during the flight should be in the basic mode for either VOR or GPS (without TTG or GS). Map mode should not be used.

d. Students should adjust the heading bug to the appropriate heading at the Mark-on-Top Call or when necessary. Technique: "You bug it, I'll fly it."

e. Ops checks should be accomplished every 20-25 minutes of flight. A good rule of thumb is to accomplish one on every leg sometime after the Wings-Level Call, when leg length and workload allow.

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f. Gear down, flaps takeoff, landing lights on is the default BAC for approaches unless you direct otherwise. The T-6 NATOPS and JPATS both specify 110 KIAS as the minimum T-6A approach speed.

g. Use this first flight to emphasize time management. Examples: No Ops check after the Wings-Level Call until you have checked your navigation/heading. If you get a frequency change at the MOT, answer the controller, direct the MOT, then change the frequency.

206. Instrument 4002

1. Discuss Items:

a. Special Use Airspace: Go over the different types and how they affect mission planning. Make sure they know how to use the legend on the chart and the applicable AP series.

b. Engine Failure Immediately After Takeoff and Engine Failure During Flight: Per NATOPS, with emphasis on how to handle it IMC.

c. Missed Approach/Climbout Procedures: Make sure your students know the actual JPATS and NATOPS Missed Approach Procedures and can talk you through how to apply this in flight. Make sure they know the difference between Missed Approach Instructions and Climbout Instructions.

2. Recommended Approaches:

a. Localizer and ILS Approaches.

b. Try to fly the ILS and LOC back to back and highlight the differences as well as the use of the 6 T's. Students have been taught to back up the ILS with the LOC.

207. Instrument 4003

1. Discuss Items:

a. Immediate Airstart (PMU NORM): Per NATOPS.

b. Uncommanded Propeller Feather: Per NATOPS in IMC.

c. VOR Approach: Per JPATS using an approach plate. Procedure Turn vs. Procedure Track.

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d. Departure Procedure Vs. Radar Vectors: Show an example of a Graphical DP and a text-only ODP (Trouble T), and explain how clearances for both will sound.

2. Recommended Approaches:

a. Radar Approach/GCA and VOR.

b. Fly the PAR and ASR back to back and highlight the differences

3. **Notes:** This sortie can be flown as an out-and-in (in conjunction with I4004) if your student is capable of doing so.

208. Instrument 4004

1. Discuss Items:

a. Base Ops Planning (AP-1, NOTAMS, weather minimums for takeoff, approach, and alternate): Show them the important things for planning an off-station flight. Include runway length, services available, contract fuel, etc. Broaden their picture and get them ready for cross-country flight.

b. CTAF Usage: Go over the calls and explain the concept of uncontrolled civilian airfield operations. Use the AIM where necessary.

c. Ejection: Per NATOPS.

209. Instrument 4005

1. Discuss Items:

a. Any EP: Preferably a PEL in IMC.

b. Class "A" Operations: Make sure they know what it is and how to operate in it.

c. Terminal Change Notice (TCN): Make sure they know what it is and when it comes out. If one is in effect, make sure you both have it.

d. Use Of FSS/PMSV: (in-flight change of flight plan, activate flight plans, and update weather).

2. Recommended Approaches: Any approach not up to MIF.

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3. Notes:

a. This sortie can be flown as an out-and-in (in conjunction with I4190) if your student is capable of doing so.

b. If your students are not ready to progress to the checkride, do not pass them.

210. Instrument 4190**1. Discuss Items:**

a. Any EP

b. Any Instrument Navigation Procedure

2. Approaches: Minimum of two approaches: VOR or ILS and GCA (if available).

3. Notes:

a. Put on the evaluator hat and check their pubs for currency.

b. Do not offer much help; let them dig themselves out of their own holes up to the point of imminent violation.

211. I4201 - I4490

1. Procedures remain the same, but the grading criteria are a little more stringent; students are expected to demonstrate higher mastery of the skills and procedures. They will also become more familiar with the T-6A avionics capabilities.

2. I4201-I4203 is generally planned as canned routes but do not have to be. I4204-I4490 is normally filed on DD-175 flight plans.

3. Start placing more emphasis on the terminal area and approaches. By late-stage instrument sorties, most students are quite proficient with enroute timing and point-to-points but still have problems with terminal-area work. The more approaches the better.

4. If given the opportunity, do not hesitate to go to a non-towered field. Students do not always get a chance to use CTAF, and Advanced jets have identified this as a weak area. If their

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instrument approaches are up to speed, consider cancelling IFR and show your student how to do approach work while VFR. Part of their instrument training should be how to cancel IFR, how to pick it back up again, and when it is appropriate.

5. Introduce course reversal techniques other than the 45/180 (i.e., 80/260, AIM entry procedures, etc.). Likewise, look for opportunities to challenge your students with high-altitude approaches and calculated descent rates.

6. Begin to introduce and place more emphasis on RNAV/GPS approaches, especially during the early flights in the I4200 block. Ensure that the students become proficient in loading the GPS for both a "T" approach utilizing an IAF, as well as vectors to final utilizing the OBS function and final approach course off the FAF. Students should be familiar with procedures for properly loading the GPS from their Simulator instruction as well as backing up Radar/GCA approaches in the first block of the Instrument Stage. Place an emphasis on the importance of checking RAIM as well as GPS NOTAMs prior to conducting any RNAV/GPS approach work.

212. Instrument 4201

1. Discuss Items:

- a. Smoke and Fume Elimination/Electrical Fire: Per NATOPS in IMC.
- b. Chip Detector Warning: Per NATOPS in IMC.
- c. Visual Glide slope Indicators and Interpretation: PAPIs, VASIs, and the Meatball. Reference FIH.
- d. OPNAVINST 3710.7 Alternate Field Requirements: Get out the 3710 and go over the requirements. Devise weather scenarios and make your students tell you whether a given field is legal.

2. Recommended Approaches: VOR/ILS/GPS.

213. Instrument 4202

1. Discuss Items:

- a. Avionics Failures: Get into the NATOPS and cover all of the different scenarios. Stress the use of going composite.

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These may not be memory items, but emphasize to the student the importance of being familiar with the procedures.

b. OPNAVINST 3710.7 Fuel Requirements: Open up the book - bottom line, you need to at least plan to have the gas to do the mission with reserves. Go over the different reserve requirements and stress the difference between OPNAV 3710 reserve fuel for mission planning and our NATOPS/SOP minimum and emergency fuel requirements.

214. Instrument 4203

1. Discuss Items:

a. OBOGS System and Failures: Make sure the student understands the system beyond GREEN RING - PULL. Talk about all the non-memory items.

b. OPNAVINST 3710.7 Takeoff Minimums: Look it up and go over scenarios.

215. Instrument 4204

1. Discuss Items:

a. Any Emergency Procedure

b. Any Limitation

216. Instrument 4301

1. Discuss Items:

a. Approach Lighting Systems: Look in the FIH and go over the different types.

b. Localizer Approach: Have them explain it per JPATS using an approach plate. Emphasize MDA, not DH, defining the FAF, defining the MAP.

c. Operations Away From Home Field: Students should have flown out-and-in sorties by now, so they are probably familiar. With cross country being the emphasis, discuss considerations involved in leaving the plane overnight at civilian fields, determining what services will be available, how to file a flight plan through FSS, etc.

d. Any Emergency Procedure

217. Instrument 4302

1. Discuss Items:

a. Icing: Avoid it! Do not file into it! Go over the 5000 ft light-rime transit and the use of PROBES ANTI ICE.

b. Position Reports: Straight off the back of the IFR Supplement.

c. Circling Maneuvers: Use the diagram in the JPATS or AIM and discuss circling techniques. Emphasize: T-6 is normally Cat B; circling radius =1.5nm; Approach speeds related to different aircraft categories; how they change if we approach/circle above 121KIAS, guaranteed obstacle clearance at circling MDA.

d. Any Emergency Procedure

218. Instrument 4303 - 4304

1. Discuss Items:

a. Any Emergency Procedure

b. Any Limitation

219. Instrument 4490

1. Discuss Items:

a. Any Emergency Procedure

b. Any Limitation

2. Approaches. Minimum of two approaches: VOR or ILS and GPS.

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CHAPTER THREE - SNFO Visual Navigation Syllabus Flights

**The information in this document reflects guidance from the CNATRINST 1542.155B version of the MNTS and the CTW-6 VNAV Stage Manager.*

300. Overview.

1. The Visual Navigation (VNAV) phase of training is designed to introduce SNFOs to the basics of visual navigation, to include chart preparation and interpretation, time and fuel calculations, time and course corrections, wind analysis, and navigation by reference to visible landmarks. This training takes place at altitudes below the standard VFR hemispheric altitudes (3500' MSL) but above what would normally be considered "low level" altitudes (less than 1000' AGL).

2. In addition to visual navigation, students are expected to maintain full proficiency in instrument operations. Students shall execute a minimum five instrument approaches in the VNAV stage. Poorly executed instrument approach procedures are the most common reason for a student to fail a flight in the VNAV stage of training.

301. Briefing Standards

1. Briefings are a critical area in the VNAV stage. Ensure that each brief contains a compound wind problem for the student. They should come prepared to give you all required products and their chart should be squared away.

2. The emphasis on wind analysis is on the ground. Wind consideration should be the term we are using in the air.

3. Use the pilot card on the back of your IP PFPS charts to check the course and time for the student's chart. Pay special attention to whether there are IR crossing routes and check to see that the student has them annotated correctly on their charts. These are the only routes that actually cross co-altitude with our VNAVs.

4. Students must be able to brief the following without reference to their VNAV chart:

- a. Turnpoint (TP) descriptions

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b. All features inside the TP circle that will aid in identifying the TP

c. All hazards on the route

d. All altitude changes

302. Student Chart Standards

1. All student charts shall contain:

a. A copy of the route on the back

b. A data card on back with the current chum date

c. All crossing routes present. (IR routes cross co-altitude on VNAVs 1, 2 and 5.)

d. NPA must be included on chart

e. ETA's +/- 20 seconds (total time +/- 30 sec)

f. Headings +/- 2 degrees

g. Fuels +/- 15 lbs

h. Proper orientation of all turnpoint letters and times

j. Correct colors

k. Chart signed near middle of route, name block in lower right corner of chart

l. All CHUM present (within 500' MSL and 5 NM of planned course and altitude)

2. Round all distances to nearest 1/2 nm and times to nearest 10 sec. Time ticks every minute, 3nm on both sides of course; every third minute tick will be labeled and extend 5nm on both sides of course. NO marks inside turnpoint circles except chum. Must have four divers, two of which must be military. Divert field annotations and conflicting routes may be drawn within 3 nm of course.

3. Color requirements:

a. The following shall be in pencil:

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- (1) Mission Completion Fuel (MCFs)
- (2) Estimated Fuel Remaining (EFRs)
- b. The following shall be in blue ink:
 - (1) Class B Airspace
 - (2) Class C Airspace
 - (3) Class D Airspace
 - (4) Divert Fields
 - (5) CHUM
 - (6) Crossing Routes
- c. The following shall be in black ink:
 - (1) Turnpoint Circles/Letters
 - (2) Doghouse Information (excluding fuels)
 - (3) The Target Triangle
 - (4) Course Lines
 - (5) Time Ticks
 - (6) ETAs
- d. The following may be highlighted with yellow marker:
 - (1) Crossing Routes

303. Weather Minimums TW-6 Low Level Training Rules limit us to 3000' and 5 NM visibility for VNAVs.

304. Flight Standards

- 1. Students will sit in the rear cockpit.
- 2. IPs will conduct ground ops in same manner as INAV flights.
- 3. Student's GPS will remain off.

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4. NAVAIDs shall not be used as the primary method to identify the entry point or turnpoints while on the route. On cloudy/hazy days students may do a point to point to the entry point (point "A") only if this is the only way to get to the route.
5. Students may set the CDI to the last updated wind direction to aid in wind analysis.
6. Students are responsible to constantly maintain the heading bug on assigned heading, but per IP may move heading bug inside 2min prior call to outbound heading.
7. The IP shall (and the student should) fly with a current VFR sectional IN THE COCKPIT to be legal on the flights per military instruction. You are flying on a VFR squawk 1200. You are not squawking 4000 as on an MTR. Please keep your eyes outside of the airplane. If training is degrading and/or the student is pulling your attention to the back seat then at a minimum stop evaluating and scan outside. We can eliminate some risk during these flights but not all of it. We are de-conflicted from some military tactical traffic but will probably see more civilian traffic at the VNAV route altitudes.
8. IPs must understand and plan how to drop/pick up IFR handling/clearances. You are not operating under an IFR clearance unless you request a flight plan and the controller says "YOU ARE CLEARED TO THE XXXXX AIRPORT..." You have to be cleared to a destination. If you are unable to maintain VFR on your approaches, post VNAV route than you must request and receive an IFR clearance. This brings up another topic. VNAV events require you to use good headwork. We have a lot of flexibility when it comes to flying these events outside of a published MTR structure which is good for getting the X, however, be smart about dropping and picking up IFR. Per the Wing Low Level Training rules, we are not allowed to fly a route if the weather on the route is less than 3000' and 5 NM vis.
9. Students must maintain the following parameters during flight:
 - a. +/- 2 NM of course centerline
 - b. +/- 1 minute from Time on Target
10. Students shall:

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- a. Identify at least 80% of turnpoints
- b. Identify 50% of intermediate checkpoints
- c. Analyze winds to within +/- 45°s and +/- 10 Knots
- d. Make wind corrections/compensations within +/- 2°s and +/- 5 knots
- e. Calculate the MCF IAW OPNAVINST 3710 without error
- f. Make hazard calls with 90% accuracy
- g. Direct the IP to climb or descend to maintain the appropriate VNAV route altitude or VFR hemispheric altitude, as applicable.

305. VNAV Turnpoint Procedures

1. Two-minute Prior call:
 - a. Outbound Heading
 - b. Outbound Airspeed
 - c. Outbound Altitude
 - d. Description of turnpoint/hazards
2. Mark on Top Call:
 - a. Clear Left/Right
 - b. Turn Left/Right (heading)
 - c. Time is
 - d. Set Airspeed
3. Wings-Level Call:
 - a. Heading for course
 - b. Airspeed
 - c. Altitude is

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- d. Fuel on board, + recommendation (compare to MCF)
- e. Turnpoint analysis
- f. Time analysis
- g. Update ETA
- h. Wind Considerations

306. VNAV Course Corrections

1. VNAV course corrections shall be made as follows:

| | | | | | |
|---------------|-------------|--------------|------------|--------------|------------|
| <u>1/2 nm</u> | <u>1 nm</u> | <u>1.5nm</u> | <u>2nm</u> | <u>2.5nm</u> | <u>3nm</u> |
| 10 deg | 10 deg | 10 deg | 10 deg | 10 deg | 10 deg |
| 1+00 | 2+00 | 3+00 | 4+00 | 5+00 | 6+00 |
| | 20 deg | 30 deg | 20 deg | | 20 deg |
| | 1+00 | 1+00 | 2+00 | | 3+00 |

307. VNAV Speed Corrections

1. No corrections are required unless you are 12 or more seconds off preflight time.
2. Corrections shall be +/- 10% of Ground Speed (20 knots). You will correct six seconds for every minute of correction. (The FTI allows a 40 knot increase on the target leg only.)
3. Take the total time off and divide by six for minutes of correction, add a zero to remainder for seconds. (ex: 20 sec off = 3+20 correction); or take time off, add a zero and then convert to minutes and seconds (ex: 20 sec off = 200 seconds of correction which is equal to 3+20 correction)

308. VNAV Wind Corrections

1. Use the following formulas to calculate route winds and corrections:
 - a. $\frac{\text{dist off (nm)}}{\text{time flown}} \times 60 = \text{Crosswind}$
 - b. $\frac{\text{time off (sec)}}{\text{time flown}} \times 3.0 = \text{Headwind/Tailwind}$

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2. The six-minute rule may be used if the time since the last fix is six-minutes +/- 1 minute:

a. Distance off (NM) x 10 = Crosswind

b. $\frac{\text{Distance off (sec)}}{2} = \text{Crosswind}$

c. $\frac{\text{Time off (sec)}}{2} = \text{Headwind/Tailwind}$

3. Total wind is all of the Headwind/Tailwind or Crosswind (the larger of the two) + 1/2 of the Crosswind or Headwind/Tailwind (the smaller of the two). This is also referred to as "all of the big, half of the small."

309. BDHI

1. A student may navigate visually (BDHI) to an identified point along the route within the following criteria:

a. For intermediate checkpoints, the point must be on or closer to course than the aircraft, and not on the opposite side of the course.

b. The identified point must be within 30°s of aircraft heading.

c. A standard course correction would not be practical prior to passing the point.

2. If able, students should attempt to estimate the distance off course prior to initiating the BDHI maneuver.

310. Route Structure. All T-6A routes are de-conflicted with local VR MTR traffic by a minimum of 500'. These routes are also de-conflicted by a minimum of 500' internally between T-6A VNAV routes. The route structure has been given to VT-86 and TRAWING FIVE for deconfliction purposes. Our major conflict now is with IR crossing routes that have altitude blocks such as IR 030/031, which is from 500'AGL to 6,000MSL. These cross every route we do with the exception of VNAV 3 and VNAV 4.

311. The VNAV Brief.

1. Students are expected to brief each VNAV flight all the way up to, but not necessarily including the Emergencies portion of

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the brief. The N5001 brief is vitally important to how the students will perform on all other VNAV flights. If you do not expend the effort to teach it to them correctly on N5001, you are setting them up to fail later on. Additionally, it is important to evaluate the student's knowledge of the six min rule and the process of wind analysis in the brief, since during the flight more emphasis is placed on reading the chart. To the max extent possible, N5001 should be scheduled with a VNAV Stan IP.

2. Discuss Items:

a. VFR chart interpretation/symbology

(1) Cover some of the symbols mentioned in the FTI

(2) Discuss how to interpret the 2 dimensional chart in a three dimensional world

(3) Discuss "funneling", find big features around the turnpoint that will funnel you into it; work from big to small.

(4) Discuss limiting factors. There are always two limiting factors. One is time, the other is geography. Turn on time if you do not see the turnpoint. If you are off time and have not corrected, update your ETA. If you are correcting for time, determine how many seconds you will make up prior to the turnpoint and update your ETA. [Example: Your ETA is 17+00; you determine that your correction will be completed at 17+30. This means that 30 seconds of correction will not be complete at the next turn point. 30 seconds of correction equates to three seconds of timing, so your updated ETA will be 17+03. Find some geographic or man made feature around your turnpoint, that you know you will see. If you miss your turnpoint, but can identify the other feature, turn when appropriate. This feature may be beyond, before or to the side of the turnpoint.

b. Emergency field selection 3,000' min length. Emphasis should be placed on the location of emergency fields during the student's discussion of the route.

c. Any EP - Emphasize low altitude considerations.

d. During the N5190 debrief: As a technique, cover the military training route (MTR) structure and AP/1B resources for the Low-Level event discuss items as part of the flight debrief. Focus specifically on visual routes (VR) in preparation for

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flying VR-1024 on F5101/F5102. If needed, consult with a Form qualified IP to answer any student questions to which you might not know the answers.

3. Wind Analysis:

a. Intent:

(1) Reduce the requirement for math intensive procedures during flight to allow student to focus on learning chart reading and staying on course and on time.

(2) Do not require students to assume all errors in course and timing result from winds.

(3) Use the briefing to teach six min rule (concrete wind analysis methods) in order to ensure students still learn this method as they will need to use it in advanced training.

b. Wind analysis should be a big portion of the brief on this flight, as well as all the remaining flights in the block. Ensure that the student understands how to analyze the winds using the six-minute rule. During the flight, students are only required to determine the winds within 45 degrees and 10 knots. In addition, the students will have already figured a compensated heading and airspeed for each leg. As long as the winds from FSS are within 45 degrees and 10 knots of pre-flight, the students need not change their compensated heading and airspeed along the route. As the flight progresses along the route, if the pre-flighted compensated heading and airspeed only result in small errors, (i.e. 1/2 nm off course or 10 sec off timing) the students will not be required to update the winds. This is a judgment call on their part, but the bottom line is if the winds the student uses meet standards and they stay on course/timing within standards, they are not required to update the winds. This allows the student to focus more attention outside during the flight and learn the skill of chart reading vice the procedures of wind analysis.

c. If the student is not meeting standards during the flight due to inability to respect the winds, the instructor must have a tangible means to correct the student; the six-minute rule. Therefore, during the briefing the student will be required to solve a wind problem using the six-minute rule, as outlined in the FTI. Instructors shall require the student to solve a wind problem on every brief in this block. Consider

using the compound wind problem at the end of the FTI and simply changing the numbers.

4. Ground Speed and Ground Track Computations:

a. These compensations will be calculated before the flight using forecast winds. The compensations are placed on a 1/2 inch square piece of paper next to the doghouses. The compensations should be in the format of +/-, not an actual heading or airspeed.

5. Time/Course Corrections:

a. Work through a problem and have the student do the math (incorporate wind problem).

b. Discuss BDHI corrections and when/how they can be used.

c. Discuss jungle rules and when/how they can be used.

6. Turnpoint Procedures:

a. Students should know these cold in the brief. The wings-level call includes all analysis.

b. Discuss how to update times to turnpoints and intermediate checkpoints if you are correcting for time. Example - you put a 5+00 correction in but only have 4+00 until the turnpoint; you need to update your ETA.

c. Make sure the student realizes that during the wings-level call, at "wind consideration", if he changes the winds, this is the point at which he will need to also change his compensated heading and airspeed.

7. VNAV Chart:

a. There should be NO errors on the charts. Nav-1 and Nav-4 are done in ground school and they have a 24-step checklist to follow. If they screw it up, call them on the carpet. Past N5002 do not cut them any slack. Emphasize attention to detail!!

b. You should become the expert on the chart. Since not everyone will, keep this for reference and check the student's chart for these things:

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(1) Magnetic variation on the TPC is old, so stud should get Mag Var from a sectional.

(2) Check that CHUM is current

(3) Look for one doghouse for each point, including the target

(4) Check for MCFs and EFRs done in pencil using current winds

(5) Is Class D airspace annotated with blue, dashed line?

(6) Look for cutouts in airspace: Ferguson is in NPA's Class C, for example

(7) Point before the target should be a square, oriented perpendicular to the target leg

(8) Must have two military divert fields, 5nm square

(9) Point labels should be oriented so that the next label is upright when the current leg is upright

(10) No marks, except CHUM in the turn circles

(11) Copy of route and data worksheet pasted/glued to back of chart

(12) No highlighting of extra info (wind Ts and white squares are allowed; highlighting of crossing routes is covered in the FTI, and is permitted)

(13) Check times, courses and fuels against the Chart standards

312. Notes

1. Students should be using the FTI procedures. The wings level call forces the student into the "Fix, Correct, Assess" format. They are not taught the phrase "Fix, Correct, Assess," so do not expect them to know it, just stick to the wings level call. This is the same format used when the students progress to advanced training. By correcting first, even with poor wind analysis, the student has a better chance of staying on course. Emphasize staying on course and on time and getting to the

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target on time. Remember that the standards for wind analysis in flight are relatively loose, so the student can use any means to approximate an updated wind vector in flight. However, if after the first leg your actual winds are different from preflight, you **should require** your students to use the six-minute rule to calculate winds, as this is the most accurate method.

2. Know the rules for BDHI. The drawback to the BDHI is that you lose track of how far the winds were blowing you off course. However, since students will not necessarily attempt to determine a new wind vector on each leg, BDHI corrections can become more useful. Make sure you know the rules, and hold the student to them! (see above)

3. Consider practicing a BDHI correction inbound to the entry point, as this is a good opportunity to ensure the student practices one each flight.

4. Encourage the student to have a solid plan for a direct entry and use outbound parallel only when needed, since in advanced, the outbound parallel is not an option. Have the students identify a point two to three minutes prior to the entry point that will line them up for a direct entry.

5. Students may ask for a wing rock on top of or nearing a point. However, the preferred method for determining if on top of a point is to find another point abeam and turn based on that.

6. Students may fly the first leg unwinded if the winds are forecast less than 10 knots.

7. A minimum of five instrument approaches must be flown in this block! You should do at least one approach on each flight, but plan for two, especially on routes which require little transit time to get on and off. You are encouraged to pick up an IFR clearance off the route as this is commonly a weak area for the students.

8. Watch your fuel! You may not be able to blaze out to the route at 4500' and still have gas for the route and an approach. Do not trust the student to calculate your fuels on the route. Stay on top of it, you are a professional!

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9. Make sure you know where crossing/shared routes are. Follow the guidance on the stereo route handout. Do not hesitate to make any calls you think you need to on CH 18.

10. Ascents/descents: Ascents should be started at the two-minute prior call and descents after the MOT.

11. The 40 knot speed corrections should only be used on the target leg, or if the total time off is one minute or greater, in all other situations use only a 20 knot speed correction.

12. Students have many approaches under their belt at this point. Hold them to at least the same standards as you do in late-stage INAVs. Cut them very little slack on approaches. Approach work is the most common reason for downs in this phase.

13. Studs should plan for a drop in approach if fuel allows. If they have a drop in and approach calculated on the front of their jet card, then they can have only one approach on the back in the fuel section. In this situation, they should subtract 250 from the IAF fuel on the front to calculate MCF.

14. In every brief, TW-6 Low Level Training rules shall be briefed.

15. Specific Route Info:

a. Nav-2: There is a 1200'+ tower just south of target on this route. Whiting course rules inbound are at 3,500' and outbound at 4,500', Southbound parallel to your course, consider flying at 6,500' after coming off the target.

b. Nav-3: Be sure to stay clear of the Desoto MOA and R-4401. When exiting the route, if you proceed direct to YARBO you should stay clear of the MOA. Once above 10,000' MSL, you are clear of the MOA. There are many tall towers on the first two legs of Nav-3.

c. Nav-4: The target leg on this route is shared with Nav-1. You should hear on CH 18 if anyone is on the target leg of Nav-1, so remember when you fly Nav-1 that it is important to make that call. 500' of minimum clearance is assumed.

d. Nav-5: The leg from F to G is below the Camden Ridge MOA, be on the lookout for traffic.

e. MXF Checkride: The entry is in Area 2T. Be on the lookout for T-34C traffic.

CHAPTER FOUR - SNFO Formation Syllabus Flights

**The information in this document reflects guidance from the CNATRAINST 1542.155B version of the MNTS and the CTW-6 Formation Stage Manager.*

400. Overview. These procedures are an attempt to standardize our way of flying formation so we produce the best possible students. The more closely we follow standard fleet practices and signals, the better prepared our students will be as they progress to the fleet.

401. The Form Brief

1. This is one of the students' first attempts to run a brief as a professional aviator. One of the best things that they can learn from this experience is how to prepare a professional brief and confidently run the show. Instructors shall review all briefing materials for neatness and accuracy.

2. Students should know the maneuvers cold. Ask specific questions about:

- a. Taxi interval.
- b. Runway line up.
- c. Frequency changes. Which ones are automatic and when/where they will take place. Specifically the switch to and from Tower and any double frequency swaps. Example: leaving the MOA and going to either KBFM or KMVC. Example: "Flight Go common and CTAF".

d. Hand signals

(1) Impress upon the students that Brake Release (Tomahawk chop), and Gear/Flap retraction and extension (head nod) and Lead Change signals are for the pilot only.

(2) Impress upon the students that visual signals are next to impossible to see next to a helmet. Instructors should have students make signals so they can be seen against the open sky in the canopy.

(3) Insist that the students have a plan to execute the signals ensuring that both cockpits are giving the signals simultaneously.

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e. Lost sight procedures and communications. Make sure students verbalize these in the brief and clarify the difference between the exercise and an actual occurrence.

3. Make sure they brief contingencies for weather. Example: Section go vice the running rendezvous.

4. Encourage the students to think along the lines of a Mission Commander. Stress the points of being a good lead. Explain the difficulties of being wing and how eventually being in a division will magnify the difficulties.

5. Discuss the need to be succinct and to combine radio calls when possible. Point out the difference between: "Vader 2 is aborting" and "Vader flight abort."

6. Students have a real tendency to combine the communication and the conduct portions of the brief. Instructors shall ensure students brief the communication batting order before discussing conduct. This should be nothing more than what frequencies they are using and when they will be using them. For example, "...push to ground on channel 3, auto switch to tower on channel 4..."

7. Stress which communications are the student's responsibility and those that are only between pilots. Students may call tac-form turns but the execution is always done on the wing IP's "2" response.

402. Ground Operations. Taxi in trail using the taxi lines while in any tight area like the T-6 line area or on small taxiways like at KMVC. Match lead's example.

403. Takeoff/Climbout

1. Line up per the FTI. Impress proper hand signals here.

a. Wing checks lead over and give a thumbs up when ready.

b. Lead gives the run up signal and each aircraft checks their engine instruments.

c. Wing gives the thumbs up when ready.

d. Lead either chops for a section-go or kisses wing off for the running rendezvous.

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2. On the section-go, lead smoothly pushes power to 90%. Wing will use power as necessary to maintain position. It is ok to initially tap the brakes but do this cautiously. Power is a much more effective way to maintain position.
3. Once in the air, on the section-go, expect the gear retraction signal. Lead should confirm wing is safely climbing away. Gear and flap retract on the head nod motion aft from lead pilot.
4. On the running rendezvous, after safely airborne, lead will limit power to 90 percent until the wing is aboard. Wing will use power and turn radius, when available, to join. Join at the pre-briefed airspeed (160 kts).
5. Lead should, when stable, check wing for a thumbs up for good gear, and engine indications. Return the thumbs up, and give a fuel check. Pass fuels, rounded down to the nearest ten pounds visually between aircraft. Drop the last zero of the fuel quantity passed. Example: 920 passed as 9-2.
6. Lead will either keep wing in parade to drag through clouds or kick him back to cruise.
7. If the weather is insufficient for a section-go, but good enough for MOA work, briefing a join-up point in Area 1 or the Gator MOA and getting separate clearances is an option.

404. Cruise Formation

1. Cruise is primarily an enroute position. Cruise form is NOT an OK for the lead to use aggressive wing inputs unexpectedly. Cruise formation is safer because it requires less attention to maintain position and allows the wingman to have a good look out doctrine. In conjunction, it is more fuel efficient for wing. Since parade turns are comfortably made at approximately 30 degrees AOB, cruise allows the formation greater maneuverability.
2. Cruise allows for flexibility as wing. If being on the left side causes the sun be a problem, move to the right side. If wing sees weather ahead, it is his/her responsibility to "snuggle-up" back into parade position if necessary to prevent going lost sight.
3. In other words--Be a "Smart Wingman." Be sure as wing that the position you are flying is proper for the varying conditions

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of the flight. Wing should attempt to place himself/herself on the opposite side of lead from any contacts that pop up on the TAS or opposite from where traffic is expected. For example: wing in cruise traveling west along the beach south of Area-1 places himself on the south side to clear through lead. Alternatively, if you are entering the initial for RWY 7R at NPA, wing anticipates that it is a right break so he/she should set up on lead's left side and begin closing toward parade so lead only has to look over his/her shoulder and pat wing aboard.

405. Area Work

1. Lead will check into the Gator MOA and establish the flight in a working area.
2. Challenge the students to run the flow of the flight and maintain the boundaries of the working area.
3. Lead should attempt to keep wing from looking directly into the sun to the maximum extent possible.
4. Remember to demonstrate both VMC and IMC parade turns to the students.
5. Lost sight exercise - follow the procedures in the FTI and make special mention of reducing power inside the turn as the wing to ensure nose/tail separation. Have the student practice the radio comms for the lost sight exercise in the brief. This will help them when they execute the comms airborne. Errors are common the first time students attempt the lost sight exercise comm drill, so be ready to jump in and assist/clarify in-flight. Point out to the students the amount of separation achieved and how quickly it happens. This should build confidence in the students for the advantages of admitting lost sight and properly performing the procedures. It is recommended that lead IP call terminate after about 10 seconds. This will put the formation in a nice position to do the G-warm from the combat spread position.
6. Break Up and Rendezvous - If at any time the rendezvous is not under control, an underrun shall be executed in accordance with the FTI. It is highly recommended that both IP's pre-brief which B&R is to be used as the planned-underrun.

406. Tail Chase

1. This is normally done after the break-up and rendezvous to a planned-underrun. This maneuver gives the student the basic concept of what it takes to stay behind another aircraft while dynamically maneuvering. It is intended to give the student a basic appreciation for the effects of lead, lag and pure pursuit on nose-to-tail separation. Challenge your students to keep sight of lead/wing throughout tailchase maneuvering. Resist the urge to demonstrate non-standard maneuvers based on your community background or experience. Stick solely with the maneuvers, positioning and aircraft parameters described in the FTI.

a. Lead can perform maneuvers such as loops, wingovers and barrel rolls. Wing should ensure that he/she does not get closer than 500 feet from lead at any time. Nose-to-tail separation is maintained using lead, lag and pure pursuit.

b. The wingman should try to avoid stagnating at lead's 6 o'clock. Think of the position as more of a cone around lead's 6 o'clock.

c. As lead, begin the loop at no less than 250 KIAS as a technique and target no less than 120 KIAS over-the-top. This will help ensure that wing is not depleted of energy at the top of the maneuver.

d. Initially some instructors may have a hard time maintaining position during tail chase. During dynamic maneuvering when lead maneuvers into the vertical, it is a good rule of thumb for wing to think "lag" going up-hill, "lead" going down-hill. This is because lead will be depleting airspeed sooner than wing when lead maneuvers nose up, thus naturally creating closure. Likewise, lead will be gaining airspeed sooner than wing when lead maneuvers nose down, thus naturally creating separation. Use lead and lag to offset this affect and maintain consistent safe separation. Be mindful that during a loop, wing must wait to start his/her pull up until roughly in same piece of sky as lead began his/her maneuver in order to prevent pulling excessively out in front of lead, ending up nearly abeam at the top of the maneuver.

e. If wing's energy is depleted at any time, he/she is not required to follow lead over the top and can break off level while maintaining sight.

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f. Students should be introduced to the fundamentals of what will eventually be expected of them as a WSO in a fighter aircraft. We can do them a great service by teaching them the proper body positioning for keeping the wing aircraft in sight and by having them call out the wing's clock position while monitoring altitude and airspeed.

g. Instructors are encouraged to demonstrate lead, lag and pure pursuit. Lead should attempt to provide opportunities for wing to maneuver out-of-plane in order to give students a basic appreciation of the three-dimensional aspects of this exercise.

h. A "terminate" will be called when:

(1) Trail aircraft reaches a point forward of the lead aircraft's 3/9 line (abeam).

(2) Either aircraft's airspeed drops below 90 knots.

(3) Briefed joker fuel is reached.

j. A "knock-it-off" will be called when:

(1) Any safety of flight issue is recognized.

(2) Briefed bingo fuel is reached.

2. The sequence is complete when lead or wing calls terminate or knock-it-off. Lead will clear wing to join on him/her and should provide a turn as required to allow wing to expedite the rejoin. Once wing is in parade position, the flight can execute a lead change.

407. Recovery

1. The VFR recovery presents many potential hazards.

2. Wingman courtesy is essential during the recovery.

3. Lead should almost never be at less than 20 percent torque. Lead should normally never be above 90 percent torque unless wing is already in parade.

4. Lead may signal/call for and use speed brakes on very rare occasions when wing is in cruise position but NEVER USE IDLE AND SPEED BRAKES AT THE SAME TIME. In this instance, wing has no

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more energy available to deplete and an unsafe situation involving closure and acute positioning can develop.

5. As previously stated, if the wing is in cruise position, he/she should take the proper side of lead for the break direction. Wing should begin closing on lead to be in a tight cruise position when approaching the 3-mile initial as a technique. Lead should always know the position of his/her wing when approaching the initial. Using mirrors is recommended. Lead should be careful to NOT make any aggressive AOB corrections during this period because it is understood that wing will be tucking it in. Lead should pat wing aboard via hand signal when applicable.

6. As previously stated if the wing is in admin cruise, he should place himself on the proper side of lead for the break direction. Wing should begin closing on lead to be just outside of parade position when approaching the three-mile initial.

7. Leads should always know the position of their wing during this period. Using mirrors is highly recommended. Leads will NOT make any violent maneuvers during this period because it is understood that the wing will be approaching.

8. Leads will **first** attempt to pat the wing aboard. If that is not successful they will execute a mild porpoise, if that is not successful, make a call on the radio.

9. The fan break should be utilized at fields other than NPA when flying up initial at 200 KIAS. When flying up initial at NPA at 250 KIAS the 3-second break provides an easier pattern with better separation between flight mates.

10. One technique is for the lead aircraft to land with takeoff flaps and the wingman to land with landing flaps. This helps keep adequate separation during the landing roll-out in case the wing lands a little fast and/or long.

11. For section approaches, remember the weather requirements are either non-precision circling mins or, if none are published, 1000-3.

408. Recovery Techniques

1. F5001 usually requires more flight time to complete than F5002. Therefore, it is often easier to fit both section approaches in on F5002. Try to show each pair of students a

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lead low approach/wing touch and go and a section full stop (section drag). DO NOT execute a section drag to a touch-and-go to rejoin in compliance with OPNAVINST 3710 series. Rejoin only after the lead low approach, wing touch-and-go and plan a 160 KIAS rejoin.

2. Make lead changes on the downwind leg of each approach when able. Be sure the new lead has the transponder and TAS on before new wing turns his off (technique - new wing waits to receive a TAS hit from new lead's transponder before turning off his/her own squawk and TAS.

3. Ensure students plan ahead to make it easier for the section to slow together and take BAC. As wing IP, focus on smooth airwork throughout the configuration change and resist the urge to overcorrect.

4. If the section is a full-stop (section drag), realize the 2 miles in the FTI is from the runway threshold and not from the TACAN. As lead, be conservative if necessary and ensure you kiss off wing with enough distance from the runway to affect adequate separation. Wing should select landing flaps and slow to 100 KIAS, while lead flies 120 until short final. As a technique, if it looks like separation will be minimal, lead may elect to keep his speed up to roughly 140 KIAS until short final. If in doubt as to whether adequate separation exists (1500'), wing may execute a waveoff and enter the tower pattern when necessary.

5. If lead needs to cross in front of wing on landing roll-out to exit the runway, lead will wait for wing to call "Vader-2 Slow". Wing will call "slow" when he/she has confirmed adequate separation exists and there is no longer any chance of collision with lead. Be patient as lead during these procedures.

6. At airfields where the runway is narrow (79 ft wide at 1R8, 100 ft wide at KMVC and KJKA), brief your recovery game plan in detail with a focus on safety. At these airfields, it is recommended that lead plan on taking it to the end of the runway during roll-out. Once wing calls "slow", both aircraft make a U-turn on the runway with adequate separation and back taxi to the exit taxiway with lead taxiing behind wing. Lead make the "back taxi" and "clear of the runway" calls on CTAF. Upon landing, resist the urge as lead to stop and wait for wing before a mid-field taxiway at an airfield with a narrow runway. As wing, waveoff if necessary or if not an option, trust that if you maintain the center of your side of the runway and lead

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maintains the center of his/her side, then you will have adequate wing-tip separation to overtake lead, worst case scenario.

409. Wingman Consideration

1. Being a good lead fundamentally starts with SA of the wing's position, requirements and energy state. A good lead makes life easier for wing. Lead must always realize that wing needs a power advantage over him. A lead who uses less than 20% torque or greater than 90% torque is usually making things difficult for wing. A lead should also not fly at high power settings, like cruising at 250 KIAS and then pull power and descend at anything less than 20% torque. This will result in wing going acute without any way to make a sufficient power correction to fix.

2. Leads should expect wing to close up into tight cruise position as you are approaching the initial for the overhead (Note: as wing, do not go to parade until cleared unless briefed otherwise).

3. In conclusion, being a good lead primarily involves the effective care and feeding of your wingman. Usually if wing thought that the flight or the maneuver was easy, it was because you were being a good and considerate lead.

410. Emergency Procedures

1. Anytime an emergency is encountered, continue to ensure deconfliction and let the other aircraft know of the situation. This should primarily be done over the radios, and, if maneuvering, should be in the form of a "terminate" or "knock-it-off" call.

2. The aircraft experiencing the emergency should be offered the lead when they first announce the problem. It is then the hurt bird's choice whether they want to remain a section (lead or wing) or split the flight into singles for recovery. During a NORDO situation, the aircraft with good radios should take lead, make appropriate advisory calls to ATC and recover via course rules (if available). If course rules are not available, plan on a section approach. Out of the break, wing is cleared to land after lead does a touch-and-go. If lead waves off, wing should also wave off.

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3. When formed up on an emergency aircraft, fly cruise position in anticipation of potentially rough airwork by lead. Follow along with checklists and procedures and be able to assist whenever the emergency aircraft requires it. Your goal is to aid in any way possible and not to be a hindrance or an additional task to the emergency aircrew. Watch for abnormalities and advise of excessive nose down attitude, navigating in the wrong direction, excessively slow airspeed, etc. Do not jump in the other aircraft's cockpit, but be aware of task-loading and assist as required.

4. As the emergency aircraft, maintain separation, comply with NATOPS and take lead or split into singles as desired. Utilize wing for any support required i.e. visual checks, reading of checklists, nearest suitable field information, etc.

5. Once you have a gameplan, let your wingman know your intentions.

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CHAPTER FIVE - Cross-Country Flights

500. Overview

1. Purpose. Cross-country trips are one of the best deals we have here in TW-6. They are a great opportunity to take students who have worked hard and introduce some 'real world' experience to go with their FTI/FWOP knowledge. They are rewarding for both the SNFO and IP. With that said; **CCXs are a PRIVILEGE and NOT a right of either the SNFO or IP.**

2. Scope. This is not meant to be an all-encompassing set of rules, nor is it meant to take away an IP's ability to think and act for him or herself while on the road.

3. Seeking advice. Newer IPs are encouraged to seek out and use the wealth of experience available from more senior IPs that have done several trips to various destinations. Remember, that while on these trips, the IP is not just a flight instructor but also a Mission Commander! The IP's responsibility does not stop when the engine is secured at the end of the day. There are several aspects of planning other than simply flying the 'X' that must be considered and will be addressed in the following pages.

501. Planning the Cross Country

1. Planning ahead. The best way to make sure both the IP and the SNFO get the most out of a CCX while enjoying the chance to frequent the destination of choice is to plan ahead as much as possible. The further ahead of time one makes reservations, PPR #'s, and other such arrangements the better. The groundwork for planning starts with finding a student.

2. Quality is the priority. A cross-country, while fun for the IP, may not be in every SNFO's best interest in the end. Second only to SAFETY, our priority is QUALITY training! For some SNFOs, these flights will need to occur in the local area. See the squadron Ops department for specifics.

502. The Destination

1. General. It is incumbent upon both the IP and SNFO to approach destination selection with an attitude of flexibility. Ultimate discretion for the destination does lie with the IP; however, every effort should be made to select a location agreeable to the SNFO as well.

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2. Military fields. Destinations fall into either one of two categories: military or civilian facilities. Military facilities are easy to plan for in regards to our security requirements. They can however be tricky in most other areas. While we can be confident that a military facility will have the required fuel and it is legal to purchase, be sure to call ahead to verify that it will be available while there (especially if arriving or departing on a weekend). It is recommended that one get gas as soon as possible after landing to ensure one does not have a long wait when trying to depart ahead of inclement weather or when everyone else is in line for it at the end of a busy weekend. (Exception: if over-wing fueling is required, do not fuel the aircraft until shortly before departure) More advance planning is required for the PPR #, and occasionally there will be military airports that have tight quotas for them. A prime example is NAS Key West. It is recommended to investigate obtaining a PPR there no later than two weeks PRIOR to intended arrival date for this location. In any case, when calling for a PPR, one will not yet have one's aircraft assigned. When a student calls for a PPR, have him or her give the instructors name and use the CDO/FDO phone number if asked to provide home base contact information. If asked for the purpose of the visit, all that needs to be said is "training" and inform them the crew will be on official orders.

3. Other issues. Other issues that can cause difficulty if not properly investigated are field hours, quiet hours, exercise windows that may be active, as well as surrounding airspace (ex. Andrews AFB) restrictions. The IFR Supplement and the AP-1 are useful when researching any of these things. A snag that can be commonly encountered at Air Force facilities is that field hours can be different from hours of availability for transient line services. Air Force bases use civilian contractors to handle all transient aircraft line needs (including fueling), and they often go home (due to contractual requirements) ½ - one full hour prior to the tower shutting down. If the base is continuously operated, then it is very likely that transient line services are only available during a portion of each 24-hour period. When making the PPR request with base ops, be sure to ask about this so as not to get an unpleasant surprise when there is nobody to assist with parking upon arrival. For the benefit of CNATRA, if one makes a PPR and needs to cancel or change times, please call ahead and let the destination know as soon as it is realized. There is no penalty for canceling and no set advance requirement for doing so, even if it is as one is walking from the previous FBO/base ops to the aircraft for the

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next 'X'. Doing so will help to ensure all Training Air Wing SIX units are positively received and regarded in the most professional manner possible in the future. The use of military facilities does have its advantages. The advantages are: usually (except Key West) closer proximity to quarters, the BOQ rooms are reimbursable, 99% of them meet security requirements, and the possibility exists of a PAR being available.

4. Civilian Fields. The advantages to using a civilian facility are numerous. First and foremost, there is usually a lot less advance planning required, and very rarely a requirement for a PPR. The other advantages are: when arriving one is treated like a paying customer and as such experience much faster service, in most cases even when the tower closes landing is still an option if one is running late, FBOs in many locations are open 24 hours/day, closer proximity to cities and points of interest, the FBOs usually have very nice lounges and facilities for general use (including internet access and fax machines), much easier access to courtesy cars for crew use to grab a meal, and much easier to be picked up by civilian family members and friends. As a matter of both safety and courtesy to those around the T-6 when operating at an FBO, DO NOT conduct the engine run-up checklist while still on the FBO ramp. There are plenty of spots including the hold short where this and the takeoff checklist can be accomplished. Do **NOT** set the poor example in front of the student by conducting rolling ground run-up or takeoff checklists. Civilian airports also have disadvantages. On some civilian airports there is more than one FBO making it easy to park at the wrong one since there is only one allowed to offer the contract fuel at each airport. If in doubt, call the FBO number listed in the IFR Supplement. Another more current resource is the website http://www.airseacard.com/cgi-bin/fbo_locate. The IFR supp is only updated every eight weeks, whereas the website is updated continuously. Another disadvantage is that NOT all civilian airports offer the security we require for an RON. The security requirements for parking overnight are:

a. A continuous fence/wall preventing general access to the ramp/airfield area.

b. Controlled access points that are continuously monitored 24/7. (An FBO is a good example of a controlled entry point with continuous monitoring/security). Common sense applies; in other words, the white picket or rail type fence (such as the fence at Monroeville, KMVC) that surrounds many of the more rural or county airports does not cut it! The above

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requirements for security do not apply for a gas and go, but only to overnight parking.

5. Billeting. The last major destination consideration is billeting. As stated earlier, BOQ/VOQ rooms are reimbursable via travel claim upon return to NPA. If the IP and/or the student elect to stay at a hotel out in town, a Certificate of Non-Availability (CNA) should be obtained, and the hotel rate must not exceed the authorized per-diem rate. Obviously staying with friends or family or a student's friends/family is a great idea; just do not leave the student hanging at a hotel by him or herself while having a good time. If one does not have family or friends in the area, then it is perfectly acceptable to stay with a student's family/friends. There are several ways to obtain BOQ rooms or other authorized (read that to mean reimbursable) accommodations. Phone numbers may be looked up for each base's facilities individually on the internet or some central reservations #'s are listed below.

a. SATO Navy Central Housing reservation Desk:
1-800-576-9327

b. Navy Inns: 1-800-628-9466

c. Air Force BOQ Hotline: 1-888-235-6343

d. U.S. Army Central Reservations: 1-800-462-7691 or
1-866-363-5771

503. The Route of Flight

1. Flexibility is imperative when planning on where to stop along the way to the final destination. The IP needs to work with the student to make sure all of the stops they pick out will meet the needs. Two of the most important needs are fuel and approaches. This document will examine these as well as a few others.

504. Fuel

1. Contract Fuel. See the website listed in the 'Destination' section. This will provide the most up-to-date information about which civilian facilities carry the contract for jet fuel. Make sure to ask for PRIST premixed. Locations that handle T-6s regularly will know this, however, if T-6s are an infrequent visitor to the chosen stop, be sure to hang around for a few

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minutes to make sure the line person does not have any questions.

2. www.airnav.com is a great planning website. Not only will it give the distance between stops, but it will list all the FBOs at a particular airport. If the crew does not have an IFR Supp with them then they can use the internet and call the FBO to inquire if they have contract fuel.

3. Special Military Cases. If choosing to get gas at a Guard or Reserve unit, be 100% sure that they will be there upon arrival. In some cases, they will have an unpublished UHF frequency the crew can call inbound on or it will be listed in the IFR Supp. The safest bet is to get the name of someone that can be coordinated with at that unit. Make sure to show up as scheduled and call prior to leaving the last stop to make sure everything is still on track.

4. Air Force Bases. If at an Air Force base, be careful on the flight line. At some of these bases, there is a red line surrounding the ramp area. At spread out intervals, one will see a red and white hashed area. That is the ONLY option for entering or leaving the ramp. Even if it may be much more convenient, DO NOT CROSS THE RED LINE!

505. Filing

1. General. IPs are all familiar with how to file at a military destination through base ops. One requirement, however, is to get the student up to speed on calling FSS and filing with a civilian briefer. The number is 1-800-WX-BRIEF (1-800-992-7433). Always file /G in the 'aircraft type/special equipment' block enabling ATC to give a direct clearance when able. The following is a link to the civilian flight plan or there is one in the appendix of this booklet:
<http://forms.faa.gov/forms/faa7233-1.pdf>

2. Filing with FSS to a military airfield. If filing with FSS to a military field, even if just going there to shoot approaches enroute to somewhere else, FSS will need to send a message to that field's base ops. FSS can do this when activating, but they will need the departure time and estimated time of arrival in the military terminal area. (A PPR is not required to conduct practice approaches at a military field if it is not the filed destination for that leg.) If the military airfield is the destination, the message will be sent automatically upon activation of the flight plan after

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departure. In order for the military facility to receive the flight notification message (unlike when we file to civilian fields), activation of IFR flight plans with FSS is also required. Filing a DD-175 will ensure that this is accomplished.

3. Closing out a flight plan. For all events terminating at an uncontrolled field, the IP will need to ensure the flight plan is closed either on the radio before landing or by using a phone after safe on deck.

4. Alternates. CNATRA requires an alternate for all flights regardless of type or weather.

506. Flight Planning

1. Some other reasonable and very commonly used first stops for those looking to front-load approaches (in addition to those discussed earlier) are:

| <u>Heading</u> | <u>Stop at:</u> |
|----------------|---|
| East | Tallahassee Regional (KTLH) Panama City- Bay County (KPFN) |
| Northeast | Macon-Middle Georgia Regional (KMCN) |
| North | Tuscaloosa, AL (KTCL) |
| Northwest | Meridian, MS (KMEI - not NAS Meridian) Jackson, MS (KJAN) |
| West | Hammond, LA (KHDC) New Iberia, LA (Acadiana -KARA) |

507. Practice Approaches. Make sure to choose wisely when accomplishing practice approaches and do not choose somewhere very busy where ATC will not be accommodating or be able to devote the quality time to the student! If plans change on the road, whether it is due to the student, weather, or something else, keep the squadron informed. Call the duty desk *every time upon landing*, once safe on deck for the night, and if plans change (this could be the route of flight, final destination, or both).

508. The Weather

1. General. The weather is one area where we have absolutely no control. It forces us to be flexible and accept not being able to head very far North in the winter months. Do not ever push the weather in the T-6!

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2. Weather Sources. Navy Wx in Norfolk is available 24/7 and will accept requests over the phone. This is especially handy on the road as one can call them anytime and they will be able to fax a brief to whatever FBO or base Ops where the crew is located. (1-888-745-6899).

3. Other Weather Sources. If staying at a Navy or Air Force base, one can make use of their weather office if it is open. Last resort is to request a "standard" briefing from an FSS briefer. It is recommended to pre-brief with one of the websites BEFORE talking to the briefer to make what he/she says a lot more understandable. Since most of each day will be spent flying, one will need to update weather at each stop. The best website to do this is <http://adds.aviationweather.gov>.

4. Last Words. If one is doubtful of the chances to make the destination, it is probably time to come up with a new plan. There is a reason Key West is the most popular destination from November to March. Do not ever push it or underestimate Mother Nature when it comes to the weather.

509. Troubled Students. Should the IP feel the need to UNSAT a student on the first hop, it is much easier to return to NPA from Acadiana or Huntsville than places more distant. If the student does UNSAT then it is usually required that the crews fly back from wherever they are currently located and the CCX is over. The IP should not award an UNSAT, complete a thorough debrief and press onward.

510. Good to Know Information. Listed below are several 'good to know' numbers and websites one may want to write down and take on the road.

1. Useful Websites:

a. NOTAMS Websites:

(1) <https://www.notams.faa.gov/>

(2) <https://www.notams.jcs.mil>

b. TFR Websites:

(1) <http://tfr.faa.gov/tfr2/list.html> or

(2) http://tfr.faa.gov/tfr_map_ims/html/index.html

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c. Domestic Contract Fuel Sites:
https://www.airseacard.com/cgi-bin/airsea_website/fbo_locator.cgi

d. Other flight planning websites:

(1) <http://www.baseops.net/>

(2) <http://www.airnav.com>

(3) <http://adds.aviationweather.gov>

2. Departure Checklist:

a. Check Flight Planning complete

b. Check Weather checked/Brief requested

c. Check Orders (squadron admin)

d. Check NOTAMS

e. Check TFRs

f. Check Fuel Packet

g. Check Pubs (make sure there is everything needed and that neither the pubs nor the GPS database will expire while on the road.)

h. Check Blank Forms (FAA Flight Plan, CCX Log)

j. Check Flight Gear (Not going to expire while on road)

k. Check MNTS Book (if not familiar with it from memory)

Intermediate Jet



Flight Instructor Guide

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CHAPTER 1 - T-39 INTERMEDIATE FLIGHT INSTRUCTOR GUIDE

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100. OBJECTIVE. This instruction provides standardized guidance to T-39 Instructors on effective methods of maximizing student training in the eight flights of the Intermediate Jet curriculum. This Flight Instructor Guide is intended to provide initial course guidance to new instructors and helpful techniques and refreshers to current instructors. It summarizes the high points of the Master Curriculum Guide (MCG) and incorporates the previously-named Standards of Conduct.

101. REFERENCES. The following references may prove useful to new and experienced instructors alike:

1. CNATRINST 1542.157B (Intermediate Jet NFO MCG)
2. CNATRINST 1500.4G (Training and Administration Manual)
3. COMDRAWINGSIXINST 3710.1 Series (Wing SOP)
4. VT-10 Squadron SOP
5. COMDRAWINGSIXINST 3710.17 Series (Wing In-flight Guide)
6. COMDRAWINGSIXINST 3740.2 Series (Wing Flight Instructor/Standardization and Training [FIST] Program)
7. NAVAIR 01-60GBE-1 CH. 2/8 (T-39 NATOPS FLIGHT MANUAL - Autopilot and Flight Characteristics)
8. All of the student Flight Training Instructions (FTIs) can be accessed here:

https://www.cnatra.navy.mil/pubs/ppub_nfo_snfo.htm

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102. TRAINING PHILOSOPHY. The Intermediate Jet curriculum serves as a critical training bridge between the T-6 and the Advanced stage of training - we are the "prep school" for VT-86 and VAW-120. We have eight flights to introduce or reinforce critical concepts like CRM, comm brevity, TACAN navigation, HI-altitude approaches, the 500'AGL low-level environment, and faster cruising speeds in a more complex aircraft. As such, we must maximize every available training opportunity, and we should challenge every student on every sortie to the peak of his or her "stress curve".

103. INSTRUCTOR-UNDER-TRAINING (IUT) PROGRAM. The squadron IUT managers will direct the overall flow for new T-39 instructors. The following paragraphs offer a general overview of what to expect.

1. Summary of Preflight Events. Prior to flight, a number of ground events will need to be accomplished. Your squadron should provide a syllabus summary describing all of the requirements, and your IUT Training Manager will schedule you for classes and let you know when and where they are.

a. These classes include:

(1) **Physiology/Swim Air Crew Refresher** (ARC-4/ARCR-4); this training is usually conducted once per month, and can be scheduled by calling 452-2688. If you have any desire to fly T-6s in the squadron as well, tell the swim/phys instructors so that you can get the N6/T6 and Class 1 quals as well for T-6 flying.

(2) **Instrument Ground School** (IGS), which is usually followed by **Crew Resource Management** (CRM). This is normally held the second and fourth Thursday of each month at 0745 in Griffith Hall.

(3) **Flight Instructor Training Course** (FITC), which is required before flying with students. It is a three day course at Griffith Hall, usually beginning on Monday at 0800. Uniform is flight suits. Your training plan should be built around FITC as it is offered at once per month. FITC Contact info: CTW-6 GTO, 452-8332.

(4) **T-39 Ground School**; typically starts every other Tuesday. Includes systems, flight prep, and VNAV.

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b. In addition to these classes, there are a series of tests that must be completed, to include the following:

(1) 4 academic tests to complete at Griffith Hall before flight

(2) Course Rules Exam (from Squadron)

(3) Ops Limits/Boldface Test (from Squadron)

(4) INAV and VNAV Stan Exams (from Squadron)

(5) Open and Closed Book NATOPS exams (to be completed before NATOPS check flight)

c. Prior to your first flight you will do a "FAM-0," where you will go out to a plane with an instructor and go through checklists step-by-step.

d. As soon as you meet the requirements (current upchit, swim/phys, and T-39 egress training), you can go on observer flights to hear the pacing and conduct of the checklists and procedures. These are highly recommended and greatly beneficial.

2. IUT Syllabus Flights. Your first two flights in the jet will be "familiarization" flights. You will sit in the right seat and run the checklists and radios. Generally, you will fly a local stereo route (NPA-851) which takes you to the PNS-South MOA (Gator) for unusual attitudes, stall recoveries, other demo items, and some autopilot familiarization. From the MOA, expect to go to Mobile Regional for some autopilot-coupled ILS approaches, then back to NPA for course rules. During your brief at the squadron, you and your instructor will discuss standard T-39 ops, review some systems, and discuss the flight profile. For the T-39, reference Chapters 2 and 8 of the T-39 NATOPS Manual for description of T-39 autopilot and flight characteristics. Review these chapters thoroughly prior to your flights. You will also be working with the autopilot on these flights, so at a minimum, you will want to familiarize yourself with the autopilot controls and indicators in the aircraft. Specifics for operation are more easily understood in practice than reading the NATOPS, so your VERTEX pilot and instructor will explain and talk you through autopilot operations.

3. After your two Fam flights, you will fly right-seat student profile sorties, in which you go through all of the same

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procedures that the students are expected to do (checklists, comms, navigation, fuels, timing, etc.). After you finish your end-of-block (EOB) flight, you are eligible to start your jump seat rides (provided FITC has been completed). As much as possible, your first jump seat ride in a block will be paired with a student EOB, your 2nd with a middle-of-the-block, and your 3rd (which is your stan check) will be on a student's first flight in that block. Your NATOPS check will be accomplished towards the end of your flight syllabus, and could be before or after your stan checks, depending on student availability. The NATOPS check will follow the same profile as your Fam flights.

4. Completion of IUT Syllabus. After all syllabus events are accomplished, your IUT manager will go through your training jacket and logbook and bring them over to the Wing along with your IUT critique. Your instructor letter will be sent to the CO, who will also want to have a meeting with you before sending you off to educate eager young flight students. You will not be allowed to instruct students until your instructor letter has been signed and is on file. However, you will still be able to fly on observer hops - again, these are highly recommended. For your early instructor flights, you will be flying with a qualified Mission Commander, so feel free to ask questions or get his or her opinion on anything.

104. TRAINING ADMIN.

1. Grading. See paragraph 10, chapter I of the MCG. According to the MCG, grading of student events is on an "absolute grading scale" with reference to the Course Training Standards (CTS). Familiarity with the CTS at the back of the MCG is therefore essential. Students must achieve MIF in every category by the end-of-block flights and the checkride. For intermediate jet events, MIF is always a grade of 4 (Good).

a. This absolute grading scale is NOT the same system (i.e. "average", "above average", "below average") that most instructors likely experienced going through training as a student. Each maneuver is graded against the course training standards and then given a grade. The following definitions explain each grade, taken directly from the Master Curriculum Guide, pages I-11,12:

(1) Demonstrated (No Grade): When instructor demonstrates the item (such as the flight brief on I5101).

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(2) Unable (U/2): Performance is unsafe or lacks sufficient knowledge, skill or ability. Deviations greatly exceed CTS, significantly disrupting performance.

(3) Fair (F/3): Performance is safe, but with **limited proficiency**. Deviations exceed CTS, **detracting from performance**. Corrections **noticeably lag** deviations, and may not be appropriate.

(4) Good (G/4): Characteristic performance is within CTS. Deviations outside CTS are allowed, provided they are **brief, minor, and do not affect safety of flight**. Corrections must be **appropriate and timely**.

(5) Excellent (E/5): Greatly surpasses CTS. Performance is correct, efficient, and skillful. Deviations are very minor. Corrections, if required, are initiated by the student and are appropriate, smooth, and rapid.

b. Therefore, after a first flight in a stage, you will find that many maneuver items were performed with limited proficiency. These should be graded Fair (3). Remember, grading something as Fair is NOT the same as grading it "below average" in the old system. Grade according to the CTS. Nevertheless, bear this in mind: although the grading scale is absolute, some degree of subjectivity is always involved in the grading process. The goal is to grade as objectively as possible in accordance with the CTS, while applying common-sense filters to the real-world circumstances of the event.

c. For overall grades, the event should be a "pass" if progress is on track to meet MIF by the end-of-block (EOB). "Marginal" indicates that student potential to reach MIF by EOB is questionable. "Unsatisfactory" grades should be given when student progress is insufficient to reach MIF by EOB. Realize that an Unsatisfactory flight (before EOB) will not result in a student re-fly. On an EOB flight, any category below MIF automatically renders the flight "Unsatisfactory", and a re-fly will be required before going to the checkride. See page I-12 of the MCG for the official language.

2. Regression. The "Regression Rules" in the MCG do not apply to the Intermediate jet syllabus due to the flow of events and grades in the curriculum. This simplifies the grading process for us significantly.

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3. Warm-ups. Instructors need to pay attention to the warm-up requirements per the MCG. Warm-ups are based on the number of days in between flights of the **same stage**. In the T-39 syllabi, INAV and VNAV are different stages. Therefore, if a student flies his I5101 on day 1, then flies his three VNAV sorties, and gets scheduled for his I5102 on day eight, that is a seven-day break in the INAV stage and the student is eligible for an optional warm-up. If the warm-up flight is a "pass," it counts as a progressing X. If the flight was marginal or unsatisfactory, it counts as a warmup. See pages I-7 and I-8 in the MCG for official guidance.

105. GENERAL MISSION PLANNING GUIDANCE.

1. Route Selection. For instrument sorties, newer instructors may lean on using NPA stereo routes since it ensures adherence to planned flight times and easier flight planning. However, instructors are encouraged to come up with new routes for both proficiency and to broaden exposure to flying in different airspaces. Here are some pointers to help new instructors generate a good plan for INAV flights.

2. Standard routing. The following guidelines are preferred routing for departing and arriving into Pensacola:

a. Standard departure routing to the west will flow through TEEZY (NPA 241/22) TRADR (NPA 264/37).

b. If departing to the North or East, you will file for JAYDI (NPA 095/15) INBRD (CEW 263/17).

c. Arrivals from the north will normally flow through INBRD JAYDI MARYS (NPA 180/11, Alternate IAF for all HI TACAN's). Prior to that, PNS approach may clear you direct to the IAF if you are executing a High TACAN approach.

d. Arrivals from the west can expect an enroute descent through TRADR, usually hitting TRADR at either 9000 ft or 7000 ft. If you want the high penetration, file through INBRD JAYDI MARYS (HI TACAN IAF).

106. EVENT PROFILES.

1. I0201 (FAM-0). The Fam-0 is a critical event that sets the stage for student success or failure in the remainder of the syllabus. If you are scheduled to do a Fam-0, take the event seriously and take advantage of the opportunity to set up your

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students for success. Items to cover on the Fam-0: Complete walk around procedures (to include proper pacing), an egress briefing before powering up the aircraft, cockpit inspection, and all of the standard checklists. For the egress brief, discuss how to egress the jet and the location of emergency items: fire extinguishers, raft, EEEDs, EPOS, LPUs, etc. The egress brief should be annotated on the ATF grade sheet. In addition, take the time to demonstrate a full inspection of the Oxygen masks.

a. Powering up the T-39 for the Fam-0: T-39 Maintenance will be very helpful if given some advance notice. They will connect the GPU and set up electrical power on the jet. If it is hot outside, they can also put the air conditioning on for you and you can close the hatch while doing the walkaround to cool the cabin.

- (1) GPU - Connected
- (2) Electrical Master - On/Guarded
- (3) Battery - On
- (4) Generators - On (28 volts)
- (5) Inverter - Main/No. 1
- (6) Aux Air Conditioning - As Required

c. Students must sit in the right seat at some point during the FAM-0. Switching out students half way is acceptable. Show students how to adjust the seat, a full preflight of the O2 mask, strap in, adjust radio volume(s), set up their nest, how to use the radios and EHSI usage. Review all of the normal checklists, giving particular attention to the checklist items that normally give students problems during the first few flights. Before leaving the aircraft, make sure to perform the "After Clearing Runway" and "Engine Shutdown" checklists.

2. I5101. This is the student's first flight in a jet aircraft, and they will likely be holding on for dear life. Without a simulator, it is difficult for the students to achieve any degree of realism in their ground school training. Expect to demo and show the student all the basics throughout the flight. Their knowledge of systems and procedures should be high (there is no excuse for being ill-prepared), but their

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execution may well be faltering since they have not had a simulator in which to prepare.

a. MCG Requirements:

- (1) Instructor shall demonstrate the brief.
- (2) All items are mandatory to be MIF by end-of-block.

b. Standard Profile: Round-robin to/from NPA with no enroute delay. Routing should include a variety of jet routes, direct to station, and point-to-points, concluded with HI-TCN at NPA. Plan for 2.0 hour sortie.

c. Mission planning: The NPA-150 flight plan is recommended. Students have already planned the route from jet ground school, so they can spend more time studying procedures and less time mission planning. The route has long route segments to reinforce procedures, and includes a jet route, direct to station, and point-to-points. Flight time to complete route is usually a 2.0 or 2.1.

(1) Other options: For a slightly shorter route than the NPA-150 (1.8 or 1.9 flight time), some instructors opt for the following: TEEZY TRADR MCB JAN IGB090030 MGM INBRD JAYDI MARYS NPA

(2) Going east, you can go to Jacksonville and back in two hours. Here are easterly routes: JAYDI INBRD J2 SZW VAD300030 MCN LCG170030 MGM INBRD JAYDI MARYS or JAYDI INBRD J2 SZW CTY CRG TAY J2 CEW INBRD JAYDI MARYS

(3) Going north, you can go just north of Chattanooga and back within two hours including a HI TACAN approach back to NPA.

d. Brief: Consider starting the brief 15 minutes early (1+45 prior to walk, 2+30 prior to takeoff). There is a lot of material to cover, and it helps to have 10-15 minutes after the brief to get an updated weather brief, make changes to the plan, and catch your breath before walking to the jet.

(1) Instructors will demo the brief, to include the board brief. The students need to see a professional, polished board brief to establish expectations for the remainder of the syllabus. During the mission brief, ask plenty of questions to ensure the level of general knowledge is high.

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(2) Key items to quiz and discuss during your brief:

(a) Abnormal starts

(b) Emergency Ground Egress procedures

(c) T-39 student response checklist items

(d) Takeoff sequence calls and prioritization
(chairfly sequence and instrument scan with cockpit poster)

(f) Crew Coordination and CRM (comm brevity on the radio, comm brevity with the pilot, don't think out loud, etc.)

e. Flight: Expect to provide plenty of instruction on this first sortie. Try to find a balance between keeping the students on a short leash, while still giving them some room to make mistakes and self-correct. Try to plan for a long leg during which to give the student a simulated EP that requires donning the oxygen mask.

(1) Common student errors:

(a) Excessive communication, both in the cockpit and on the radio

(b) Departure sequence (poor prioritization of key tasks)

(c) Checklist usage and prioritization

(d) Slow scan

(e) Well behind the aircraft on HI-TACAN approach

f. Debrief: The flight debrief can be conducted however you as the instructor see fit. For this first flight, consider the following techniques:

(1) For this sortie, less is more. The student has probably been fairly overwhelmed and task saturated for the past few hours, so another 1+30 of debrief might be counter-productive. Try to keep it to 20-30 minutes.

(2) Make sure the student takes notes. He probably isn't listening very well at that point, but his notes can refresh him later on the wisdom you impart.

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(3) Go through the flight chronologically, from mission planning through the brief all the way to engine shutdown. Hit the high points of where the student did well and which areas need the most work. Be specific and provide concrete examples.

(4) Debrief your CRM by discussing how well you all worked together as a crew. As part of this discussion, ask for feedback on your CRM as an instructor. For example, you could ask, "Did any of my in-flight instruction today further confuse you instead of help you?" Debrief yourself on the times when you might have been talking too much and distracted from good prioritization and mission accomplishment. Set the example that flight debriefs are a time to be candid, honest, and humble.

(5) Since the student will conduct the brief on their next sortie, teach the student how best to use the briefing guide for effective mission briefs.

3. I5102. Most likely the student's second or third flight in the airplane. There should be improvement from the I5101, but cockpit familiarity and procedural proficiency may still be limited. Give the students a little more rope than you did on the I5101, allowing them space to make, identify, and correct their mistakes.

a. MCG Requirements: None

b. Standard profile: Round-robin, cross-country, or out-and-in sortie; should include enroute delay, concluded by HI-TCN back at NPA (or as required at alternate destination).

c. Mission Planning: Combine roughly 1.4 hours (or 500 miles) in the high altitude structure with an enroute delay to achieve an overall 2.0 hour sortie (with an instrument approach at your destination). See Appendix for suggested destinations if scheduled for an out-and-in.

(1) Common airfields for enroute delays:

(a) MEI (Meridian)

(b) MGM (Montgomery)

(c) NBG (New Orleans NAS)

(d) GPT (Gulfport)

(e) TLH (Tallahassee)

(f) GNV (Gainesville)

(g) BHM (Birmingham)

(h) TCL (Tuscaloosa)

d. Recommendations:

(1) Conduct HI approach during enroute delay to maximize exposure (since these are rarely, if ever, done in the T-6).

(2) For a weaker student, consider planning the enroute delay in the latter half of the sortie profile, giving sufficient time to establish ANAV pacing on the first half of the route.

(3) If planning on an enroute delay, discuss go-around procedures in the brief.

(4) For a strong student having no trouble with standard procedures, introduce in-flight change to routing. Coordinate with ATC for unplanned point-to-point(s), challenge student to recalculate ETAs and EFR at the IAF.

4. I5103. This is the "approach hop" with emphasis on pacing in the terminal environment. The keys to success are task prioritization and staying ahead of the aircraft. We focus less on the turnpoint procedures due to the dynamic up-and-down nature of the flight profile. It could be the student's third flight, or it could be his sixth (or anywhere in between). Either way, be prepared to help the student stay out in front of the jet.

a. MCG Requirements: none

b. Standard Profile: Round-robin, cross-country, or out-and-in sortie, with two enroute delays, concluded by an instrument approach at destination. See Appendix for suggested destinations if scheduled for an out-and-in.

c. Mission Planning: Common profiles include the following:

(1) NBG - GPT - NPA

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(2) MEI - GPT - NPA (or GPT - MEI - NPA)

(3) MEI - MGM - NPA (or MGM - MEI - NPA)

(4) BHM - MGM - NPA (or MGM - BHM - NPA)

d. Recommendations:

(1) In the brief, discuss abbreviated turnpoint procedures (as covered in the Flight Prep FTI) and where you expect to do them on that day's flight.

a. Delete the ETA portion of the 2-minute prior call.

b. Delete the IAF EFR from the WL call.

c. WL fuel will consist of a comparison of actual fuel remaining to the estimated fuel remaining on the winded Jet Card (+- preflight).

(2) Brief the flight chronologically and in-depth. Make sure the student has a gameplan for every required procedure (e.g., when to get ATIS and on what frequency).

(3) Include a mix of approach types for the enroute delays. Recommend one in the LO environment, the other a HI approach. Introduce an ILS if available and feasible.

5. I5104.

a. MCG Requirements: All items must meet MIF on this end-of-block sortie.

b. Standard Profile:

(1) Sortie can be flown as a round-robin, cross-country, or out-and-in sortie; should include enroute delay, concluded by HI-TCN back at NPA (or as required at alternate destination). See Appendix for suggested destinations if scheduled for an out-and-in.

(2) **Show-and-go mission planning profile:** When feasible, instructors should meet with (or call) students 1+00 prior to published brief time to direct flight profile for the day. Students will then accomplish all mission planning requirements in the 1+00 available prior to the brief. Standards remain unchanged.

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(3) Schedulers should attempt to schedule I5104 flights in the second or third go (if possible) to prevent this timeline from pushing too early in the duty day.

(4) Instructors should abide by this show-and-go profile to the max extent possible, though it is not a requirement when circumstances (i.e. 0530 brief) make it unrealistic to do so.

(5) Instructors should make flight profile different from student's previous flights, to include enroute delay at an airfield not used on the I5102 or I5103 (if possible).

c. Recommendations:

(1) Include in-flight change to routing, if feasible. Have students recalculate ETAs and EFR at the IAF (conditions permitting).

(2) Give simulated EP in flight, and talk through appropriate procedures and follow-on considerations for safe recovery.

6. N5401.

a. MCG Requirements: "The instructor shall demonstrate the low-level portion of the briefing and the first leg of the low-level, beginning with FSS call through the wings-level call after the second turnpoint."

b. Standard Profile: NPA-520 (single student) or NPA-500 (double low-level) on the VR-1020, A - E. As stated in the MCG, instructor will assist with low-level entry and then demo from the FSS call through the wings-level call after pt B. Recovery via course rules.

c. Mission Planning: About 20-30 minutes before the brief, review the student's chart, DD-175, and jet card. Ensure all of the required annotations are made on the chart, check for current chum, noise-sensitive areas plotted, correct turnpoints plotted, intermediate checkpoints noted, and cross-check the student's headings and times with the STAN chart checker. Cross-check the jet card and chart to make sure that Mission Completion Fuels were calculated correctly.

d. Contingency Plan/Alternate Mission: If weather is marginal, be prepared to flex to a backup INAV mission, if student still has I510x flights remaining. Ensure the basics of

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the backup route have been briefed, ensure student has winded jet card, and review types of approaches to be flown. The backup "A" flight plan for each stereo route is a round robin clockwise circle back to NPA without any enroute delay. Alternate Missions should be of equal or lesser difficulty than the primary planned mission. Therefore, if flexing to the I5103, instructors can coordinate with ATC for an enroute delay at MGM if desired, but should not plan on doing two enroute delays.

e. Recommendations:

(1) During the brief, ensure thorough student knowledge of turnpoint procedures, particularly the Wings Level call, and checkpoint/turnpoint descriptions. Go through multiple examples. Emphasize importance of going step-by-step all the way through the procedures. Go over game plan for accomplishing FACCU procedures at particular checkpoints on the route and when performing a full FACCU may not be feasible.

(2) On the first leg of the route, instructor shall demo compensations, standard course corrections, intermediate checkpoint calls, FACCU, BDHI, and standard TPP calls. A common technique for accomplishing this on the VR-1020 is as follows: Use "Duck Eye" for your first intermediate checkpoint; demonstrate use of "FACCU" on that checkpoint; even if you are on course, demonstrate a standard course correction to put yourself intentionally off course; give the two minute prior call, visually acquire the bridge (Pt B) or smokestacks long, and then demonstrate a BDHI to the bridge.

7. N5402.

a. MCG Requirements: None.

b. Standard Profile: NPA-521

c. Mission Planning/Contingency Plan/Alternate Mission: Same as N5401.

d. Recommendations: This is a critical flight in the syllabus - it is only their second T-39 low level, but the next flight is their end-of-block. Students need to internalize the procedures, and instructors need to give students enough space to take ownership of the mission.

8. N5403.

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a. MCG Requirements: All items must meet MIF on this end-of-block sortie. Departure, Approach, Enroute Delay, and Point-to-Point navigation are "optional items" which do not have to occur on this sortie; but, if they are accomplished, they must meet MIF in that area. If these items are NOT flown on the N5403, the student must have achieved MIF in these areas on a previous flight.

b. Standard Profile: NPA-522.

c. Mission Planning/Contingency Plan/Alternate Mission: Same as N5401.

d. Recommendations: This is the most commonly failed flight in the T-39 syllabi. The VNAV environment is challenging, and this is only their third attempt. Emphasize the basics during the brief, in-flight, and debrief: Accurate and consistent turnpoint procedures, clock-chart-ground, good CRM comm, using the FACCU technique at every Intermediate checkpoint, etc. Even though this is an end-of-block flight, some in-flight instruction should still be provided to help guide the student towards even greater proficiency on their checkride.

9. N5590.

a. MCG Requirements: All items must meet MIF on this checkride. An enroute delay is optional - all other maneuvers are required.

b. Standard Profile: NPA-523 (VR-1023 A-G). Recovery via course rules or HI-TCN.

c. Contingency Plan/Alternate Mission: None.

d. According to the VT-10 SOP, to be designated a Stage "X" Check Instructor (i.e. qualified to do student checkrides), Instructors must be designated MCs, complete 15 student events as the primary MC, and observe one N5590.

e. Recommendations:

(1) This is the student's checkride, so in-flight instruction should be kept to a minimum. Emphasize to the student that he/she is the MC-in-training, and needs to assert himself as such. Though active instruction from the jump seat

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should be minimal, you should still be a viable crewmember to reinforce the good CRM habits exhibited by your student. Positive CRM inputs from the jump seat could include (but are not limited to) helping with radio calls, identifying towers, and calling "mark" when passing checkpoints.

(2) If you choose to do an enroute delay during the instrument portion of the flight, you must (at a minimum) prebrief this possibility with your student. You do not need to specify where or when the drop-in would occur, but brief the possibility of its occurrence and a general gameplan for success. Ensure the possibility is also briefed with the VERTEX pilot so that he is prepared. After the low-level, if the student is flowing smoothly and easily into the instrument portion of the flight, a short-notice drop-in can keep him/her appropriately challenged. If the student is struggling to settle into the instrument pacing, the drop-in is not recommended. Either way, the enroute delay should not be the determining factor in whether a student passes or fails the flight. It is an optional event, and should be graded as such.

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APPENDIX A

1. Out-and-In Locations. Out-and-ins are a great opportunity to operate and land outside of our local area. Talking with different controllers and operating at nonlocal airports enhance both student training and instructor proficiency. Here is a list of favorite out-and-in locations.

a. Chennault International, LA (KCWF). Located near Lake Charles, LA, this is a favorite T-39 stop. If you call the FBO at Million Air ahead of schedule (either by phone or by UNICOM freq), you can get your food (\$1 each) soon after you land. Shrimp Po-boys are highly recommended at this stop. The best part is you get good food and you don't have to drive anywhere! Million Air contact info: 888-744-8468 and 122.95

b. Alexandria International, LA (KAEX). Located north of Lake Charles, a new Million Air FBO makes this an attractive option. Good Cajun food prepared and served on site for \$1. You can call ahead to find out what they are serving that day. Million Air contact info: 800-285-8695 and 130.0

c. Chattanooga, TN (KCHA). If you land here, taxi to TACair on the east side of the airfield next to the terminal. You can take a courtesy van for a short drive to either Hooters for chicken wings or the Rib and Loin for BBQ.

d. Acadiana Regional (KARA). Located in New Iberia, LA, this airport's FBO has been a traditional lunch spot for transiting military aircraft. Every weekday, they serve awesome Cajun seafood (either fried or gumbo). On Wednesdays, they serve jambalaya and on Friday they fire up the BBQ for burgers and sandwiches.

e. Mobile Regional (KMOB) or Mobile Downtown (KBFM). Need an intermediate stop that's close to our local operating area? If you call ahead, both these airports can have pizzas waiting for you when you land. Call **Mobile Air Center** if you are going to Regional (122.95 or 251-633-5000). Call **Downtown Air Center** if you are going to Downtown (122.95 or 251-433-2800).

f. Gainesville Regional, FL. (KGNV). Taxi to the GA ramp towards the north of the airfield. The rumor is the FBO will let you ride a limo to your favorite eatery. In this case, you can go to the Swamp or Sonny's BBQ. Some have cautioned that the limo ride to the University of Florida takes too long.

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g. Columbia, SC (KCAE). Park at Eagle Air then take a courtesy car to Maurice's Piggy Park for some great BBQ.

h. Tuscaloosa, AL (KTCL). Two recommendations: Full Moon BBQ or Dreamland.

Advanced

T-39 / T-45



Flight Instructor Guide

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T-39 ADVANCED FLIGHT INSTRUCTOR GUIDE

100. MISSION. To train and provide the world's finest Naval Flight Officers and Navigators to the United States and her allies in order to allow for the successful defense of their citizens and way of life.

101. VISION. We will accomplish our mission through superior self-preparation, thus ensuring that those officers being trained are more prepared than we were. We will extend ourselves as teachers so that we guarantee that they receive the world's finest training as Naval Flight Officers and Navigators. Our goal is to successfully produce the correct number of quality aviators on time to their respective nations and services so that they can act as combat multipliers in their nation's defense.

102. PHILOSOPHY. Training Squadron EIGHT SIX has an outstanding reputation for producing the finest Naval Flight Officers and Navigators for both the United States and her Allies. This reputation comes from your hard work and dedication. In order to maintain this reputation, we will do everything necessary to prepare our future aviators for the ever complex, always changing art of aviation warfare. The following are our priorities:

a. Know your mission and be the best at it! Our primary mission is to train our students, ensuring they have the necessary skill sets required to excel once winged. In order to accomplish this, you MUST be the expert instructor, knowing your aircraft, the curriculum, Stan, SOP, etc, better than anyone else. Additionally, you must also be cognizant of your own capabilities and limitations as well as that of the Officer you are instructing. Above all else, you must remember, that in order to be the best at your mission, your individual training must never stop. There is no one in this squadron that cannot benefit from continued training!

b. Take care of your people and each other. This applies to the personnel that work for you, the students that you are training, and your fellow instructors. For my instructors - the students are your charge. Their success depends on your mentorship. Spend the time required to ensure they have been provided every opportunity in order to succeed in the fleet. For my Department Heads - you have been selected to fill this role based on your abilities to lead. Be that leader! Additionally, always remember that leadership includes setting

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the example at all times. Always strive to do what is right, whether airborne, on deck, or during off duty hours. Whether you like it or not, as instructors, you are always being watched by those that want to emulate you.

c. Safety should be part of everything we do. Nothing less than zero mishaps is acceptable. Always evaluate the risk. Admit to your mistakes and learn from them. Incorporate ORM into your everyday activities. Finally, NATOPS is written in blood...know your procedures and follow them.

103. REFERENCES. The following references may prove useful to new and experienced instructors alike:

1. CNATRAININST 1542.158 (Advanced Multi-Service Navigator Training System (MNTS) Curriculum)
2. CNATRAININST 1542.123 (Advanced Naval Flight Officer (NFO)/Air Force Combat Systems Officer (AF CSO)/Naval Aviator/Air Force Pilot Instructor Under Training (IUT) Multi-Service Navigator Training System (MNTS) Curriculum)
3. CNATRAININST 1500.4 (Training and Administration Manual)
4. COMTRAWINGSIXINST 3710.1 (Wing SOP)
5. TRARONEIGHTSIXINST 3710.1 (Squadron SOP)
6. COMTRAWINGSIXINST 3710.17 (Wing In-flight Guide)
7. COMTRAWINGSIXINST 3740.2 (Wing FIST Program)
8. TRARONEIGHTSIXNOTE 3740 (Squadron FIST)
9. NAVAIR 01-60GBE-1 (T-39 NATOPS FLIGHT MANUAL)
10. NAVAIR XXXXXXXXXX (T-45 NATOPS FLIGHT MANUAL)
11. Strike Standards / Fighter Standards
12. Strike Segment Planning Guide / Fighter Briefing Guide
13. All Flight Training Instructions (FTIs) can be accessed here: https://www.cnatra.navy.mil/pubs/ppub_nfo_snfo.htm

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14. Additional resources are available at:
<http://www.cnatra.navy.mil/tw6/vt86/documents.asp>

104. INSTRUCTOR UNDER TRAINING (IUT) PROGRAM.

Name: _____

Rank: _____ Service: USN/USMCStatus: Active/Reserve/AssociateSyllabus: Strike/Fighter/ATM

Check-In Date: _____

Proposed Completion Date: _____

| | Things to do (before you can fly) | Date Completed |
|----|---|----------------|
| 1 | Meet with CO | |
| 2 | Meet with XO | |
| 3 | Meet STAN officers / AOPS / Schedule Officers | |
| 4 | Flight Doc (Up chit / High risk screen) | |
| 5 | Physiology | |
| 6 | Swim | |
| 7 | IGS / CRM | |
| 8 | FITC* | |
| 9 | Get access to WingStats and NSS Calc | |
| | Paperwork (before you can fly) | |
| 10 | Academic Book Issue | |
| 11 | IUT info sheet | |
| 12 | Emerg Data Sheet | |
| 13 | Statement of Understanding | |
| 14 | Privacy Act Statement | |
| 15 | ORM Certificate | |
| 16 | NAMO (T-39) / Systems (T-45) | |
| 17 | Open /Closed NATOPS/ EP Tests/ Course Rules Exam | |
| 18 | SOP / STAN notes / Read and Initial | |
| | Now you are Allowed to fly | |
| 19 | Fam-0 / Observer Flight (T-39) | |
| 20 | FAM A / B (T-39) (Must Complete NATOPS Tests prior to FAM A/B) 1 N Model and 1 G Model Ride | |
| 21 | Stan Tests | |
| 22 | IUT Sims / flights / NATOPS qualification** | |
| 23 | Finalize logbook / FIST jacket / NATOPS jacket | |
| 24 | Receive Commodore IUT letter | |
| 25 | MC designation letter (T-39) From CO | |
| 26 | ASIST | |

* = FITC/ASIST is a requirement to instruct, not to fly

** = work with your schedule officer to ensure the NATOPS check flight is one of your last events

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1. IUT Checklist Instructions.

a. Things to do (before you can fly).

(1 & 2) Meet with the CO & XO as soon as possible. This is your number one priority. Please be in the uniform of the day (USN: Khakis; USMC: Alphas) not in your flight suit. You can make an appointment with their secretary, Ron, at 452-2403 or just stop by their office.

(3) Meet STAN officer/AOPS/Schedule Officers. STAN will provide relevant training information (e.g. pubs, exams) and discuss the IUT and MC expectations and requirements in detail. Through OPS, STAN will also coordinate scheduling of FITC and any other out of squadron training required. Work directly with the Schedule Officers and OPS to schedule your IUT events (academics, simulators, and flights). The Stan office will track your progress and ensure you complete the training on time.

(4) Flight Surgeon: Admin Up-Chit/High Risk Screening. You must check in with Doc for your admin up-chit and high-risk instructor screening. Please call central appointments at 505-7171 and ask for an appointment with the VT-86 FS (you must ask for him by name) as soon as you arrive. When you arrive for your appointment, have your medical and dental records and your high risk screening questionnaire completed. The FS will complete the upper portion of the high risk screening form and Safety and the XO will complete the remainder. Before you can become an instructor, you must complete the High Risk Screening form and get an UP-CHIT. Turn the admin up chit into the respective NATOPS officer for inclusion in your NATOPS jacket, and let your STAN officer know that item has been completed. Once the FS completes his part of the high risk screening form, schedule an appointment with the Safety Department Head and CO/XO for interviews so they can sign off their portions of the form. Once the form has been signed by the CO, drop off to the NATOPS officer and tell STAN you have completed this event.

(5 & 6) Physiology/Swim. You need to have current physiology and swim qualifications. If you are an NFO/NAV who wants to fly in the T-45 or keep your tactical jet quals current, you need to complete class 1. Class 4 is the minimum required for T-39 instructors who do not fly in the T-45. Ensure that the swim/phys personnel know which airframes you will be flying during your tenure at the squadron. If you need

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swim or physiology, the NATOPS office 452-3089 will schedule it for you or just call the pool at 452-2688. You must be current in both swim and physiology before you can fly in either the T-39 or the T-45.

(7) IGS meets the second and fourth Thursday of each month, 0745~1100 at Griffith Hall. Snivel with schedule officer/OPS, and then check the schedule. You should get a course rules brief in this class. T-39 instructors need to inform your NATOPS officer as soon as you finish this course - your instrument qualification paperwork will be generated. (T-45 pilots will get their instrument qualification as a separate, graded flight event). CRM for T-39 instructors is given the same day at 1300 in the Perch. T-45 instructors: see your schedule officer to sit in on the CRM class given to students.

(8) FITC. Flight Instructor Training Course. This three-day class is needed before you are allowed to instruct a student. Ensure STAN or AOPS schedules this class for you as soon as possible after check-in. The course normally runs Monday-Wednesday (0800 - 1600 in Griffith Hall or BLDG 633 as assigned) during the second full week of the month. Flight suits are authorized. Turn your completion letter into STAN to file in your NATOPS jacket. You may start your IUT syllabus before attending FITC, but you cannot instruct students until FITC complete.

(9) WingStats/NSS Calculator. To obtain access to WingStats and the NSS Calculator visit the TW-6 TIMS support desk, located on the admin side of the hangar (Rick Wermers, TIMS Support 452-5489).

Alternatively visit <https://coc000010m0011/UAMFM/default.aspx>. Select the application "Pipeline Fit Score Calculator" with a role of "VT-86 user". Also select VT-86 WingStats. You will use WingStats to help keep track of you currencies and when you are IUT complete you will be assigned as a Personal Advisor for students. In that role you must meet with them once a week and show them their NSS.

b. Paperwork (before you can fly). Note: Work on this paperwork concurrently with items 1-8.

(1) Academic Book Issue. Go to the Griffith Hall book issue and get the appropriate pubs for your stage. Let them know if you will be a Strike, Fighter or ATM instructor.

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(2) IUT info sheet. Turn this into STAN as soon as possible. STAN is your "mustering officer" while you are an IUT. AOPS may volunteer you to represent the squadron at the monthly Rotary Club luncheon downtown (this is a good deal that results in a free lunch).

(3) Emergency Data Sheet. You should have received this from Admin. Turn it back into Admin. You cannot fly until it is on file.

(4) Statement of Understanding. Read, sign and turn into your STAN officer for filing in your Flight Instructor Standardization and Training (FIST) jacket. This form explains the DOR and TTO policies.

(5) Privacy Act. Read, sign and turn into your STAN officer for filing into your FIST jacket.

(6) **ORM certificate.** Complete ORM University - Go to <https://wwa.nko.navy.mil>, select Learning/ELearning/Browse Categories/Dept of Navy Training/Operational Risk Mgmt. Individual - Managing Your Risk (CPPD-ORM-MYR-1.0) for O-3s, Supervisor - Managing Your Team's Risk (CPPD-ORM-MYTR-1.0) for O-4s, Manager - Directing Your Command's Risk Management (CPPD-ORM-DYCRM-1.0) for O-5s. Print your certificate(s) when complete and make **TWO** copies. One goes to NATOPS for your NATOPS jacket and one to STAN for your FIST jacket.

(7) NAMO (T-39)/Systems (T-45). This is ground school for your respective jet. The courses are given approximately every two weeks as new students class up. See your schedule officer to be scheduled for these classes. T-39 instructors are encouraged to study on the Computer Based Trainers.

(8) Open/Closed NATOPS/EP tests. Once you are done with your systems course, do these tests. You can get the tests from your NATOPS officer. Turn the completed tests into NATOPS to file in your NATOPS jacket.

(9) SOP/STAN notes/Read and Initial. Read the squadron and wing SOPs. Read and sign off the read and initial in the Ready Room. (See the NATOPS office to get a name tag for the R&I board). Read the applicable STAN notes (Strike, Fighter, ATM) that are located in the STAN office. Now you can start flying!

c. Allowed to fly.

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(1) Fam-0 / Observer flight (T-39). Once NAMO is complete and your tests are turned in see your schedule officer to get a FAM-0 and an observer flight. Observer flights are not required but a good way to get familiar with the syllabus and instructional techniques. T-45 IUTs see your schedule officer to get a FAM-0 and the FAM Flight Procedures lecture.

(2) FAM A / B (T-39). See the Strike or Fighter schedule officer to schedule these flights. More information on this is located in the back of this enclosure.

(3) IUT Sims/Flights/NATOPS qualification. Finally! This is the meat and potatoes of the IUT syllabus. Please aggressively seek flight time. The best way for you to finish these flights is to visit the schedule officer daily and to specifically request your next event. Without micromanagement by you, you will be lost in the daily chaos of student scheduling. For Strike IUTs your ICOMP flight must be scheduled last as it is your standardization checkride. Ensure (via your schedule officer) that the NATOPS check flight is one of your last events and then push your paperwork through ASAP via your NATOPS and STAN officers.

(4) Stan Tests. Complete all Stan Tests prior to the last IUT flight. The tests are located in the STAN folder in the S drive, but your STAN officer can print them out for you. These tests then become an annual requirement, along with your annual Stan Checks. Turn the completed tests into your STAN officer. Note: it is prudent to complete the Stan tests before you *start* flying... but the requirement is to finish prior to the last IUT flight. It is a good idea to turn them in the same month that you finish the IUT syllabus as they are an annual requirement along with an annual standardization checkride.

(5) Finalize logbook/FIST jacket/NATOPS jacket.

*****This will be the most frustrating part of your IUT syllabus.*

Please use attached form as an aid to ensure your paperwork is correctly filed as you progress through the syllabus. You need to micromanage this paperwork accounting drill in order to minimize the wait between your last flight as an IUT and your first flight as an instructor.

(6) Receive Commodore IUT letter. After step 5, Stan department will turn your IUT file (logbook/FIST jacket/NATOPS

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jacket) into the Wing for review. The Commodore will then sign a letter designating you as a flight instructor. ATM can start instructing at this point.

(7) MC designation letter (T-39). After step 6, the COs Secretary will draft a letter designating you as a mission commander. Once the CO signs this you can start instructing solo.

(8) Applied Suicide Intervention Skills Training. This is a two-day class needed before you are complete with the IUT syllabus. The training is only offered once a month. Contact TRAWING 6 Chaplain (850-452-2341 x 3118) to schedule the training. Flight suits are authorized. Upon completion drop a copy of your certificate in the Ground Safety Officer's (GSO) inbox.

105. TRAINING ADMIN

1. Grading. See paragraph 9, chapter I of the MCG. According to the MCG, grading of student events is on an "absolute grading scale" with reference to the Course Training Standards (CTS). Familiarity with the CTS at the back of the MCG is therefore essential. Students must achieve MIF in every category by the end-of-block flights and the checkride.

a. This absolute grading scale is NOT the same system (i.e. "average", "above average", "below average") that most instructors likely experienced going through training as a student. Each maneuver is graded against the course training standards and then given a grade. The following definitions explain each grade, taken directly from the Master Curriculum Guide, page I-17:

(1) Demonstrated (No Grade): When instructor demonstrates the maneuver and the student does not subsequently perform it during the event.

(2) Unable (U/2): Performance is unsafe or lacks sufficient knowledge, skill or ability. Deviations greatly exceed CTS, significantly disrupting performance.

(3) Fair (F/3): Performance is safe, but with **limited proficiency**. Deviations exceed CTS, **detracting from performance**. Corrections **noticeably lag** deviations, and may not be appropriate.

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(4) Good (G/4): Characteristic performance is within CTS. Deviations outside CTS are allowed, provided they are **brief, minor, and do not affect safety of flight**. Corrections must be **appropriate and timely**.

(5) Excellent (E/5): Greatly surpasses CTS. Performance is correct, efficient, and skillful. Deviations are very minor. Corrections, if required, are initiated by the student and are appropriate, smooth, and rapid.

b. Therefore, after a first flight in a stage, you will find that many maneuver items were performed with limited proficiency. These should be graded Fair (3). Remember, grading something as Fair is NOT the same as grading it "below average" in the old system. Grade according to the CTS. Nevertheless, bear this in mind: although the grading scale is absolute, some degree of subjectivity is always involved in the grading process. The goal is to grade as objectively as possible in accordance with the CTS, while applying common-sense filters to the real-world circumstances of the event.

c. For overall grades, the event should be a "pass" if progress is on track to meet MIF by the end-of-block (EOB). "Marginal" indicates that student potential to reach MIF by EOB is questionable. "Unsatisfactory" grades should be given when student progress is insufficient to reach MIF by EOB. Realize that an Unsatisfactory flight (before EOB) will not result in a student re-fly. On an EOB flight, any category below MIF automatically renders the flight "Unsatisfactory", and a re-fly will be required before going to the checkride. See pages I-17/18 of the MCG for the official language.

2. Regression. Refer to pages I-18/19 of the MCG.

3. Warm-ups. Refer to page I-13 of the MCG.

106. GENERAL MISSION PLANNING GUIDANCE

1. Route Selection. Refer to the Strike Segment Planning Guide, page 10, for the Strike Syllabus preferred routes.

2. Standard Routing. The following guidelines are preferred routing for departing and arriving into Pensacola:

a. Standard departure routing to the west will flow through TEEZY (NPA 241/22) and TRADR (NPA 264/37) 10,000 ft and below.

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b. If departing to the North or East, you will file for JAYDI (NPA 095/15) and INBRD (CEW 263/17), then to either Crestview (CEW) if going east or Montgomery (MGM) if proceeding north. You can expect to cross 10 NM south of INBRD at FL190 to keep you clear of the MOAs to the north.

c. Arrivals from the north will normally flow through INBRD, JAYDI, MARYS and NPA. Prior to that, PNS approach may clear you direct to the IAF if you are executing a High TACAN approach.

d. Arrivals from the west can expect an enroute descent through TRADR, TEEZY, usually hitting TRADR at either 9000 ft or 7000 ft. If you want the high penetration, file through JERYs and TEEZY above 10,000 ft.

107. STRIKE IUT AND STUDENT EVENT PROFILES.

1. Syllabus Overview. Your syllabus is going to parallel the student syllabus in a lot of ways. You will start with RSTs and your instructor checkride will be a Comp sortie. You will find during training what you need to develop the most is when to step in to assist the student and when to let them make mistakes. Your Standardization Instructors will be instrumental in helping you develop this.

2. Ground School. You must accomplish IGS before you can fly and FITC before you can instruct. As far as attending the student classes it is ultimately up to you. Either review the NATOPS CBTs or sit through the classes, you will find that the T-39 is incredibly simple compared to a fleet jet. Review all the FTIs and Computer Based Trainers; this will help you figure out which classes you need to sit in on. Sitting in on Turnpoint Procedures class as well as LL/RADAR Nav will be helpful even if you grasp the CBTs. You may also "class up" with a new student class and follow them through academics. You will be scheduled to attend Strike Seminar and Comp Ground School. The Strike Segment Planning Guide and the Strike Stan Notes are a must read. Remember you need to know the information better than the students if you are going to effectively instruct them.

3. FAM-A/B. Your first scheduled flight events will be Fam sorties. It will be you and a pilot and is your chance to sit in the front seat to run checklist, get familiar with the handling of the T-39, learn the autopilot system, and see the local area. It is recommended that you sit in the jet prior to

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this event to get familiar with the location of the switches. The typical profile is the NPA-851/856 (see IFG). Little is required on your part prior to the flight, NOTAMS and Weather may be printed out for you at the duty desk. The contract pilot will give you a hand written gradesheet that you need to turn into the Stan Inbox. You will also need to accomplish the Navflir (Yellow Sheet); any instructor can assist you in this.

4. RST-1/2. Your RST-1 you will watch a Stan instructor instruct a student on one of the three RSTs. On RST-2, **YOU** will instruct one student on one of the three RSTs. You don't need to have anything prepared prior to the event. Your Stan instructor will show you how to review the student Junk Jacket and teach you how to operate the simulator. Your Stan instructor will go into more detail on expectations for the student's performance depending on the simulator you are doing. After the event your instructor will show you how to fill out the Navflir (Yellow Sheet) and how to do the gradesheet. Typically the RST-1 and 2 will be accomplished in the same day.

5. IRN-1/ILL-1. Both the IRN-1 and ILL-1 are sorties that you sit in the front seat for. It is designed to be a student appreciation sortie, you get to see how difficult it can be to try to accomplish the turnpoint procedures that students are required to do. Little on your part is required, only weather and NOTAMS. There are charts available behind the schedule officer's desk for your use. Often these two events are paired together; you'll do a RN route then drop into a Low Level.

6. IRN-2/ ILL-2. These events you will observe a Stan instructor instruct two students. Your instructor should cover Junk Jacket review and discuss with you the student performance on the route. Try to follow along in the back during the procedures the same as the student and try to catch their mistakes.

7. IRN-3/ILL-3. On these flights you will observe a Stan instructor instruct one student then you will swap seats and **YOU** will instruct one student. Your instructor will assist you in grading the student and may offer assistance from the back of the airplane.

8. IRN-4/ILL-4. **YOU** will instruct both students. The Stan instructor will let you run the brief and flight and offer assistance when necessary.

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9. IAN-1/2. For your IAN-1 you will observe a Stan instructor teaching an Airnav or Approach Hop sortie. Your IAN-2 you will instruct an Airnav or Approach Hop sortie. You may do the AN sorties anytime after your RSTs and you may bounce back and forth between LL and RN flights, but they should be accomplished in order.

10. ISTRIKE-1/2. Your strike flights are the watch/do format. You will observe a flight then instruct a flight. These are typically done in one day on an out and in.

11. ICST-1/2. Same flow as the RST.

12. ICOMP-1/2. Same flow as the strike flights. This should be done last, as it is your instructor checkride and will have to be accomplished annually.

13. NATOPS Check. You and a NATOPS instructor will fly a profile similar to your FAM sorties. Conduct is governed by CTW6INST 3710.20.

14. IUT Critique. As you progress through the Strike IUT Syllabus, **fill out your IUT Critique** and turn it in to the Stan Officer prior to your last flight. This must be accomplished prior to getting your Instructor Letter. Failure to do so will delay your letter getting signed by the Commodore.

15. Students check in to VT-86 having already complete Primary and Intermediate in the T-6 and T-39. The students sit through one and a half weeks of academics prior to hitting the flight line. They are instructed how to use JMPS for chart prep, NATOPS Review, and Low Level Radar navigation. Some of these classes will be important for you to sit in on. It is ultimately up to you which lectures you think you need to sit in on after reviewing the FTIs (Flight Training Instruction) and the CBTs (Computer Based Training). After completing ground school the students are ready for you, the new instructor.

16. The syllabus grading is probably different than what you had as a student. There no longer is above/below average, the students are graded against the syllabus and not versus each other. They are required to meet MIF (Maneuver Item File) by the end of the block of training. The MIF is a listing of required maneuvers and associated proficiency levels for each block of training. In the Strike syllabus there are three blocks of training; 1. RST-AN-RN 2. LL-Strike Sims-Strike Flights 3. CST-Comps. For example, Radio/ICS Procedures, to

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meet MIF the student must: communicate clearly and concisely with appropriate agencies using standard military and FAA terminology; be familiar w/NORDO procedures; make all calls when required to an accuracy of 90%; not step on others' transmissions; use nonstandard comm brevity when appropriate; use correct terminology to an accuracy of 90%; use standard terminology and comm brevity to an accuracy of 90%; maintain an appropriate level of comm with other crewmembers; use proper switching for effective use of the ICS (p. VII-6 in the MCG, CNATRAINST 1542.158D). The gradesheet will have these items listed on them and what specifically is required is listed in the MCG. If they don't meet this then they earned a grade lower than MIF, which is fine except on an end of block or checkride event. If they fail to meet the required MIF on the EOB or checkride it constitutes a failure. The MCG goes into detail on what happens after a failure. The MCG is no doubt a difficult read and takes time to understand fully but please read it and have it handy going through the IUT syllabus. If you have any questions please ask your Stan instructor or someone in the Stan department.

a. FAM-0. This is an ungraded event that gives the students hands on time with a jet to learn how to do a preflight check and to get familiar with the switchology of the T-39. You should sit each student in the front of the cockpit and go through the entire checklist and discuss what we are doing for each item. There is a checklist in the student's junk jacket. Encourage students to sit in a "G" model as well prior to their first AirNav.

b. RST-0 (N2001). RST-0 is a simulator focused on checklists, airnav/approach procedures, and emergency procedures. Students are still new to the jet and should not be expected to be expert on the aircraft and its systems but should know the boldface without exception. Students tend to be behind the jet especially in the approaches. Point to points are also a weak area for the majority of the students.

c. RST 1-3 (N2002-4). These RADAR Sims are the students' first time using the RADAR. It is also their first time doing VT-86 Turnpoint procedures. You should run through the entire ground checklist with each student as well as a takeoff and approach for each student. Generally students will not be that great for their first two sims and the students are not expected to meet MIF.

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d. AN 1-2 (N4005-6). Airnav flight for the students to get more familiar with the T-39 checklist and flying prior to their first RADAR flight. Students may accomplish their AN prior to, during or after their RSTs. The only prerequisite for RST-1 or AN-1 is FAM-0 and RST-0. You should have the student do multiple instrument approaches as well as put the oxygen mask on.

e. RN 1-3 (N4007-9). RADAR flights focusing on RADAR procedures and Turnpoint Procedures. Students must have completed both AirNavs and all three RSTs. Students should have the turnpoint procedures down coming out of the simulator. Most students will need instruction on how to tune the RADAR. The simulator doesn't do well simulating how to build the best possible scope. Generally students have gain too high and accept banding on their scope. The best way to eliminate the banding is through tilt and it generally takes a little bit of up tilt. RN-3 is an End of Block and the student must meet MIF in all graded items.

f. LL 1-2 (S4003-4). Students only get two Low Level flights in VT-86. It is meant to be a refresher from Low Level they have had in VT-10. The focus is on VT-86 turnpoint procedures, and refreshing their visual scan at 500 ft.

g. Strike Timing Simulator (STS/S2001). The students prepare three scenarios to practice their high level timing that they learned in Strike Seminar. It is important in the brief to go through the timing scenarios thoroughly to ensure that the students understand all the concepts associated with High Level Timing. Executing the Sim you can start with the line up checklist. Be sure to input a scenario time before coming off of freeze. Students typically need help with the math and developing their scan during the descent.

h. Strike Radar Simulator (SRS/S2002). This simulator is a complete strike flight flown in the simulator. Start with the line up checklist, again remember to input a scenario time prior to coming off of freeze. Students are still working on high level timing concepts and switching from RADAR procedures to LL procedures. Instructors should give the student visual cues after the student gives standard descriptive com for the checkpoint or turnpoint.

j. Strike 1-3X (S4005-6/S4190). The strike flights put together all the student has learned up to this point; RADAR Nav, LL Nav, and high level timing. The students are

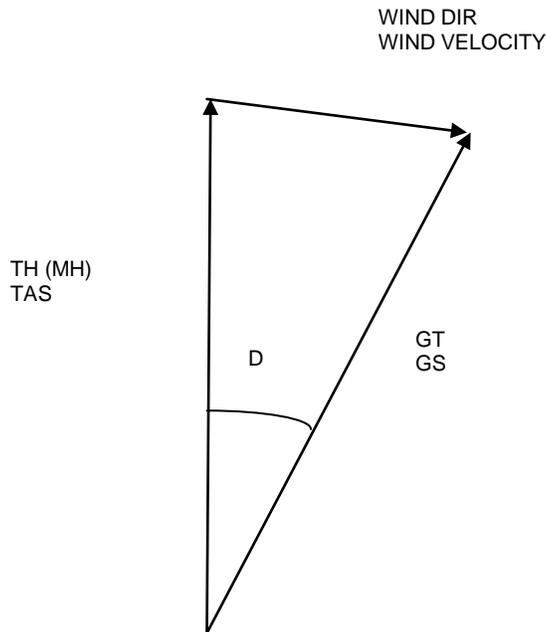
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responsible for getting the jet to the entry point on time. The preferred order for these events is the VR-1050, VR-1032, VR-1031 in that order. Obviously this is flexible for weather, BASH or other factors. Strike 2 is an End of Block and the students must meet MIF in all areas. Stk-3X is the student's first checkride in VT-86 and must meet MIF in all items. You must be an instructor for 3 months prior to giving a checkride.

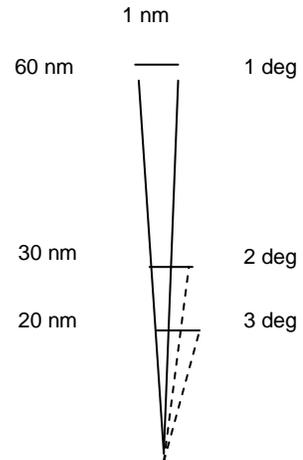
k. CST 1-3 (T2001-3). CSTs are simulators designed to teach the students RADAR usage in mountainous terrain and how to successfully navigate off the black line and maintain situational awareness. You may "Hot Spot" the student to a point of their high level portion. Just like the strike Sims be sure to input your scenario time prior to coming off freeze. CST-3 is a show and go profile. You and the students show up one hour and 30 minutes prior to brief to plan the sortie. The planning binder with charts is located in a file cabinet in the T&C office.

l. Comp 1-5X (T4004-7/T4190). Comp flights incorporate real world timing to the TGT. Students are expected to act like mission commanders and take ownership and responsibility for all aspects of the mission. This is typically what they need to focus on the most along with being aggressive/assertive in the jet. Feel free to "shoot" at the students to drive them off the black line. Comp-4 is an End of Block and the student must meet MIF in all areas. Comp-5X is their final check ride in this part of the syllabus and is a show and go profile. You must be an instructor for three months prior to giving a check ride. There is a Comp-5X binder located in the T&C office in a filing cabinet in the back. Feel free to use this or pick your own route that you would like to do. For the mission planning you and the students will show three hours prior to brief time and the students are responsible for all products including making a chart.

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108. STRIKE INSTRUCTOR GOUGE.**Strike Gouge****NAV Triangle/Radial Math**

1 deg @ 60 nm = 1nm
 2 deg @ 30 nm = 1nm
 3 deg @ 20 nm = 1nm
 4 deg @ 15 nm = 1nm
 6 deg @ 10 nm = 1nm



Distances (NM) left/right of course =
 (NM away/60) x Deg L or R

General Timing/BAR**GS check**

- 1) Check DME at 1 min intervals then multiply DME flown by 60
- 2) Take a 36 sec check and add a zero to the end of the DME

300 GS = 5nm/min
 1nm every 12 sec

Calculating Base Airspeed

see VNAV TAS chart
 5 kts per 1000 ft

Lead Turns

- 1) 90 deg turn lead by 1% GS (fix) and Min DME + 1% GS for NAVAIDS
- 2) 45 deg turns led by 1/2 of 1% and 30 deg turns by 1/3 of 1%

Wind Analysis

True wind = actual wind

Corrected wind = wind components corrected for
 by crab & IAS to maintain 300 GS & course

Apparent wind = determined by measuring effectiveness of corrected wind at
 maintaining preflight course/time

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Steps

1. Calculate Apparent HW/TW(formula)
2. Compare to Corrected HW/TW
3. Combine for True HW/TW
4. Determine True Crosswind (drift analysis or formula)
5. Combine 3 and 4 for total True Wind

Apparent CW = deg crab x k k = TAS/60
 = (NM L or R/minutes flown)x 60
 = distance off course x 10 over 6 min leg
 = distance off course x 12 over 5 min leg
 = distance off course x 15 over 4 min leg

Apparent HW/TW = (seconds off/min flown) x k k = TAS/60
Compare MOT to
updated ETA

Wind Ratio: 1:1 = 45 deg; 3:2 = 40 deg; 2:1 = 30 deg; 3:1 = 20 deg; 5:1 = 10 deg

Wind Velocity = add larger component to 1/2 smaller component

Wind Application Methods

Wind Cross
 Bullseye
 EHSI

Speed/Course Corrections**Speed Corrections**

Late = speed up

Early = slow down

6 sec of time is made up for every one minute of a 30 kt speed correction

Corrected airspeed = Base +/- wind comp +/- speed corr

Correction Duration = (time sec E or L)/6 + (remainder x 10)

Complex: correction duration remainder in min x 6 + first digit of sec then add/subtract from preflight ETA

Course Corrections

| Deg Hdg Change for 1 min | Distance Closer to Course | ETA Update |
|--------------------------|---------------------------|------------|
| 10 | 1nm | 3 seconds |
| 20 | 2nm | 6 seconds |

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30

3nm

9 seconds

Fuels

MCF = fuel req to complete msn & arrive at destination IAF w/enough fuel to fly to farthest IAF at planned alternate w/1500 lbs

Joker = fuel req to fly planned route of flight & arrive at destination IAF w/1500 lbs

Bingo = fuel req to get from any point along route flying most direct route to destination & land with 1100 lbs

Turnpoints**Turnpoint Priorities**

- 1) On top On hdg
- 2) On top in a course
correction
- 3) Abeam correcting
- 4) Abeam
- 5) Turn on Time

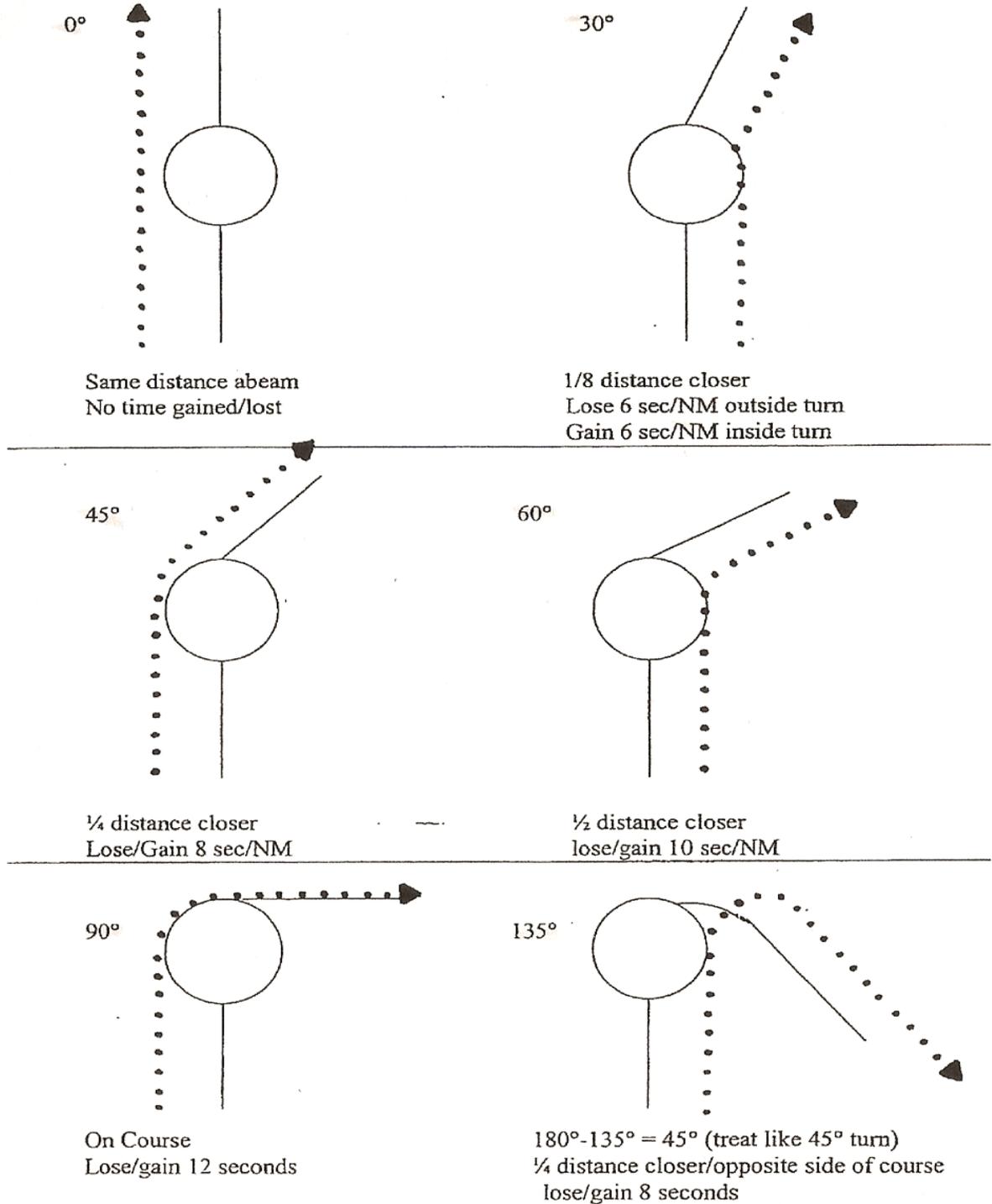
Turnpoint Procedures

| AirNav | Low Level | Radar Nav |
|--------------------------------|--|---|
| Outbound Hdg for a course | Outbound Hdg Outbound Airspeed Outbound Altitude TP Description & Hazards | Outbound Hdg Outbound Airspeed |
| Turn Update Navaid | Clear/Turn Time Set Airspeed Clear Turn | Turn Time Set Airspeed RAGC Range Out Antenna- tilt up Gain-bring up Cursor- center Update TACAN |
| Hdg Airspeed Altitude | Hdg Airspeed Altitude | Hdg Airspeed Altitude Fuel |
| Fuel Analysis +/- preflight | Fuel Analysis | Analysis DR Cursor |
| EFR at next turnpoint | Turnpoint Analysis | Turnpoint Analysis Time |
| EFR at IAF | Time Analysis Update ETA Wind Consideration Check Crab Check Airspeed | Analysis Update ETA Wind Analysis Check Crab Check Airspeed |

Turnpoint Analysis

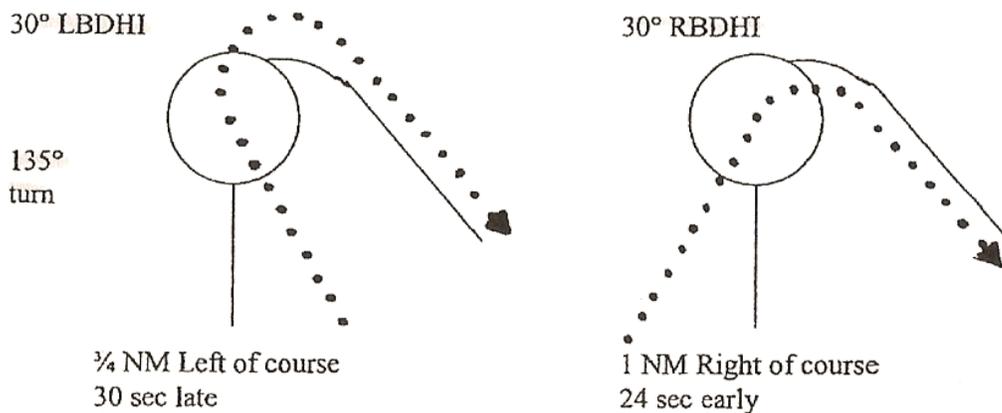
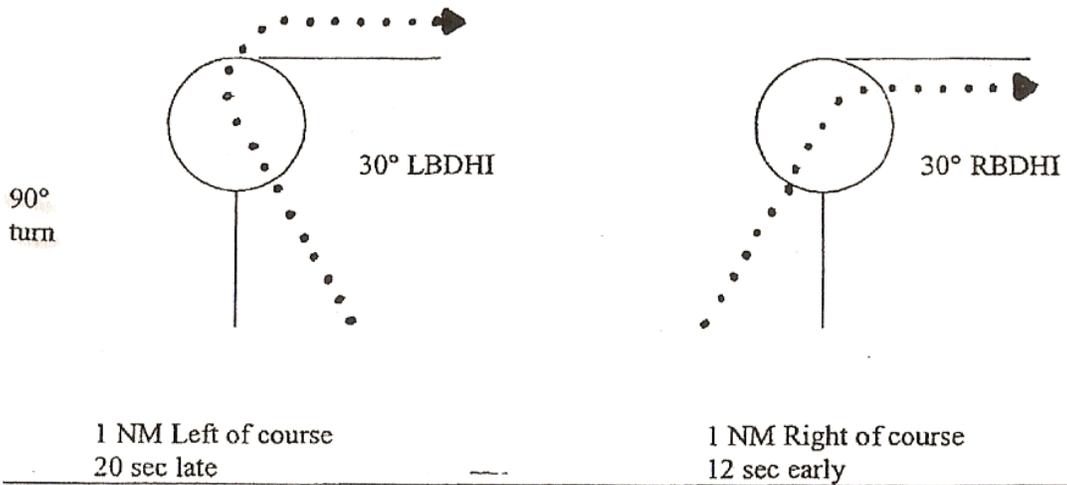
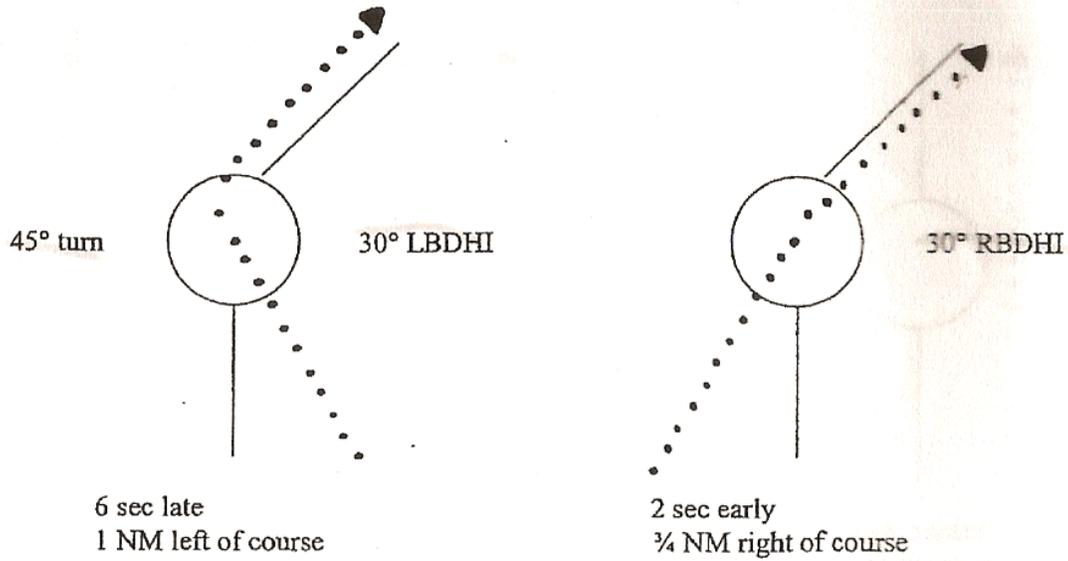
TURNPOINT ANALYSIS

Approximate rule of thumb effects if abeam/on heading:



TURNPOINT ANALYSIS

Approximate rule of thumb effects if on top/off heading:



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Low Level/Radar Planning**DD-175**

SBR-1/A

Doghouses (Low Level)

ESA - Emerg Safe Alt

1) Block Alt on chart + 500
ft2) Highest obstacle w/in 10 miles of course rounded up to nearest 100 ft + 1000
ft (2000 mountainous terrain)**Checkpoints**

1) Label to nearest second

2) Not inside TP

3) No set number req

4) Funneling features & get well points

5) Do not have to find a certain percentage of
them**Hazards**

1) Towers - within 5 nm 400 ft AGL or greater

2) Airports - within 5nm (avoid by 3nm or 1500
ft AGL)

3) Crossing routes

4) Highest terrain/ridgelines - highest terrain per leg annotated & briefed

Alt profiles1) Dest IAF to furthest alt IAF at last cruising alt/airspeed/fuel flow (400#
for app at alt/land w/1100# min)2) Dest IAF to furthest alt IAF using dest IAF alt & max range airspeed (400#
for app at alt/land w/1100# min)3) Bingo profile from dest to alt (p.32 of PCL/does not include 400# for app)
All trng a/c must plan for alt regardless of wx if dest other than home field.
MCF must include this extra fuel.**Correlation Point Selection**

1) Radar only sees 45 deg either side of centerline

2) Should have at least 1 to 2 correlation pts per leg

3) Purpose of correlation is to place cursor within 1 mi of TP

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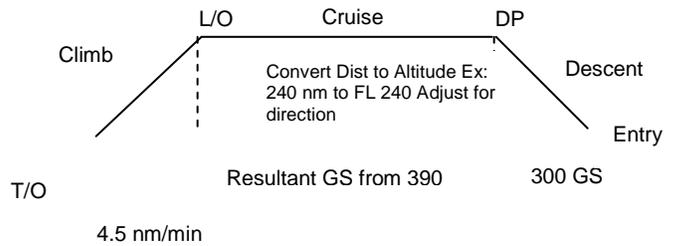
Strike Planning

Low level entry time is the control time

Held to +/- 2 min on entry time but strive for +/- 30 sec

No orbiting allowed at any time.

Do not plan a MCF > EFR



NET

- 1) IAS: 200 KIAS min airspeed
- 2) TAS: Take altitude & multiply by 5 kts to account for change in TAS due to 2 deg/1000 ft temp change
- 3) GS: Figure winds at altitude & apply to TAS
- 4) Apply min GS to timing flying black line. Subtract 2 min from time in previous step to obtain NET

NLT

- 1) TAS: Airspeed limit (350-365 KIAS below 21.5K)/(0.8 IMN above 21.5K)
- 2) GS: Figure winds at altitude & apply to TAS or IMN
- 3) Apply max GS to timing flying shortest route. Add 2 min to time in previous step to obtain NLT

Descent ROT

Plan descent pt when equal to 2 x altitude to lose + 10nm (approx 2000 ft/min)
Use avg alt for decent IAS

Timing Control Methods

Geometry

- 1) 90 deg ROT

| <u>Degrees of Turn</u> | <u>Turn Short/late (min)</u> | <u>Time Saved/Lost</u> |
|------------------------|------------------------------|------------------------|
| 30 | 1 | 0+07 |
| 30 | 2 | 0+15 |
| 45 | 1 | 0+15 |
| 45 | 2 | 0+30 |
| 60 | 1 | 0+25 |
| 60 | 2 | 0+50 |
| 90 | 1 | 1+00 |
| 90 | 2 | 2+00 |
| 135 | 1 | 1+40 |
| 135 | 2 | 3+20 |

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180

1

2+00

- 2) Direct to next TP
- 3) Burn time at entry pt: follow natural terrain into entry pt/arc around entry pt at constant dist/offset away from entry pt

Throttle

- 1) Total dist/Total time

Total dist (NM)/Total time (min) = GS in NM/min

| | | | |
|--|------|-----|--------|
| 2) Gate Method | IMN | GS | |
| 30 min Gate: (TD+10)x2 = GS | 0.8 | 480 | Sec/mi |
| 20 min Gate: (TD+10)x3 = GS | 0.75 | 450 | 7.5 |
| 15 min Gate: (TD+10)x4 = GS | 0.7 | 420 | 8 |
| 10 min Gate: Dist = IMN | 0.65 | 390 | 8.57 |
| 6 min Gate: Dist = GS | 0.6 | 360 | 9.23 |
| | 0.55 | 330 | 10 |
| <i>Do not add 10 if controlling time</i> | 0.5 | 300 | 10.91 |
| <i>to descent pt</i> | 0.45 | 270 | 12 |
| | 0.4 | 240 | 13.33 |
| TD divided by factor of 6 = GS | 0.1 | 60 | 15 |
| Ex: 24min/6 = 4 then TD/4 = GS | 0.01 | 6 | |

- 3) Real world times

Flt Execution - Strikes

- 1) BDHIs not req when TP/TGT in sight
- 2) May direct left/right/steady up to overfly a TP/TGT
- 3) Do not employ radar on visual legs or visual techniques on radar legs

Comps

Comp-1 flown initially at 1500 ft AGL until crew comfortable

Charts

- 1) No TPs within 1.5nm of route corridor
- 2) 4-5 min IP - TGT leg and no big turn at IP
- 3) Geometry cuts - hdgs/dist/times (time saved/lost)
- 4) ESA
- 5) Highest terrain on each leg
- 6) Real world time
- 7) ID/Brg/Dist to nearest divert on chart (CHA/050/35nm)

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NET/NLT

NET: flying LL black line in single-down speed corr to IP (TGT leg flown at 300KGS)

NLT: geometry cuts & single-up speed corr on LL

Flt Execution - Comps

- 1) Acceptable to shift between scheduled entry times
- 2) Only Updated ETA and fuel analysis for TP verbally
- 3) Easy/std/hard turns acceptable at any time
- 4) Fly to commands authorized
- 5) BDHIs and std course corrections authorized
- 6) Min airspeed 250 KIAS

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109. FIGHTER STUDENT EVENT PROFILES.

1. Upon completion of the composite phase of training at VT-86, students start their initial strike fighter instruction. The first phase is the reattack phase of training, which is still under the strike syllabus, although it is managed and taught by strike fighter instructors.

Reattack students will go through a week of ground school to learn basic fighter intercept fundamentals. Upon completion of reattack ground school, simulators, and flights, students select to see whether they will get strike or strike fighter. If a student selects strike, Navy and Marine students will go directly to the ATM phase of training and eventually fly E/A-6B's. If a student gets selected for the strike fighter syllabus, they will either fly F/A-18F's or E/A-18G's for Navy students and F/A-18D's for Marine students.

2. Students are required to meet MIF (Maneuver Item File) by the end of the block of training. The MIF is a listing of required maneuvers and associated proficiency levels for each block of training. In the Strike Fighter syllabus there are three blocks of training: Reattacks, Conversions and Advanced. All MIF requirements are listed in the Master Curriculum Guide.

For example, to meet MIF in "Radar Procedures" the student must: use appropriate search increments, correlate GCI target information with displayed radar information, troubleshoot radar effectively. The gradesheet will have these items listed on them and what specifically is required is listed in the MCG. If they don't meet this then they earned a grade lower than MIF. If they fail to meet the required MIF on the EOB or checkride it constitutes a failure. The MCG goes into detail on what happens after a failure.

The MCG is a difficult read and takes time to understand fully. Please review it often throughout the IUT syllabus. If you have any questions please consult a Stan instructor.

3. The entire student S/F syllabus is illustrated on page I-7 of CNATRAININST 1542.158F. The conduct for each event starts on page VI-22 of the 158F.

4. Reattacks. This phase of training introduces the student to basic intercept geometry and fighter fundamentals. It consists of four simulator events and two flights.

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a. Conduct of events.

(1) SR-1 (R2101). High aspect reattack sim. Introduce radar work, target aspect control, target altitude analysis and correction, lead control, displacement turn, RQ drift control/Fox-2, speed control, descriptive communication, directive communication, and counterturn. Reattacks consist of four simulators and two flights. SR-3 includes a full departure and SR-4 includes a RTB from W-155B and a full arcing TACAN approach.

5. Conversion. During the conversion phase, the student will go through a single day of ground school, consisting of CBTs and an instructor taught lecture . Conversions focus on decision making and mission analysis, teaching the student what will happen to intercept geometry when the fighter maneuvers at range, and what happens when the bogey maneuvers, i.e., jinks inside of 10nm. This phase consists of five simulators and two flights.

6. Approach Flights block. Approach flights are for the students to get more familiar executing multiple approaches outside Pensacola airspace. Students may accomplish the AP flights once they have completed the first conversion simulator. Students will do at least two approaches at two different airfields, either on a cross country, round robin flight, or an out and in. GPS navigation will also be introduced during these events.

7. Advanced. The Advanced phases of training consist of three different segments. Initially, students start with basic lvl intercepts in which the bogey is free to maneuver. Students will also be introduced to broadcast and tactical bullseye communication, AIM-120 employment, and merge procedures. The student will go through a single day of ground school, consisting of a CBT and an instructor taught lecture.

8. Following the three lvl simulators and two lvl flights, students will start the 2vX phase of training. The phase consists of three simulators. There will be no flights in this part of the block because there is no T-39 formation flying. We use the capability of linking simulators together to see basic formation flying. The student will go through a single day of ground school, consisting of an instructor taught lecture.

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9. Upon completion of the three 2vX simulators, the students will finish their final block by complete the strike route phase. The strike route phase is similar to a self escort strike mission, where the aircraft is expected to fly to a target on a specific route, which conducting air-to-air intercepts on the ingress and egress portions of the route. The student will go through a single day of ground school, consisting of an instructor taught lecture.

110. FIGHTER IUT EVENT PROFILES.

1. Once you have completed your NATOPS classes, FAM-0, FAM-A/B, IGS, and FITC, you will start your strike fighter training. Initially you will go through the entire reattack ground school with a student class. This will take four days, as you don't need to sit through the final day of school. Upon completion of the four days of ground school, the strike fighter schedule officer will start scheduling you for events. All strike fighter IUT events will be conducted with a qualified Stan officer.

a. R2001 (Reattack Sim-Observe). Your first simulator event will be an observation of a Stan officer instructing a student.

b. R2002 (Reattack Sim-Instruct). Since most of our simulator events are comprised of two students, after watching the first students being instructed by the Stan officer, you will now instruct the second student. You do not need anything prepared prior to the event. Your Stan instructor will show you how to review the student Junk Jacket at the beginning of the brief and will teach you how to operate the simulator. Your Stan instructor will go into more detail on expectations for the student's performance depending on the simulator event (SR-1 - SR-4) you are doing. After the event your instructor will show you how to fill out the Navflir and how to do the gradesheet.

c. R4001 (Observe any flight). You do not need to do anything for this event. You will just sit in on the brief and then be an observer in the back of the T-39 for the entire flight just to see the way flights are conducted before you start evaluating. This observation flight can be done on any block of fighter training, but will be instructed by a Stan instructor.

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d. R4002 (Reattack flight instruct). This is your first flight as an instructor. For all of your flights you will have a Stan instructor there for extra instruction and guidance for you. He will sit in the back of the T-39 during the flight. If you have two reattack students in the jet, you are authorized to complete the R4001 with the first student and then the R4002 with the second student.

e. F1004 (Conversion Class). Sit in on the conversion class.

f. R2003 (Conversion Sim-Observe). You will observe a conversion simulator with a Stan officer running the event.

g. R2004 (Conversion Sim-Instruct). You will instruct a conversion simulator with a Stan officer present. You can do the R2003 and the R2004, with two students, in one event.

h. R4003 (Conversion flight instruct). You will instruct all conversion students in the flight. The Stan officer will let you run the brief and flight and offer assistance when necessary.

j. F1005 (Advanced 1v1 Class). Sit in on the advanced 1v1 class.

k. R2005 (Advanced 1v1 Sim-Observe). You will observe a 1v1 simulator with a Stan officer running the event.

l. R2006 (Advanced 1v1 Sim-Instruct). You will instruct a 1v1 simulator with a Stan officer present. You can do the R2005 and the R2006, with two students, in one event.

m. R4004 (Advanced 1v1 flight instruct). You will instruct all 1v1 students in the flight. The Stan officer will let you run the brief and flight and offer assistance when necessary.

n. F1007 (2vX Class). Sit in on the 2vX class.

p. R2007 (2vX Sim-Observe). You will observe a 2vX simulator with a Stan officer running the event.

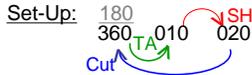
q. R2008 (2vX Sim-Instruct). You will instruct a 2vX simulator with a Stan officer present. You can do the R2005 and the R2006, with two students, in one event.

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- r. F1008 (Strike Route Class). Sit in on the Strike Route class.
- s. R2009 (Strike Route Sim-Observe). You will observe a Strike Route simulator with a Stan officer running the event.
- t. R2010 (Strike Route Sim-Instruct). You will instruct a Strike Route simulator with a Stan officer present. You can do the R2005 and the R2006, with two students, in one event.
- u. R4005 (Strike Route flight instruct). You will instruct all lvl students in the flight. The Stan officer will let you run the brief and flight and offer assistance when necessary.
- v. R2190 (Any Sim Stan Check). You will conduct a full simulator event to include brief, intercepts, and debrief, under the supervision of a Stan instructor. This event can be completed when you are R2010 complete.
- w. R4190 (Any Flight Stan Check). You will conduct a full flight event to include brief, intercepts, and debrief, under the supervision of a Stan instructor. This event can be completed when you are R4005 complete.
- x. I4001 (Airnav observe). For this event, you will observe a Stan instructor teaching an Airnav or Approach Hop sortie.
- y. I4002 (Airnav instruct). You will instruct an Airnav or Approach Hop sortie. These two flights can either be done with one or two students. With two students it will be an out and back; with a single student you can do an out and back to complete both of his events, or just a round robin to complete one event if needed. These two flights can be completed upon completion of your FAM A/B.
- z. C4190 (NATOPS check). You and a NATOPS instructor will fly a profile similar to your FAM sorties. Conduct is governed by CTW6INST 3710.20.

111. FIGHTER INSTRUCTOR GOUGE.

Reattacks Smart Sheet



FSA's: 12k', 16k', 20k'

Rounding:
 - To 0: 8, 9, 0, 1, 2
 - To 5: 3, 4, 5, 6, 7

Altitude Analysis:
 - Climb/Descend to Hi/Lo FSA if:
 -- >2° H/L @ 20 nm
 -- >3° H/L @ 15 nm
 - Consistent GCI Hi/Lo @ 15 nm
 - Altitude Δ = Elev x (Rng/10) in K'
 -- Example: 3° @ 20 nm = 6k' Δ

Initial Spiel:
 - "Steady _____. I have a ____ L/R Cut, Looking ____ L/R for a ____ R/L TA, ____ DTG. L-R/R-L Pass, Steady _____."

CCCs:
 - Stop at 14 nm for 0-20 TA (0-22), 12 nm for 25-45 TA (23-47) [2 nm prior to Lead]
 - In turn to initial SH, one CCC if bogey crosses the round
 - On SH, only if TA touches a 0/5
 - Turn 10° into cut for every 5° TA decrease / 10° away from cut for every 5° TA increase

STT Lock:
 - Outside 14/12 nm, only w/bogey on collision w/i rounds (hard turn or less, drift stabilized w/good spotlight)
 - Inside 14/12 nm, lock immediately & do TAA

Lead:
 - At 12 nm for 0-20 TA, 10 nm for 25-45 TA
 - Lead AO is ½ of TA in opposite direction (e.g., 25R TA displaces to 12.5L)
 - Fox-1 Range is 12/10 nm ("L/R for Lead. Taking 10R to 5L.....your Dot") (AO must be w/i 3° of Lead)
 - If AO not w/i 3° of lead, re-lead
 - If AO is w/i 3° of Lead, do not sweeten lead (TAs: 0, 1, 2, 5, 6, 7, 12 are already pre-lead if on collision)

Displacement Turn:
 - At 10 nm for 0-20 TA (8 nm minimum), 8 nm for 25-45 TA (6 nm minimum)
 - Use Rule of 50 to Displace: 20R TA displaces to 30R AO... 50R TA displaces to nose... 60R TA displaces to 10L
 - For late displacement, displace extra 5" for each NM or partial NM inside min displacement range
 - "R/L Hard for Displacement.....steady up"

Counter Turn:
 - 0-15 TA (0-17): Constant AO (start @ 1° of outward drift) w/easy initial turn
 - 20 TA (18-22): Slight steady inward drift (3:1 ratio) w/easy initial turn
 - 25 TA (23-27): Slight steady inward drift (3:1 ratio) w/standard initial turn
 - > 30 TA (28+): Steady inward drift (1:1 ratio) w/ standard initial turn
 - Subsequent turns are harder/hard as poss/ease/hold as req'd to maintain proper drift rate

AREO (Az R/L, Range, Elev H/L, ROC):
 - Starts at 15 nm...then as able w/i normal cadence until Tally

Fox-1 Criteria:
 - Hostile Dec
 - STT
 - Dot in ASE circle
 - Proper lead w/i 3°

Cold 100s (TA >= 50):
 - Can Sneak-a-Peak by turning 20° into the Cut (must remember new Cut)
 - At 8 nm, displace per following table (0.1 IMN advantage moves CB in by 5°)...

| | TA | Cut | AO | Displace to | Buster? |
|------------|--------|---------|--------|-------------|---------|
| Double -10 | 50 L/R | 100 L/R | 50 R/L | 0 (nose) | No |
| | 55 L/R | 100 L/R | 45 R/L | 5 R/L | Yes |
| | 60 L/R | 110 L/R | 50 R/L | 10 R/L | Yes |
| | 65 L/R | 120 L/R | 55 R/L | 15 R/L | Yes |
| Double -20 | 70 L/R | 120 L/R | 50 R/L | 20 R/L | Yes |
| | 75 L/R | 130 L/R | 55 R/L | 25 R/L | Yes |

Fox-2 Criteria:
 - Hostile Dec
 - STT
 - w/i 8° azimuth } Dot in/on
 w/i 8° elev } ASE circle
 - 0.5 – 1.5 nm range
 - 0-100 ROC (no opening)
 - Drift stabilized (SI ok)
 - < Hard turn

Hot Overshoot (Compass Recovery procedures):
 - Hard as Poss turn to 30° past BH, call "Lost contact" to GCI and select ACM-S
 - If no contact w/i 5", standard rate turn to BH
 - w/GCI info, turn midway between BH and BB

W-155 Procedures:
 - NPA2 flight plan
 - Assigned vectors until cleared enroute
 - Fix-to-Fix (NPA Ch 119x)
 -- Beard NPA 210/28
 -- Rozie NPA 160/28)
 - Switch to Seabreeze ~ 15-20 nm
 - Get Clrx into area(s) & altimeter
 - Fence check
 -- Rdr, A/A Tcn, alt alert 7k', HSI
 -- "Bogey fenced," "Ftr fenced," alibis
 - Intentions to Gritrock/bogey
 - "Fights on, Tapes on"

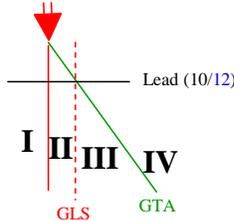
STAN Notes:

| | SR-1 | SR-2 | SR-3 ¹ | SR-4 ² | FR-1 | FR-2X |
|--------|--|------|-------------------|-------------------|------|-------|
| # Runs | 5 | | | 4 | | |
| Type | Srch / Track / GCI @ Instructor Discretion | | | | | |
| Range | 25 nm (F.O. @22-23 nm) | | | | | |
| TA | 23-50 | 0-22 | 0-75 | | 0-50 | |
| WEPS | 0 / 2 / 2 | | | | | |
| Radar | 40 nm scope / AZ3 / 1 bar / MN / DB N / BLK Y / ASR 25 nm | | | | | |
| Notes | ¹ Std departure on SR-3 ² Sep vectors into NLT SR-4; fly full TACAN appch on SR-4 | | | | | |

Conversions Smart Sheet

Conversion "Big 3" Items:

- Proper SH (setting correct Cut for Area I-IV per own gameplan)
- Turn Rate
 - HAP turn if reaching BB before SH
 - Ease to Std turn if reaching SH before BB
 - If $\pm 3^\circ$ of GTA caveat applies, continue Hard turn
- Buster / No Buster (add Buster only for the $\geq 45k'$ LS caveat)



Conversion Areas:

- I: Δ DOP; Lo LS, Lo TA
- II: Lo LS, Lo TA
- III: Good LS, Lo TA
- IV: Hi LS, HI TA

90-60-0-90 Gameplan:

- Area I: SH = 90° Cut into BB
- Area II: SH = 60° Cut away from BB
- Area III: SH = BR (0 Cut)
- Area IV: SH = 90° Cut into BB

Caveats:

- If initial TA is w/i 3° of Goal TA, turn directly to AH w/Hard turn
- If converting $\geq 45k'$ LS, add a Buster
- If converting $\leq 24k'$ LS, use a 40° Cut
- If Goal TA ≤ 15 , don't do LS calcs; just lead the turn to AH

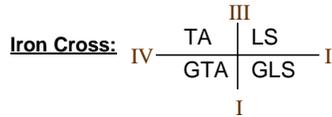
| Goal TA | LS | Lead Rng |
|---------|------|----------|
| 0 | 0 | 12 nm |
| 5 | 6k' | 12 |
| 10 | 12k' | 12 |
| 15 | 18k' | 12 |
| 20 | 24k' | 12 |
| 25 | 25k' | 10 nm |
| 30 | 30k' | 10 |
| 35 | 35k' | 10 |
| 40 | 40k' | 10 |
| 45 | 45k' | 10 |

Set-Up:



SH = BR +/- Cut IAW the game plan
GB = BR + Right GTA (or BR - Left GTA)

AH = BR + double Right GTA (or BR - double GTA)
Goal LS @ 20 / 24nm = $\frac{1}{2}$ GLS



Actual LS (k'):

$$LS = TA \times (Rng/10)$$

Determining the Area:

- I: Δ DOP
- II: bottom #s > upper #s
- III: bottom #s fit between upper #s
- IV: upper #s > bottom #s

Turns are allowed <14nm:

- A: turn to AH
- L: Lead for Fox-1
- 0: Zero cut
- C: turn to CH
- K: Keep bogey on scope

Conversion Rules:

- Max Cut allowed is $90^\circ + 0.1$ IMN Buster
- BB w/i scope limits NLT 20 nm
- No Re-conversions <14 nm (see info box for permitted turns <14 nm)
- Bogey must be successfully attacked & re-attacked

Re-Conversions / Zero Cut:

- For Areas I & II turn to Zero Cut when GLS met
- For Area III turn to 0 Cut; Area IV, turn to CB when GTA met
- At Zero Cut, LS remains constant; while TA doubles as Rng halves
- For every 20° off 0 Cut, LS will change 1k' per nm
- For every 10° off CH, TA changes by 5° as Rng halves

Lead-Turning AH ROTs (do NOT lead LS):

- Lead point is 1° lead for every 20° turn req'd for AH/direct for Ld
- >20 nm, Std turn -- 20-16 nm, Hard turn -- <16 nm, HAP turn

Lead (same as Re-Attacks):

- At 12 nm for 0-20 TA, 10 nm for 25-45 TA
- Lead AO is $\frac{1}{2}$ of TA in opposite direction (e.g. 25R TA to 12.5L AO)
- Fox-1 Range is 12/10 nm
- ("L/R hard for Lead. Taking 10R to 5L.....Fox-1")
- If AO not w/i 3° of lead, re-lead

Displacement Turn (same as Re-Attacks):

- At 10 nm for 0-20 TA (8 nm minimum), 8 nm for 25-45 TA (6 nm minimum)
- Use Rule of 50 to Displace: 20R TA displaces to 30R AO/50R TA \rightarrow nose..60R TA \rightarrow 10L AO
- For late displacement, displace extra 5° for each NM or partial NM inside min displacement range (rng rounds up)
- "R/L Hard for Displacement....steady up"

Counter Turn (use ROC gates for potential jinks):

- 0-15 TA (0-17): Constant AO (start @ 1° of outward drift) w/easy initial turn
- 20 TA (18-22): Slight steady inward drift (3:1 ratio) w/easy initial turn
- 25 TA (23-27): Slight steady inward drift (3:1 ratio) w/standard initial turn
- > 30 TA (28+): Steady inward drift (1:1 ratio) w/ standard initial turn
- Subsequent turns harder/hard as poss/ease/hold as req'd for proper drift rate

STAN Notes:

- 5 intercept runs for sims; 4 runs for flights
- Areas III/IV for SC-1; I/II for SC-2; All Areas for other sims/flights (max 45 TA)
- Radar setup: 40 nm, AZ3, 1 bar, MN, DB N, BLK Y, ASR=30nm
- STT Lock permitted $\leq \pm 3$ nm correlation w/GCI BRA
- Bogey Jinks permitted: 8-10 nm for 0-22 TA; 6-8 nm for ≥ 23 TA; No DOP change; Max 50 TA
- If lost contact in RQ, keep BB w/i 20° of nose instead of splitting the diff (due to potential jinks)

Cold 100s (TA ≥ 50):

- Sneak-a-Peak by turning 20° into Cut
- At 8 nm, displace per following table...

| TA | Cut | AO | Displace to | Buster? |
|--------|---------|--------|-------------|---------|
| 50 L/R | 100 L/R | 50 R/L | 0 (nose) | No |
| 55 L/R | 100 L/R | 45 R/L | 5 R/L | Yes |
| 60 L/R | 110 L/R | 50 R/L | 10 R/L | Yes |
| 65 L/R | 120 L/R | 55 R/L | 15 R/L | Yes |
| 70 L/R | 120 L/R | 50 R/L | 20 R/L | Yes |
| 75 L/R | 130 L/R | 55 R/L | 25 R/L | Yes |

Fox-1 Criteria:

- Hostile Dec
- STT
- Dot in ASE circle
- Proper lead w/i 3°

Fox-2 Criteria:

- Hostile Dec
- STT
- w/i 8° azimuth
- w/i 8° elev
- 0.5 - 1.5 nm range
- 0-100 ROC (no opening)
- Drift stabilized (SI ok)
- \leq Hard turn

Counterturn ROC Gates:

| Rng | ROC |
|------|---------|
| 5 nm | 500 kts |
| 4 | 450 |
| 3 | 400 |
| 2 | 300 |

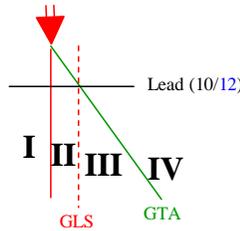
Conversions Examples

90-60-0-90 Gameplan:

- Area I: SH = 90° Cut into BB
- Area II: SH = 60° Cut away from BB
- Area III: SH = BR (0 Cut)
- Area IV: SH = 90° Cut into BB

Caveats:

- If initial TA is w/i 3° of Goal TA, turn directly to AH w/Hard turn
- If converting $\geq 45K'$ LS, add a Buster
- If converting $< 24K'$ LS, use a 40° Cut
- If Goal TA ≤ 15 , don't do LS calcs; just lead the turn to AH

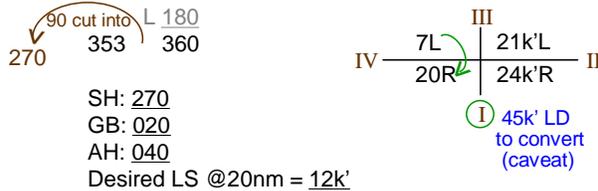


Determining the Area:

- I: Δ DOP
- II: bottom #s > upper #s
- III: bottom #s fit between upper #s
- IV: bottom #s < upper #s

Area I:

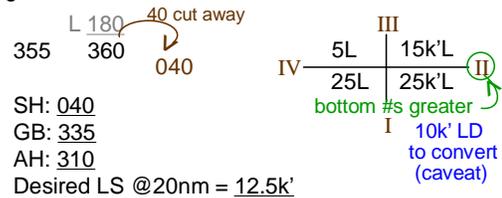
"Bogey left 180, Fighter right."
"Hammer, Gritrock sgl group BRA 353, 30, medium, hot."
"Gritrock, Hammer commit."
"I have 7L TA for 21k' on the left. What's my goal?"
"Your goal is 20R TA."



"Ease to Std turn, Steady Hdg 270.
I have an Area I problem; 90 cut into, one caveat.
Set Buster 0.6 mach."

Area II:

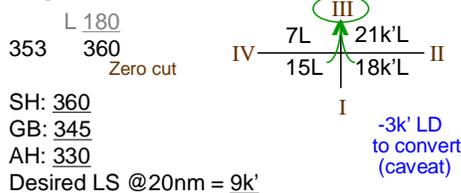
"Bogey left 180, Fighter right."
"Hammer, Gritrock sgl group BRA 355, 30, medium, hot."
"Gritrock, Hammer commit."
"I have 5L TA for 15k' on the left. What's my goal?"
"Your goal is 25L TA."



"HAP, Steady Hdg 040.
I have an Area II problem; 40 cut away, one caveat."

Area III:

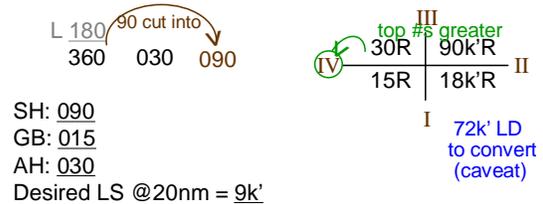
"Bogey left 180, Fighter right."
"Hammer, Gritrock sgl group BRA 353, 30, medium, hot."
"Gritrock, Hammer commit."
"I have 7L TA for 21k' on the left. What's my goal?"
"Your goal is 15L TA."



"HAP to Steady Hdg 360.
I have an Area III problem; zero cut.

Area IV:

"Bogey left 180, Fighter right."
"Hammer, Gritrock sgl group BRA 030, 30, medium, hot."
"Gritrock, Hammer commit."
"I have 30R TA for 90k' on the right. What's my goal?"
"Your goal is 15R TA."



"HAP, Steady Hdg 090.
I have an Area IV problem; 90 cut into, one caveat.
Set Buster 0.6 mach."

| Conversions Calcs | | Conversions Calcs | |
|-------------------|----|---|---|
| I | 5 | 5 L/R 15k' / 10 R/L 12k' / 90° into / +27k' | 15 L/R 45k' / 5 R/L 6k' / 90° into / +51k' + B7 |
| | | 5 L/R 15k' / 15 R/L 18k' / 90° into / +33k' | 15 L/R 45k' / 10 R/L 12k' / 90° into / +57k' + B7 |
| I | 10 | 5 L/R 15k' / 20 R/L 24k' / 90° into / +39k' | 15 L/R 45k' / 15 R/L 18k' / 90° into / +63k' + B7 |
| | | 10 L/R 30k' / 5 R/L 6k' / 90° into / +36k' | 20 L/R 60k' / 5 R/L 6k' / 90° into / +66k' + B7 |
| I | 10 | 10 L/R 30k' / 10 R/L 12k' / 90° into / +42k' | 20 L/R 60k' / 10 R/L 12k' / 90° into / +72k' + B7 |
| | | 10 L/R 30k' / 15 R/L 18k' / 90° into / +48k' + B7 | 20 L/R 60k' / 15 R/L 18k' / 90° into / +78k' + B7 |
| I | 5 | 5 L/R 15k' / 20 L/R 24k' / 40° away / +9k' | 15 L/R 45k' / 50 L/R 50k' away / 40° / +5k' |
| | | 5 L/R 15k' / 25 L/R 25k' away / 40° / +10k' | |
| I | 10 | 5 L/R 15k' / 30 L/R 30k' away / 40° / +15k' | |
| | | 10 L/R 30k' / 35 L/R 35k' away / 40° / +5k' | |
| I | 10 | 10 L/R 30k' / 40 L/R 40k' away / +10k' | |
| | | 10 L/R 30k' / 45 L/R 45k' away / +15k' | |
| I | 15 | 15 L/R 45k' / 50 L/R 50k' away / 40° / +5k' | |
| | | | |
| I | 20 | 20 L/R 60k' / 10 R/L 12k' / 90° into / +72k' + B7 | 20 L/R 60k' / 10 R/L 12k' / 90° into / +72k' + B7 |
| | | 20 L/R 60k' / 15 R/L 18k' / 90° into / +78k' + B7 | 20 L/R 60k' / 15 R/L 18k' / 90° into / +78k' + B7 |
| I | 25 | 25 L/R 75k' / 20 L/R 24k' / 90° into / +81k' + B7 | 25 L/R 75k' / 20 L/R 24k' / 90° into / +81k' + B7 |
| | | 25 L/R 75k' / 25 L/R 25k' / 90° into / +84k' + B7 | 25 L/R 75k' / 25 L/R 25k' / 90° into / +84k' + B7 |
| I | 30 | 30 L/R 90k' / 30 L/R 30k' / 90° into / +90k' + B7 | 30 L/R 90k' / 30 L/R 30k' / 90° into / +90k' + B7 |
| | | 30 L/R 90k' / 35 L/R 35k' / 90° into / +96k' + B7 | 30 L/R 90k' / 35 L/R 35k' / 90° into / +96k' + B7 |
| I | 35 | 35 L/R 105k' / 40 L/R 40k' / 90° into / +105k' + B7 | 35 L/R 105k' / 40 L/R 40k' / 90° into / +105k' + B7 |
| | | 35 L/R 105k' / 45 L/R 45k' / 90° into / +105k' + B7 | 35 L/R 105k' / 45 L/R 45k' / 90° into / +105k' + B7 |
| I | 40 | 40 L/R 120k' / 45 L/R 45k' / 90° into / +120k' + B7 | 40 L/R 120k' / 45 L/R 45k' / 90° into / +120k' + B7 |
| | | 40 L/R 120k' / 50 L/R 50k' / 90° into / +120k' + B7 | 40 L/R 120k' / 50 L/R 50k' / 90° into / +120k' + B7 |
| I | 45 | 45 L/R 135k' / 50 L/R 50k' / 90° into / +135k' + B7 | 45 L/R 135k' / 50 L/R 50k' / 90° into / +135k' + B7 |
| | | 45 L/R 135k' / 55 L/R 55k' / 90° into / +135k' + B7 | 45 L/R 135k' / 55 L/R 55k' / 90° into / +135k' + B7 |

Conversions Run Sheet (90-60-0-90 Gameplan)

| RKT | TAC Callsign: | Setup |
|--------------------------------------|---|---|
| Run Type: T S G (Hd to AH; no LS) | $\leq 24K'$ (40 cut) III IV ————— k' II k' ————— k' ————— HAP/Std/Hd GTA $\leq 15^\circ$ I >45K' (lead AH; no LS calcs) (+B) AH: ————— k' ALS: ————— k' | Conv Re-conv AH Lead TAA Lead Goal CT/Jinks RQ K / VID ALT — |
| SH: GB: AH: Init.Cut: | | |
| Run Type: T S G (Hd to AH; no LS) | $\leq 24K'$ (40 cut) III IV ————— k' II k' ————— k' ————— HAP/Std/Hd GTA $\leq 15^\circ$ I >45K' (lead AH; no LS calcs) (+B) AH: ————— k' ALS: ————— k' | Conv Re-conv AH Lead TAA Lead Goal CT/Jinks RQ K / VID ALT — |
| SH: GB: AH: Init.Cut: | | |
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| SH: GB: AH: Init.Cut: | | |
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| SH: GB: AH: Init.Cut: | | |

Conversions Run Sheet (90-60-0-90 Gameplan)

| RKT | TAC Callsign: | Setup |
|--------------------------------------|---|---|
| Run Type: T S G (Hd to AH; no LS) | $\leq 24K'$ (40 cut) III IV ————— k' II k' ————— k' ————— HAP/Std/Hd GTA $\leq 15^\circ$ I >45K' (lead AH; no LS calcs) (+B) AH: ————— k' ALS: ————— k' | Conv Re-conv AH Lead TAA Lead Goal CT/Jinks RQ K / VID ALT — |
| SH: GB: AH: Init.Cut: | | |
| Run Type: T S G (Hd to AH; no LS) | $\leq 24K'$ (40 cut) III IV ————— k' II k' ————— k' ————— HAP/Std/Hd GTA $\leq 15^\circ$ I >45K' (lead AH; no LS calcs) (+B) AH: ————— k' ALS: ————— k' | Conv Re-conv AH Lead TAA Lead Goal CT/Jinks RQ K / VID ALT — |
| SH: GB: AH: Init.Cut: | | |
| Run Type: T S G (Hd to AH; no LS) | $\leq 24K'$ (40 cut) III IV ————— k' II k' ————— k' ————— HAP/Std/Hd GTA $\leq 15^\circ$ I >45K' (lead AH; no LS calcs) (+B) AH: ————— k' ALS: ————— k' | Conv Re-conv AH Lead TAA Lead Goal CT/Jinks RQ K / VID ALT — |
| SH: GB: AH: Init.Cut: | | |
| Run Type: T S G (Hd to AH; no LS) | $\leq 24K'$ (40 cut) III IV ————— k' II k' ————— k' ————— HAP/Std/Hd GTA $\leq 15^\circ$ I >45K' (lead AH; no LS calcs) (+B) AH: ————— k' ALS: ————— k' | Conv Re-conv AH Lead TAA Lead Goal CT/Jinks RQ K / VID ALT — |
| SH: GB: AH: Init.Cut: | | |

26 Sep 12

Advanced 1v1 Smart SheetWeapons Employment (2x2x2):

- Students call Fox-3/Fox-1 on radio; but still pass the dot on Fox-2
- Fox-3: rng 25-20 nm, @ lead, \leq 20TA, A54 selected, dot in ASE cir.
- Fox-1 employment: same as reattacks/conversions
- FQ Fox-2: rng 5-1.5 nm, STT, A9 selected, dot in ASE circle
- RQ Fox-2: same as reattacks/conversions

Sample Adv. 1v1 Game Plan (from FTI, unless italicized blue):

- Commit Criteria: any group \leq 40 nm and \leq 60TA
- Reset: *>90 TA and >40 nm*
 - HAP turn shortest direction to BB at own 6 o'clock
 - Set Buster; unload & extend
- >20 nm:
 - 0-20 TA: Collision, Lead, Fox-3
 - 25 TA: 50 AO hot + Buster
 - 30-60 TA: 50 AO hot
 - 65-90 TA: monitor using cut-off/nose-on/stiff-arm geometry
 - >90 TA: monitor 5 secs, reset
- < 20 nm:
 - 0-45 TA: Collision, Lead, Fox-1
 - 50 TA: 50 AO hot + Buster, Lead, Fox-1
 - 55-90 TA: 50 AO hot
 - >90 TA: monitor 10 secs, reset
- *Maneuvering Bogey:*
 - \geq 20° turn
 - *Monitor – commit/reset*

Merge Procedures (if bogey continues nose-on):

- Recognize bogey jink into & aggressively cool off CT
- If bogey still mnvrs hot (\leq 15 TA), bring bogey nose-on w/HAP (~6 nm)
- Steady up dot in ASE circle for FQ Fox-2 & continue AREOs
- Employ Fox-2 from 5-1.5 nm or get VID/declaration

Post-Merge Game Plan (must comply w/TRs):

- Neutral (TA=AO): option to turn or separate
- Advantage (TA>AO): option to turn or separate (likely turn to engage)
- Disadvantage (TA<AO): separate

Separation/Bug Out Procedures:

- No Tally & No Radar SA:
 - Set Buster, unload & continue straight ahead
 - Make "leakers" call to GCI
- No Tally w/Radar SA:
 - Option to use No Tally/No Rdr SA or Tally/Rdr SA plans
- Tally w/Rdr SA:
 - Check 30° into bogey's extended 6 o'clock @3/9 passage
 - Set Buster, steady up & unload
 - Hard turn to put BB at own 6 o'clock

Training Rules:

- 1000' bubble - Daylight only - Ftr FSAs: 12k', 16k', 20k'
- FQ missile attacks stop by 1.5 nm
- Ftr may climb/descend to Hi/Lo FSA NET 15 nm
- Ftr won't leave FSA for the bogey w/o pilot Tally
- Bogey jinks to any hdg, but no Δ DOP post Fox-1
- Bogey won't fly thru Ftr base altitude <15 nm, and will be set in block by 10 nm
- Bogey won't leave hi/lo blk for medium blk <15 nm
- Ideally all merges will be R-R
- Bogey shall set 10 TA by 3 nm w/ 2k' of FSA
- Fighter shall set 10 TA by 1 nm
- Pilot tally req'd to start post-merge mnvrs; pilot/student tally req'd to continue mnvrs
- Both aircraft shall call tally & DOP at the merge
- If either jet is no joy at merge, that jet will respond w/current altitude and separate from the fight
- If one jet loses tally during post merge mnvrs, it will immediately roll wings level & call no joy, w/alt. & hdg (other jet will call "continue" assume deconf responsibility)
- If both jets lose tally, both will roll wings level & call KIO w/alt. & hdg; blind turns or "no-sight" defenses not allowed

High Fast Flyer (collision moves outward by 5°):

- Set Buster 0.6 mach asap
- Climb to 20k' FSA at 15 nm
- Displacement Turn:
 - 0-15 TA: displace normally, expect CT to be 50-70 kts Hot
 - >20 TA: underdisplace by 10°, expect CT to be 100 kts Hot

Low Slow Bogey (collision moves inward by 5°):

- Descend to 12k' FSA at 15 nm & confirm slow speed
- Overdisplace by 10°, expect CT to be 50 kts Cold
- At 90TA w/bogey on nose,
 - If rng >2 nm, continue normal CT
 - If rng < 2 nm, ease turn to cool off & reevaluate ROC
- Employ RQ Fox-2 quickly & be prepared for Break-X procs

Hostile Intent (Ftr declares Hostile due to inherent right of self defense):

- Ftr sees smoke trail from az correlated to bogey ("smoke in the air Rt 1:00")
- Ftr hears "Alamo"/"Archer" called over radio

STAN Notes:

- 5 intercept runs for SA-1, -2, -3; 4 runs for FA-1, -2X
- Threat: MiG-29/Su-27 w/10 nm Alamo & 3 nm FQ Archer (0.5-1.5 nm RQ)
- Tactical bullseye is NPA Tacan, "Vegas" (SJI Tacan, "Detroit", for W-453)
- STT permitted after initial BRAA call - Select "A54" for AMRAAMs
- TA used for valid shot criteria is the TA displayed in the data block @ shot
- Bogey jinks shall not change DOP inside AIM-7 range - No aborts

26 Sep 12

Advanced 2vX Smart Sheet**Mission Obj's (should be measurable & fit msn scenario):**

- Target all factor bandit groups
- 100% valid shots
- No blue losses

Training Obj's (what you're trying to learn/improve):

- Clear, correct, concise SA-building comm
- 100% good sorts IAW brief
- Excellent radar discipline/mechanics

Weapons Employment (loadout = 2x2x2):

- Students make own Fox-3/Fox-1 calls; but pass the dot to pilot on Fox-2s
- Fox-3 & Fox-1 employment: same as before; time-out at ½ shot range
- FQ & RQ Fox-2 employment: same as before

Radar Setup: 80 nm, AZF, 1BR, MN, DB Y, BLK Y, 30 nm ASR

AOR: #1 - 15-25k'; #2 - 7-17k' w/30nm ASR (3.45° beam = 10,350' @30nm)

Peeking: 25% max (if desired at all)

Intercept Procedures:

- Label: Core info = # of groups, bullseye info, altitude [group = 5nm/5k']
Broadcast Control Digital Bullseye: prior to commit
Tactical Control DBE: usually after commit
- Commit: < 60° TA, <40 nm, 8-24k'; switch to tactical BRAA control
- Target: Range = Ld-Trt; Azimuth = E-W/N-S; Echelon = Az/Rng w/fill-in
- Resan ("35 miles"): last chance full frame AOR sanitization before meld
- Meld / Sort (30 nm):
-- Meld mech- 40 nm, AZ3, elev centered, Acqs 1-2 lengths in front of tgt
-- Rng=N-F; Az=L-R/N'ern-S'ern
-- #2 is FTL / #1 is STL (MLR=25 nm)
-- Sort contract: #1=near/left/high ; #2=far/right/low
-- "Sorted, right, 18k" = STT IAW sort contract w/100% confidence
-- "Locked 18k" = locked into group without confidence of a correct sort
- Crank: a hard turn after BVR shot to maintain bogey sep/deny bogey WEZ
-- Crank priorities: 1) away from nearest threat 2) away from other threats 3) with the briefed flow/mutual support
- Decision / Abort ranges: execute abort after Fox-3 t/o, but NLT 10 nm
-- Continue/Notch/Abort depending on assessment of W/L/E
-- Should have 30 nm Az sep to be able to flow from group to group
- Merge / Separate:
(Stan) -- SRR: 10" of ACM-S centered on nose; 10" of 40 nm AZF w/20nm ASR
(FTI) -- SRR: ACM-S own side/AOR 6", 20 nm DLS AOR 10", 40 nm DLS 20"

Other STAN Notes:

- Four 2v2 intercept runs for SS-1; two 2vX runs for SS-2, SS-3
- Threat: MiG-29/Su-27 w/10 nm Alamo & 3 nm FQ Archer (0.5-1.5 nm RQ)
- Setup range: 40 nm; TA: any
- Anyone w/SA may call "35 miles" for resan
- Grps mnvr at will >30 nm; targeted grp <30 nm shall not induce cross sort; targeted group's jinks shall not exceed 60°TA post-Fox-1
- No Sort: #1 may lock in at 10 nm w/SA of single contact in the group
- Intercept debrief: use sim playback feature; instrs may allow OULs to debrief
- Tactical comm examples:
-- Initial picture: "Hammer, Gritrock; picture: group Vegas 180-60, medium, track south; group Vegas 180-40, medium, track SE"
-- Commit: "Hammer 11, commit"
-- Label and Names: "Hammer, Gritrock; picture: 2 groups range 20; lead group Vegas 180-60, medium, hot; trail group flank SE"
-- Target: "Gritrock, Hammer 11 target lead grp, Gritrock monitor trail grp"
-- Initial Contact: "Gritrock, Hammer 11, group BRAA 160-37, hits 17, declare"
-- Resan: "35 miles"
-- Meld: "Hammer 11, meld hits 17, side-side"
-- Sort (#2): "Hammer 12, sorted right, 1-7 thousand" or "Hammer 12, locked 1-7 thousand"
-- Sort (#1): "Hammer 11, good sort"
-- AIM-120 shot: "Hammer 12, Fox-3 lead group, 1-7 thousand"
-- Crank: "Hammer 11, crank west"
-- Separation: "Gritrock, Hammer 11, separation trail group"
-- AIM-7 shot: "Hammer 11, Fox-1 lead group, 1-8 thousand"
-- Timeout: "Hammer 11, timeout west group, 18-thousand"
-- Kill: "Hammer 12, kill west group, 1-7 thousand"
-- Abort: "Hammer 11, abort"
-- Engaged: "Hammer 12, engaged, nose 9 miles, 1-8 thousand"
-- Press: "Hammer 11 press"

Simulator Setup:

- Select 'Network' at two sim stations
- Select 'Master' on the host station
- Select 'Slave' & 'Group X' (X= master sim #)
- Use the master terminal to hot spot position & control bogeys
- Comm setup (use headsets; all will be hot mic):
-- Hang up all sim phone connections
-- Select same # (either master or slave sim #)
-- DO NOT select 'IOS/STS' on the phone pad
- Select 'Run OS' on slave terminal
- Select 'Run' on master terminal
- DO NOT use randomize on subsequent setups
- Rewind & reposition as req'd, then select 'Run' on the master
- Use 'Visible' Yes/No on the target page to kill/remove bogey(s)
- Master console instructor controls the bogeys
- Slave console instructor acts as Gritrock controller

Current as of 2007 FTI and Nov 2007 Fighter Standards

26 Sep 12

Advanced Strike Route Smart Sheet**Role:** self-escort strike msn at 16k/0.5 IMN; Weps = 2x2x2 + 1 LGB**Threat:** MiG-29/Su-27 w/Alamo (10 nm) & Archer (FQ 3 nm/RQ 0.5-1.5 nm)**Mission Objs:**

- Bombs on time, on target (BOTOT)
- Target all FBGs
- No blue losses

Scenario: as designed by student

- Must cover threat nation, AOB, gnd threats, target & msn objs
- Encouraged: imagery/charts/other products to enhance the scenario/brief

Routes (use std routes that have been developed for our airspace):

- Route card min. info: OUI name, rte #, bullseye, rte pts & labels, b/e cuts for each rte pt, ETAs & distances, rte pt coords
- Must have overview card w/general layout of all rtes/coords for poss. Flex

GPS (Fit Mgmt System (FMS)):

- OUIs must be familiar w/FMS; it's the primary nav reference for the strk rte
- Enter rte pt coords in FMS prior to leaving chocks
- Expect pilot to select TACAN info for airspace mgmt; OUI will select FMS

Setup Admin:

- Bogey will present both an ingress and egress presentation
- Coord w/Gritrock when airborne to let them know when flying the strike rte
- Setup starts w/Ftr's "Comex, Comex, Comex" call (no "Fight's on" call)
- Comm:
 - "Comex, Comex, Comex": commence exercise; 2 mins prior to rte start
 - "Hammer 11, pushing": made when starting the route (start ET clock)
 - "Hammer 11, IP inbound": made at IP; SEAD efforts maximized
 - "Hammer 11, Miller Time": made coming off target and egressing
 - "Hammer 11, target direct": made if going dir. to tgt from present posit.
- Maintain rte black line until A/A threat requires a reaction IAW the gameplan

Timing Problems/Corrections:

- Can change speed ± 0.1 IMN to make TOT window (± 30 "
- Can use geometry inside/outside black line to make up/lose time
- Avoid IP \rightarrow Tgt run at 0.4 IMN or flying S-turns in a SAM ring to lose time

Weapons Delivery: releasing a single GBU-12/16/10 series LGB

- Release range = 3.0 nm, $\pm 30^\circ$ of planned run-in hdg (ideally 16k', ≥ 0.5 IMN)
- Comm:
 - "Captured": you found tgt in pod; pilot may release bomb (OUI calls @5nm)
 - "Pickle" or "Wpns away": bomb has been released; OUI calls @ 3 nm
 - "Laser's on": informs pilot you're guiding the LGB (technique: @1.5 nm)
 - "Splash, laser's off": weapon has impacted tgt, you're done guiding it

A/A Comm: same as 2vX comm**Game Plan Considerations**

- Role & Msn: priority is to put bombs on tgt; A/A engagement only if req'd
- Radar Setup: adjust scope setup for coverage req'd to build SA
- Pre-Commit Geometry: stiff-arming can get around bogey; timing problem
- Commit Criteria: leave the black line only when you have to
 - Sample commit criteria: ≤ 30 nm, ≤ 60 TA + factor on route
 - Commit doesn't require putting bogey on the nose
- Post-Commit Geometry:
 - Force merge & blow thru: can help catch up on time
 - If you merge & turn w/bogey, you'll likely have to jettison bombs
 - Standard CT good if you re early on timing/against unaware bogey
- Post-Shot Mnvrs: think how your crank or bogey mnvrs will affect you
- Kill Removal: will occur when desired learning objectives are met
- Egress: After "Miller Time" your priorities change; only need to survive
 - Steer direct to push point; stiff-arm/buster/engage as req'd
 - Ensure to use short-rng radar ops when changing hdg off tgt

Training Rules (same as 1v1s):

- 1000' bubble - Daylight only - Ftr FSAs: 12k', 16k', 20k'
- FQ missile attacks stop by 1.5 nm
- Ftr may climb/descend to Hi/Lo FSA NET 15 nm
- Ftr won't leave FSA for the bogey w/o pilot Tally
- Bogey jinks to any hdg, but no Δ DOP post Fox-1
- Bogey won't fly thru Ftr base altitude < 15 nm, and will be set in block by 10 nm
- Bogey won't leave hi/lo blk for medium blk < 15 nm
- Ideally all merges will be R-R
- Bogey shall set 10 TA by 3 nm
- Fighter shall set 10 TA by 1 nm
- Pilot tally req'd to start post-merge mnvrs; pilot/student tally req'd to continue mnvrs
- Both aircraft shall call tally & DOP at the merge
- If either jet is no joy at merge, that jet will respond w/current altitude and separate from the fight
- If one jet loses tally during post merge mnvrs, it will immediately roll wings level & call no joy, w/alt. & hdg (other jet will call "continue" assume deconf responsibility)
- If both jets lose tally, both will roll wings level & call KIO w/alt. & hdg; blind turns or "no-sight" defenses not allowed

STAN/Other Notes:

- 2 strike route runs (2x ingress + egress);
- Syllabus has 2 strk rte sims (SS-4, -5) & 2 strk rte flights (FS-1, -2X)
- Radar setup: 80 nm, AZF, 1 bar, MN, DB Y, BLK Y, 30 nm ASR
- Students shall ensure a kill is made during ingress presentation
- Following ingress CT/merge, student may ask for a Rolex to meet TOT
- Kill removal IAW VT-86/Gritrock employment stds
- Students shall only initiate separation vectors after instructor "terminate" call and at the end of the full strike rte scenario
- After the ingress presentation, Ftr instructor makes kill call over UHF1; Bogey instructor makes a copy kill call and flow direction on UHF1

Current as of 2007 FT1 and Nov 2007 Fighter Standards

T-45 INSTRUCTOR GUIDE

200. REFERENCES. The following references may prove useful to new and experienced instructors alike:

1. CNATRAININST 1542.158 (Advanced Multi-Service Navigator Training System (MNTS) Curriculum)
2. CNATRAININST 1542.123C (Advanced Naval Flight Officer (NFO)/ Naval Aviator Instructor Under Training (IUT) Multi-Service Navigator Training System (MNTS) Curriculum)
3. CNATRAININST 1500.4G (Training and Administration Manual)
4. COMTRAWINGSIXINST 3710.1 (Wing SOP)
5. TRARONEIGHTSIXINST 3710.1 (Squadron SOP)
6. COMTRAWINGSIXINST 3710.17 (Wing In-flight Guide)
7. COMTRAWINGSIXINST 3740.2 (Wing FIST Program)
8. TRARONEIGHTSIXNOTE 3740 (Squadron FIST)
9. NAVAIR A1-T45AC-NFM-000 (T-45 NATOPS FLIGHT MANUAL)
10. All student Flight Training Instructions (FTIs) can be accessed here:
https://www.cnatra.navy.mil/pubs/ppub_nfo_snfo.htm

201. ATM IUT EVENT PROFILES.

1. The T-45C/ATM IUT syllabus is outlined in the Master Curriculum Guide (CNATRAININST 1542.123C). Specific maneuvers are discussed in detail in the Student Naval Flight Officer T-45C Flight Training Instruction (CNATRA P-821) and the most recently updated edition of the VT-86 ATM Stan Notes and Briefing Guides found in the Ready Room. All T-45C/ATM instructor training will be flown in accordance with the current VT-86 SOP.

202. ATM SNFO EVENT GRADING.

1. Students are graded against the syllabus and not versus each other via the Maneuver Item File (MIF) which is a listing of required maneuvers and associated proficiency levels for each block of training. They are required to meet MIF by the end of each block of training.

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The ATM syllabus consists of four blocks of training: Contact, Section WEPS, BFM, and Close Air Support (CAS).

For example, to meet MIF for "Radio/ICS Procedures", the student must: Communicate clearly and concisely with appropriate agencies using standard military and FAA terminology, be familiar w/NORDO procedures; make all calls when required to an accuracy of 90%, not step on others' transmissions, use nonstandard comm brevity when appropriate, use correct terminology to an accuracy of 90%, use standard terminology and comm brevity to an accuracy of 90%, maintain an appropriate level of comm w/other crewmembers and use proper switching for effective use of the ICS (p. VII-6 in the MCG, CNATRINST 1542.158F).

The gradesheet will have these items listed on them while specific requirements for those items are listed in the MCG. If they do not meet the indicated proficiency level then they earn a grade lower than MIF. If they fail to meet the required MIF on the EOB or checkride it constitutes a failure. The MCG goes into detail on what happens after a failure.

The MCG is a difficult read and takes time to understand fully. Please review it often throughout the IUT syllabus. If you have any questions please consult a Stan instructor.

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TIMS CHECK IN SHEET

| <u>CHECK IN DATE:</u> | <u>CHECK OUT DATE:</u> | <u>ENTRY INITIALS</u> |
|-----------------------|------------------------|-----------------------|
| | | |

| | | |
|---|---|--|
| Last Name: | First Name: | Middle Name: |
| SSN: | Date of Birth: | *Gender: |
| *Race: | *Ethnicity: | Marital Status: |
| Spouse Name: | Number of Dependents: | Home Phone: |
| Work Phone: | Cell Phone: | |
| Local Address (Street, City, State Zip Code): | | Birth Country and State: |
| Country of Citizenship: | Service: | Pilot / NFO / Student: (circle one) |
| Pay Grade: | Rank: | Date of Rank: |
| *Original Source Code (USN only) (If other, explain) | *Student Procurement Code: (If other, explain) | Entered Active Duty (ADSD): |
| Commission Date: | Instructor PRD: | Instructor Reserve Status (full / part time): |
| Student AQT /FAR score | Instructor Designator: | Instructor Flight Hours: |
| Degree (BS / BA / MA / etc.) | Major: | University: |
| Instructor IUT assignment (T-6 / T-39 Strike / etc.): | | Fleet Aircraft: |
| Do you have any issues that could negatively impact your flight training? (Circle):YES / NO (If YES, ask to speak privately regarding the issue.) | | |

* - Codes listed on back

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PRIVACY ACT STATEMENT

AUTHORITY TO REQUEST THIS INFORMATION IS DERIVED FROM 5 UNITED STATES CODE 301, DEPARTMENTAL REGULATIONS. PURPOSE OF THIS FORM IS TO PROVIDE FOR AN IMMEDIATELY ACCESSIBLE, UP-TO-DATE RECORD OF PERSONAL DATA FOR PERSONNEL MANAGEMENT AND/OR EMERGENCIES. COMPLETION OF THIS FORM IS MANDATORY. FAILURE TO PROVIDE REQUIRED INFORMATION MAY RESULT IN ADMINISTRATIVE OR DISCIPLINARY ACTION BEING TAKEN.

| <u>Gender</u> | <u>Race</u> | <u>Ethnicity</u> |
|-----------------|--------------------|---|
| M Male | American Indian | Chinese Melanesian |
| F Female | Asian | Cuban Mexican |
| | Black | Eskimo Micronesian |
| | Caucasian | Filipino Other |
| | Hispanic | Hispanic Other Asian Descent Other Pacific Island Descent |
| | Other | Indian Japanese Korean Latin American with Hispanic Descent Polynesian Puerto Rican Vietnamese |

| Code | Student Procurement |
|-------------|------------------------------|
| 5 | USN ROTC |
| 1 | USN Academy |
| 13 | USN OCS |
| N38 | USN US Air Force Academy |
| N11 | USN Flying LDO |
| N99 | USN Other |
| N91 | USN Transition Student |
| N19 | USN Direct Procurement |
| N27 | USMC ROTC |
| N25 | USMC Naval Academy |
| 6 | USMC PLC/Other |
| N93 | USMC Transition Student |
| N31 | USMC US Air Force Academy |
| N20 | USMC Direct Procurement |
| 7 | USAF ROTC |
| 3 | USAF Academy |
| N79 | USAF Officer Training School |
| N0 | USAF US Naval Academy |
| N81 | USAF Transition Student |
| 2 | USMA (West Point) |
| 8 | USA ROTC |
| N98 | Other Service |
| 10 | National Guard |
| 17 | International Student |

| Original Source Code | |
|----------------------|--|
| 01 | NAVAL ACADEMY |
| 02 | MERCHANT MARINE OFFICER CANDIDATE |
| 04 | NROTC REGULAR |
| 05 | NROTC CONTRACT STUDENT |
| 06 | OFFICER CANDIDATE SCHOOL (OCS) COMMISSIONED DIRECTLY FROM MILITARY ACADEMY |
| 12 | (USA) COMMISSIONED DIRECTLY FROM AIR FORCE ACADEMY |
| 13 | (USAF) |
| 15 | DIRECT APPOINTMENT, OTHER USN LIMITED DUTY OFFICER (LDO) (FROM |
| 22 | ENLISTED) |
| 23 | USN LIMITED DUTY OFFICER (LDO-T) (FROM ENLISTED) |
| 24 | USN WARRANT OFFICER PROGRAM (FROM ENLISTED) MSC FROM ENLISTED BY PUBLIC LAW 337, 80TH |
| 28 | CONGRESS |
| 30 | USNR MEDICAL SERVICE CORPS, OCS FULL COURSE |
| 85 | SEAMAN TO ADMIRAL |

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NATOPS/LOG BOOK/STAN CHECK

IUT Name: _____ A/C Type: T-45 /T-39 Syllabus:
Strike / Fighter

Check LOG BOOK:

- In the front there should be stamped (and signed):
 - Instrument qual
 - CRM EVAL
 - NATOPS qual
- Check and sign the last month here at VT-86 (make sure not to sign the current month)

Check STAN JACKET:

- On the left side there should be a guide to the Stan Jacket. Make sure all information is there and everything is signed and filled out correctly.

Check NATOPS:

- Section 1 part B (PCS orders) - check for latest PCS orders
- Section 1 part C (medical clearance) -
 - Current up chit
 - High Risk screening form
- Section 2 part C (miscellaneous) -
 - CRM stamp or certificate
- Section 3 part A (Schools and Courses) -
 - ORM
 - FITC
 - IGS
- Section 3 part B (Survival Training) -
 - Aircraft egress paperwork
 - GTIP/GLOC brief
- Section 3 part C (Examinations) -
 - NATOPS
 - IGS
 - EP tests logged in
- Section 3 part D (NATOPS evaluations) -
 - Latest NATOPS evaluation report

- Section 3 part E (NATOPS Instrument Rating) -
 - Latest Instrument check report

Home Phone: _____ Cell Phone: _____

VT-86 IUT personal data sheet

Name: _____

Callsign: _____

Rank: _____ Service: USN/USMC/USAF Status: Active/Reserve/Associate

Syllabus: Strike/Fighter/ATM

Check-In Date: _____

Hometown: _____

College:

Previous Assignments:

Previous Aircraft:

Local Recall numbers:

Address:

CNATRAINST 3710.13G
14 May 11

| | |
|-----------------------|--|
| MEDICAL RECORD | CHRONOLOGICAL RECORD OF MEDICAL CARE |
| DATE | SYMPTOMS, DIAGNOSIS, TREATMENT, TREATING ORGANIZATION <i>(Sign each entry)</i> |

FLIGHT INSTRUCTOR MEDICAL SCREEN, AVIATION MEDICINE, <your MTF, location, state>

(Rev. 11/19/08)

AUTHORITY: CNATRAINST 3710.13G

PRINCIPLE PURPOSE: To determine suitability as a flight instructor

ROUTINE USE: The information obtained herein will be utilized by the undersigned flight surgeon to advise the Commanding Officer of a candidate's physical and emotional suitability as a flight instructor.

DISCLOSURE: Voluntary; however, failure to provide the information may disqualify the candidate for flight instructor duty.

| | | | |
|------|-----------|------|---------|
| NAME | RATE/RANK | DATE | COMMAND |
|------|-----------|------|---------|

1. **CANDIDATE INTERVIEW;** Does the member have a present or past history of:

a. Disease, injury, or infection that may hamper his/her ability to perform training duties? Y / N

b. A psychiatric disorder or undergone psychological counseling or treatment for the same? (i.e., psychosis/psychotic disorder, personality disorder, history of impulsive behavior, problems related to bad judgment, depression or mood disturbance) Y / N

c. History of significant adjustment disorder, personality traits of a maladaptive nature, "nervous breakdown," or "neurosis," anxiety disorder, phobic or panic disorder, poor coping skills, stress related problems. Y / N

d. Work related problems? (i.e., mishaps, FNAEB, FFPB, FEB, passed over for promotion, relieved of duty, formal written or verbal counseling, adverse fitness report) Y / N

e. Discipline problems? (i.e., insubordination, misconduct, failure to comply with rules or regulations, lawful orders, flight violations, NJP) Y / N

| | | | |
|--|------------|-------------------------|-----------------------|
| HOSPITAL OR MEDICAL FACILITY | STATUS | DEPART./SERVICE | RECORDS MAINTAINED AT |
| SPONSOR'S NAME | SSN/ID NO. | RELATIONSHIP TO SPONSOR | |
| <small>PATIENT'S IDENTIFICATION: (For typed or written entries, give: Name - last, first, middle, ID No or SSN; Sex; Date of Birth; Rank/Grade.)</small> | | REGISTER NO. | WARD NO. |

CHRONOLOGICAL RECORD OF MEDICAL CARE
Medical Record
STANDARD FORM 600 (REV. 6-97)
Prescribed by GSA/ICMR
FIRM (41 CFR) 201-9.202-1

Enclosure (1)

CNATRAINST 3710.13G
14 May 11

| | |
|-----------------------|--|
| MEDICAL RECORD | <u>CHRONOLOGICAL RECORD OF MEDICAL CARE</u> |
| DATE | SYMPTOMS, DIAGNOSIS, TREATMENT, TREATING ORGANIZATION <i>(Sign each entry)</i> |

f. Alcohol abuse or dependence, alcohol or drug related incidents, undergone substance abuse rehab program? Y / N

g. Spouse or child abuse/neglect? (family advocacy program) Y / N

h. Suicide attempt/gesture or aggressive behavior? (verbal/physical) Y / N

g. Any health problems not in record, seen a civilian provider within the past year, taking any prescribed medications? Y / N

2. CANDIDATE RECORD REVIEW

a. Flight Physical is current? Y / N

b. Problem Summary List reviewed/updated? Y / N

c. Medical record reviewed? Y / N

3. **COMMENT(s)** on all (Y) responses in section 1 above and significant findings on medical record review or interview:

4. RECOMMENDATION:

The required medical screening has been conducted. Information does / does not currently exist which should be considered prior to CO interview.

Medical Officer Signature:

| | | | |
|--|------------|-------------------------|-----------------------|
| HOSPITAL OR MEDICAL FACILITY | STATUS | DEPART./SERVICE | RECORDS MAINTAINED AT |
| SPONSOR'S NAME | SSN/ID NO. | RELATIONSHIP TO SPONSOR | |
| <small>PATIENT'S IDENTIFICATION: (For typed or written entries, give: Name - last, first, middle; ID No or SSN; Sex; Date of Birth; Rank/Grade.)</small> | | REGISTER NO. | WARD NO. |

CHRONOLOGICAL RECORD OF MEDICAL CARE
Medical Record
STANDARD FORM 600 (REV. 6-97)
Prescribed by GSA/ICMR
FIRMR (41 CFR) 201-9.202-1

Enclosure (1)

CNATRAINST 3710.13G
14 May 11

| FLIGHT INSTRUCTOR SCREENING | |
|--|---------------|
| From: _____ (Medical Officer) | Date |
| To: Commanding Officer, _____ | |
| Subj: RESULTS OF FLIGHT INSTRUCTOR SCREENING IN THE CASE OF: _____ | |
| Ref: (a) NAVEDTRA 135A (b) CNATRAINST 3710.13G | |
| 1. The medical records review and interview required by references (a) and (b) has been conducted. Information does/does not currently exist which should be considered prior to CO interview. | |
| _____ Signature of Medical Officer | _____ Date |
| 2. The flight records review required by reference (b) has been conducted. Information does/does not currently exist which should be considered prior to CO interview. | |
| _____ Signature of Aviation Safety Officer | _____ Date |
| 3. _____ was interviewed and screened per reference (b) and is considered qualified for flight instructor duty. | |
| _____ Signature of Commanding Officer | _____ Date |
| Copy to NATOPS Training Jacket | |

CNATRAINST 3710/15 (Rev. 4-11)

Enclosure (2)

26 Sep 12

STATEMENT OF UNDERSTANDING

Ref: CNATRINST 1500.4G

DROP ON REQUEST (DOR) POLICY. All NATRACOM courses are voluntary. Accordingly, students have the option to individually request termination of training. Any time the student makes a statement such as "I quit" or "DOR", he/she shall be immediately removed from the training environment and referred to the student control officer for administrative action.

TRAINING TIME OUT POLICY

a. In any training situation when a student or instructor expresses concern for personal safety or a need exists to clarify procedures or requirements, the student or instructor calls a "training time out" (TTO). Instructors are responsible for maintaining situational awareness and shall remain alert to signs of student panic, fear, extreme exhaustion, or lack of confidence, that may impair safe completion of the training evolution, and shall immediately cease training when the instructor considers this action appropriate. It is the responsibility of the instructor to document a TTO request on the flight or simulator aviation training form (ATF), if a flight or simulator event, otherwise on a CNATRA-GEN 1542/16, Supplementary Jacket Form. Information concerning the TTO and action taken by the instructor shall be provided.

b. If a student asks for a TTO, that does not necessarily mean the training event must be terminated. Following a TTO, the training situation shall be examined and additional explanation and instruction will be provided as necessary to allow safe resumption of training. The instructor will determine if the event can be completed after the TTO.

c. When a student refuses to participate in training after additional instruction is provided, and the safety concern is resolved, or when excessive use of TTO occurs, he/she is removed from training (i.e., incomplete the flight event) for counseling or administrative processing, including removal from training.

d. Only verbal TTO signals will be used for aircraft flight events. TTO signals other than verbal shall be appropriate to the training environment and clearly indicated in the curriculum, Lesson Topic Guides and Student Guides. Prior to commencing any "high risk" evolution the instructor will detail the TTO procedures with emphasis on evolution specific verbal (and nonverbal signals when appropriate) as part of the safety portion of the brief.

NOTE: All aircraft flight training events are considered "high risk" events per CNETINST 1500.20D.

e. NAVAVSCOLSCOM shall ensure all Officer Candidate School (OCS) and Preflight students are briefed on CNATRA DOR and TTO policies. NAVAVSCOLSCOM shall ensure each student signs and dates a

Supplementary Jacket Form (SJF) witnessed by whomever briefs the policies, with these policies stated on it. That form will be filed in the student's aviation training jacket (ATJ). Each subsequent command shall ensure the DOR/TTO form is in the ATJ if it is not, a new one will be completed and inserted in the ATJ.

I have read and understand the CNATRA DOR/TTO policy.

Signature

Date

Name (print or type)

CNATRAINST 1500.4

CNATRA 1542-PRIVACY ACT STATEMENT AND RECORD OF DISCLOSURE

The attached record contains personal information concerning an individual. Its use and disclosure is governed by SECNAVINST 5211.5C.

TITLE & DESCRIPTION OF RECORD

- AVIATION TRAINING JACKET.** Aviation Flight training, practical and academic grade scores, including pretraining aviation test battery scores, educational background and demographic information.

PRIVACY ACT STATEMENT

The information contained on the forms in the Aviation Training Jacket (ATJ) is requested under the authority of 5 USC 301, Departmental Regulations. This information is used to maintain an up-to-date student flight record and to evaluate the student's individual progress and qualifications, including aircraft, medical, and physiological qualifications. Routine uses of the record include to educational institutions upon request for academic transcripts, as well as, the blanket routine uses published at the beginning of the Department of the Navy's Compilation in the Federal Register. Disclosure of the data is voluntary. Failure to disclose any of the requested information may result in an inaccurate representation of the data in your ATJ.

| | | | |
|--------------------------|-----|-----------|------|
| LAST NAME, FIRST MIDDLE, | SSN | SIGNATURE | DATE |
|--------------------------|-----|-----------|------|

UNAUTHORIZED DISCLOSURE OF PERSONAL INFORMATION FROM THIS RECORD COULD SUBJECT THE DISCLOSER TO CRIMINAL PENALTIES

- | | |
|---|---|
| <p>1. This sheet is to remain a permanent part of the record described above.</p> <p>2. An entry must be made each time the record or any information from the record is viewed by, or furnished to any person or agency, except:</p> | <p>a. Disclosures to DoD or DoN personnel having a need to know in the performance of their official duties.</p> <p>b. Disclosure of certain items as authorized in SECNAVINST 5211.5C.</p> |
|---|---|

Forward written requests for disclosure to: Chief of Naval Air Training, Naval Air Station, Corpus Christi, TX 78419-5100

| DATE OF DISCLOSURE | METHOD OF DISCLOSURE | PURPOSE OR AUTHORITY | NAME & ADDRESS OF PERSON OR AGENCY TO WHOM DISCLOSED, WITH SIGNATURE IF MADE IN PERSON |
|--------------------|----------------------|----------------------|--|
| | | | SIGNATURE |
| | | | SIGNATURE |

1 Jun 2006

From: L-3 Communications Vertex Aerospace Chief Pilot
To: Operations Officer, Training Air Wing SIX

Subj: CONTRACTOR PROVIDED T-39 IUT TRAINING

1. Vertex provides initial T-39 familiarization flight training (FAM) for instructor NFO/Navigators (IUT). To facilitate this training we would like to implement the following procedures immediately.

a. Prior to being scheduled for FAM A the IUT shall have completed the following:

(1) The T-39 aircraft ground school.

(2) Cockpit familiarization in both the T-39 N and G with emphasis on checklist procedures (FAM 0).

(3) An observer flight with emphasis on EHSI and communications panel operations.

(4) Open & Closed book NATOPS exams.

2. The IUT will meet at Vertex Operations for flight briefing one and a half hours prior to the scheduled takeoff time for each familiarization flight. Prior to the briefing, the IUT must complete the following:

a. Insure the squadron flight schedule shows the appropriate stereo route (FAM A: NPA-851, FAM B: NPA-856) unless otherwise agreed upon by the instructor pilot.

b. Obtain NOTAMS and a computer generated flight weather briefing for the appropriate route to include weather at the approach airfields (NPA-851: MOB and NPA-856: MEI, GPT, and NBG). For DD 175 flights, deliver the completed flight plan to station weather two hours prior to the scheduled takeoff time.

c. Have applicable enroute publications to include both high and low instrument approach procedures.

d. The IUT should feel free to call the FAM pilot prior the flight.

3. FAM flights will be conducted IAW the existing syllabus.

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a. FAM A & B should be scheduled separate and not on a out & in syllabus event.

b. It is desired that one FAM flight be flown in a T-39N and one in a T-39G model, recommend FAM A in a "N" model, and FAM B in a "G" model.

4. After completion of FAM A and FAM B, the instructor pilot will give the completed IUT Training FAM forms to the IUT for return to the squadron training office.

Pieter Vandenberg
Chief Pilot

CC: Operations Officer, VT-86
Operations Officer, VT-4

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T -39N INSTRUCTOR NFO / NAV FLIGHT FAMILIARIZATION

FAM A: LOCAL AREA NPA-851 (Check Current IFG)

1. Preflight Briefing
 - a. Runway Layout / Taxi Routes
 - b. Course Rules / alert Areas I MOA's
 - c. Performance Data:
 - (1) Definitions
 - (2) Standard Data
 - (3) Takeoff Data / Critical Field Length / Balanced Field Length
 - (4) Landing Data
 - d. Checklist Usage
 - e. Aircraft Forms
2. Preflight/Engine Start
 - a. Walkaround (Main Gear Doors)
 - b. Cockpit/Cabin Inspection (Fire Ext., Survival Gear, etc..)
 - c. Engine Start
 - d. Taxi
3. Flight
 - a. Normal Takeoff
 - b. Area Work
 - (1) Approach to Stall (Stick Shaker)
 - (2) Unusual Attitudes (Demo)
 - (3) Emergency Landing Gear Lowering (Demo)
 - c. Navigation Systems
 - d. Flight Director/Autopilot Operation (Demo)

- e. Approaches
 - (1) Precision
 - (2) Non-Precision
 - f. VFR Patterns & Landings
 - (1) Full Flap
 - (2) Partial Flap .
 - (3) No-Flap
 - g. Full stop landing with thrust reversers
4. Postflight
- a. Mission Forms/Maintenance/Radar Debrief
5. Debrief

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T -39N INSTRUCTOR NFO / NAV FLIGHT FAMILIARIZATION

FAM B: ROUND ROBIN NPA-856 (Check Current IFG)

1. Preflight Briefing
 - a. Review FAM-A
 - b. Performance Data:
 - (1) Single Engine Takeoff
 - (2) Climb/Cruise
 - (3) Endurance/Divert Decision Making
 - (4) Descent
 - c. Flight Planning/Stereo Routes
2. Preflight/Engine Start
 - a. Aircraft/Cockpit Lighting
 - b. Engine Start Malfunctions
3. Flight
 - a. Area Work
 - (1) Cabin Pressurization
 - (2) Oxygen Mask Don Demo
 - (3) Emergency Descent (Discussion)
 - (4) Engine Airstart (Discussion)
 - (5) Fuel Management
 - (6) Emergency/Abnormal Event Procedures
 - b. V-I Cut (Single Engine Failure in Takeoff Configuration)
 - c. Approaches and Landings
 - (1) Single Engine Approach/Landing

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- (2) Single Engine Missed Approach
- (3) Multiple VFR / Instrument Approaches
- (4) Full Stop without Thrust Reversers (Final Landing)
- (5) Postflight
 - (a) Aircraft Servicing
 - (b) Review Mission/Maintenance Forms

5. Debrief