DEPARTMENT OF THE NAVY
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TRAINING AIR WING FIVE
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IN REPLY REFER TO:
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COMTRAWING FIVE INSTRUCTION 3710.18

From: Commander, Training Air Wing FIVE
To: Primary Squadron Commanders

Subj: PRIMARY FIXED WING STANDARDIZATION INSTRUCTOR GUIDE (SIG)

1. Purpose. To publish a comprehensive "Best Practices" guide detailing policies, techniques, and recommended procedures for Fixed Wing Flight Instructor Training Unit (FITU) Standardization flight instructors within Training Air Wing FIVE.

2. 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 SIG supersede directives of higher authority. It is not a substitute for the sound judgment of Instructor Pilots.

3. Action. All Fixed Wing Standardization flight instructors shall be familiar with this instruction. Items annotated by "shall" are compulsory in nature.

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

5. TRAWING FIVE POC is the T-6B Standardization Officer, COMM 850-623-7067 or DSN 868-7067.

G. A. KLING

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T-6B STANDARDIZATION

INSTRUCTOR GUIDE

2014

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SUMMARY OF CHANGES

CHANGE NUMBER	DATE OF CHANGE	CHANGE DESCRIPTION	PAGES AFFECTED/ INITIAL

ACRONYMS USED

ADDU	Additional Duty - Squadron SIs assigned to supplement FITU flight schedule as needed
ASR	Airport Surveillance Radar approach
ATIS	Automatic Terminal Information Service
CNATRA	Chief of Naval Air Training
corr	Correction
CRM	Crew Resource Management
CTAF	Common Traffic Advisory Frequency
DME	Distance Measuring Equipment
FAA	Federal Aviation Administration
FAM0	Familiarization 0 - initial introduction/walk around the aircraft prior to first flight
FAR/AIM	Federal Aviation Regulations/Aeronautical Information Manual
ILS	Instrument Landing System
KIAS	Knots Indicated Airspeed
LOC	Localizer - lateral guidance for ILS approach
MDA/DA	Minimum Descent Altitude/Decision Altitude
NH/NL	Nose high/nose low
N/SMOA	North/South Military Operating Area - defines boundaries and use of specific air spaces
OPNAV	Office of the Chief of Naval Operations
RNAV	Radar Navigation
RVFAC	Radar Vector Final Approach Course
TAC C/S	Tactical Call/Sign
TIMS	Training Integration Management System - program used to schedule and track both academic and flight training

UA	Unusual Attitude
VOR	VHF Omnidirectional Range

CHAPTER 1
COMMANDER'S INTENT

100. General. Training Air Wing FIVE (TRAWING FIVE) provides all prospective primary flight instructors with NATOPS and instructor qualifications utilizing an Instructor Training Unit. Manned with the highest quality instructors from within the Wing, the TRAWING FIVE Fixed-wing Instructor Training Unit (FITU) provides robust, standardized ground and flight instruction that forms the foundation for instructional excellence in undergraduate flight training within the Department of Defense.

101. Mission. The TRAWING FIVE FITU mission is to provide Training Squadrons TWO (VT-2), THREE (VT-3) and SIX (VT-6) with well qualified primary flight instructors in order to facilitate the effective instruction of undergraduate flight students in the primary phase of training.

102. Intent. The TRAWING FIVE FITU Standardization Instructor Guide (SIG) is designed to enhance instructor standardization within TRAWING FIVE while serving as a companion document to CNATRAINST 1542.165A, T-6B Primary Flight Instructor Training (PFIT). This guide amplifies the course of instruction set forth in CNATRAINST 1542.165A by providing both specific direction and a collection of best practices designed to synchronize the efforts of TRAWING FIVE Standardization Instructors (SIs) engaged in the training of Instructors-Under-Training (IUTs).

CHAPTER 2
GENERAL GUIDANCE

200. STANDARDIZATION INSTRUCTOR (SI) EXPECTATIONS

1. Lead.

2. Know what you teach. Impart what you know.

3. Be the subject matter expert in T-6B instruction.

a. The art of flight instruction: (FAA Flight Instructor Handbook);

b. Within the bounds of two curricula: Joint Primary Pilot Training (JPPT) and PFIT;

c. In compliance with one governing document: Training and Administration (TA) Manual;

d. In the T-6B Naval Air Training and Operating Procedures (NATOPS) and Flight Training Instruction (FTI);

e. Using a set of local procedures: Fixed Wing Operating Procedures (FWOP); and

f. Measured by a detailed set of Course Training Standards (CTS)

4. Be efficient with the resources with which you've been provided. You've been entrusted with a multi-million dollar aircraft, thousands of dollars in fuel and a finite amount of time to accomplish the training objectives. Make the most of every minute. Efficiency demands detailed planning on your part.

5. Be effective in the delivery of your instruction. Making the best use of your time means perfecting your own instructional techniques to best meet the needs of the IUT. Each IUT is different so you will need to tailor your delivery to meet their individual learning style. Effectiveness demands development of multiple teaching techniques on your part.

6. Be tenacious in the execution of the event. While quality training is second in importance only to safety, rarely will you be presented with ideal training conditions. Find a way to safely accomplish quality training. Regardless of the origin of friction, make the best of the situation and teach your IUT to do the same. A good deal of what you teach, particularly in the instructor phase of the syllabus, is improvisation. If the weather is workable, try it. If you can't complete the event, you've exposed the IUT to what works and what doesn't work.

7. Be above reproach. Your strict adherence to governing documents is paramount during an IUT's training. Willful violation for convenience is unacceptable and ignorance is no excuse. Execute in such a way that everyone knows that you know and abide by the rules. Everyone expects professionalism from a "TEXAN" call sign (c/s).

8. Be wary. The safety of aircraft and crew are the SI's paramount responsibility. Maintain the aircraft within safe parameters every moment of the syllabus event. It is the nature of flight training that instructors routinely encounter and counteract airwork and headwork errors that, left unchecked, would end in disaster. A watchful instructor never truly gives up control of the aircraft, and an IUT's failure to recognize an error does not absolve the SI from their obligation to remain in complete control of the training event at all times.

9. Be demanding. Hold the IUT to the Course Training Standards. The more the IUT sweats in the FITU, the less he bleeds in the pits.

10. Be upfront. Call performance like you see it. Keep in mind that while it may be unsavory at the time, the only way an aviator improves is when he knows the naked truth. Our mission at the FITU is not attrition, but to build quality instructor pilots for the fixed-wing training squadrons. Accurately characterizing areas of weakness early allows the FITU to tailor an IUT's training in order to most efficiently correct deficiencies.

11. Leave a legacy. As an SI, you've been given a sacred trust: the future of Naval Aviation. How you teach the next generation of Naval Aviators will have a long, lasting impact on the future of Naval Aviation. Leave Naval Aviation with the world's best Aviators taught by the world's best instructors.

201. IUT EXPECTATIONS

1. In preparation for success in the pits, we expect our IUTs to:

a. Demonstrate an instructional level of knowledge of the material for which they are responsible.

b. Demonstrate professionalism which inspires both students and fellow instructors to uphold the standard both in the air and on the ground.

c. Come prepared to execute on each event. IUTs should arrive no later than 15 minutes prior to the brief:

(1) WELL VERSED - knowing the material required for the event.

(2) WELL REHEARSED - having chair-flown the event.

(3) WITH A PLAN - knowing how they will execute the event.

(4) All briefing material (weather, Notice to Airmen (NOTAMS), and flight plans) shall be ready to go at brief time.

2. Own their training. An IUT must seize every opportunity, particularly early in the syllabus, to knock out those events not requiring a simulator or an airplane. As an SI, reinforce the notion that there is no down-time at the FITU. An IUT is ultimately responsible for their own training and shall make their Event Tracking Card (ETC), and previous Aviation Training Forms (ATF) available for review by the SI. IUTs 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 Maneuver Item File (MIF), must be discussed.

202. INSTRUCTION VS. EVALUATION

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

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

3. Both instruction and evaluation are required to transform an IUT into an Instructor Pilot (IP). SIs should instruct on all flights. It is on the NATOPS and standardization check flights that evaluation is the primary focus of the event. During these flights, IUTs must demonstrate their knowledge, flying ability, and instructional technique to the evaluator.

203. PROCEDURE VS. TECHNIQUE

1. **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.

2. **Technique** - A method of accomplishing a desired aim.

3. SIs must clarify when they are utilizing a technique. FTIs, NATOPS, TA Manual, JPPT, OPNAV3710, and FAR/AIM provide the SI with his or her framework for instruction. SIs shall instruct maneuvers in accordance with the publications utilizing technique when required to explain different methods to accomplish the maneuvers. Teaching a method or technique is acceptable, provided that method or technique does not contradict the procedure outlined in the reference. As the IUT progresses through training, they need to have the freedom to either develop their own techniques, or simply copy the techniques utilized by the SIs in order to build their own bag of instructional tricks. It is the SI's responsibility to ensure these techniques adhere to both the letter and spirit of procedure outlined in the publication.

4. It is imperative that SIs train IUTs in accordance with established and appropriate publications and standards. If SIs feel a procedure is unsafe, unclear, or unsatisfactory, they should make every effort to change the procedure vice circumventing it. Set the example: teach the book or make the effort to change the book.

204. SPECIAL SYLLABUS REQUIREMENTS (SSRs) SSRs should be accomplished on the event specified in the PFIT. If the SSR was not accomplished during the event, the SI shall note it on the ATF so that the SSR is not omitted on the next event. Generally, SSRs are conducted as demonstration items in the NATOPS Stage and as IUT conducted items in the subsequent phases of training.

205. AVIATION TRAINING FORMS (ATFs)

1. ATFs shall be completed by the SI within 24 hours of the completion of the event, or within 24 hours of return from cross country events. However, SIs should make every effort to complete the ATF immediately after the event. ATFs should accurately reflect the IUT's performance during the event, and grades for specific maneuvers shall be assigned in accordance with CTSs outlined in Chapter IX of the PFIT.

2. ATFs provide follow-on SIs with a comprehensive picture of an IUT's performance in the syllabus. They enable the SI to tailor instruction to the needs of the individual IUT. It is not uncommon for an IUT to perform all maneuvers in an event to CTS, therefore, leaving the SI with very little to comment on. In this case, SIs should grade the items accordingly and comment on the IUT's overall performance in the "General Comments" section of the ATF.

3. ATF Formatting. ATFs shall be formatted in accordance with the following template.

a. Maneuver Item File (MIF). Comment on each maneuver that is not to End of Block (EOB) CTS, and preface the comment with the name of the maneuver. Example: "Loop - +300', 30 KIAS, excessive G (5.3) initially, rough rudder control over the top." Specific instrument approach procedure comments should be made on the specific MIF line.

b. General Comments Section. The general comments section of the ATF contains three main elements: - Profile, Overall/Recommendations, and Landing Pattern/Landings.

(1) Profile. SIs are encouraged to use abbreviations when describing the profile flown. The profile shall include all maneuvers flown in their respective order to include: takeoff runway, stereo flight plan, maneuvers, landing pattern field, Course Rules and recovery point. Example: "KNSE RWY 05, NSE2, NMOA 3C, GX, POS, Spin, LPS, POS, ELPS, UA (NH&NL), Loop, Cuban, BR, PPEL 12J RWY 30, Break GZH 01, PEL/P, 5 Lakes, Easy Break 32."

(2) Overall. SIs shall comment on the brief and the flight portion of the event. Generally, comments on the IUT's brief will be short. However, if the IUT demonstrated deficiencies in general or in procedural knowledge, the SI shall comment on the specifics in this section. SIs should focus on general IUT trends highlighting areas of difficulty as well as areas of strength when discussing the flight portion of the event. Specific maneuver comments should be addressed on the specific MIF line. SIs should make recommendations for maneuvers and/or profiles to be flown in subsequent events at the end of the Overall section.

(3) Landing Pattern and Landings. SIs shall comment on the landing pattern in both the NATOPS and Contact Stages and should include the Outlying Field (OLF) winds. The focus of this section of the ATF should be on IUT trends in the landing pattern, and whether or not they improved during the event. Landing comments should highlight trends, safety, and areas of strength or weakness, and include the number of landings in each flap setting. Example: "Fair LP work at KGZH in strong winds. Trends were to fly slightly wide on downwind, early trans, holding nose up off the 180 leading to flat 90s, fast on final. Landings: (NF-2, TF-4, LF-3) Insufficient x-wind corr., late idle, floated landings (NF), 20' R of CL."

206. DEFENSIVE POSTURING

1. Defensive posturing is the key to maintaining positive control of the training event and a means to avoid dangerous situations. Like any instructional event, the SI should guard the controls at all times. SIs are instructing winged aviators, and must be cognizant of the balance between the learning and safety bubbles. An SI's over-riding objective is to maintain the aircraft in safe parameters.

2. An active defensive posture will help with safe control of the aircraft while allowing IUT development.

a. A winged aviator presents a special challenge. They're often someone, who by their past experience, may lead you to let your guard down.

b. Ensure the nose wheel is centered prior to disengaging nose wheel steering, especially during the lineup on the runway prior to takeoff. During both takeoffs and landings, ensure brake pressure is fully released. Realize, the "heels to the deck" technique may be insufficient to ensure brake release, and SIs should instruct IUTs to place the balls of their feet on the lower portion of the rudder pedal.

c. The landing pattern can be a high-threat area and the SI should be especially vigilant there. Any quick movement of controls by the IUT may be impossible to correct without proper posturing by the SI.

d. Spin and Out of Control Flight (OCF) training can be very disorienting for the IUT. It is not uncommon for an IUT to incorrectly place the control stick aft of neutral, and/or fail to center the rudder pedals. SIs must be able to first, verbally, and second, physically, be in a position to properly position the flight controls for OCF recovery.

3. Even if the aircraft is within safe parameters, an SI should not hesitate to take the controls when an IUT is deviating from the SI's personal comfort zone. If the SI finds himself asking the IUT "What are you doing?," the SI is most likely too late in coming on the controls.

CHAPTER 3
NATOPS STAGE

300. OVERVIEW. The NATOPS stage is the IUT's introduction to the T-6B Texan II. NATOPS is a fast paced syllabus that takes an IUT from their first flight in the aircraft to a competent Aircraft Commander. Expect that IUTs will enter the NATOPS phase with a wide range of skill levels. In many ways this stage will resemble taking an on-wing from the C4101 to their solo, without on-wing continuity, while including baseline instrument training.

1. Expectations. The T-6B NATOPS manual does not have a great deal of amplifying information about the maneuvers expected of the IUTs. IUTs are encouraged to use the Contact and Instrument FTIs to supplement their knowledge. Be mindful that Section VIII of the NATOPS covers the NATOPS syllabus and that the IUTs are expected to have familiarized themselves with it.

2. Technique. The NATOPS qualification stage is designed to build and enforce pilot skill proficiency. With that in mind, it is never too early to learn procedures and techniques that will enable the IUT to better fly the aircraft. At no point will instructional techniques be evaluated. However, all IUTs in the NATOPS stage will soon be in the instructor phase. Their first flight in the rear cockpit is too late for them to figure out how they were actually accomplishing maneuvers in the front cockpit. For example, teaching a landing pattern technique that mirrors the Contact FTI to maneuver the aircraft from the 180 to the rollout provides a solid basis for success in the instructor phase of training.

3. IUT Background. The NATOPS Stage takes fleet aviators from a wide variety of backgrounds and turns them into T-6B pilots. Be prepared and mindful of the different habits that an IUT's previous platform may have ingrained into their flying techniques. Some examples include:

a. Tactical/strike pilots will fly Angle of Attack (AOA) patterns instead of the airspeed patterns used in the T-6B.

b. Heavy (P-3/E-6/KC-130) pilots will attempt to put the nose wheel on the ground as soon as possible regardless of airspeed or ground speed. Heavy pilots also have reservations about closing out the power to land resulting in long landings.

c. Helicopter pilots will usually have the most difficulty. In most cases they have not flown fixed wing profiles or landings for at least four years.

4. Knowledge. Academic and general knowledge expectations should be high in the NATOPS Stage. Although IUTs are not expected to be subject matter experts after approximately 15 hours in the aircraft, they shall know Emergency Procedures (EPs) verbatim (memory items) and

have a functional knowledge of the non-memory items. They shall have a NATOPS manual level understanding of aircraft systems. They are qualifying as Aircraft Commanders, and should be able to brief all areas of their flight. They will need your experience to teach them the T-6B particulars and the TRAWING FIVE specifics of a NATOPS brief, with the expectation that the IUT will give the entire NATOPS brief on their NATOPS check flight.

301. MANEUVER CLARIFICATION (NATOPS VS FTI)

1. Power Off Stall (POS). The IUT Syllabus directs the IUT to reference the Student Naval Aviator (SNA) Contact FTI for Emergency Landing Pattern (ELP) Stalls. This is generally a very easy maneuver to accomplish but also a very good indication as to how much your IUT has studied.

2. Approach Turn Stall (ATS). The syllabus directs the IUT to reference the SNA Contact FTI for Landing Pattern Stalls (LPS). However, procedures for the ATS are specifically outlined in the OCF FTI. Use the procedures in the OCF FTI even though the OCF FTI may not be referenced in the current syllabus. NATOPS calls for this maneuver to be taken to the stall (un-commanded nose drop or roll) vice the approach to stall (stick shakers or airframe buffet). The maneuver is more realistic if flown with 30 degrees Angle of Bank (AOB). Ensure the IUT establishes the aircraft in the downwind configuration, starting a normal final turn at a simulated 180, and then introducing the stall.

3. Spin. In the NATOPS Stage the IUT shall establish the aircraft in an erect, steady-state spin. Upon confirmation of altitude, AOA, airspeed, and turn needle indications, recover from the spin via the NATOPS anti-spin recovery procedures. This maneuver does not qualify as an OCF recovery.

4. OCF Recovery. OCF maneuvers can range from a spin entry that may or may not achieve steady state to any of the OCF departures referenced in the OCF FTI (performed by an OCF qualified SI/ADDU). Emphasis is on the IUT making the proper recovery, not setting up or getting into the OCF.

5. Landing Pattern. The NATOPS Stage is the portion of the syllabus where the IUT develops their own landing technique. The IUT must be taught a process for the transition to landing. Many methods are acceptable, such as "Power, Level, Idle, Flare." However, the one method that is unacceptable is the "seat-of-the-pants, I-got-it-on-the-ground safely" method. We cannot expect an IUT to teach a landing transition if they do not develop a solid landing technique early in their training. The Contact Stage is too late to figure out one's own landing technique and to learn how to teach landings.

6. Course Rules. Course Rules (CR) are not required per PFIT in the NATOPS Stage. However, the NATOPS stage is an excellent introduction to Course Rules. If the flight, syllabus, and specific IUT do not call for an instrument recovery, show the IUT a set of Course Rules and encourage them to have a basic knowledge of them. Feedback from the squadrons demonstrates that some new IPs lack a comprehensive understanding of the local Course Rules. Give the IUT every opportunity possible to grow into an excellent IP. There is a time and a place for random recoveries, but that time and place is not a normal return from a Navy Out Lying Field (NOLF). During an IUT FAM0, emphasize the importance of understanding Course Rules early.

302. NATOPS EVENTS BREAKDOWN

1. Q4101

a. Brief. The Operations Department should schedule 1.5 hours for brief time to allow enough time to adequately cover the numerous discussion items listed in the JPPT. It is never too early to start discussing common student errors regarding emergency procedures; i.e., misdiagnosis between an engine seizure and a flameout. Even though local area Operating Procedures is a discussion item, remember that IUTs are not responsible for knowing Course Rules until the Contact Stage, so you may want to focus more on departure procedures, NMOA/SMOA operations, and NOLF and home field operations.

b. Flight. The NATOPS Stage primarily utilizes the SMOA to alleviate NMOA and Area 2 NOLF congestion. Ensure you are familiar with NOLFs Barin (KNBJ) and Choctaw (KNFJ) operations. Because you are flying with experienced winged aviators, plan on having a "do demo" mentality as opposed to the "demo do" mentality you would carry with a SNA. The IUT's background and time they have been out of the cockpit may dictate the amount of demonstration needed on your part. Remember that there are four flights in this block to ensure the IUT has exposure to and meets MIF (which is only a "3" for all items with the exception of the POS) for all maneuvers. Don't squeeze too much into the first flight. Devise a profile that allows the IUT to obtain a feel for the aircraft: trimming, stalls, benign aerobatic maneuvers (Loop, Aileron Roll, Wingover, Barrel Roll), and utilize a simple vice complex simulated emergency to initiate a Practice Precautionary Emergency Landing (PPEL) entry into a NOLF. Allow for a moderate amount of pattern work, but realize that by the time you get to the pattern, the IUT may be getting tired and frustrated. Recognize when it is time to call it a "good first flight." If time and fuel permit, show the IUT Course Rules from the Area 1, but also realize that a random recovery to a home field break is always an option.

2. Q4102/Q4103 (OCF Flights)

a. Brief. Plan on conducting a thorough OCF discussion (Q4102) and landing pattern discussion (Q4103). Don't assume that because the

IUT is an experienced aviator that they will be able to flawlessly land the T-6B. It is imperative that the IUT learns and develops a solid technique regarding the landing transition in order to enhance their ability to effectively teach their established technique in the Contact Stage.

b. Flight. Due to the disorienting nature of the OCF maneuvers, the SI should inquire if the IUT had any bouts of airsickness on their first flight. If this is the case, the SI might need to consider saving the OCF maneuvers toward the end of the flight to maximize event efficiency. Utilize high work to introduce new maneuvers and gain proficiency on previously flown maneuvers. Try to alternate between Precautionary Emergency Landing (PEL) and simulated power loss entries into the NOLF with increasingly complex emergency procedures. Attempt to maximize the amount of time spent in the landing pattern, stressing landing transition techniques and basic pattern operations.

3. Q4104

a. Brief. IUT briefs the system of the week.

b. Flight. Ensure that any items that have not been introduced or that the IUT has not yet made MIF on are either completed or given extra attention to ensure the IUT grasps the concept of the maneuver or develops a good technique to effectively complete the maneuver. If there is little to "clean up," attempt to focus on the more complex aerobatic maneuvers (Cloverleaf) and more complex emergencies during the PPEL/simulated power loss entry into the NOLF. Even though MIF is a "3," the IUT should be able to negotiate the landing pattern and transition to land with very minimal coaching from the SI. If the IUT's previous grade sheets show a weakness in the landing pattern, allow sufficient time to focus on landing pattern operations.

4. Q4201/Q4202

a. Brief. Keep in mind that flying Instrument Flight Rules (IFR) may not be the IUT's strong suit. Get a feel for how comfortable the IUT is in the IFR environment and tailor the brief accordingly. If the IUT comes from a strong IFR background, then you may want to focus on local IFR operations and profiles.

b. Flight. Tailor the profile to Ground Controlled Approach (GCA) availability. Precision Approach Radars (PARs) are becoming increasingly more difficult to find in the local area. Therefore, if you have the opportunity to complete the GCA work early on Q4201, do it. If it appears as though GCA work is going to be difficult to accomplish on the Q4201 flight, attempt to accomplish as much of the instrument work as possible for the block in the event the Q4202 needs to include Cairns Army Air Field or Tyndall Air Force Base as part of the profile.

5. Q4203

a. Brief. Since the PFIT briefing items are "any previously discussed items (as required)," take this opportunity to find out the IUT's weak points and areas that need more work. Chances are if they can identify a deficiency, it may be worse than the gradesheets depict. Having the IUT describe what they are potentially struggling with can give you good insight as to what the SI can do to enable the IUT to overcome the deficiency.

b. Flight. The Q4204 should primarily focus on a Q4390 checkride profile. Since the first two flights of the Q42XX block are instrument flights, there is a lot to accomplish on this flight. The goal should be to ensure the IUT is up to MIF on as many mandatory items as possible to minimize the "clean-up" work for the Q4204. If an IUT is struggling in the landing pattern, elect to forgo some high work to ensure ample time is allowed for pattern work.

6. Q4204

a. Brief. This brief should focus on checkride expectations and current IUT deficiencies. SIs should also check the IUT's NATOPS to ensure they have incorporated all changes. This is the last opportunity to develop an understanding of what needs to be accomplished in order to get an IUT where they need to be for their NATOPS checkride. Keep in mind that IUTs are winged aviators, and a failed NATOPS checkride will follow them for the rest of their career.

b. Flight. This flight should be flown as a simulated Q4390 checkride minus the OCF (controls neutral) spin recovery. If there are still ungraded items left over from the Q4203, tailor the profile accordingly. A sample Q4204 profile: "SMOA, GX, spin (anti-spin recovery), UAs, two aerobatic maneuvers, inverted flight, ATS, PPEL/power loss into NOLF Barin, VFR pattern work, PPEL/P, NOLF departure, PAR at KNPA, non-precision approach at KPNS, random recovery to a homefield break at KNSE, full stop."

CHAPTER 4
IUT INSTRUMENT STAGE

400. OVERVIEW

1. Goals. The four goals for the IUT Instrument Stage portion of the syllabus are:

a. Develop IUT instrument flight proficiency.

b. Develop IUT proficiency in T-6B flight planning.

c. Attain the requisite number of precision and non-precision instrument approach procedures, and instrument flight hours to be eligible for a NATOPS Instrument Evaluation.

d. Ensure the IUT is fully qualified to instruct the Instrument Navigation (INAV) Stage of flight.

2. By the end of the stage, IUTs must be capable of flying and instructing in the aircraft under all weather conditions.

3. Flight Management System (FMS). SIs shall emphasize the importance of using the raw data provided by the VOR/ILS receiver in the aircraft as the primary means of navigation utilizing INAV FTI procedures. IUTs need to be able to teach the FTI as it is written, which means being able to operate effectively in the instrument environment using the raw data only. Once the IUT is able to do that proficiently, SIs should then instruct the IUT on how to optimize the FMS. If used properly the FMS can be Situational Awareness (SA) enhancing and, possibly, a life-saving tool. It should be taught to IUTs during initial qualification.

3. Flight Planning. T-6B flight and fuel planning proficiency extends beyond the minimum requirements specified in NATOPS fuel planning charts and in the OPNAV 3710.7 Series. Since IUTs come from different backgrounds, some may not be familiar with the flight planning tools that are most commonly utilized by IPs and SNAs. IUTs shall produce jet logs for all non-local area INAV flights.

a. In addition to the OPNAVINST 3710 and NATOPS, SIs should expose IUTs to the tools provided by the following websites:

(1) adds.aviationweather.gov

(2) baseops.net

(3) flightplan.com

(4) airnav.com

(5) skyvector.com

(6) airseacard.com

(7) fwb.metoc.navy.mil/fwb13/

5. Airfield Exposure. In accordance with the PFIT, IUTs will be scheduled for out-and-in flights to the maximum extent possible. Attempt to expose them to the airfields they will utilize while training students. Some common destinations are Bay Minnette (K1R8), Monroeville (KMVC), Pensacola International (KPNS), Mobile Downtown (KBFM), Mobile Regional (MOB), Sherman Field (KPNA), Tallahassee (KTLH), Birmingham (KBHM), Montgomery (KMGM), Hammond (KHDC), New Orleans Lakefront (KNEW), Chennault (KCWF), Tuscaloosa (KTCL), Selma (KSEM), Meridian (KMEI), Peachtree/Dekalb (KPDK), Pascagoula (KPQL), Gulfport (KGPT), and Acadiana (KARA).

6. Approach Requirements. Check the IUT's Event Tracking Card (ETC) and previous grade sheets to ensure MIF completion prior to the end of the block. If the IUT needs to fly PARs and KNPA is not accepting TW-5 aircraft, some other airfields that offer PARs are Cairns AAF (KOZR), Tyndall AFB (KPAM), NAS Meridian (KNMM), NAS New Orleans (KNBG), NAS Jacksonville (KNIP), and Warner Robins AFB (KWRB). It is highly recommended that pilots contact Cairns or Tyndall approach prior to takeoff as requests for practice approaches may be denied during their recovery windows.

401. I4100 BLOCK OVERVIEW

1. General. If an IUT will not be scheduled for a cross country (CCX), the I4101 can be scheduled as an out-and-in with the I4102. Another option is to schedule I4101/C4XXX as an out-and-in on one day and C4XXX/I4102 as an out-and-in on another day. Each IUT needs to fly the local departure and recovery by the end of the first block in order to satisfy PFIT. For non-CCX IUTs, it is recommended that I4101 be flown under Visual Flight Rules (VFR) and the rest of the block flown under VFR or IFR at the discretion of the SI. The PFIT does not specify a minimum number of instrument approach procedures for IUTs, but three approaches with holding and a point-to-point (PTP) should be considered the minimum on each flight. The I41XX block should be used to develop IUT proficiency with INAV FTI instrument flight procedures, flight planning and instructional techniques.

2. I4101. I4101 is the only flight in the stage that the PFIT requires the IUT to occupy the aft cockpit. The PFIT lists the vertigo demonstration as an SSR on this flight in addition to the SSRs for local departure/recovery. If an IUT is scheduled for a CCX, then the I4101 should be scheduled as a single flight in order to meet the criteria for local departure/recovery SSR.

a. Vertigo Demo. Start wings level. Direct the IUT to close their eyes. Initiate a 30 degree AOB turn to the left or right using a normal roll rate. Stabilize in the turn for at least 30 seconds,

then level the wings using a slow rate of roll. Initiate another 30 degrees AOB turn to either direction using a normal roll rate. Have the IUT guess the direction of turn then open their eyes. This SSR shall be conducted in Visual Meteorological Conditions (VMC).

b. CCX IUTs. This flight and the last leg of the CCX may be the only two events that will be conducted in the local area. For IUTs going on a CCX, I4101 is the best opportunity to see a common student profile.

c. Sample Profiles

(1) For CCX IUTs: Depart KNSE on VFR flight plan, vertigo demo, PTP SQWID, hold, VOR-A KMOB, VOR-A as a procedure turn, PTP TRADR, PAR/ASR KNPA, hold MERTY/ANTUA, RNAV KNSE.

(2) For non-CCX IUTs: Profile is at the discretion of the SI. Refer to General Block Comments for suggested destinations.

3. I4102. For CCX IUTs, this may be the first leg of the CCX.

a. SIs should consider limiting the distance of the flight in order to allow them to evaluate IUT's performance and adjust subsequent CCX destinations if required.

b. Sample Profiles

(1) CCX IUTs. If going East, the TLH320, which has a terminal delay for approaches at KMAI or the KTLH 330, which has a terminal delay for approaches at KOZR are recommended. If going North, the MGM321, which allows for approaches at KMGM or the MGM322, which has a terminal delay for approaches at KOZR, are recommended. There are no recommended stereo routes going West. Some recommended airfields for terminal delays or stopovers are KMEI, KGPT, KHDC, KNEW, KLCH and KARA.

(2) Non-CCX IUTs. Profile is at the discretion of the SI. Refer to General Block Comments for suggested destinations.

4. I4103. SI demonstrates a cross section of common student errors on this flight.

a. SIs should consider filing a VFR flight plan if the weather permits.

b. Sample profiles

(1) CCX IUTs. At the discretion of the SI based on the CCX and PFIT requirements remaining.

(2) Non-CCX IUTs. VFR to the East, SI demonstrates common student errors for the following: hold Crestview (KCEW), VOR-A KCEW,

RVFAC ILS/LOC, PTP ROMEK. The SI should allow the IUT to play the role of Air Traffic Control (ATC) and set up the SI, in student role, for multiple approaches at KCEW using RVFAC. When shooting practice approaches into KCEW, inform Eglin Approach of the flight's intentions. A good technique is to monitor Eglin Approach in the Ultra High Frequency (UHF) and monitor KCEW Common Terminal Area Frequency (CTAF) in the Very High Frequency (VHF).

402. I4200 BLOCK OVERVIEW

1. General. The intent of this block is to polish IUT instructional techniques, to ensure they are prepared to instruct the INAV Stage, and prepare the IUT for the INAV Stan check, as well as the NATOPS Instrument Evaluation. All IUTs should see each local airfield that SNAs will utilize most often - KMOB, KBFM, KNPA, and KPNS. Use of the local stereo routes should be emphasized as well. A minimum of three approaches, holding and PTP are required for each flight. The IUT is required to instruct a portion of each flight. PFIT requires that at least one PAR or ASR be flown as a backup flight instrument approach.

2. I4201. Sample Profile: "Depart KNSE on KMOB320/KMOB320R, PTP SQWID, hold, VOR-A KMOB, VOR-A as a procedure turn, RVFAC ILS/LOC KMOB, hold MERTY/ANTUA, RNAV KNSE."

3. I4202. Sample Profile: "KNSE209. Depart KNSE, PTP PENSI, hold KNUN, PAR/ASR KNPA, ILS/LOC x2 KPNS, PAR KNDZ, tower to tower KNSE."

4. I4203. SI demonstrates a cross section of common student errors.

a. It is recommended the SI take the IUT to an uncontrolled airfield, such as KSEM or KCEW, in order to allow the IUT to play the role of ATC and the SI can accurately demonstrate common student errors.

b. Sample Profile. "Depart KNSE on a VFR flight plan to the west or east, hold over KMVC or KNUN, x2 VOR approaches, approaches into KMOB, or KNPA, RNAV KNSE."

403. I4390 STANDARDIZATION CHECKRIDE

1. General. Before conducting this flight, ensure the IUT has taken the IN1390 exam. Like all standardization checks in the syllabus, the purpose of this flight is to check that the IUT can accomplish all the maneuvers within CTS as well as instruct all of the maneuvers. With that in mind, SIs check that each IUT can set up and fly each approach, hold, and do a point-to-point using raw data only.

2. Sample Profile. "Hold KBFM, VOR-A as a procedure turn at KMOB, PTP TRADR, PAR at KNPA, hold MERTY or ANTUA, RNAV at KNSE."

404. I4490 INSTRUMENT CHECKRIDE

1. Crew Resource Management (CRM) Annual Evaluation (I4490). The CRM Evaluation should be conducted with the IUT in the aft cockpit with the SI simulating an unqualified instrument pilot (SNA) in the front cockpit. A challenging scenario should be presented in which the SI simulates Instrument Meteorological Conditions (IMC) down to minimums on a flight where deteriorating weather conditions were not anticipated.

a. Prior to the flight, ensure the IUT is aware that a CRM evaluation will be conducted.

b. The IUT should be evaluated on the use of the appropriate checklist.

c. The IUT should know that distractions will be used during the evaluation. The FAA states that distractions evaluate the examinee's ability to divide attention while maintaining safe flight.

d. Ensure the proper three way change of controls method is utilized during flight. There should never be any doubt as to who is flying the aircraft.

e. Ensure IUT informs SI of COM/NAV setup and usage. There should never be any doubt as to which radio (Com 1 or Com 2) is being utilized.

f. The approach shall be thoroughly briefed by the IUT. The IUT should provide instruction to the SI (a simulated student) on what to call out on the approach in a worst case weather situation. For example, at a minimum, the IUT should tell the SI to call out 100 ft prior to the MDA/DA and to call runway in sight or to execute a missed approach as appropriate.

2. Recommended I4490 CRM scenarios

a. Early stage student contact ride return with unforecasted deteriorated weather (ILS Mins) in the local area which requires the flight to proceed to the planned alternate. Fuel may become a factor as numerous aircraft get in line for the recovery. Inform the IUT that thunderstorms are present with variable winds and a wet runway.

b. Simulate CCX return where the aircraft is low on fuel and destination is below weather minimums. The flight must proceed to your alternate at minimum fuel with thunderstorms present in IMC.

CHAPTER 5
IUT CONTACT STAGE

500. OVERVIEW

1. The T-6B IP spends much more time in the aft cockpit than the front cockpit. Airmanship and instruction from the aft cockpit should be of primary concern to the IUT. The Contact Stage of the T-6B JPPT is also foundational to the SNA's aeronautical training. Because this is where that mentor-student relationship is formed during an IP's time with his on-wing student, the FITU places heavy emphasis on an IUT's development during the Contact Stage.

2. The SI should cover aft seat height and cockpit control differences. Specifically, the aft cockpit pilot should adjust the seat so that the top of his head is below the aft cockpit seat canopy striker. Additionally, the SI should re-emphasize the importance of visually and physically identifying the Interseat Sequencing System (ISS) Mode Selector in order to prevent inadvertent Canopy Fracturing System actuations.

3. The SI's coaching job might be simply stated as: "Help new IPs fly the airplane well while enabling them to learn how to teach." SIs should use clear and concise verbal cueing to instantly communicate with the student (IUT or SNA) what he needs to do better. Each SI will have a different collection of verbal cues in their reserve. SIs should not only use those cues when instructing IUTs but also allow IUTs to practice and refine cueing phrases to suit their instructional style.

501. FWOP GUIDELINES AND POLICY

1. The FWOP is the TRAWING FIVE Standard Operating Procedure for T-6B flight operations. However, T-6B crews have rare need to execute actual FWOP contingency procedures. Until practiced, some of the FWOP language can be difficult to visualize, especially for the IUT who did not attend primary flight training at NAS Whiting Field (NASWF). To that end, FITU SIs will make every effort to ensure that IUTs practice the following during the Contact Stage.

a. "No radio" (NORDO) procedures while in the MOAs and on and off Course Rules

b. Discontinued entries at KNSE and the NOLFs

c. Delta patterns at all airfields (Racetrack and Circular)

d. KNSE PPEL and PPEL/P (/in the Pattern)

e. VFR holding on Course Rules

f. Coordinating for the straight-in approach at KNSE

g. KNSE waveoff.

h. SIs shall ensure that IUT Contact Stage training includes familiarity with Areas 1 and 3.

2. The FWOP describes four sets of VFR arrival procedures from the three subsections of A292. SIs shall ensure that IUTs are comfortable with performing these VFR arrival procedures in the Contact Stage. Currently, only the two north NOLFs are available for SNA solo touch-and-go landings. As a result, the majority of SNA pre-solo contact flights are concentrated in the Pelican and NMOA working areas using only those two fields. Therefore, a heavier emphasis shall be placed on returning to homefield via the Jay and 5 Lakes Course Rules. In the Contact Stage, random recoveries and homefield instrument approach procedures (under VFR) do not add value to the IUT's training and should be avoided.

3. FWOP VFR arrival procedures are described by referencing headings, geographic checkpoints, altitudes and airspeeds. The TRAWING FIVE In-Flight Guide contains graphical depictions of each of the four routes and is intended for use by all pilots. Additionally, the FMS in all TRAWING FIVE aircraft have been loaded with the arrival procedures as Company Routes. Both the In-Flight Guide and the FMS Company Routes are authorized to aid all TRAWING FIVE pilots in executing the arrival procedures and are not considered "cheating" when utilized by IUTs at any time. However, the best practice is for IUTs to become familiar with the geographic checkpoints through repetition.

502. INSTRUCTING THOSE INSTRUCTING THE EMERGENCY

1. The Contact Stage of primary flight training focuses on one main goal: qualifying the student to fly solo. To that end we concentrate on landings and airborne emergencies. One of the more challenging events for an IP will be to teach the student to deal with a power loss or engine malfunction. This challenge becomes more complicated when the requirements of airspace management are mixed with handling the simulated emergency.

2. Simulated emergencies can and should be presented anywhere (see the FTI for minimum altitudes) but most commonly are presented once clear of the NMOA, when inside the Pelican area or while the SNA is setting up for the initial entry point to an NOLF. All have value and the IUT should be introduced to each. The SI should introduce best practices of each technique as early as possible, but no later than the C42XX block.

3. SIs should teach power loss scenarios at altitudes emphasizing the zoom/glide step of the ENG FAILURE EP as well as a power loss inside of high key which emphasizes ELP profile discipline. By the end of the C42XX block, the IUT should be able to demonstrate both power loss scenarios.

4. Initially, SIs will present the emergencies to the IUT in the C41XX block. The focus is on the rear cockpit sight picture, not the actual presentation of simulated emergencies by the IUT. IUTs will need to present their own EP scenarios in the C42XX block and may feel a sense of dual personalities as they play the roles of both IP and SNA. Be sure to plan for the checkout with Jacksonville Center /Pensacola Approach if the EP is given in the NMOA/SMOA. If given in the Pelican, verify that all blocks between your aircraft and high key are clear of traffic. If they are not clear, two techniques to help maneuver the aircraft safely to high key are: (1) coordinate with the other aircraft on Area Common or (2) simulate weather in occupied Pelican blocks. The simulated weather may include clouds with a "hole" that allows for descent along one of the dividing lines between blocks.

5. After initiating the emergency, the IUT will need to calculate Dead Engine Glide Altitude (DEGA) and begin to plan his approach to high key.

6. With a PPEL, emphasize the thought process that "your engine will quit, you just want to be on the ground when it does." Never accept being low during a PPEL. Use power to get back on profile. Once on the ELP, utilize the power required to correct the profile and realize that max power may be unwieldy and may aggravate the simulated condition. The primary goal is to be on the ELP profile - not above or below. IUTs need to avoid aiming to be high on the ELP profile with the intent of utilizing IDLE power to correct for high energy states. IDLE power may be used to dissipate energy, but the FTI warns against high sink rates with landing flaps. TRAWING FIVE has experienced tail strikes resulting from flaring at extremely low energy states.

7. With a power loss, SIs must emphasize that the prop is now "feathered" until touchdown (simulated using the 4-6% torque setting). If low on profile, the only options are delay configuration or eject. If high on profile at or inside low key, the IUT should utilize drag, ground track adjustments, and slips to correct the ELP profile.

8. If weather does not allow a climb to DEGA, the SI will emphasize accelerating to intercept the ELP. Generally, the T-6B will decelerate by 60 KIAS for every nautical mile (nm). So, if the IUT arrives at high key altitude with 240 KIAS, they should try to reduce power to 4-6% at approximately 2 nm (2nm x 60 KIAS/nm = 120 KIAS) and the aircraft will arrive at high key on altitude and airspeed.

503. C4490 DAY CONTACT STANDARDIZATION EVALUATION

1. This section is included prior to the prerequisite blocks in order to describe the way an IUT will be evaluated at the end of the Contact

Stage. All contact training should be tailored to helping the IUT prepare for this evaluation.

2. Sample C4490 Profile.

a. Startup/Taxi/Takeoff/VFR Departure to NMOA

b. Power on Stall

c. G-Awareness/Exercise (GX)

d. Contact Unusual Attitudes

e. 4x aerobatic maneuvers

f. SI demonstrates a cross section of OCF maneuvers

g. Landing Pattern Stall Series

h. Emergency Landing Pattern Stall Series

i. Slow Flight

j. Power loss scenario to a 125 kt glide

k. Depart NMOA for break entry KGZH

l. Demonstrate at least one landing in each flap configuration

m. PPEL/P

n. Depart KGZH for 5 Lakes Course Rules

o. At Southern Powerline Slash, simulate an EP that requires a PEL

p. PPEL to K12J

q. Depart for Jay Course Rules

r. Arrive at KNSE for full stop

3. This profile accomplishes all of the JPPT required items for C4490, demonstrates an appropriate energy management scheme and affords the IUT an opportunity to demonstrate familiarity with both solo fields as well as both VFR arrivals from the north of A292.

Working in the NMOA gives the IUT an opportunity to demonstrate managing an EP from a high working area and descending through the Pelican enroute to an OLF.

504. C4100 BLOCK OVERVIEW

1. C4100 Block emphasizes aft cockpit proficiency. SIs should ensure the IUT is able to perform high work maneuvers to CTS, as well as land the aircraft to the "Fair" level by the end of the block.

2. SIs should plan to allow the IUT to practice all FTI maneuvers from the aft cockpit focusing on maneuver proficiency. However, the majority of the flight will be spent in the landing pattern. Aerobatic maneuvers may also require a significant amount of practice due to the shift-in-sight picture from the front to the aft cockpit. The stall procedures and other high work are easily transferred from forward to aft cockpit.

3. IUTs should learn to develop a scan around the forward pilot's head during the final landing approach. One technique is for the aft pilot to continually shift his focal vision to the left and right of the forward pilot's head, acquiring the landing environment cues during the decelerating descent from the 90. This is known as "looking around" the forward pilot's head. By comparing the runway scene to fixed objects in his view (such as forward seat striker bar assembly or forward canopy bow), the aft pilot can learn to discern pitch and roll attitudes as well as flight path-to-runway and nose track-to-centerline alignment. Just prior to the landing flare and touchdown transition, the aft pilot should also scan wing position relative to runway edge lines to detect drift and improper alignment. The aft pilot's scan should shift forward and down the runway length in the flare to acquire drift and alignment cues as well as detect the first indications of a balloon. Proper flare attitude is achieved by bringing the tops of the forward seat riser-rail assemblies just below the far tree line as the aircraft settles to the deck.

4. Another technique is "looking through" the forward pilot's head. This is accomplished by acquiring the landing environment scene in small chunks ahead of the aircraft from the approach turn and into the final groove. This is a more advanced technique and shares many characteristics with "looking around" the head. But the verbal cues of "look through" vice "look around" from an SI can help to keep an IUT from leaning to the left or right during the landing transition. Leaning to one side may cause poor nose alignment and off-centerline landings.

5. A C41XX profile should build toward the C4490 sample profile, with reference to the JPPT for required items. For example: Turn Pattern and Level Speed Change are required in the C41XX but not on the C4490.

505. C4200 BLOCK OVERVIEW

1. C4200 Block Emphasis: Introducing Instructional Procedures. By the end of this block, the IUT should be able to fly and talk through FTI procedures simultaneously.

2. The IUT should be able to identify potential traffic conflicts in the OLF landing pattern. The SI should help to develop strategies for maintaining high Situational Awareness (SA) while monitoring SNA progress in the downwind. For example: if you are turning crosswind and another aircraft calls "high key," then chances are you will have to wave off at the 180 for conflicting PPEL traffic.

3. The SI should emphasize instructional cueing techniques for Contact Stage maneuvers. For example: during the Barrel Roll, wait until your feet pass through the horizon before beginning a roll.

4. The SI should help the IUT develop initial entry strategies for each runway of the two solo OLFs. The IUT should consider potential Course Rules conflicts and geographic references that approximate 4 miles. For example: for runway 01 at KGZH, Castleberry is approximately 5.3 miles and flying abeam it gives sufficient time to finish the four "A"s before calling the Runway Duty Officer (RDO).

506. C4300 BLOCK OVERVIEW

1. C4300 Block Emphasis: Defensive Posturing and Instructional Procedures. IUTs should demonstrate mastery of Contact FTI procedures and be able to correct common student errors.

2. The C4301 flight is unique in this stage as it is the only one that requires SMOA operations due to the OCF SSRs. It is also an excellent opportunity to demonstrate transitioning from the SMOA to a northern NOLF, which may be necessary from time to time with an SNA. SIs should also demonstrate a good cross section of departures from the OCF FTI during this event. If the IUT is prone to airsickness, this may fatigue him quite early.

3. SIs should have the IUT complete the Naval Flight Records (NAVFLIRs) and ATFs during this block using the Training Integration Management System (TIMS).

4. Cross section of common student errors. It is not enough to just play the role of a student during this SSR. The SI should thoroughly brief the common error that they are about to demonstrate and possible solutions for IP defensive posturing and intervention. IUTs should practice intervening with verbal cues and with measured control manipulation.

a. The Contact FTI lists common student errors for each maneuver. SIs should endeavor to expose the IUT to as many of these errors as possible. Many of the common student errors only require verbal coaching from the IP, but at times the error will require the IP to take the controls from the SNA and recover the aircraft. The SI should fly common student errors of both types.

b. SIs must expose IUTs to common student errors in all phases of flight: takeoff, departure, high work, pattern work, and Course

Rules. Many of the errors will be related to poor Basic Air Work (BAW) (altitude control/trim), and poor headwork/SA. The SI should focus on stall and spin recoveries, aerobatics, and airspace management in the high work portion of the event. In the pattern work portion of the event, SIs need to expose the IUTs to pattern management, airspeed, AOB, and landing transition errors.

c. These two flights are the only opportunity to expose the IUT to the potentially dangerous situations in which the SNAs may put them. SIs must be cognizant of IUT limitations when recovering the aircraft after the SI places the aircraft in a sub-optimal regime of flight, and be prepared to intervene immediately if the IUT does not take the appropriate action.

d. SIs should expose the IUT to the following common student errors.

(1) Cocked nose wheel.

(2) Trim errors on departure, climb out, and transit.

(3) Under/over-controlling aircraft.

(4) Incorrect stall recoveries (insufficient AOA, secondary stall, no positive rate of climb).

(5) Improper spin (OCF) recoveries (stick aft of neutral or rudder pedals not centered).

(6) Insufficient G loading during Loop/Cuban Eight/Immelmann.

(7) Insufficient rudder during aerobatic maneuvers.

(8) OLF break entry errors (cut off interval, descending or climbing in the break).

(9) ELP profile, configuration, and airspeed control errors.

(10) Landing pattern geometry errors.

(11) Landing pattern airspeed errors (no slower than activation of the stick shaker in the approach turn).

(12) Course Rules entry and procedures errors.

(13) Landing transition errors (high flare, late flare, flat, balloon).

(14) Homefield break (tight on downwind).

507. C4500 BLOCK OVERVIEW

1. C4500 Block Emphasis: Aft cockpit proficiency at night.

2. The C4501 is a single sortie block that is intended to introduce night landing procedures and night contact maneuvers. Typical profiles include touch-and-go landings at lighted, towered airfields and a PPEL at homefield. KBFM and KPNS are very accommodating and serve the purpose well.

3. A best practice is to launch so that the first few landings are after sunset but before End of Evening Nautical Twilight (EENT). This allows the IUT to practice aft cockpit landings with ever decreasing peripheral cues.

4. The C4690 is the Night Contact Standardization Check Flight. IUTs shall demonstrate night landing, local night flying procedures, and night navigation proficiency.

508. ALTITUDE DISSIPATION TECHNIQUES AND PROCEDURES

1. Helix. Fly directly to high key ground point and then determine how much altitude the aircraft needs to lose in order to reach the proper ELP intercept altitude. For training purposes, 3,000 ft Above Ground Level (AGL) for high key entry, but the crew can intercept the ELP at any point during an actual emergency. Then, by flying a descending circular ground track between high key and low key and using the following data, pilots can gradually lose excessive altitude and be at a safe position directly over the ELP. If the engine fails while spiraling down, the aircraft will already be in a good position to intercept the ELP and safely land.

Approximate altitude loss for 360 degree turn (Contact FTI):

125 KIAS, Idle Power:

30 degrees AOB - 3000-3500 ft

125 KIAS, 4%-6% or feathered prop:

30 degrees AOB - 2,000 ft

45 degrees AOB - 1,500 ft

60 degrees AOB - 1,000 ft

2. Circling. This is meant as an enroute altitude dissipation technique in the event that "S" turns are insufficient. After determining how much excessive altitude must be lost (DEGA "one-half DME + Key" method), use 360 degree descending turns (see above charts) during your glide to high key.

3. Bow ties. The Contact FTI covers flying "Bow Ties" (essentially a continuous set of bow tie shaped turns away from the runway) in the Emergency Procedures Section. The biggest advantage of the bow tie is that you can keep sight of the runway throughout the maneuver. Plan to arrive at your landing site perpendicular to the landing direction at one-half Wing Tip Distance (WTD) from the intended point of landing. Turn away from the field 45 degrees then time 15 sec. At the end of timing, turn at 25 degrees AOB in the opposite direction until on a heading perpendicular to the landing direction. The aircraft should lose approximately 1500 ft per one-half bowtie. Plan to leave the bowtie pattern 1500 ft above high key altitude and glide straight to the high key position.

CHAPTER 6
IUT FORMATION STAGE

600. OVERVIEW. The IUT should show up well prepared for the flight events and thoroughly familiar with FTI procedures. SIs shall ensure IUTs conduct the formation flights in both the Fox and Pelican working areas.

601. F4100 BLOCK OVERVIEW. The sequence of events will be conducted as outlined in the Formation FTI.

1. Standard F41XX Block Profile.

    a. Interval take off and running rendezvous

    b. Parade to working area

    c. Parade Turns - 4x

    d. Cross Under

    e. Parade Turns - 4x

    f. Cross Under

    g. Breakup and Rendezvous (B&R) - 3x (minimum 2x full set ups with forced under run if required)

    h. Cruise maneuvering (intro demo/do F4103/04 only)

    i. Tail-Chase (demo/do F4103/04 only)

    j. Lead Change

    k. Repeat steps c - j

    l. CR home to KNSE or VFR to out-and-in destination

    m. 3-second Break at KNSE or VFR entry to out-and-in destination, section approach with landing gear inspection (4103/04)

2. F4101. IUTs shall brief all flight discussion items to include Pelican and Fox working areas, major landmarks and Course Rules from Area 2 per the FWOP. Include discussion on airspace management for single block. This is a long brief and should be scheduled for 1.5 hours.

    a. Take Off and Departure. Lead SI coaches IUT through interval take off. Wing SI coaches IUT through interval take off and running rendezvous. Wing SI can reset in trail to remediate the IUT during the climb out or transit to the working area as required. Remaining

transit time to the working area should be spent remediating parade position.

b. Parade Position. Wing SI should demo and remediate parade position during the transit to the working area to include a demo of sucked and acute with power, sucked and acute on bearing and stepped up and down. Once established in a working block, spend the first few minutes remediating the parade position as required. IUT needs a solid understanding of all parade check points as well as how to incorporate the relative size of lead aircraft into their scan before progressing into turns. Address meaningful and timely three part power corrections. After the lead change, the new Wing SI will have to cover the parade position demo and remediation before starting turn sequence.

c. Parade Turns. Lead SI will coach IUT through 30 degree AOB turns. Discuss roll rate into and out of turns. There is such a thing as too slow or too fast. Wing SI will demo the first two 30 degree AOB turns (one into and one away). IUT flies the remaining turns in the sequence. Focus on 30 degree VFR turns into and away. Make no linked turns on this flight. Allow IUT time to stabilize in position before reversing turns.

d. Cross Under. Wing SI should demo the first cross under in the sequence. The IUT should fly the second one with SI resets as necessary for remediation. Focus on correcting the common student errors of getting too far in trail of lead and stopping the cross too soon.

e. Breakup & Rendezvous (B&R). Lead SI should demo first B&R as Lead. Wing SI should demo one good B&R followed by requesting back in to demo what it looks like to be acute and sucked on bearing, and acute in close to an under run. IUT attempts two complete B&Rs (one normal and one under run). Ensure that the IUT fully reestablishes the VFR turn away position from the under run position. Discuss techniques to avoid getting too far away from lead after safe separation is established. SI can request back in as required for further remediation.

f. Under Runs. A forced under run should be accomplished in each block. Prior to Lead aircraft kiss-off signal, Wing SI will give the "forced under run" hand signal to the Lead aircraft (see SI for demo of signal). Dash-two gives the "TAC C/S 2 ready." Lead aircraft starts the B&R as normal but reducing power to obtain no less than 180 KIAS in the turn to force Wing acute in close, high rate of closure.

g. Lead Change. SIs demo Lead Change, followed by IUT attempt(s). Resets for multiple lead changes should be accomplished over the radio and with the SIs at the controls in order to expedite multiple Lead Change sequences for the IUT.

h. Course Rules Return. Lead should direct Wing to fence out and clear him off frequency to get current ATIS information while transitioning to Course Rules. ATIS can also be obtained by Tactical Lead during the last B&R, but this should be covered in the brief. Wing SI should demo the cruise position during this transit to Course Rules. Brief IUTs to put themselves on the correct side for the upcoming break and to "request to come aboard" if Lead has not porpoised or verbally cleared Wing aboard by the time they are approaching the VFR entry points. Wing should never clear themselves aboard and assume that Lead sees them in parade position when not properly cleared aboard.

i. 3-Second Break. During the break Lead shall use 10% power setting with speed brake out and Wing shall use idle with speed brake out. IUTs will brief South Field penetration procedures when landing runways 14 or 23 to prevent Wing from entering into South Field's airspace.

3. F4102. The F4102 profile will closely resemble the F4101. IUTs will swap roles to ensure they have exposure to both the departure and arrival as Lead and Wing.

a. Take Off and Departure. Same as the F4101 except that the IUTs should swap roles so that Wing from the last flight is Lead in the F4102.

b. Parade Position. If the IUT is doing well with Parade since he saw it on his last flight, the SI has the option to demo/do cruise on the way to the working area. If not, the cruise demo can be done during the transition to Course Rules from the area.

c. Parade Turns. The first set of turns in the sequence should be flown by the IUT as 30 degree AOB and all VFR. On the second set of turns the SI should demo an IFR turn away and then have the IUT fly a full set of 4 turns with IFR turns away. Time should still be allowed between turns for Wing to stabilize position.

d. Cross Under. IUT will fly both with remediation as required.

e. B&R. IUT should see three complete B&Rs on this flight with one as an Under Run. If fuel becomes an issue the flight can modify the sequence and fly two complete B&Rs with one ending in an Under Run and request back in for additional remediation as required.

f. Lead Change. IUTs perform Lead Changes. If remediation is required the SIs should have the IUT coordinate the Lead Change to reset via the radio, and then re-execute the Lead Change themselves.

g. Course Rules Return. If the SI did a cruise demo during transit out to the area, then the IUT can practice cruise position on Course Rules return.

4. F4103 and F4104. The F4103/4104 events should be flown as an out-and-in. IUTs should fly normal parade sequence but link all turns. SIs should introduce 45 degree AOB but note that 45 degree turns are not required as a separate graded item. The recommended turn sequence on these flights is 30 degree AOB on the first set and 45 degree AOB turns for the second set utilizing the VMC turn away position. At the end of the Parade sequence, SIs will demo/do Cruise Maneuvering and Tail-Chase procedures.

602. F4200 BLOCK OVERVIEW. SI shall ensure IUTs fully brief all discussion items for each flight in the block. SI shall also ensure all SSRs are completed by the end of the block. SI should brief Radial Rendezvous procedures after conducting the section PEL, to include location (land mark or radial/DME), altitude de-confliction, and fuselage alignment techniques.

1. Standard F4200 block profile.

   a. Interval T/O (Section T/O as required)

   b. Cruise to working area

   c. Parade Turns (2x) 30/30 (45 as required)

   d. Cross Under

   e. Parade Turns (2x) 30/30 (45 as required)

   f. Cross Under (only if needed to remediate)

   g. B&Rs (2 minimum with 1 Under Run and join from the Under Run position)

   h. Cruise Maneuvering

   i. Tail Chase

   j. Lead Change

   k. Repeat c-j

   l. Section PEL

   m. Section Approach

   n. CR home to NSE or VFR to approved uncontrolled field.

   o. Normal Interval Break at NSE or VFR entry to uncontrolled field.

2. F4201. A mix of 30 degree (IFR and VFR) and 45 degree AOB turns can be used at the SIs discretion for IUTs who are at MIF or above with 30 degree AOB turns. SIs should plan to allow enough fuel and time for practice section approaches, section PEL entries, Cruise Maneuvering and Tail Chase. Conduct the lost comm/lost sight, blind, and gear inspection SSRs.

3. F4202. This flight should focus on polishing IUT instructional technique as well as completing any remaining ungraded maneuvers. SIs should plan to allow enough fuel and time for practice section approaches, section PEL entries, cruise maneuvering and Tail Chase.

4. F4203 and F4204. SIs shall demonstrate a cross section of common student errors. SIs will focus their instruction on defensive positioning during specific maneuvers, and how to safely maneuver the aircraft out of dangerous situations.

603. F4390 STANDARDIZATION CHECK FLIGHT. IUTs shall demonstrate all maneuvers required by the PFIT with minimal input from the SI. The flight profile will closely resemble the F4203 while the IUT is demonstrating the maneuvers to the SI.

604. ADDITIONAL INFORMATION

1. IUTs shall verbalize the hand signal sequence over the Inter-Communication System (ICS) to their instructor. For example: "Wingman in position"..., "area clear"..., "cross under signal, ready now" (hold signal for 2-3 seconds)..., "ready look"..., "signal acknowledged." This will minimize confusion in the cockpit concerning when a particular signal was passed. SIs will only mirror signals on the F4101.

2. When Lead is on the left and Wing is on the right, use hand signals in accordance with the Formation FTI. Use the radio for administrative Lead changes or to expedite Lead changes due to airspace management. For example: "TAC C/S has the Lead on the left/right." "Roger, TAC C/S has the lead on the left/right."

3. When Lead is on the right and Wing is on the left, use the radio only. This scenario should be for administrative lead changes. SNAs are **NOT** authorized to do this. The SI in the aircraft taking the Lead needs to monitor the IUT in the new Wing aircraft and to inform the SI if his IUT looks forward after passing the lead.

4. Joker/Bingo. The flight should depart with the briefed Joker fuel set into the Bingo bug. When Joker is reached by either aircraft, report it over the TAC frequency. As a rule, Wing should not dictate the new Bingo bug setting. Wing should only state that they have reached the current setting, and Lead will dictate what the new setting will be; .i.e., Wing states "TAC C/S 2, Joker". Lead then

responds, "Acknowledge Joker, reset Bingo." Both aircraft will reset new Bingo bug setting at the same time, regardless of who reaches the pre-set value first. Joker is usually set to signal the end of the high work, and Bingo is usually set to begin the return to base either from the working area or from the OLF. If you hit Joker when you are already in the pattern or Bingo when you are half way back on Course Rules, there is no need to make a call. Just reset to the next briefed fuel or as required to ensure you comply with FWOP and NATOPS regulations.

5. Lost Communication and Blind. Once established in the working area, Tactical Lead will climb to a working altitude. This altitude may be briefed or set after arriving in the working block(s). In the event of lost communication/blind, Lead should climb to the established working altitude, and Wing will descend to the established working altitude minus 500 ft. The rejoin point should be either a geographical location or the center of the working block, left hand turns and 200 KIAS. If the lost communication aircraft does not regain sight, then they should recover using VFR lost communication recovery procedures no later than reaching Bingo fuel.

6. Lost Communication VFR. The "good" aircraft will lead the RTB via normal Course Rules for the break. Lead aircraft will full stop ahead of Wing as a signal that Wing is cleared to land. If Lead executed a wave off, Wing will follow either to downwind or to a discontinued entry. If Wing has to wave off after Lead is on deck, they will remain in the pattern and follow single aircraft NORDO procedures.

7. Lost Communication IFR. The flight will execute an approach in Parade. Lead should configure flight prior to entering IMC and beginning approach. Upon the flight breaking out of IMC, the lead aircraft should coordinate for a lead low approach, wingman full stop and use appropriate hand and arm signals to provide Wing with landing clearance. Upon kissing Wing off, Lead should position themselves at Wing's 10 or 2 o'clock position. If Wing executes a wave off, they should rejoin on Lead while matching Lead's configuration. Once Wing is safely on deck, Lead can then coordinate with tower and turn downwind for a normal landing pattern to a full stop or execute a missed approach as required.

8. Speed brake utilization. Extension or retraction of the speed brake can either be conducted over the radio; i.e., "Stand by for speed brake ...speed brake now," or with the appropriate hand signals. The radio should be the primary means of utilizing the speed brake unless the hand signals were covered in the brief.