

FROM: 558 FTS/DO

SUBJECT: 558 FTS Squadron Standards

1. Attachment 2 to 558 FTS Squadron Operating Instruction 11-1, Squadron Standards, is released and effective immediately. This replaces SOI 11-2 Attachment 2. The remainder of the new Squadron OI 11-1 will be released shortly. SOI 11-1 will replace 11-2 in its entirety.
2. This publication is available electronically via the squadron web site. Each flight also has a printed copy.
3. PIFs 04-16, 04-25, 04-26, 05-12, and 05-16 are rescinded.
4. The entire document must be reviewed. Major changes:
 - Step directly from the ops desk to the aircraft with all gear at 25 minutes prior to takeoff.
 - Changes in challenge and response verbiage.
 - Includes checking FLIP as part of “over-the-rail” check.
 - Formation radio calls substantially revised.
 - Lost wingman with San Antonio – revert to DFO callsigns regardless of formation position.
 - Formation Blind Exercise added.
 - Clarifies FCP/RCP interaction.
 - Requires PIT IP to brief the first instructional sortie of a unit.

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ATTACHMENT 2
SQUADRON STANDARDS

Standards are used to standardize training throughout the squadron and shorten briefings so that more time can be spent on instruction and discussion. All instructors and trainees are expected to comply with these standards on CT and formal syllabus training sorties unless there is a specific reason for non-compliance. Personal preference is *not* an acceptable reason. Additionally, items listed as procedures in AFMAN 11-248, while not specifically covered in this Instruction, may also be briefed as “standard” or “IAW 11-248”.

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1. GENERAL GUIDANCE

1.1 Definitions:

FCP - Front Cockpit Pilot
RCP - Rear Cockpit Pilot
PF - Pilot Flying
PNF - Pilot Not Flying

1.2 Aircraft Commander (AC) and Designated Flight Lead (DFL).

1.2.1 For PIT training sorties, the AC will be the IP. For CT sorties, the AC will be the higher of the letter of X qualifications (LOX), e.g. FE, IP, MP, FP. If like LOX qualifications, unless otherwise briefed or designated, the FCP will be the designated AC. For FCF training sorties, the FCF IP is AC

1.2.2 Formation (2, 3 or 4-ship) Designated Flight Lead (DFL). The DFL will be approved by the Flight Commander and put in the number one (#1) position on the Daily Flight Orders (DFO) by the flight scheduler. The DFL is ultimately responsible for the conduct of the flight. DFL duties include mission preparation, briefing, in-flight execution decisions and de-briefing. Under normal circumstances, the DFL (or his/her PIT Trainee) will accomplish these tasks under the PIT IP's supervision. The DFL retains overall responsibility for the formation and mission conduct regardless of the position being flown. During PIT training sorties, the PIT IP in the number one (#1) position on the DFO will be the DFL. During PIT CT sorties, the DFL will be selected by the Flight Commander based on qualifications, recent flight experience, training requirements and any other factors the Flight Commander considers relevant to DFL selection. During four ship sorties, unless an alternative fallout plan is briefed, number 3 will be the designated Deputy FL and will be 4-ship FL qualified.

1.3 Crew Coordination and Clearing.

1.3.1 Select NACWS enroute mode no later than completion of the first climb or level off check. Both pilots are responsible for clearing and should do so as if they were flying solo. The FCP has a distinct advantage in clearing from 10 to 2 o'clock and should place extra emphasis in clearing this area.

1.3.2 GPS/EHSI/RMU usage. The PF is always assumed to have control of the entire aircraft to include GPS/Nav and comm settings/NACWS. In general, in accordance with the PIT and JSUPT syllabi, single seat mentality and procedures will be used which means that the PF will change all radio frequencies, nav frequencies and display setup and GPS configurations. To enhance CRM, the PF may direct the PNF to adjust a particular nav source, frequency or GPS setting. For all syllabus sorties this will be the exception and not the rule. If the IP not flying must change a frequency/nav configuration/NACWS, the IP will take control of an item by stating "***I have your VHF radio/UHF radio/GPS/HSI display/Nav aids/NACWS.***" The PF will respond "***You have the VHF radio/UHF radio/GPS/HSI/Nav aids/NACWS.***" After completing the required action, the PNF will return control of the specific item to the PF by stating "***You have the VHF radio/UHF radio/GPS/HSI/Nav aids/NACWS back.***" The PF will respond "***I have the VHF radio/UHF radio/GPS/HSI display/Nav aids/NACWS back.***" Under no circumstances will the PNF arbitrarily take control of the GPS/Nav/radios/NACWS without PF coordination.

- 1.3.3 The PF will initiate all checks and radio communications. If transfer of aircraft control takes place in the middle of a checklist, the pilot taking control will ensure the checklist is completed.
- 1.3.4 The PNF will notify the PF of any contact with the stick or throttles. If in doubt, CONFIRM who has control of the aircraft.
- 1.3.5 Threat communication. When pointing out threats/conflicts to the other crewmember or to the other aircraft in your formation, use left/right, clock position, high/low/level, distance if known, then any further descriptors, i.e. **“Tally ho, Right 2 O’clock, level, 3 miles, opposite direction”**
Use AFMAN 11-248 terminology regarding potential conflicts with other aircraft:

“Visual” See aircraft in own formation,

“Tally-ho” See aircraft outside the formation

“Blind” Cannot see aircraft in own formation

“No-joy” Cannot see aircraft outside the formation identify

When communicating with ATC, use standard phraseology IAW FLIP General Planning (i.e. “negative contact” or “traffic in sight”)

1.4 Emergency Procedures.

- 1.4.1 General aircrew responsibilities during emergencies: Apply CRM to safely recover the aircraft. The PF will continue to fly and accomplish applicable BOLDFACE and subsequent checklists. The PNF will assist by assuming dedicated responsibilities (clearing, radio calls, monitor flight parameters, backing up the PF with the checklist, maintaining situational awareness on the nearest suitable landing field, etc.). There will only be one person flying and one person heads-down reading the checklist. In general, do nothing irreversible before confirming that action with the other crewmember. The AC will determine final course of action for recovery.
- 1.4.2 Emergency Ground Egress. If taxiing, the pilot in control of the aircraft is considered to be the PF. When the AC directs Emergency Ground Egress (**“EGRESS, EGRESS, EGRESS”**), the PF will shutdown the engine using the PCL. FCP will pull the Firewall Shutoff Handle and set the parking brake. RCP will ensure the ISS is set to SOLO. Both pilots will ensure their respective ejection seat pin is installed and continue with procedures. FCP will be responsible to turn off the Battery, Gen, and Aux Batt. The PF will open the canopy when conditions permit. To egress out the right side of the aircraft, the AC will direct the other crewmember to **‘EGRESS RIGHT.’** Prior to actuating the CFS handle it is imperative to ensure the canopy is closed and locked and masks are connected, visors are down and gloves are on. Each crewmember will then use their respective CFS handle. If the situation is severe enough, consider ejection. The AC must exercise an option of ground ejection only under extreme conditions. If the ISS has been set to SOLO, to prevent injury to FCP, RCP should eject first. It is extremely important to ensure the canopy is closed and locked and both crewmembers are completely strapped in before ejection is initiated.
- 1.4.3 Takeoff emergencies. Any decision to land straight ahead or continue takeoff after refusal speed requires a calculated assessment prior to takeoff considering all relevant factors including weather, runway length, surface condition, and pilot proficiency. PF will brief his/her particular decision triggers based on above information/additional variables as required.

1.4.4 Ejection.

Controlled with Intercom. Fly to the controlled bail out point if practical. When checklists are complete and both pilots are in good body positions, the AC will pull the PCL to idle and zoom the aircraft while commanding “**BAILOUT, BAILOUT, BAILOUT**”. Perform the ejection BOLDFACE after the third “Bailout” command.

Controlled without Intercom. The AC will show the other pilot the pink In-flight Guide pages as a signal to accomplish the Dash 1 checklist and IFG procedures. As the AC zooms the aircraft, if the PNF is not ready to bailout, the PNF pushes the PCL out of the idle position. In the zoom prior to a sink rate, the AC will initiate ejection with the AFI 11-205 “face curtain” signal. Delay momentarily while the PNF gets into the proper body position and performs the ejection BOLDFACE. If attempting to communicate by dropping mask and yelling, it is IMPERATIVE that the visor is down and mask connected prior to ejecting; otherwise, severe injury may result from canopy fracture.

Uncontrolled with Intercom. Initiate recovery using OCF procedures. If still uncontrolled at 6000AGL, command immediate ejection.

Uncontrolled without Intercom. Same as above, but if able, the AC will command ejection with “face curtain” signal.

1.4.5 Intercom failure/visual signals. Attempt to re-establish communication using alternate comm cord. If necessary, drop mask and yell to other crewmember. Additional intercom out visual signals can be used as follows:

- Thumbs up/down – I’m ok/not ok
- Show of hands – I have relinquished control of the aircraft
- Lowering the gear handle without three green – pull the Emergency Gear Handle

2. GROUND OPERATIONS

2.1 Mission Preparation ROE.

- Show time (all flyers) NLT 20 minutes prior to directed brief time
- Review student gradebook, WX, NOTAMS, TOLD, Ops notes, Currencies, and Go/No Go.
- Ensure the Daily Flight Order corresponds with the scheduled flight plan
- Schedule low level route or MOA as required
- Develop profile to support mission requirements, including special syllabus items
- Develop objectives
 - Mission objectives should be syllabus based
 - Training objectives should be attainable, measurable, clearly defined, and support mission objectives
- PIT instructor role-playing determined and briefed to the student
- Joker and bingo fuels established and adhered to unless FL / AC determines otherwise
- Contingencies developed for WX, maintenance delays, etc. (alternate profile)
- Prepare EP of the day and instructional topics
- Ensure all necessary materials are available prior to brief
 - (Squadron standard lineup cards are available from the Mission Planning Web Page)
- All flyers will be present in the flight room the briefing is to be conducted in NLT 5 minutes prior to brief time

2.2 Minimum Briefing Times. IAW the applicable syllabus. Times may be modified at the discretion of the IP/FE. Additional briefing times:

IP Emergency Procedure Sim	0+20
Minimum for all aircraft sorties (CT or syllabus)	1+00
T4002 – T4008 Instrument Stereo Profiles AHC Sorties Local low-level Sorties F4001 All Pre-qual sorties Three and Four-ship Formation Sorties	1+15
Recurring IP Evals	2+00
Base Ops Drill (Navigation syllabus sorties)	2+30
C5290 Eval	3+00

2.3 Briefing Presentation.

2.3.1 Trainees will conduct all preflight briefings except:

- The first three sorties in the T40XX block and
- The first three sorties in the proficiency only portion (C40XX, F40XX) of the instruction block.
- The first briefing in the instructional block of training

2.3.2 Briefing item requirements.

- Preflight briefings will be in accordance with AFI 11-2T-6, Vol 3, AFMAN 11-248 and this operating instruction.
 - Plan about 1/3 of allotted briefing time to admin/motherhood (IFG brief)
 - Plan about 2/3 of allotted briefing time to mission details and instruction
 - Briefs should last approximately 30 minutes
- Brief will include a 1 to 2 minute presentation to cover the EP of the day
- An instructional topic related to the mission will be covered on every sortie
- SIIs will be briefed. Highlight applicable Training Rules; others may be briefed as “IAW 12 OG Training Rules”
 - ORM assessment and risk mitigation actions will be covered during the brief
 - Visual presentation will be used for all briefs
- BRI, white boards and power point slides are acceptable presentation methods
(White board examples are available from the Mission Planning Web Page)
- Line-up cards by themselves are not an acceptable presentation method
- Briefer will provide an opportunity for mission specific questions prior to step

2.3.3 Professionalism.

- This is a military brief with a clear chain of command
- FL / AC identified IAW with this instruction and is responsible for all aspects of briefing and mission

- Briefings will start on time with an accurate time hack and finish on time
- Missions will not be flown if the IP or student is unprepared at brief time
- At a minimum the briefer will stand for multi-ship briefings
- Briefs/de-briefs will not be interrupted except in the event of an emergency or by the Ops Sup
- Trainees will ensure DASH ONE, checklists, associated directives, and sticks are readily available

2.4 Pre-flight.

- 2.4.1 Step, Sign out, engine start, takeoff time. All flyers will be present at the Operations Desk for the step brief NLT 25 minutes prior to the scheduled takeoff time (formations use the earlier of the two takeoff times). All flyers will have all of their flight gear with them at the Operations Desk for the step brief and then proceed directly from the Ops Sup step brief to the aircraft. Plan engine start NLT 10 minutes prior to scheduled takeoff time.
- 2.4.2 AFTO Form 781 (review and stowage). The aircraft commander is responsible for the review of the aircraft forms. Secure the forms in baggage compartment under cargo strapping.
- 2.4.3 Checklist responsibilities. PIT trainees will verbalize each checklist item during transition phase (not just BOTH items). Both crewmembers will accomplish the Before Exterior Inspection checklist together. FCP is responsible for INTERIOR INSPECTION. During INTERIOR INSPECTION, if RCP is not on interphone when "(BOTH)" items are encountered, FCP may continue only if FCP verified the proper position of the PCL, Starter, and Ignition in rear cockpit prior to entering front cockpit. FCP will verify "(BOTH)" checklist items when RCP is on intercom. If qualified in the T-6 (FP), the RCP/trainee may accomplish the Exterior Inspection at the discretion of the A/C.
- 2.4.4 Pubs. Each pilot is responsible to ensure required, current FLIP is available in their cockpit.
- 2.4.5 Walk Arounds. PIT trainees should accomplish one walk-around per sortie in the Transition Phase. If time does not permit the trainee to perform the preflight walk-around, it should be accomplished after landing. After the transition phase, the RCP will perform the walk around if qualified as an FP or higher in the T-6 aircraft.
- 2.4.6 Spare aircraft procedures. The FCP will verify the Before Exterior Inspection checklist items applicable to the rear cockpit before moving to the front cockpit and accomplishing the remainder of the Before Exterior Inspection checklist. The RCP will review/stow forms and accomplish Exterior Inspection checklist. Either pilot will call Texan Ops/Hangover SOF to verify new tail number prior to takeoff.
- 2.4.7 Ground Operations / Checklists. The DASH ONE is the source document for checklists governing aircraft operation. The T.O. 1T-6A-1CL-1 is the Pilot's Abbreviated Flight Crew Checklist and is a condensed checklist used during flight. A locally developed "Smart Card" is a further condensed version of the abbreviated checklist and may be used for normal checklist items. The following paragraphs clarify certain checklist items and provide standard verbiage. These lists for Cockpit (All Flights) and Before Taxi are not all-inclusive and should be applied with the abbreviated checklist or the approved "Smart Card."

2.4.8 Cockpit Checks

Before Exterior Inspection Standard phraseology is used to efficiently ensure completion of checklist items between FCP and RCP. The FCP will initiate a challenge and response sequence by stating ***“One pin in, one pin out, off, down, normal, normal OBOGS off, plungers and latches are good, pubs are good.”***

“One pin in” = ejection seat pin in,

“One pin out” = CFS pin out,

“Off” = PCL in cutoff,

“Down” = gear handle down,

“Normal” = starter norm,

“Normal” = ignition norm,

“OBOGS off” = OBOGS supply lever off,

“Plungers and latches good” = ejection seat eyebolt plungers seated and ejection seat left and right top latches fully engaged with guide rail locking lugs.

“Pubs good” = pubs are current and complete

The RCP will respond by stating ***“ISS Solo, one pin in, one pin out, off, down, normal, normal, OBOGS off, plungers and latches are good, pubs good.”***

Strap-in

When fully strapped in, the FCP will initiate this step by using the following terminology while verifying correct connections - ***“Legs, Lap, seat kit, shoulders, harness, hoses, helmet”***. The rear cockpit will respond with the same verbiage while checking connections.

Seat Height

Sitting position should be the same on every flight. When sitting comfortably the upper part of the EADI display should be visible just below the glare shield. A clenched fist between the top of the helmet and the canopy ensures adequate clearance for the canopy breaker during ejection. Adjust the rudder pedals to allow full travel of the rudder and brakes.

Flight Controls

PF will state ***“Feet and Knees Clear”*** before checking the flight controls.

Lamp Check

FCP will initiate this step by pushing the lamp test switch forward and stating ***“My lamps check good”*** and release the switch. The RCP will then push the switch forward and state ***“My lamps check good”***. If RCP isn't on interphone yet, but is in the aircraft, the FCP can yell to initiate this step or wait until the RCP is on the interphone.

Fire Detection System

FCP will push the fire detection test switch forward and challenge by saying ***“Fire 1”*** and the RCP will respond ***“Fire 1”***

for proper light operation. The FCP will then push the fire detection test switch aft and challenge by saying “**Fire 2**” and the RCP will respond “**Fire 2**.” If RCP isn’t on interphone yet, but is in the aircraft, the FCP can yell the challenge and the RCP can yell the proper response. The stick shaker on the AOA test is the RCP’s clue the firelights are coming on.

Trim Operation	Check all three axes, but leave rudder trim out of the green to check TAD function later.
Parking Brake	Pump up the toe brakes, then release and reset the parking brake while holding the toe brakes– after entering the aircraft. This action will be accomplished before the crew chief pulls the chocks.
Generator Switch	FCP initiates “ My Generator Switch is off ” and RCP responds “ My Generator Switch is off. ”
Canopy	FCP will state “ Rail clear, pin box closed ”. RCP responds “ Rail clear, pin box closed ”. Only one pilot will normally operate the canopy.
Before Engine Start	Ensure all BOTH items of “Cockpit (All Flights)” checklist are complete, then clear fore and aft, left and right and state “ Prop Clear, crew chief, fire bottle, no servicing, ready to start ”

2.5 Before Taxi

OBOGS	Check (Both) FCP challenges with “ On, normal, normal, good blinker. ” RCP responds “ On, normal, normal, good blinker. ”
Speed Brake	Check (Both) FCP challenges with “ Speed brake light’s on ” and RCP responds with “ Speed brake light’s on. ” Leave speed brake extended for flaps check
Flaps	After flaps are lowered to landing, FCP challenges with “ Speed brake light’s out ” and RCP responds with “ Speed brake light’s out. ”
GPS	GPS programming duties may be delegated to the RCP, but will be specifically briefed or explicitly directed by the FCP. When the RCP has completed programming, the RCP will tell the FCP that control of the GPS has been relinquished control of the GPS by stating “ You have the GPS ” and the FCP will respond “ I have the GPS ”
Flight Instruments	On EHSI, set the white needle to VOR, and the magenta needle to GPS

RMU	Set - normally use memory mode for local sorties
Backup UHF	Technique: listen to ATIS during this check
Altimeters	FCP will initiate after setting proper altimeter setting: “XX.XX set twice showing X (altitude in main) over X (altitude in stby)” and the RCP will state “XX.XX set twice showing X (altitude in main) over X (altitude in stby)”
Ejection Seat Safety Pins/ ISS	IAW current guidance. Do NOT pull ejection seat safety pins under a shelter or other structure. The ISS is positioned to BOTH when the seat pins are removed. When the pins are removed, each pilot states “Pin removed and stowed” RCP adds “ISS BOTH”
CWS Panel	Check (Both) “Panel’s Clear”
Landing/Taxi Lts	On. This will signal the marshaller when ready to taxi. At night, aircrew may elect to signal the marshaller by turning on only the taxi light (right side) or by a flash of the landing and taxi lights.

2.5.1 Avionics/RMU Setup. The T-6 is capable of a myriad of avionics configurations. The following procedures will be used during the transition phase to both ensure proficiency in flying with the “classic” avionics setup and to provide a building block approach to T-6 avionics. During the first three sorties or until proficiency is demonstrated (whichever occurs latest), area orientation will be accomplished with the VOR/HSI configuration on the EHSI using the center radial/DME technique for area orientation. Area orientation may then be accomplished using the GPS/MAP mode on the EHSI. In all cases, ground references should be used when available to enhance area orientation in a composite crosscheck using both VOR/DME and GPS references.

2.5.2 Radios. Radios will be tuned to duplex the UHF and VHF frequencies while in the local area. Exceptions are when on discrete frequencies in the MOA, during formation sorties, low-level sorties, and off station.

2.6 Before takeoff.

2.6.1 Taxi Brake Check. When taxi clearance is received, signal the crew chief (taxi light on). The brake check in the Taxi Checklist may be accomplished without transferring control of the aircraft. The pilot in control will check brakes and state **“My brakes check good, check your brakes”**. The other crewmember applies pedal pressure and says **“My brakes check good.”**

2.6.2 R-NEWS Check. Normally perform an R-NEWS check either while taxiing in an uncongested area enroute to the hammerhead.

R - RAIM check. If planning to fly a GPS approach, check predictive RAIM on STAT 5 page. *Consider checking RAIM in the chocks or in the hammerhead to prevent considerable heads-down time when taxiing.* When starting from a shelter, it may not be possible to check RAIM until the GPS receives satellite signals after taxiing clear of the shelter.

N - Nav aids/Needles/NACWS: Appropriate for departure, VOR white needle 1, GPS magenta needle 2, appropriate squawk set. In formation, NACWS off if not #1.

For local departures:

Rwy 14R: set 112.3 (CH 1) in VHF nav and listen for ident, 153 in the CSW, 158 under heading bug.

Rwy 32L: same except 140 under heading bug for outside downwind departure.

E - Emergencies: Consider pattern status, engine failure after takeoff, wx mins for ELP, etc.

W - Weather/Winds: Discuss surface winds and probable pattern corrections.

S - SID/Departure Procedure: Review/open IFG to the appropriate page if necessary.

2.6.3 End of Runway (EOR) - Upon reaching the hammerhead, set the parking brake, check fore, aft, left and right of the aircraft, then accomplish the Overspeed Governor Check. Verify the other pilot is guarding the brakes. Guarding the brakes means having feet in a position to immediately apply brake pressure but does not mean applying pressure to the brakes which is tantamount to taking control of the aircraft. Ensure instrument cockpit check complete. Confirm ISS mode selector position.

2.6.4 Lineup Check - Perform the P-PANE check to complete the Lineup Check.

P - Caution and Warning Panel—clear

(possible exceptions of the “Anti Ice” light and/or ignition light)

P - Probes anti-ice—turn on

A - Transponder—set ALT in RMU

N - Nose wheel steering—off, once nose is aligned down the runway

E - Exterior lights—check on

3. INFLIGHT OPERATIONS

3.1 Inflight Checks

3.1.1 While the T.O. 1T-6A-1 and the Interim T-6A Flying Training Manual are the source documents for checks governing aircraft operation, they are sometimes vague concerning specific actions/terminology. The following bullets give more guidance on certain checklist items. These bullets are not all-inclusive and should be studied with the T-6 Checklist or the approved abbreviated checklist page.

After Takeoff Check

“Two Climbing, good engine, gear clear” ;

Two climbing = altimeter and VSI.

Good engine = Torque and ITT as a minimum.

“Gear and flaps up at (read airspeed)”

Climb Checks

Check cockpit altitude passing 10K’ MSL. It should read approx 8,000 FT. Check OBOGS, **“On, normal, normal, good blinker”**. If the RCP is the PF, verbally verify the Defog and Vent positions. **“Confirm Defog [off/on] and Vent in [foot/canopy]?”** Response is **“Defog [off/on], Vent in [foot/canopy]”**. Consider placing Vent lever to Canopy when planned enroute altitude is above FL 210. This may prevent or delay moisture freezing on the rear canopy.

Ops Check

Accomplish HEFOE – P

H Hydraulic pressure.
 E Electric - amps and volts.
 F Fuel quantity and balance.
 O Oxygen "On, normal, normal good blinker".
 E Engine Instruments.
 P Cockpit Pressure.

FENCE Check Accomplish upon entering/exiting the MOA. Accomplish on all sorties. See 3.1.2 below.

Descent Check ***"Good heading and attitude, XX.XX set twice"*** If in the RCP is the PF, verbally verify the Defog and Vent positions. ***"Confirm Defog [off/on] and Vent in [foot/canopy]?"*** Response is ***"Defog [off/on] Vent in [foot/canopy]."***

3.1.2 FENCE check. When established in the assigned area, auto switch to area monitor (South MOA: UHF Ch 7, VHF Ch 9; Fantom/West MOA: UHF Ch 15, VHF Ch 9)

F – Fuel
 E – Engine
 N – Nav aids/NACWS
 C – Comm/Checks
 E – Equipment (g-suit connected and functioning) and loose items stowed

3.1.3 G-Awareness Exercise. Plan as first maneuver performed in the area. Attain a minimum of 200 KIAS prior to initiating G-Awareness Exercise Confirm G's with other crewmember. For G-training prior to centrifuge training, see SOI 11-1.

3.1.4 Departing area. Prior to FENCE out, listen to ATIS for current airfield conditions. Inform controller you have ATIS [code] with your recovery request.

3.2 Before Landing

3.2.1 Landing gear operation. IAW AFMAN 11-248, prior to lowering the landing gear the PF will verbalize (and check), ***"Below 150, gear clear"***. Prior to the qualification evaluation, the IP will be required to respond, ***"Gear clear"***. For all other sorties, the call is still required, but only to allow the PNF time to cross check airspeed.

3.2.2 Before Landing Check PF configures as required and verifies configuration: ***"Check handle down, three green, flaps [up/takeoff/landing]"***
 PNF physically checks the gear handle down and verifies configuration: ***"Handle checked down, three green, flaps [up/takeoff/landing]"***

3.3 After Landing/Engine Shutdown

3.3.1 After landing. Pull forward onto taxiway with sufficient spacing to allow other aircraft to clear the runway. Auto switch to Hangover Ground frequency (Ch 1) and call clear of the runway. Do not perform checklist items until clear of the runway. Once clear, checks may be accomplished

while taxiing, but ensure after landing checks are complete before taxiing into a congested area (i.e. parking area / shelters).

3.3.2 Engine shutdown. Once engine shutdown checklist is complete verbalize **“Loose items stowed, Rail Clear”** and receive confirmation prior to opening the canopy. Ensure all loose items are stowed before making or confirming this call. Remain strapped in until canopy is open. Unless briefed otherwise, the PF will actuate the canopy whether opening or closing.

3.3.3 Prior to leaving the aircraft. Use same phraseology to confirm post-engine shutdown switch position as the Before Exterior Inspection. Inventory personal items to avoid postflight FOD.

4. POST FLIGHT

4.1 **Sign in.** Accomplish administrative duties described in Chapter 4 before the debrief.

4.2 Debrief

- Debriefs should last approximately 30 minutes.
- As a minimum, FL or AC will cover the following topics:
 - Adequacy of the mission brief
 - Adherence to training rules and SIIs
 - Adherence to Group/Squadron standards
 - Root-cause error analysis and recommended corrective instruction
 - Lessons learned
 - Detailed situational EP on every PIT training mission
 - Review and analysis of mission and training objective accomplishment
 - Overall mission grade for all PIT student missions

4.3 Gradesheets.

A. **Overall comments** are written primarily for the next IP and should contain:

Profile: Big picture description of the mission profile

Overall Comments: General perception of trainee’s proficiency/instruction (i.e. well above average, slightly above average, average, below average), strengths, weaknesses, and trends.

Next: recommended profile/emphasis areas. Include “must-have” items.

B. **Maneuver comments** should be written when the trainee’s performance/instruction is below expected progress or warrants emphasis. While not all items below MIF require comments, items below MIF on several successive sorties should have a comment. Use cause and effect as appropriate and write comments to benefit both trainee and the next IP.

4.4 **Gradebook Write-ups.** Required 4293 write-ups are in Chapter 8 of this SOI. Just as each TIMS 4293 template implies, every write up WILL include:

A. **Conditions:** Sortie lesson identifier, date and overall grade across the top of the page.

01 Oct 04 C4102 UNSAT

Sortie conditions, profile, etc.... and any other pertinent background info

B. **Cause and effect** of the error. For example,

“NORMAL PATTERN (U, G) – **Due to** Capt Trainee’s slow cross-check and failure to set the proper pitch and power, he failed to maintain proper final turn airspeed.”

- C. **Recommended course of action.** For example “Recommend Capt Trainee review the pitch and power settings (AFM 11-248, Ch. 2) and traffic pattern procedures (AFM 11-248, Ch. 6) prior to his next sortie which should be a contact profile with emphasis on overhead patterns.
- D. **Proper notification** (in TIMS AND backed up by email reminder to supervisors). Inform the Flight CC and scheduler, as a minimum. See Chapter 8 for more notification guidance.
- E. **IP signature** (electronic initials and signature block is OK).
- F. **Trainee initials** (electronic initials and signature block is OK).
- G. **Flight CC (and higher where appropriate)** review and initials.

NOTE: The following sections contain category specific standards. Adhere to the previous administrative standards; however, as indicated below, minor changes to the above standards may occur due to the unique nature of each specific category.

5. CONTACT/TRANSITION (During Transition Phase, also review local Instrument Standards in this Instruction.)

5.1 Recoveries

- 5.1.1 Transition Phase. IP will set up the recovery, and say “***You have the aircraft, recover.***” Trainee will then take the aircraft IAW normal transfer of aircraft control procedures (state “***I have the aircraft***” and shake the stick) and complete the recovery.
- 5.1.2 Instructor Phase. Trainee will set up the recovery and either instruct through it or direct the simulated student to recover.

5.2 Stalls/Slow Flight

- 5.2.1 Power On Stalls. Brief specific entry parameters during the preflight briefing.
- 5.2.2 Traffic Pattern Stalls. Brief configuration during the preflight briefing.
- 5.2.3 ELP Stalls. Practice ELP stalls from an in-flight EP scenario (example: engine fire, chip light, etc.).
- 5.2.4 Slow Flight. Transition Phase: Perform the coordination exercise.
Instructor Phase: Perform SCATSAFE

5.3 Patterns

- 5.3.1 For a normal VFR pattern lower gear and flaps abeam touchdown zone and confirm configuration prior to the perch.
- 5.3.2 ELPs. Specify/brief the type of ELP (PEL or SFL), as well as the simulated runway length (if applicable) prior to each attempted ELP. PELs will be sampled on the Transition Check and should be emphasized in the transition phase. SFLs will be sampled on the Initial Instructor/MSN Check. ELPs during PIT training are normally flown simulating a worst case situation of a 3000’ runway; therefore plan to touch down on speed in the first 1000’. Brief if planning to use full length of the runway for landing to include intended touchdown point.

Verbalize each flap setting prior to landing. When moving flaps and verifying configuration, re-check torque to ensure the PCL didn't move. Trainees should strive to set their own power during ELPs. IP intervention is acceptable if this becomes distracting during the Transition Phase.

5.3.3 Initial for High Key options:

Option 1: Climb to High Key on initial by maintaining the pattern power setting (approx 50% torque). Climb at approximately 15 degrees of pitch to get 125 knots. At 3000' AGL, reduce power as necessary to arrive at High Key at 125 knots then set power to 4-6%.

Option 2: Climb to 3000' AGL using max power, approximately 20-30 degrees of pitch and maintaining 140-160 knots. Reaching 3000' AGL, set torque to 4-6% and glide to High Key.

5.3.4 Closed to Low Key:

Option 1: Climb to Low Key altitude using normal closed procedures. Once established on high downwind and approaching low key, set 4-6%.

Option 2: After climbing above 500 feet AGL, set power to 60% or below to simulate engine malfunction, and climb to Low Key altitude.

5.3.5 High Altitude Power Loss (HAPL). During the Contact block of training, the trainee must fly and instruct a HAPL. This will normally be initiated from the MOA by simulating an engine problem requiring an ELP and setting the torque to 4-6%. The trainee will then fly the aircraft to the intended landing destination as far as possible without jeopardizing safety. For example, if the ELP is to a non-towered field, a low-approach is required. Occasionally, the ELP should be flown to the actual runway conditions where a longer landing may be not only acceptable but preferred (i.e. Kelly, Hondo)

5.3.6 Slips. Fly slips for training in clean configuration only.

5.4 Contact Control Confusion Demo: The IP demonstrates control feel, and aircrew confusion during a dual control situation. Perform this demonstration on the ground in the chocks or other clear area. The recommended time/place is after completing the Cockpit (All Flights) checklist but before the engine is started. The IP initiates this exercise by having the trainee come on the controls while the IP still controls the aircraft. While the trainee attempts to maintain the stick in a straight and level condition, the IP begins to initiate small stick movements in any direction. Both pilots should note the confusion caused by both pilots attempting to control the aircraft.

6. FORMATION

6.1 Radio Procedures.

- On local sorties, formations will use appropriate UHF frequency and designated VHF discrete frequency for the entire sortie unless unusual circumstances dictate otherwise.
- Aim for clear, concise, correct comm.; however, the only good radio call is one that is understood by both the sender and receiver. Do not hesitate to use plain English (especially on the flight discrete frequency) to ensure safety or to enhance training.
- When executing a check-in, lack of the word "Victor" implies that it is on Uniform frequency.
- During intra-flight communication, #1 will be referred to as "One" rather than "lead"; i.e., "*Scuba Terminate*" "*Scuba 1 terminate*" "*Scuba 2 terminate*".
- #2 will generally acknowledge #1's directive calls with "2" unless #1 can perceive #2's compliance visually. For example, #2 does not need to acknowledge #1's call "*Scuba go*

fighting wing FENCE out” because #1 knows the call is received and understood when #2 makes a move to the fighting wing position.

- Receipt and understanding of visual signals should be acknowledged with a head nod. If there is any doubt about whether to acknowledge a call by #1, err to the conservative by acknowledging with “2”.
- Use full numeric call sign when transmitting on UHF and abbreviated call sign only for VHF
- Use call sign and formation position when specifically identifying yourself or being directive, *“Scuba Ops Check, 1 is OBOGS good”*, or *“Scuba 2, break out”*.
- During a knock it off or terminate, the initial call may be made by any flight member. The response above using only the single digit position is used to ensure everyone in the flight received the message and is complying with procedures.
- During checks, the call *“2, same”* indicates OBOGS is good, fuel is within 50 pounds, and “g” is within 0.5g.

6.2 Ground Ops

6.2.1 Engine Start.

PILOTS VISUAL: If visual with the other aircraft pilots, the wingman will give #1 a thumbs up when ready to start. #1 will grab the canopy rail, pause, then close the canopy. The wingmen close the canopies at approximately the same time. When #1 gives the engine start signal to his crew chief, the wingman will do the same and start the engine.

PILOTS NOT VISUAL: If not visual with the other aircraft’s pilots, but the respective crew chiefs are visual, the wingman will pass a thumbs up signal to the crew chief when ready to start. The wingman’s crew chief will pass the thumbs up to #1’s crew chief. #1 will give the engine start signal to the crew chief who will pass it back to the wingman’s crew chief.

CREW CHIEFS NOT VISUAL: If the crew chiefs are not visual with each other, establish a start time prior to leaving crew bus. Use STBY UHF 305.35 to check in at the designated start time. A check in with no caveats is clearance to start. If not ready to start, inform other aircraft of problem and estimated delay time needed. *“Scuba 2 working hydraulics, need 5 minutes.”* For problems after engine start (PMU shutdown, etc.) which may cause an extended delay, use the discrete formation VHF frequency when able to notify other flight member(s). If unable VHF, direct or request the flight go to 305.35 to discuss options. The good aircraft will leave the engine running unless an extended delay (> 15 minutes) is expected. Sympathetic delay until FL determines otherwise, then continue on an alternate mission, if available.

6.2.2 Before taxi: Sweep ATIS prior to check in. Check in on designated formation VHF discrete, *“Scuba, check Victor”*, “2”. If not ready, inform #1 of problem and estimated time needed on VHF. *“Scuba, Check Victor.”* *“Scuba 2 needs 3 minutes.”*: After a successful check-in on VHF, #1 then checks the flight in on CH 1 UHF, *“Scuba 21, check”*. When #1 acknowledges clearance to taxi, the wingman will respond with formation position after #1 acknowledges flight clearance and permission to taxi:

“Scuba 21, taxi with Uniform”

“Scuba 21, cleared as filed on the Falls6, taxi runway 32L, squawk 4421”

“Scuba 21, 32L”

“2” This radio call by the wingman signifies that the clearance is understood.

6.2.3 Spare aircraft procedures. Individual flight members will advise FL of tail changes before takeoff. FL will ensure Texan Ops has new tail #.

- 6.2.4 Taxi.** Taxi staggered on the parallel taxiways. During operations in the End of Runway (EOR) area, transition from staggered taxiing to taxiing on the centerline when turning from the parallel to 90 degrees from runway heading.
- 6.2.5 End of Runway (EOR).** After Overspeed Governor and Before Takeoff check, #2 gives #1 a thumbs up indicating all checks are complete and ready for takeoff. #1 will direct the flight to CH 2 (UHF) either visually (primary) or over the radios (backup), then check the flight in and call ready for takeoff. Staggered spacing may be compressed during maneuvering in EOR to reduce congestion and expedite transition to the runway. Maintain increase vigilance for FO considerations and wingtip clearances during operations under these conditions.

6.3 Takeoff / Departure

- 6.3.1 Abort. Sympathetic abort up to brake release (unless briefed otherwise for alternate single ship mission). During any abort, do not cross runway centerline.
- 6.3.2 Formation or Interval takeoff. If pattern is open, do not switch the flight to departure until clear of the pattern.
- 6.3.3 Formation takeoff. #1 sets approximately 90% after brake release. If #1 aborts after brake release, #2 will normally continue to takeoff to expedite aircraft separation. If #1 wants the entire formation to abort the radio call will be “*Scuba 21 flight abort, abort, abort*” with emphasis on the word “*flight*”.
- 6.3.4 Interval takeoff (6 seconds). #1 uses MAX torque until 160 KIAS, then accelerates using 85%. For outside downwind departures or pattern delays, accelerate to 200 KIAS. #1 delays turn to crosswind until 1NM past the end of the runway and attempts to make one smooth turn to outside downwind to facilitate predictability during the rejoin.
- 6.3.5 Instrument Trail Departure. Spacing will be 90 seconds in the local area with separate clearances. Each aircraft will perform a normal takeoff using MAX power and maintain a separate squawk until rejoined. To increase positional awareness each aircraft will include DME from the departure airfield with the required altitude calls.
- 6.3.6 Intermediate Level Offs. If required to level off below the final departure altitude (i.e. 13,000 MSL on the Falls departure), #1 will accelerate towards and then maintain 200 knots until #2 is rejoined or the climb is continued.
- 6.3.7 Rejoins. Rejoins are to the left side if wings level, or inside of turn if lead is in a bank (exception: the small turns from takeoff to intercepting the 153 radial on the Falls departure are not considered turns for the purpose of determining the rejoin side.)
- 6.3.8 Departure. #1 will set torque between 85%-95% prior to 3000’MSL. Wingmen maintain echelon in turns away during outside downwind departure.
- 6.3.9 Bird status Moderate or Severe. Wingman will fly extended route position (out to 500 feet) below 5000 feet MSL. Unless briefed otherwise, wingmen will move to fingertip position after raising the gear and flaps on a formation takeoff in Bird Moderate/Severe. Expect the flight lead to quickly push the wingman to route position after momentarily stabilized in fingertip but do not

move to route until lead directs unless specifically briefed otherwise. For an interval takeoff, rejoin in Bird Moderate/Severe will be to the route position if completed below 5,000 feet MSL.

6.4 Inflight Procedures

- 6.4.1 In-flight checks. In general, if conditions allow, attempt to initiate and complete checks in the same manner, i.e., if started with a visual signal, finish with a visual signal. Upon entering the assigned area, #1 will direct "**C/S, FENCE In**" on VHF. Automatically switch to UHF area monitor (South MOA: UHF Ch 7; Fantom/West MOA: UHF Ch 15) and accomplish the FENCE check. #1 will check in the wingman on UHF and report established to area monitor.
- 6.4.2 Route position and spacing. When moving to route during in-flight checks, channel changes and expected lead changes, use two to four ship-widths and line abreast spacing. If flying route due to Bird Moderate/Severe conditions below 5000 feet, use judicious spacing out to 500 feet to enhance maneuverability and clearing. When checks are complete or if sent to route due to traffic congestion, use route position that maximizes SA and clearing. #1 pushing outward with an open palm is considered the standard for direction to move to route position.
- 6.4.3 Engine and G envelope. Use caution for rolling G's if going through #1's wake turbulence. If you pull through #1's wake turbulence, unload, check your G-meter, and notify #1 if an over-G has occurred.
- 6.4.4 G-awareness exercise. Accomplish with a pitchout and rejoin as the first maneuver in the area. Attain a minimum of 200 KIAS and 4 G's. Pull for a minimum of 180 degrees of turn. After completing maneuver, reset the G meter, and check wingman with G's and fuel, "**Scuba 1 is 950, 4.5**". Two will mimic One's fuel and G call but if appropriate may use "**2 same**" phraseology.
- 6.4.5 Lead change. New lead will pick up NACWS and squawk, the new wingman will turn squawk to standby and turn NACWS to off.

6.5 Area Work:

- 6.5.1 Rejoins. Rejoins between FENCE IN and FENCE OUT will be 180 knots or airspeed called by #1. Rejoins before FENCE IN and after FENCE OUT will be 200 knots.
- 6.5.2 Wingwork. One "set" of wingwork is defined as a minimum of one turn into and one turn away with the wingman on one side, a cross-under, and a minimum of one turn into and one turn away with the wingman on the other side.
- 6.5.3 Extended Trail Exercise. Entry: When #2 calls in, #1 sets 85% (low area), or MAX (high area and Fantom MOA) power and begins maneuvering. Specific requests (e.g. a level 360 degree turn before changing bank) should be covered in the pre-flight briefing but can be requested in flight. After completing maneuver, reset the G meter, and check wingman with G's and fuel, "**Scuba 1 is 650, 4.5**". Two will mimic One's fuel and G call but if appropriate may use "**2 same**" phraseology.
- 6.5.4 Practice Lost Wingman Exercise. #1 directs "**Scuba 2, go practice lost wingman**". The wingman may delay to provide instruction and to "re-cage" to an instrument scenario. When ready, the wingman will execute the appropriate lost wingman procedure. The exercise will

continue until learning objectives are met. At that point the wingman will call “*Scuba 2, visual*”. #1 will direct a rejoin.

6.5.5 At the completion of area work, #1 will direct “*Scuba, Go Fighting Wing, FENCE Out*”.

Move to the fighting wing position, sweep ATIS, switch to recovery frequency (UHF), then accomplish the FENCE check. If weather or other conditions are a factor, fighting wing may be omitted.

6.5.6 Battle Damage Check. Single pilot concept (i.e. requiring a lead change) is the primary method of accomplishment.

6.6 Recovery

6.6.1 Turns. In the pattern, turns away from the wingman are echelon turns (fingertip and route). During visual straight-ins for formation approaches and landings, turns away are in fingertip after the five mile call by #1.

6.6.2 Bird status:

Moderate Maintain extended route position (out to 500 feet) below 5000 feet MSL. For instrument approaches (VMC) or pattern straight-ins, maintain route until established on final or 5 miles, whichever is later. For overhead patterns, maintain route until after 45 to initial.

Severe. Contact SOF for instructions.

6.6.3 Circling. #1 will clear the wingman off at the point of commencing the circle by giving the pitchout signal and holding up 5 fingers signifying 5 second spacing. The wingman will get separation as required (delay the turn, timing, etc.) to accomplish his own pattern and landing.

6.6.4 Landing. If the wingman passes #1 on landing, #1 should be directive by giving the lead to the wingman if necessary to ensure safety. In general, if aircraft land as a formation, taxi back as a formation. If split up, taxi back single ship. The exception is if the aircraft land one after the other and pull off of the runway at the same taxiway. If conveniently aligned, the aircraft that is in front will assume the #1 position and check the flight in on UHF CH 1 when the second aircraft clears the runway.

6.6.4 Taxi back. Automatically change to UHF CH 1 when the trailing aircraft clears the runway.

6.7 Blind Exercise

This exercise will be thoroughly briefed and performed in the MOA. From route position, #1 will direct “**Scuba 21, standby for Blind Ex**”, followed by “**Scuba 21, reference (heading) turn away**”. At that point both aircraft will turn away using 30 degrees of bank until reaching 90 degrees off the reference heading. After a minimum of 5 seconds after reaching the new heading, #2 will call “**Scuba 2, blind, (altitude)**”. #1 will be directive, ensure minimum 1000 feet altitude separation and direct the wingman as required to rejoin the flight. Considerations:

- Get and keep the formation separated by altitude
- Get the aircraft headed back toward each other or at least in the same direction (“**Scuba 2, fly heading 090**”)
- Use radial/DME or landmarks for a rejoin point
- Wing rocks can enhance visual pickup

- Once one aircraft is visual, the visual aircraft must continue to give their position to the blind aircraft until both aircraft are visual.
- No rejoin will be made until directed by #1
- If neither aircraft can regain the visual, #1 will coordinate for and direct separate recoveries before reaching bingo fuel.

6.8 Emergency/Abnormal Procedures

- 6.8.1 Element Integrity. Maintain element integrity to the maximum extent possible unless the wingman becomes a hazard to the formation due to weather or other circumstances. Usually, if both aircraft are experiencing problems, they will not chase each other. During an emergency use the call sign indicated on the DFO to tell controlling agencies which aircraft in the formation has the problem. If weather is not a factor, the aircraft not experiencing a problem may be sent to a chase position at the discretion of the aircraft in the #1 position (*“Scuba 2 cleared chase”*), which is a fluid position from two to four ship widths out to 500 feet and aft of line abreast. The chase aircraft may swap sides as required during turns and should maneuver to remain clear of the aircraft being chased. The chase aircraft must take into consideration that the lead aircraft may be unpredictable depending on the problem experienced and that most of lead’s attention will be focused on handling that problem, not on clearing/deconflicting from #2. Chase aircraft descend no lower than 300’ AGL when escorting disabled aircraft to the landing runway.
- 6.8.2 HEFOE. HEFOE signals should be initiated/acknowledged by the PF.
- 6.8.3 Radio Failure. Lead will low approach to the active runway indicating clearance to land. Monitor tower/RSU for additional signals.
- 6.8.4 Birdstrike. Use caution when taking evasive action especially when close to the ground or another aircraft. Do not hit other aircraft in attempt to avoid birds. Consider a formation landing if forward visibility is restricted.
- 6.8.5 Flight split up. #1 will initiate flight separation using original designated callsigns as they appear on the DFO. Conduct an ALPHA check prior to split up to confirm bearing and range from primary NAVAID, *“Scuba 1 has Randolph 140 for 25”*. #2 should respond with, *“Two same”* if plus/minus 3 degrees and +/- 2 miles. Obtain separate clearances with ATC and identify who will recover first. Do not execute vectors or actions directed by the controller until cleared off by the #1 aircraft. The aircraft in the #1 position will clear off #2 with a radio call using the call sign from the DFO: *“Scuba 22 you are cleared off.”*
- 6.8.6 Lost sight. In addition to AFMAN 11-248 procedures, if #1 loses visual but #2 has #1 in sight, #1 should request the position of #2, *“Scuba 2 posit”*. #2 will respond with bearing, range, and elevation: *“Scuba 2 is your right 3 o’clock, 2 miles, slightly high”*. If #2 is “blind”, proceed IAW established procedures with primary emphasis on first establishing altitude deconfliction.
- 6.8.7 Lost sight NORDO. #1 will transition to nearest odd altitude. #2 will transition to nearest even altitude without passing through the other aircraft’s last known altitude. The NORDO aircraft will squawk appropriately, orbit over the center radial and DME using right hand turns, 30 degrees of bank. The unaffected aircraft will use NAVAIDs and ATC to maneuver as required to regain visual contact with the orbiting aircraft. Maintain a minimum of 500 foot separation until NORDO aircraft acknowledges and initiates a rejoin (wing rock). Do not over fly BINGO fuel in

an attempt to rejoin. If unable to rejoin, NORDO aircraft will recover IAW IFG single ship procedures. The good aircraft will assist ATC and the SOF as necessary. If NORDO with additional malfunctions, squawk 7700, and orbit as previously described to indicate a rejoin is desired.

6.8.8 NORDO Divert. Lead makes divert decision based on aircraft with lowest fuel state. Hold up IFG divert pages and indicate number corresponding to order of divert airfield. If not in IFG, hold up approach plate and indicate page number of planned approach.

6.8.9 Lost Wingman Procedures. After lost wingman procedures are executed, separation is assured and communications with an external controlling agency is required, transition to using the call signs on the DFO. If the DFL happens to be in the wing position, maneuver IAW established procedures to establish positive separation. When separation is assured, squawk 7700 and revert to DFO call signs when coordinating for separate clearances.

6.9 Visual Signals. Visual signals will only be passed by the PF and acknowledged by the PF in the other aircraft. In addition to AFI 11-205 signals:

6.9.1 The standard visual signal to send a wingman to route is for #1 to “push” with an open palm toward #2.

6.9.2 Take Spacing. Clenched fist with the thumb extended aft, moved aft in several motions. #2 will maneuver to obtain 500 to 1000 feet spacing.

6.9.3 During formation approaches, extend both gear and T/O flaps after the AFI 11-205 gear down signal is given.

6.9.4 #2 does not need to repeat the “drinking” signal when replying to a fuel check. #2 simply replies with the appropriate remaining number

6.9.5 To clear off a wingman, #1 will give a pitchout signal.

6.10 Four-Ship Formation

6.10.1 Spare procedures. Elements stay together. For extended delays, takeoff as separate elements and rejoin in the area.

6.10.2 Takeoff and rejoin. Standard is runway lineup by elements with 500’ spacing if runway length allows. Takeoff spacing is 10 seconds between elements. If crosswinds exceed 15 knots, use six second interval takeoff between all aircraft. If rejoining in the pattern, the first element delays the turn to crosswind until one mile past departure end and makes one turn to outside downwind. #2 rejoins to the left wing, #3/4 to the right wing.

6.10.3 Recovery. If weather would require cruising in IMC, or if unable to go to initial, the flight lead will coordinate for flight split up and recovery as elements.

6.10.4 Pattern and landing. #1 will echelon the flight on the side opposite the pattern turn direction. Remain in route position until initial. #1 will use one continuous turn from outside downwind to initial. For landing, all aircraft will use the same flap setting, as briefed by the flight lead.

#1 lands on the cold side, subsequent aircraft land on the hot side then cross to the cold side when conditions permit.

6.10.5 After landing. #1 waits for #4 to clear. The formation taxis back together.

6.10.6 Emergency procedures. Maintain element integrity. For takeoff aborts, abort as a single ship if possible. If any aircraft in the lead element aborts, that aircraft must call aborting on the radio. The second element will not start takeoff roll until the aborting aircraft has cleared. If already rolling, subsequent aircraft will also abort and make a radio call.

6.10.7 Diversion. Divert as a four ship unless weather is a factor.

7. INSTRUMENTS

7.1 Local Procedures

7.1.1 Tweet MOA. Sign out Tweet MOA at the Duty Desk and adhere to assigned timing block.

7.1.2 Radar Pattern. Airspeeds - 200 kts on downwind, 160 kts on base, slow to configure on final. Approx power settings: 50% on downwind, 30% on base, 20% on final (prior to gear/flap extension).

7.2 Avionics Setup

7.2.1 **ILS/VOR** approach avionics setup: ADI on top display and HSI on bottom display. Utilize the GPS to enhance situational awareness to the maximum extent possible.

7.2.2 **GPS** approach avionics setup: Composite on top display, GPS map mode on bottom display, SUPER NAV5 on GPS display. If available, set up NAVAIDs for a backup approach (i.e. ILS with inbound course or VOR with final approach course set). Give consideration to alternate missed approach instructions in the event of GPS failure.

7.2.3 **Fix-to-Fix**. Trainees/simulated students should not use GPS steering to execute a fix-to-fix. Dim GPS and remove pointer from the display. GPS may be used by the IP to help evaluate selected fix to fix headings and provide immediate feedback, but should only be selected momentarily for feedback purposes and not for execution.

8. NAVIGATION

8.1 General (Use the Navigation Checklist in the IFG for detailed mission planning)

8.1.1 Base Ops Drill. Showtime is 2+30 (or as briefed by the IP) prior to takeoff at base ops. The trainee should normally have all pre-mission planning done NLT show time and be ready to give the base ops drill using the T-6A Inflight Guide Navigation Checklist as a template for discussion (exception: the IP may demo on the first O&B or X/C)
Trainees will complete AF Forms 70 (not computer generated) and be able to explain how it was accomplished using performance tables/charts. The base ops drill should include a discussion of RAIM checks and backup approaches.

8.1.2 VFR navigation. Pilots will prepare a VFR chart with wind-corrected headings, timing, airspeeds, altitudes, and fuel planning using Sectional charts showing FAA airspace or PFPS. If using PFPS, computer calculations must be verified. The desired learning objective of the VFR

navigation sortie is to visually navigate from point-to-point using map reading, pilotage, and dead reckoning techniques. Based on the training objectives, the GPS may be used as much or as little as desired during this sortie. 3000 AGL is a minimum altitude for this sortie. Training objectives may be met at higher VFR altitudes consistent with single engine mentality.

- 8.1.3 Enroute Navigation. If using GPS while enroute, update VORs and courses as a backup. Primary technique for EHSI setup: MAP mode, airfields displayed, range = 2 x altitude.
- 8.1.4 Enroute comm. Once out of the local area, enable the transfer mode of the RMU, use VHF primary and duplex UHF or monitor FSS to ensure GUARD capability is maintained. Trainees/simulated students should gain proficiency at enroute navigation using both the VOR and GPS modes. Which mode is primary, (VOR or GPS) will be clearly established and must be continuously displayed. After proficiency with the above primary display techniques is demonstrated, alternate MAP/HSI/ COMPOSITE modes may be experimented with using the “building block approach”.
- 8.1.5 Terminal Area. Duplex UHF/VHF and use transfer mode of the RMU with approach or tower frequency in “on deck” position. Primarily use VHF to transmit at civilian fields and UHF to transmit at military fields. After primary NAVAIDS are setup and the associated approach is reviewed, maximize use of the GPS to maintain SA (i.e. once the VOR/ILS has been setup and all AFM 11-217 V1 checks are complete, setup GPS direct to the airfield, MAP, NAVAID or landing runway and/or OBS with final approach course set).

8.2 Low Level Nav

- 8.2.1 Low level charts. Local charts may be signed out with the Squadron Sup. If used, complete the three applicable sections of the Low Level Binder at the duty desk: LL Scheduling Info, entry time matrix, and map sign out sheet. After debrief, return the maps to the duty desk, and sign them back in. Ensure any stray marks are removed.
- 8.2.2 Ground Track Control. When flying low levels for proficiency training, the PF should perform some legs without the GPS (dim GPS display and remove the GPS pointer) to emphasize clock-to-map-to-ground execution skills. In this case, the PNF may monitor the GPS to enhance safety and SA. Do not turn the GPS off in flight. The PF should also perform some legs using full GPS capability to practice optimizing its use for task management.
- 8.2.3 Briefing emphasis should be placed on clearing around the canopy bows and front ejection seat, scanning techniques, route conflict points, use of NACWS to aid clearing, radio use (to include monitoring of CTAF frequencies and 255.4), etc. Instructors must continue to focus on execution and instruction of these techniques to include a sufficient discussion during the crew coordination brief on prioritizing clearing responsibilities within the cockpit.
- 8.2.4 Specifically in the low altitude environment, task prioritization must be addressed with a focus on clearing and less emphasis on the black line and TOT. It is acceptable to be slightly early/late at your turn point in the vicinity of the black line while you are clearing your flight path.

9. NIGHT PROCEDURES

- 9.1 **Preflight requirements.** As a minimum, one IP from each night flying aircraft will attend the night flying brief. Those unable to attend (i.e. day/night out and back) will be briefed by the Ops Sup. All pilots will ensure they have a clear visor and operable flashlight. All pilots will obtain a reflective belt from the Ops Sup at the step brief.

- 9.2 **Ground Ops.** The reflective belt will be worn to and from the aircraft and will be stowed before entering the aircraft. Ensure that the canopy is clean, all lighting is operational, and that crew chief has lighted wands.
- 9.3 **Postflight.** When filling out the 781, ensure that sorties with a takeoff time later than 0000Z are logged on the next Zulu day.

10. SAMPLE LOCAL RADIO CALLS

In addition to the inter-cockpit and inter-flight comm listed above, the following are typical radio transmissions used in the local area. Standard pattern radio calls are also found in RAFBI 11-201V2 and RAFBI 11-201V4.

Call Signs:

FAZER – South MOA
 RATCH – Tweet MOA
 KODAK – Fantom MOA/Hondo/Kelly
 TEJAY – Low Level routes
 TAHOE – Local Stereo routes
 JAPAT – Off station sorties (including Out and Back)
 SCARY – Squadron Supervisors
 FANGS – Evaluation (including Category Checks)

Ground:

Clearance – *“Hangover Ground, Fangs 10, taxi with Delta”*
 After Clearance is received – *“Fangs 10, Rwy 14R”*

Departure:

Clearance to South MOA – *“San Antonio Departure, Fazer 10 passing 2300 for 3000, request Ran High”*
 Clearance to Tweet MOA – *“San Antonio Departure, Ratch 10 passing 2300 for 3000, request Rattler”*
 Clearance to Fantom MOA – *“San Antonio Departure, Kodak 10 passing 2300 for 3000, request Fantom”*
 Clearance to Hondo – *“San Antonio Departure, Kodak 10 passing 2300 for 3000, request Coral”*

Area:

Established in South MOA – *“San Antonio, Fazer 10 established 6 Hi (Low)”*
 Established in Tweet MOA – *“Houston Center, Ratch 10 established Tweet 5”*
 Established in Fantom MOA – *“Houston Center, Kodak 10 established Fantom 24”*

Recovery:

Recovery from South MOA – *“San Antonio Approach, Fazer 10 request Auger high (low), Spur/ILS/Karnes, with Foxtrot”*
 Recovery from Tweet MOA – *“Houston Center, Ratch 10 request recovery”* When cleared to San Antonio Approach, *“San Antonio Approach, Fazer 10 request High Kelly, followed by Stinson”*
 Recovery from Fantom MOA to Hondo (VFR) – *“Houston Center, Kodak 10 cancel IFR, request flight following to Brick”*
 Recovery from Fantom MOA to Hondo (IFR) – *“Houston Center, Kodak 10 request direct Brick, direct Hondo”*

Recovery from Fantom MOA to Kelly – *“Houston Center, Kodak 10 request Kelly West recovery”*

Recovery from Fantom MOA to Randolph – *“Houston Center, Kodak 10 request Randolph recovery”* When cleared to San Antonio Approach, *“San Antonio Approach, Kodak 10 request Bracken/Shamu, with Golf”*

Randolph to Hondo:

Randolph to Hondo when VMC – *“San Antonio Approach, Kodak 10 cancel IFR request flight following to Hondo”*

When switching to Tincan – *“San Antonio Approach, Kodak 10 terminate”*

VHF call inbound to Hondo – *Hondo Traffic, Kodak 10, single military T-6 aircraft, 12 miles East for multiple patterns, Runway 17, Hondo”*

UHF call to Tincan – *“Tincan, Kodak 10, 10 miles east for High Key”*

Departing Hondo for Fantom area – *“Houston Center, Kodak 10 departing Hondo, request Fantom area”*

Hondo to Randolph:

Departing Hondo – *“Houston Center, Kodak 10 departing Hondo, request flight following to Randolph”*

Switched to San Antonio – *“San Antonio Approach, Kodak 10 request Coaster/Orca, etc., with India”*

Formation:

Formation Check-in – *“Scuba, check victor”; “Two””Scuba 21, Check”; “Two”*

Clearance – *“Hangover Ground, Scuba 21, taxi with Delta”*

After Clearance is received – *“Scuba 21, Rwy 14R”wingman will respond with “Two”*

Departing Hangover pattern – *“Scuba 21 departing, push 5”* No response from wingman.

Clearance to South MOA – *“Scuba 21, flight of two, passing 2000 for 3000, request Ran formation low”*

Entering area on VHF – *“Scuba, FENCE in”*

Established in area on UHF – *“Scuba 21, established 6/9 low”*

Navigation:

VFR clearance to SR route – *“Hangover Ground, Tejay 10, taxi with Kilo, VFR to the South at 3500”*

VFR departure to SR route – *“San Antonio departure, Tejay 10 passing 1500 for 3500, VFR south to SR 287”*

Inbound VHF call to NTA – *“Smithville traffic, Tejay 10, single military T-6, 10 miles North of the field at 5500 for overhead, left-hand patterns, runway 35, Smithville”*

Overhead NTA – *“Smithville traffic, Tejay 10, single military T-6, overhead the field at 3500 for left-hand patterns, runway 35, Smithville”*

Turning final NTA – *“Smithville traffic, Tejay 10, left base for runway 35, Smithville”*