CHIEF OF NAVAL AIR TRAINING

T-45C JET TRANSITION
STRIKE FLIGHT INSTRUCTOR
TRAINING CURRICULUM

2002
CNATRA INSTRUCTION 1542.150

Subj: T-45C JET TRANSITION STRIKE FLIGHT INSTRUCTOR TRAINING CURRICULUM

1. Purpose. To issue the curriculum for training non-carrier qualified designated Naval Aviators as T-45C Strike Flight Instructors. Basic and Advanced instructor under training (IUT) phases follow successful completion of the jet transition phase of the training curriculum.

2. Action. This instruction is effective upon receipt. No changes will be made without written authorization of the Chief of Naval Air Training (CNATRA).

4. Forms. The CNATRA-GEN forms may be obtained by submitting a DD Form 1348 to Commanding Officer, Naval Air Station (NAS) Pensacola Supply Department (Code 19560), Pensacola, Florida 32508, or through local SERVMARTs. Instructor Training Forms (ITFs) for this curriculum are computer generated by the T45TS Training Integration System (TIS) and will not be stocked in hard copy.

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WILLIAM H. CARRY
Chief of Staff
CNATRAINST 1542.150
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COURSE DATA


2. Catalog Identification Number. Q-2A-0090

3. Training Site/Course Data Processing (CDP) Code. Naval Air Station (NAS), Meridian, Mississippi/Training Squadron (TRARON) SEVEN (VT-07) CDP 738C.


5. Course Mission. T-45C Jet Transition Strike Flight Instructor Training Curriculum is designed to provide non-carrier qualified Naval Aviators with jet aircraft training and to develop airmanship skills prerequisite for training Student Naval Aviators.

6. Prerequisite Training. Successful completion of Undergraduate Pilot Training and Flight Instructor Training Course (FITC), Q-2B-0010.

7. Personnel Eligibility. Designated Naval Aviators assigned by the Chief of Naval Personnel as recommended by the Chief of Naval Air Training.

8. Physical Requirements. As specified in Chapter 15 of the Manual of the Medical Department.


10. NOBC/NEC Earned. None.

11. Obligated Service. Refer to MILPERSMAN, Article 6610360.

12. Follow-on Training. None.

13. Course Length (Optimum)

   Training days: 110        Training weeks: 21.99
   Calendar days: 170        Calendar weeks: 24.29


15. Instructor Requirements. As established by Chief of Naval Operations (CNO) planning factors.

17. Quota Management Authority. Chief of Naval Air Training.


19. Primary Instructional Methods. Building block approach to developing and reinforcing prerequisite airmanship skills through a steady increase in mission task loading. Central to the approach is an optimum mix of classroom (MIL, CAI, etc.), simulator and flight instruction. Classroom instruction combines lecture and question/answer while simulator and flight instruction rely more heavily on a mentor relationship between instructor and student.


21. Student Performance Measurement. As published in CNATRAINST 1500.4F.

22. Application of Standards to the Measurement of Student Performance. Procedural knowledge and application must be in accordance with applicable directives and manuals. Final judgment regarding the satisfactory performance of any item or maneuver rests with the instructor pilot who is capable of assessing the environmental and systems factors affecting the condition under which the performance is measured.

23. Structure. The T-45C Jet Transition Strike Flight Instructor Training Curriculum encompasses the following:


GLOSSARY

Definitions. The following is a list of abbreviations used in the curriculum:

- ACP - Armament Control Panel
- ADC - Airborne Data Computer
- ADI - Attitude Director Indicator
- AGL - Above Ground Level
- AOA - Angle of Attack
- ASR - Airport Surveillance Radar
- ATC - Air Traffic Control
- BIT - Built-in Test
- BVR - Beyond Visual Range
- CAI - Computer Assisted Instruction
- CARQUAL - Carrier Qualification
- CCIP - Continuously Computed Impact Point
- CDI - Course Deviation Indicator
- CEP - Circular Error Probability
- CNI - Communications, Navigation, Interrogation
- CONTR AUG - Control Augmentation
- CV - Carrier
- CWS - Centralized Warning System
- DACM - Defensive Air Combat Maneuver
- DF - Direction Finder
- DME - Distance Measuring Equipment
- DR - Dead Reckoning
- ECA - Engine Control Amplifier
x. ECS - Environmental Control System
y. EDP - Engine Driven Pump
z. FC - Front Cockpit - Fly in front cockpit with a qualified flight instructor on board providing instruction, assistance, or supervision.

aa. FCLP - Field Carrier Landing Practice
bb. FLOLS - Fresnel Lens Optical Landing System
cc. FP - Flight Procedures
dd. FTI - Flight Training Instruction
ee. GCA - Ground Controlled Approach
ff. GINA - GPS/Inertial Navigation Assembly

gg. GLOC - "G" induced Loss of Consciousness
hh. GPS - Global Positioning System
ii. GTS - Gas Turbine Starter
jj. H - Hooded
kk. HSI - Horizontal Situation Indicator
ll. HUD - Heads-up Display
mm. HYD - Hydraulics
nn. IFF - Identification Friend or Foe
oo. IFR - Instrument Flight Rules

pp. IFT - Instrument Flight Trainer (2P137 - instrument)
qq. ILS - Instrument Landing System
rr. IMC - Instrument Meteorological Conditions
ss. IP - Instructor Pilot

tt. IROK - Ejection Considerations--Inflate, Release, Options, Koch Fittings
uu. ITO - Instrument Takeoff
vv. LAB - Laboratory/Practical Problem
ww. LECT - Lecture
xx. LOC - Localizer
yy. LP - Low Pressure
zz. MIL - Mediated Interactive Lecture
aaa. MFD - Multi-Function Display
bbb. NACES - Navy Aircrew Common Ejection Seat
ccc. NATOPS - Naval Air Training and Operating Procedures Standardization
ddd. NAVAIDS - Navigational Aids
eee. NIFM - NATOPS Instrument Flight Manual
fff. NORDO - No radio
ggg. NWS - Nose Wheel Steering
hhh. OBOGS - On-board Oxygen Generating System
iii. OFT - Operational Flight Trainer (2F138 - visual)
jjj. OLS - Optical Landing System
kkk. OPAREA - Operations Area
lll. OPLAN - Operations Plan
mm. OPS - Operations
nnn. PA - Precautionary Approach
ooo. PAR - Precision Approach Radar
ppp. PENCIL - Non-CAI Administered Examination
qqq. P/P - Partial Panel
rrr. RAT - RAM Air Turbine
s. RC - Rear Cockpit - Fly in rear cockpit with a qualified flight instructor on board providing instruction, assistance, or supervision.

t. REcce - Reconnaissance

u. ROE - Rules of Engagement

v. RTB - Return to Base

w. SAR - Search and Rescue

x. S/B - Speed Brakes

y. SID - Standard Instrument Departure

z. SIF - Selected Identification Feature

aa. Simo - Simultaneous

bb. SNA - Student Naval Aviator

c. Solo - Fly without a qualified flight instructor.

d. SRT - Standard Rate Turn

e. TACAN - Tactical Air Navigation

f. UHF - Ultra High Frequency

g. VASI - Visual Approach Slope Indicator

h. VFR - Visual Flight Rules

i. VFQ - Visual Forward-quarter

j. VHF - Very High Frequency

k. VMC - Visual Meteorological Conditions

l. VOR - VHF Omnidirectional Range

m. WKBK - Workbook

n. WX - Weather

o. X - Check flight, simulator check event, or examination lesson.
Curriculum Guidelines

1. Sequencing. The T-45C Jet Transition Strike Flight Instructor Training Curriculum is comprised of 15 flight stages. Training events are sequenced in seven distinct modules, which integrate academic instruction, flight support lectures, simulator and aircraft flight instruction. The general sequencing guidelines follow:

MOD 00: • ASI lessons may be sequenced any order.

MOD 01: • Academic lessons in any order.
• SEAT-01 prior to CO-02S.

MOD 02: • ACT-01 completed prior to CO-02S.
• BI-01S after BIFP-07X.
• CR-02 and CR-03X prior to FAMFP-01.
• EP-03S after FAM-03 but prior to FAM-12X.
• BI-10X prior to FAM-03.
• NATOPS Examinations, OCF-01S, OCF-02, and EP-03S prior to FAM-12X.
• IRFP-01 through IRFP-03X and IR-01X prior to FAM-12X.

MOD 03: • Can be flown concurrently with Module 04.
• EP-04S prior to FCLP-19X.
• CQ-01X requires TRAWING commander/Commanding Officer approval and is not part of the basic instructor qualification syllabus.

MOD 04: • Can be flown in any order.

2. Briefing and Debriefing. Adequate briefing time shall be provided and utilized. The applicable items listed in the NATOPS Pocket Checklist and Briefing Guides must be briefed. For multi-plane flights, all flight members, i.e., instructors, observers, students, and passengers will be briefed by the flight leader in the briefing area. Although IUTs may be briefed early on fundamental techniques, all members of the flight will be in attendance for the final “conduct of flight” portion of the brief.

   a. Briefing. Briefing will be conducted in accordance with OPNAVINST 3710.7R, NATOPS, Briefing Guides, and Training Air Wing Standard Operating Procedures (SOPs).
b. Debriefing. Timely debriefing of each simulator and flight event is an essential part of the learning process. The minimum items that shall be covered in the debrief are:

(1) Overall review of the event plan in chronological order, citing completion, omissions and deletions of prerequisite exercises.

(2) Accomplishment of learning objectives.

(3) Specific comments on above average (AA), below average (BA) and unsatisfactory (UNSAT) performance. Discussion should focus on causes, as well as effects of performance.

c. Designated Flight Leader. For all multi-plane flights involving two or more flight instructors, the designated flight leader will be responsible for compliance with OPNAVINST 3710.7R and with the provisions of paragraph 2a above. In all appropriate cases the designated instructor shall retain the formation leader status as defined by OPNAVINST 3710.7R.

d. IUTs may brief late stage flights.

3. Schedule Limitations

a. Jet Transition and Basic Instructor Qualification

(1) The IUT’s working day from first scheduled event until completion of the last event of the day (including associated paperwork and debrief) shall not exceed 12 hours.

(2) A minimum of 12 hours shall elapse between the conclusion of the IUT’s last scheduled event of the day (including associated debrief) and his/her first scheduled event of the following day.

(3) The maximum workweek is 6 days followed by 1 day off, except as waived in writing by the Training Air Wing (TRAWING) Commander.

(4) All night flights shall take off no earlier than 30 minutes past official sunset.

(5) A maximum of two flights or three cross-country legs may be scheduled in one day.

(6) 1.5 hours of night time and three night instrument approaches shall be accumulated prior to the IUT AN-04X. (These requirements must be met during aircraft flights.)
b. Advanced Instructor Qualification. Schedule limitations of the workday and workweek shall be in accordance with local procedures.

4. Standardization. All simulator and flight events outlined herein shall be conducted in accordance with the current CNATRA Flight Training Instructions (FTIs) and the T-45C NATOPS Flight Manual.

5. Solo Maneuver Restrictions. IUTs are prohibited from performing solo flight until they have successfully completed NATOPS Stage and possess a current instrument rating.

6. Administration
   a. Instructor Training Forms (ITFs)
      (1) A CNATRA ITF will be completed for each curriculum flight or simulator event. All items graded unsatisfactory, below average or above average shall be commented upon in the remarks section.
      (2) ITFs shall be graded the same day the event was conducted.
      (3) Flights requiring dual touch-and-go landings shall include remarks on landing performance using notation format listed in the LSO NATOPS.
      (4) Instructors omitting items from a flight called for in the curriculum shall note the reason for the omission in the remarks section and make the appropriate notation in the grade column (per para 11, i.e., DND, NA...).
      (5) Check flights will be noted as such on the IUT's ITF.
      (6) On multi-plane flights, items completed but unobserved shall not be graded by the flight leader.
      (7) FCLP ITFs shall be completed for all flight events as follows: FCLP-02 and FCLP-03X (1 ITF), FCLP-04 through FCLP-18 (1 ITF), FCLP-19X (1 ITF), and CQ-01X (1 ITF) if flown.

b. Warm-up Criteria. Warm-up flights may be given as necessary to regain flight proficiency after prolonged delays in training at the discretion of COMTRAING ONE/Commanding Officer. The following specific guidelines govern warm-up flights:
(1) Warm-up ITFs do not have to be marked with an unsatisfactory grade to justify an additional warm-up if the overall performance is not up to standard. Warm-up grades are not included in the cumulative totals and unsatisfactory grades do not constitute a "down" unless:

(a) The IUT demonstrates flagrant safety or flight rule violations, or a dangerous tendency.

(b) The IUT is not safe for solo and the next normally scheduled event is a solo flight.

(2) If it is determined that an IUT scheduled for a simulator requires a warm-up the IUT shall fly his/her warm-up in the simulator. If it is determined that an IUT scheduled for an aircraft flight requires a warm-up the IUT shall fly the warm-up in an aircraft. Any instrument stage warm-up shall be flown in a simulator.

c. Instructor Training Jacket (ITJ). ITJs will include ITFs of all qualified stages, standardization checks and individual qualifications, such as section and division leader qualifications.

d. Instrument Rating. IUTs will receive training in instrument flight necessary to qualify for a Standard Instrument Rating in accordance with OPNAVINST 3710.7S.

7. Waiving Events. The flight, simulator, and ground training events listed in this curriculum are the optimum to be completed by each IUT. Training events may be waived or combined at the discretion of the TRAWING commander.

8. Incomplete Flights. Incomplete events may be completed during the following event if time and fuel are available.

9. Aerobatic Maneuvers. Aerobatic maneuvers shall be conducted in accordance with OPNAVINST 3710.7S.

10. Emergency Procedures. Knowledge and response to emergency procedures will be evaluated through simulated emergencies conducted in accordance with the T-45C NATOPS Flight manual during individual stage simulator events and flights.

11. Weather Minimums and Requirements

STAGE WEATHER REQUIREMENTS

FAM Local weather minimums for touch-and-go landings and adequate reference for aerobatic maneuvers, clear of clouds.
OCF    ACM weather requirements.

NFAM   Local weather minimums for touch-and-go landings. No ceiling below en route flight altitudes and not less than 5 miles visibility on navigation route.

BI/RI/AN OPNAV minimums.

FORM   OPNAV minimums. A maximum of two events may utilize TACAN circling minimums with suitable alternate and VFR on top. At least two events shall utilize local weather adequate for running rendezvous and VFR formation recovery.

ON     3000/5 on the route.

WEP    8500/5 30-degree pattern, 6500/5 20-degree pattern, 3000/5 10-degree pattern.

TACF   OPNAV minimums.

ACM    OPNAV minimums. Wx in OPAREA in accordance with CNATRA training rules.

FCLP   Local weather minimums for FCLP.

12. Flight/Simulator Interchangeability. Flight and simulator events may not be interchanged without approval of the TRAWING commander.

13. Definitions. The following terms and symbols found in the curriculum will be applied to flight instruction as defined below:

   a. **Discuss**

      **Instructor:** Quiz the IUT on the applicable procedures, systems or maneuvers.

      **IUT:** Responsible for knowledge of the procedures prior to the event brief.

      **Item:** Graded with an "X" by the instructor in the grade columns on the Instructor Training Form (ITF), labeled "E" in the "ID" column. If this is not available on the ITF, they should be graded in the most appropriate area (e.g., HW, PROC or BAW).
b. **Brief**

**Instructor:** Brief the IUT on the applicable procedures.

**IUT:** Responsible for knowledge of the procedures prior to the event brief.

**Item:** Not graded, but marked with "BRF" by the instructor in the grade columns on the ITF, labeled "B" in the "ID" column.

c. **Demonstrate**

**Instructor:** Perform the maneuver with precision and accompanying description.

**IUT:** Responsible for knowledge of the procedures prior to the event brief and observes the maneuver.

**Item:** Not graded, but marked with "DEMO" by the instructor in the grade columns on the ITF, labeled "D" in the "ID" column.

d. **Introduce**

**Instructor:** Coaches the IUT through the maneuver as necessary, and/or may redemonstrate the maneuver.

**IUT:** Responsible for knowledge of the procedures prior to the event brief and perform the maneuver with coaching as necessary.

**Item:** Graded with an "X" by the instructor in the grade columns on the ITF, labeled "I" in the "ID" column.

e. **Practice**

**Instructor:** Observe the IUT with minimal coaching; may also demonstrate the maneuver if necessary.

**IUT:** Must perform maneuver with minimal coaching.
Item: Graded with an "X" by the instructor in the grade columns on the ITF, labeled "P" in the "ID" column.

f. Review

Instructor: Observe and grade the maneuver without coaching; airborne critique is encouraged.

IUT: Expected to perform the maneuver without coaching and devoid of procedural errors. The level of performance must warrant progression to the next stage or phase of training.

Item: Graded with an "X" by the instructor in the grade columns on the ITF, labeled "R" in the "ID" column.

g. Non-Graded

Instructor: Observe maneuver; item will be graded only if performed above average, below average or unsatisfactory.

IUT: Expected to perform the maneuver without coaching and devoid of procedural errors. The level of performance must warrant progression to the next stage or phase of training.

Item: Not graded, but marked with "NG" by the instructor in the grade columns on the ITF, labeled "NG" in the "ID" column, if the IUT's performance is average. Graded with an "X" in the appropriate grade column if the IUT's performance for that maneuver was other than average.

h. Did Not Do

Instructor: A required item on the ITF, which was not done or completed for various reasons (i.e., weather, aircraft malfunctions, etc.).

IUT: Maintain and present a copy of the ITF to the instructor of the next like event so the next instructor is clear about all PGI/DND item(s).
Item: Not graded, but marked with "DND" by the instructor in the grade columns on the ITF. If the event is incomplete an associated remark is required. One incomplete item constitutes an incomplete event. Every item previously marked "DND" shall be either graded appropriately, or marked "DND" if incomplete again.

i. Not Applicable

Not graded, but marked with "NA" by the instructor in the grade columns on the ITF. This is used ONLY for items in the following categories Labeled on the ITF as: (Optional), (Fuel permitting), (If done), or its equivalent.

j. Previously Graded Item

Instructor: A maneuver previously graded on an incomplete event. The item may be flown on the next attempt at that event if fuel/time permits or if required in order to accomplish the previously "DND" item(s) (e.g., Ground Procedures, Taxi, Take-off, etc). If the IUT's performance is anything other than average on any previously graded item it shall be graded again.

IUT: If required, perform the maneuver again, expected to do so at the level shown in the "ID" column.

Item: Not graded, but marked with "PGI" by the instructor on the ITF in the appropriate grade column if the IUT's performance for that item was average or if it was not performed again. Graded with an "X" by the instructor on the ITF in the appropriate grade columns if the IUT's performance for that item was other than average.

k. Not Observed

Normally used for IUT solo events.

Instructor: ODO/FDO/RDO/SODO shall brief the IUT thoroughly to ensure preparedness.
IUT: The IUT is expected to perform the maneuver as briefed to the skill level stipulated in the review description above.

Item: Not graded, but marked with "NOB" by the ODO/FDO/RDO/SODO on the ITF. Graded with an "X" in the appropriate grade columns as observed by a qualified instructor (i.e., ODO, FDO, RDO, SODO, Section/Division Leader, etc), if the IUT's performance for that maneuver was other than average.

1. "S"-Coded Flights

IUT instructional flights designated by the "S" (e.g., BI-01S) are flown in the flight simulator.

14. IUT Performance Criteria. Flight performance criteria are delineated as standards of performance outlined in Appendix A. Performance criteria and acceptable standards are defined in CNATRAINST 1500.4F.

15. Flight Support. Prior to the first simulator or aircraft event, and prior to designated curriculum check events, each IUT shall successfully pass a flight procedures examination covering the appropriate stage. Failure of the examination shall constitute an observed down for preflight preparation and shall be processed in the normal manner.

16. Extra Time Events. Extra time flight and simulator instruction shall be governed by the limits prescribed in CNATRAINST 1500.4F.

17. Modifying Instructor Training Curriculum. The T-45C Jet Transition Strike Flight Instructor Training Curriculum was developed to provide the average non-carrier qualified Naval Aviator with the skills necessary to become an effective flight instructor. Modifications to this curriculum may be necessary to individualize the training needs of non-carrier qualified aviators, lacking the skills required to successfully complete an IUT stage.

18. Training Time Out Policy. Any time an IUT or instructor has apprehension concerning his or her personal safety or that of another, he or she shall signal for a “Training Time Out” to clarify the situation and receive or provide additional instruction. “Training Time Out” signals other than verbal shall be appropriate to the training environment and clearly briefed.
## TRAINING SUMMARY

### 1. Training Hour Summary

#### FLIGHT TRAINING HOURS

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#### ADVANCED INSTRUCTOR QUALIFICATION

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## BASIC INSTRUCTOR QUALIFICATION

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### FLIGHT SUPPORT TRAINING HOURS

**JET TRANSITION & BASIC QUALIFICATION FLIGHT SUPPORT**

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**ADVANCED INSTRUCTOR FLIGHT SUPPORT**

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**ACADEMICS INSTRUCTION HOURS**

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2. Training Allocation by Module

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<th>SIMULATOR HOURS</th>
<th>SIMULATOR EVENTS</th>
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<th>FLT SUPPORT EVENTS</th>
<th>ACADEMICS HOURS</th>
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3. Training Time Analysis. The following table shows the additional training time involved for each programmed curriculum hour, flight or simulator event. The figures represent the average additional time an IUT is involved in the direct learning process, either in preparation for, or utilizing training equipment.

**ADDITIONAL TRAINING TIME PER PROGRAM CURRICULUM HOUR (ch) or EVENT (e)**

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<th>Training Area</th>
<th>Preparation And Study</th>
<th>Brief and Debrief</th>
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<td>1.00</td>
<td></td>
<td>2.00*</td>
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<tr>
<td>Academic and</td>
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<tr>
<td>Flight Support**</td>
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<td></td>
<td>0.50***</td>
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</tbody>
</table>

* Additional training time per event.
** Self-preparation and study time for academic and flight support may include audio-visual training aids.
*** Additional training time per curriculum hour.

a. Administrative Time. Transit time from activity to activity, meals, scheduling delays and military watch standing duties are not considered. The IUT-training week is based on 6 hours of training per day, 5 days a week (30 hours).

Computation of curriculum time is based on the following formula:

\[ \text{ch} = \text{Curriculum hours} \]
\[ \text{e} = \text{Events} \]
\[ \text{k} = \text{Additional training time per curriculum hour or event} \]
\[ \text{Tc} = \text{Total curriculum time} \]

\[ \frac{\text{ch} + (\text{ch} \times \text{k})}{6 \text{ (hrs per day)}} \text{ or } \frac{(\text{e} \times \text{k})}{30 \text{ (hrs per week)}} = \text{Tc (days) or (weeks)} \]

The Tc calculated is the total contact time required to complete the phase of training.
b. Time-To-Train (Tt). The following factors are considered in computing time-to-train: weather, unsatisfactory events and associated delays, medical groundings, and flight or simulator events canceled due to lack of instructor or equipment availability. The combination of these factors constitutes additional time (Δt) required to train expressed as a percentage of the curriculum time (Tc). The Δt for the T-45C Jet Transition Strike Flight Instructor Training Curriculum is 15.0%. The formula for computing time-to-train (Tt) is as follows:

\[ Tc + (Tc \times \Delta t) = Tt \]

### T-45C JET TRANSITION/BASIC INSTRUCTOR QUALIFICATION TIME-TO-TRAIN
(MODULES 00 THROUGH 04)

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<th>Calendar Weeks</th>
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<td></td>
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<td>Curriculum Time (Tc)</td>
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<td>Δt (15% x Tc)</td>
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</table>

The conversion of time-to-train to approximate calendar days can be calculated using the following formula:

\[ \frac{Tt}{\text{working days/days per year}} = \text{Approximate calendar days}^* \]

To convert to calendar weeks:

\[ \frac{\text{calendar days}}{7 \text{ days/week}} = \text{calendar weeks} \]

\[
\frac{110^*}{237/365} = \text{calendar days} \quad \frac{170}{7} \text{ Days} = 24.29 \text{ calendar weeks}
\]

* Training days rounded to next whole day.
4. Module Summary

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<th>SUPPORT</th>
<th>ACADEMICS</th>
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5. Summary of Lead/Chase Overhead. The summary of the Instructor Lead/Chase planning factor hours for the T-45C Jet Transition Strike Flight Instructor Training Curriculum are tabulated below. The tables are a compilation of the sorties requiring Instructor Chase that can be found in the Module Summary section of this publication.

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Total T-45C Jet Transition Strike Flight Instructor Training Curriculum Chase Overhead = 54.17

NOTE: Lead/Chase Hours per Event are derived by subtracting 0.2 hours from the IUT sortie length. This accounts for IUT touch and go's while the lead full stops first pass.
6. Outline of Training

JET TRANSITION

MOD 00........................................................ 21
MOD 01........................................................ 22
MOD 02........................................................ 29
MOD 03........................................................ 87

BASIC INSTRUCTOR QUALIFICATION

MOD 04........................................................105

ADVANCED INSTRUCTOR QUALIFICATION

MOD 05........................................................ 122
MOD 06........................................................ 151
MOD 07........................................................ 177
MODULE 00

AVIATION STUDENT INDOCTRINATION (ASI)

OBJECTIVE: Indoctrinate the IUT on procedures, system usage and command policies required to receive prescribed training in the T-45C Jet Transition Strike Flight Instructor Training Curriculum.

Includes: Aviation Student Indoctrination (ASI-01 through ASI-04).

NOTE 1: There are no examinations in this module. The CAI introduction lesson will provide procedures for taking examinations. Academic and flight support examinations are normally taken in the Learning Center. CAI administered examinations may require materials such as examination booklets, video materials, NATOPS, etc. The IUT should check the examination booklet prior to logging on CAI for the examination. Read the examination instructions carefully. Contact the instructor or Learning Center monitor if problems are encountered.

NOTE 2: ASI can be completed in any sequence. ASI-02 must be completed prior to ENG-03.

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MODULE 01

ACADEMICS AND FLIGHT PREPARATION

OBJECTIVE: Provide the IUT with a comprehensive academic base of knowledge in T-45C Systems (Engineering), T-45C specific Aerodynamics, Meteorology, Instrument Navigation, Course Rules, NACES Flight Physiology, Aircrew Coordination Training, and a complete NATOPS simulator/flight qualification, concluding with a standardization check flight.

Includes: Engineering (ENG-01 through ENG-30X); Aerodynamics (AERO-01 through AERO-06); Instrument Navigation (INAV-01 through INAV-12X); Course Rules (CR-01 and CR-02X); NACES Flight Physiology (SEAT-01); Aircrew Coordination Training (ACT-01); Cockpit Orientation lessons and simulators (CO-01 through CO-08S); and Aviation Student Indoctrination (ASI-05).

NOTE: ACT-01, ORM-01, and SEAT-01 should be completed prior to CO-07S.

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Brief:

a. QOD
b. Ground signals
c. Final checker
d. Shutdown signals

Demonstrate:

a. Enter mission data
b. Takeoff

Introduce:

a. Canopy/ejection seat preflight
b. Strap-in procedures
c. Cockpit/display orientation
d. Cockpit preflight checklist
e. Prestart checklist
f. Aircraft start
g. Post-start checklist
h. Display Management
i. Ground communications
j. Taxi checklist
k. Aircraft taxi
l. Flight instrument checks
m. Takeoff clearance
n. Takeoff checklist
o. Engine checks
p. Departure communications
q. 10,000-ft checklist/15-minute report
r. En route communications
s. Descent/penetration checklist/RADALT management
t. Approach control communications
u. VFR approach to pattern initial
v. Communication to tower
w. Landing checklist
x. After landing communications
y. After landing checklist
z. Aircraft shutdown
aa. Shutdown checklist
bb. Normal egress procedures
MODULE MEDIA SYMBOL DESCRIPTION DURATION

01-61 OFT CO-08S COCKPIT ORIENTATION EIGHT SIMULATOR 1.5

Brief:

a. QOD
b. Abnormal alignment procedures

Introduce:

a. Takeoff clearance
b. Departure communications
c. En route communications
d. Full system utilization
e. Approach control communications
f. VFR approach to pattern initial
g. Communications to tower
h. After landing communications
i. Check/test CNI system
j. Check/test ECS
k. Check/test electrical

Practice:

a. Don flight equipment
b. Strap-in procedures
c. Cockpit preflight checklist
d. Prestart checklist
e. Aircraft start
f. Poststart checklist
g. Ground communications
h. Taxi checklist
i. Aircraft taxi
j. Flight instrument checks
k. Takeoff checklist
l. Engine checks
m. Takeoff
n. 10,000-ft checklist/15-minute report
o. Descent/penetration checklist/RADALT Management
p. Landing checklist
q. After landing checklist
r. Shutdown checklist
s. Normal egress procedures
MODULE 02

JET TRANSITION

OBJECTIVES:

1. **Basic Instrument Stage.** Develop the IUT's instrument flying skill with emphasis on scan, aircraft control, pattern and instrument interpretation.


   NOTE: Basic Instruments (BI-01S through BI-07X) are normally flown after completion of cockpit orientation, EMFP lessons/EP simulators and BIFP lessons.

2. **Radio Instrument Stage.** Enable the IUT to navigate a jet aircraft from takeoff to landing, excluding airways, under IFR conditions with emphasis on scan development, instrument interpretation, precision and non-precision approaches, aircraft control and procedural knowledge. The IUT will practice all checklists.

   Includes: Radio Instrument Flight Procedures (RIFP-01 through RIFP-05X); Radio Instruments simulators and flights (RI-01S through RI-07X); and Airways Navigation flights (AN-01 and AN-02).

   NOTE 1: RI-05, RI-06, and RI-07X may be flown as legs of a cross-country.

   NOTE 2: One RI flight should be scheduled at night.

3. **Familiarization Stage.** Familiarize the IUT with normal and emergency procedures in the aircraft with emphasis on system operations, flight characteristics and landing techniques.

   Includes: Course Rules (CR-02 and CR-03X); Cockpit Orientation (CO-09 and CO-10); Familiarization Flight Procedures (FAMFP-01 through FAMFP-03X); Familiarization simulator and flights (FAM-01S through FAM-14); Emergency Procedures simulator (EP-03S); Out-of-Control Flight Procedures (OCFFP-01); Out-of-Control Flight simulator and flight (OCF-01S and OCF-02); Night Familiarization Flight Procedures (NFAMFP-01 through NFAMFP-03X); Night Familiarization flight (NFAM-01) and NATOPS instruction and examinations (NATOPS-01 through NATOPS-03X).
NOTE 1: Open-book and Closed-book NATOPS examinations shall be completed prior to FAM-12X. NATOPS examinations are administered by the squadron and are paper/pencil examinations.

NOTE 2: Instrument Rating Flight Procedures and examination should be completed prior to IR-01X and FAM-12X.

NOTE 3: Instrument Rating Check (IR-01X) should be completed prior to FAM solo (FAM-13).

NOTE 4: PAs will be flown to a full stop only when dual.

NOTE 5: A minimum of three breaks must be flown prior to FAM-12X.

4. Standardization Stage. Prepare the IUT for a NATOPS check in the T-45C aircraft.

Includes: NATOPS simulators and flights (NA-01S through NA-14X) and Formation Flight Procedures (FFP-01 through FFP-06X) to support NA-09S and NA-10.

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**Brief:**

a. QOD
b. Canopy malfunctions
c. Engine fire on deck
d. Ground ejection situations
e. Engine stalls
f. Short field arrested landing

**Introduce:**

a. No READY light
b. Wet start
c. Low oil pressure on start
d. Hot start
e. Engine fire on start
f. Hung start
g. GTS fire
h. Ground emergency communications
i. Unsafe gear (UP)
j. Fuel leak
k. LP fuel pump failure
l. Boost pump failure
m. Initial shot failure
n. CWS failure
o. Eng fire with/without secondary indications
p. Trim malfunctions
q. Engine overspeed
r. Engine flameout
s. Airstarts
t. ECA fail (full trim)
u. Engine vibration
v. Engine failure
w. Oil pressure failure
x. Ejection
y. Engine fire on shutdown
z. Emergency egress
MODULE MEDIA SYMBOL DESCRIPTION DURATION
02-13 OFT EP-02S EMERGENCY PROCEDURES TWO SIMULATOR 1.5

Brief:

a. QOD
b. Smoke/fumes/fog in cockpit
c. Stabilator trim failure
d. Flaps fail to retract
e. Slats fail to retract
f. Flaps fail to extend
g. Slats fail to extend
h. Split slats
i. Gear unsafe after lowering
j. Gear door malfunctions after lowering
k. Long field arrested landing

Introduce:

a. Flight control system malfunction/emergencies
b. Swerve after touchdown
c. Landing rollout (field) with blown tire

Practice:

a. Ground emergency communications
b. Engine fire on start
c. Hung start
d. GTS fire
e. Trim malfunctions
f. Engine fire, secondary indications
g. Engine overspeed
h. Engine flameout
i. Airstart (high altitude)
j. ECA fail (full trim)
k. Engine vibration
l. Oil pressure failure
m. Engine failure (seizure)
n. Ejection
o. Hydraulic malfunction/emergency
MODULE MEDIA SYMBOL DESCRIPTION DURATION
02-24 IFT/OFT BI-01S BASIC INSTRUMENTS ONE 1.5 SIMULATOR

Brief:

a. QOD
b. Battery operation during IFR
c. Total electrical failure
d. Main ADI failure
e. GINA malfunctions
f. Turn and slip failure
g. HSI failure
h. Half flap operation

Introduce:

a. Brief preparation
b. Instrument checks
c. IFR clearances
d. Instrument communications
e. ITO
f. SID
g. Turn pattern
h. Level speed changes
i. Half standard rate turn
j. Level speed change half SRT
k. Standard rate turn
l. Stall series
m. Slow flight maneuver
n. S-1 pattern
o. S-3 pattern
p. Partial panel timed turns
q. Penetration check
r. TACAN/VOR tracking
s. TACAN/VOR DME approach
t. Missed approach
u. PAR approach
Brief:

a. QOD
b. FLT instrument failure
c. ASR approach
d. Emergencies

Introduce:

a. Partial panel
b. VOR penetration/approach
c. ASR approach
d. ILS approach
e. Missed approach partial panel

Practice:

a. Brief preparation
b. Checklists/RADALT usage
c. IFR clearance
d. Instrument communications
e. ITO
f. SID
g. Turn pattern
h. Half standard rate turn
i. Level speed change half SRT
j. Standard rate turn
k. Stall series
l. Slow flight maneuver
m. S-1 pattern
n. S-3 pattern
o. Partial panel timed turns
p. TACAN/VOR tracking
q. Missed approach
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**Brief:**

a. QOD  
b. Types of descents  
c. NWS failure  
d. Turn and slip failure  
e. HSI failure  
f. Multi-function display failure

**Introduce:**

a. Unusual attitudes partial panel  
b. Localizer approach  
c. No gyro GCA  
d. GINA malfunctions

**Practice:**

a. Brief preparation  
b. Checklists/RADALT usage  
c. Instrument communications  
d. ITO  
e. SID  
f. Level speed change half SRT  
g. S-3 pattern  
h. Unusual attitudes  
i. VOR penetration/approach  
j. TACAN/VOR DME approach partial panel  
k. Missed approach partial panel
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**Brief:**

QOD

**Introduce:**

a. Aileron Roll  
b. Wingover  
c. Barrel roll

**Practice:**

a. Brief preparation  
b. Checklists/RADALT usage  
c. IFR clearances  
d. Instrument communications  
e. ITO  
f. SID  
g. Turn pattern  
h. Half standard rate turn  
i. Standard rate turn  
j. Level speed changes half SRT  
k. Stall series  
l. S-1 pattern  
m. S-3 pattern  
n. Slow flight maneuver  
o. TACAN/VOR DME approach  
p. ILS approach  
q. Missed approach
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**Brief:**

a. QOD  
b. Safety of flight  
   (1) Speed brake failure  
   (2) #2 hydraulic failure  
   (3) Total hydraulic failure  
c. Emergency gear extension  

**Introduce:**

a. Half Cuban eight  
b. Loop  

d. Level speed change half SRT  
g. S-3 pattern  
h. Unusual attitudes  
i. Unusual attitudes partial panel  
j. VOR penetration/approach  
k. Missed approach  
l. TACAN/VOR/DME approach partial panel  
m. Missed approach partial panel  
n. ASR approach partial panel  
o. No gyro GCA
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**Brief:**

a. QOD  
 b. Approach configuration  
 c. Compressor stall  
 d. Flameouts  
 e. Ejections

**Introduce:**

a. Don flight gear  
 b. Aircraft preflight  
 c. Man-up and seat preflight  
 d. Install hood

**Practice:**

a. Checklists/RADALT usage  
 b. IFR clearance  
 c. Instrument communications  
 d. ITO  
 e. SID  
 f. Turn Pattern  
 g. Level speed change half SRT  
 h. Stall series  
 i. Slow flight  
 j. S-3 pattern  
 k. Partial panel  
 l. Unusual attitudes  
 m. TACAN/VOR DME approach  
 n. Missed approach  
 o. PAR approach  
 p. ASR approach partial panel

**NOTE:** Brief should begin 2 hours prior to scheduled takeoff.
Brief:

a. QOD
b. Plane captain signals
c. GCA pattern engine surges
d. Emergency oil instrument approach

Review:

a. IFR clearances
b. Checklists/RADALT usage
c. Instrument communications
d. ITO
e. SID
f. S-3 pattern
g. Stall series
h. Unusual attitudes
i. Unusual attitudes partial panel
j. TACAN/VOR DME approach
k. Missed approach
l. Partial panel approach(es)
m. PAR approach
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**Brief:**

a. QOD  
b. ADI failure  
c. Inverter failure

**Introduce:**

a. Complete DD-175 with single-engine jet log  
b. Radar altimeter failure  
c. Point-to-point  
d. Wind corrections  
e. TACAN/VOR DME holding  
f. ILS approach partial panel  
g. ILS glideslope failure  
h. ILS localizer failure  
i. Marker beacon failure  
j. Emergency oil instrument approach

**Practice:**

a. Checklists  
b. Instrument communications  
c. ITO  
d. SID  
e. ATC clearance  
f. Flight control emergencies  
g. Engine emergencies  
h. TACAN/VOR DME approach  
i. Missed approach
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**Brief:**

a. QOD  
b. High field elevation approach  
c. High density altitude takeoff  
d. GINA failure  
e. BINGO profile

**Introduce:**

a. Emergency fuel GCA  
b. Lost communications  
c. VOR holding  
d. Localizer approach partial panel

**Practice:**

a. Weather criteria  
b. Instrument communications  
c. SID  
d. ATC clearance  
e. Route/destination change  
f. Missed approach  
g. Emergency oil instrument approach
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**Brief:**

a. QOD  
b. HSI failure  

**Introduce:**

a. TACAN/VOR DME approach partial panel  
b. Localizer (LOC) back course approach  
c. BINGO profile  

**Practice:**

a. Complete DD-175 with single-engine jet log  
b. Point-to-point  
c. TACAN/VOR DME holding  
d. Route/destination change  
e. Missed approach  
g. Emergency fuel approach  

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**Brief:**

a. QOD  
b. High altitude flight and OBOGS failure  
c. Vertigo  

**Review:**

a. Instrument communications  
b. SID  
c. ATC clearance  
d. Lost communications  
e. Route/destination change  
f. Point-to-point  
g. TACAN/VOR DME holding  
h. TACAN/VOR DME approach  
i. Missed approach  
j. ILS approach  
k. PAR approach  
l. Localizer (LOC) back course approach  

**NOTE:** One approach partial panel.
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**Brief:**

- a. QOD
- b. Electrical system
- c. Emergencies

**Practice:**

- a. Complete DD-175 with single-engine jet log
- b. Checklists
- c. Instrument communications
- d. ITO
- e. SID
- f. ATC clearance
- g. Point-to-point
- h. Wind drift correction (if required)
- i. ILS approach
- j. Simulated emergencies (airborne)
- k. No gyro precision approach
- l. ASR approach partial panel
- m. Emergency fuel instrument approach
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**Brief:**

a. QOD
b. Ejection procedures
c. Dirty TACAN/VOR approach
d. Partial panel

**Introduce:**

Direct routing

**Practice:**

a. Complete DD-175 with single-engine jet log
b. Instrument communications
c. ITO
d. SID
e. ATC clearance
f. Ground speed checks
g. Point-to-point
h. Wind drift correction (if required)
i. TACAN/VOR DME holding
j. Simulated emergencies (airborne)
k. TACAN/VOR DME approach
l. Missed approach
m. No gyro GCA
n. Precision approach
o. Emergency oil instrument approach
MODULE MEDIA SYMBOL DESCRIPTION DURATION
02-42 T-45/RC RI-07X RADIO INSTRUMENTS SEVEN CHECK 1.8

Brief:

  a. QOD
  b. Airstart
  c. IROK procedures
  d. Pitot static failures
  e. Full stop technique from GCA

Review:

  a. Complete DD-175 with single-engine jet log
  b. Instrument communications
  c. ITO
  d. SID
  e. ATC clearance
  f. Ground speed checks
  g. Direct routing
  h. Point-to-point
  i. Wind drift correction (if required)
  j. TACAN/VOR DME holding
  k. Simulated emergencies (airborne)
  l. TACAN/VOR DME approach partial panel
  m. Missed approach
  n. No gyro GCA
  o. PAR approach partial panel
  p. Emergency oil instrument approach
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**Brief:**

a. QOD  
b. Parking brake failure  
c. Lost aircraft  
d. Lost communications  
e. Loss of ECS temperature control  
f. OBOGS malfunctions

**Introduce:**

a. Check/test flight control system  
b. Check/test anti-skid system  
c. Taxi/marshal/TO (ground OPS)  
d. Radio communications  
e. Normal takeoff  
f. Standard departure procedure  
g. Course rules  
h. Visual landmarks (area familiarization)  
i. Level off/cruise  
j. Turn pattern maneuvers  
k. Level flight acceleration/deceleration  
l. Slow flight maneuvers  
m. Power off stall  
n. Landing attitude maneuver  
o. Landing attitude stall  
p. Approach turn stall  
q. Aileron roll  
r. Wingover  
s. Barrel roll  
t. Overhead pattern (break)  
u. VFR landing pattern  
v. Touch-and-go full flaps/slats  
w. Full-stop full flaps/slats  
x. NWS failure  
y. Taxi-to-line and shutdown

**Practice:**

a. Checklists  
b. Start malfunction/emergencies  
c. Engine emergencies  
d. Generator malfunction/emergencies
Brief:

QOD

Introduce:

a. Break turn stall and recovery
b. Accelerated stall and recovery
c. Unusual attitude recoveries
d. Straight-in approach
e. Field arrested landing with blown tire
f. Ejection situation (low altitude)

Practice:

a. Checklists
b. Taxi/marshal/TO (ground OPS)
c. Check/test aircraft systems
d. Start malfunction/emergencies
e. Radio communications
f. Abort situations
g. Normal takeoff
h. Standard departure procedure
i. Course rules
j. Turn pattern maneuvers
k. Level flight acceleration/deceleration
l. Slow flight maneuvers
m. Power off stall
n. Landing attitude maneuver
o. Landing attitude stall
p. Approach turn stall
q. Aileron roll
r. Wingover
s. Barrel roll
t. Overhead pattern (break)
u. VFR landing pattern
v. Touch-and-go full flaps/slats
w. Hydraulic malfunction/emergencies
x. Lost communications situations
y. Swerve after touchdown
z. Taxi-to-line and shutdown
02-52  T-45/FC  FAM-03  FAMILIARIZATION THREE  1.3

Brief:

a. QOD
b. Start emergencies

Demonstrate:

a. Aircraft exterior preflight
b. Postflight

Introduce:

a. Roll-and-go full flaps/slats
b. Waveoff

Practice:

a. Checklists
b. Course rules
c. Radio communications
d. Aircraft taxi
e. Normal takeoff
f. Standard departure procedure
g. Visual landmarks (area familiarization)
h. Level off/cruise
i. Turn pattern maneuvers
j. Level flight acceleration/deceleration
k. Slow flight maneuvers
l. Power off stall
m. Landing attitude maneuver
n. Landing attitude stall
o. Approach turn stall
p. Aileron roll
q. Descents
r. Overhead pattern (break)
s. VFR landing pattern
t. Touch-and-go full flaps/slats
u. Simulated emergencies (airborne)
v. Full-stop full flaps/slats
MODULE MEDIA SYMBOL DESCRIPTION DURATION

02-53 OFT EP-03S EMERGENCY PROCEDURES THREE 1.5 SIMULATOR

Brief:

a. QOD
b. Flap indicator failure
c. Landing gear indicator failure
d. Trim indicator failure
e. IFF failure

Introduce:

a. Tailpipe overheat
b. One gear unsafe down
c. NWS caution light illuminated airborne
d. NWS failure
e. Anti-skid failure
f. Wheel brake failure
g. Hot brakes
h. Trim malfunctions
i. Tail hook malfunction
j. Overhead Precautionary Approach
k. Straight-in Precautionary Approach
l. Abeam Precautionary Approach
m. Touch-and-go no flaps/slats
n. Full-stop landing (no flaps/slats)
o. Failure to meet line speed
p. Inadvertent IMC
q. Short field arrestment

Practice:

a. Start emergencies
b. Takeoff emergencies
c. Abort situations
d. Fuel system emergencies
e. Electrical emergencies
f. Hydraulic emergencies
g. Flight control emergencies
h. Swerve after touchdown
i. Ejection
MOD   | MEDIA   | SYMBOL  | DESCRIPTION                | DURATION |
02-54 | T-45/FC | FAM-04  | FAMILIARIZATION FOUR        | 1.3      |

Brief:

QOD

Practice:

a. Checklists
b. Taxi/marshal/TO (ground OPS)
c. Radio communications
d. Normal takeoff
e. Standard departure procedure
f. Course rules
g. Slow flight maneuvers
h. Break turn stall
i. Approach turn stall
j. Accelerated stall
k. Unusual attitude recoveries
l. Aileron roll
m. Straight-in approach
n. VFR landing pattern
o. Touch-and-go full flaps/slats
p. Roll-and-go full flaps/slats
q. Simulated emergencies (airborne)
r. Taxi-to-line and shutdown
s. Postflight
MODULE MEDIA SYMBOL DESCRIPTION DURATION
02-55 OFT FAM-05S FAMILIARIZATION FIVE SIMULATOR 1.5

Brief:
   a. QOD
   b. Lost canopy

Introduce:
   a. Suspend GINA alignment on power-up (align time not counting, qual number not decrementing, zero GPS satellites)
   b. Crosswind takeoff
   c. Minimum radius turns
   d. Vertical recoveries
   e. Squirrel cage
   f. IFR approach to a visual approach
   g. Downwind entry
   h. Crosswind landing
   i. Ground emergency

Practice:
   a. Checklists
   b. Taxi/marshal/TO (ground OPS)
   c. Radio communications
   d. Takeoff malfunction/emergencies
   e. Abort situations
   f. Standard departure procedure
   g. Course rules
   h. Stall series
   i. Aileron roll
   j. Wingover
   k. Barrel roll
   l. VFR landing pattern
   m. Touch-and-go full flaps/slats
   n. Touch-and-go no flaps/slats
   o. Roll-and-go full flaps/slats
   p. Hydraulic malfunction/emergencies
   q. Airstart (low altitude)
   r. Ejection situation (low altitude)
   s. Flight control emergencies
   t. Swerve after touchdown
   u. Field arrested landing, with blown tire
02-56  T-45/FC  FAM-06  FAMILIARIZATION SIX  1.3

Brief:

QOD

Introduce:

a. Straight-in roll-and-go, full flaps
b. Crosswind landing to roll-and-go

Practice:

a. Aircraft exterior preflight
b. Checklists
c. Taxi/marshal/TO (ground OPS)
d. Radio communications
e. Normal takeoff
f. Standard departure procedure
g. Course rules
h. Stall series
i. Minimum radius turns
j. Wingover
k. Barrel roll
l. Vertical recoveries
m. Unusual attitude/recoveries
n. VFR landing pattern
o. Touch-and-go, full flaps/slats
p. Touch-and-go, no flaps/slats
q. Roll-and-go, full flaps/slats
r. Simulated emergencies (airborne)
s. Postflight
Brief:

a. QOD
b. Engine surge/compressor stall
c. PA configuration management

Practice:

a. Aircraft exterior preflight
b. Checklists
c. Taxi/marshal/TO (ground OPS)
d. Radio communications
e. Normal takeoff
f. Standard departure procedure
g. Course rules
h. Stall series
i. Minimum radius turns
j. Wingover
k. Barrel roll
l. Squirrel cage
m. Unusual attitude recoveries
n. Vertical recoveries
o. Straight-in Precautionary Approach
p. Abeam Precautionary Approach
q. VFR landing pattern
r. Touch-and-go, full flaps/slats
s. Crosswind landing to roll-and-go
t. Touch-and-go, no flaps/slats
u. Simulated emergencies (airborne)
v. Postflight
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<td>FAMILIARIZATION EIGHT</td>
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**Brief:**

QOD

**Practice:**

a. Aircraft exterior preflight  
b. Checklists  
c. Taxi/marshal/TO (ground OPS)  
d. Radio communications  
e. Normal takeoff  
f. Standard departure procedure  
g. Course rules  
h. Stall series  
i. Squirrel cage  
j. Vertical recoveries  
k. Recovery  
l. Overhead Precautionary Approach  
m. VFR landing pattern  
n. Touch-and-go, full flaps/slats  
o. Touch-and-go, no flaps/slats  
p. Simulated emergencies (airborne)  
q. Postflight
02-59   T-45/FC  FAM-09  FAMILIARIZATION NINE  1.3

Brief:

QOD

Introduce:

Precautionary approach (full stop)

Practice:

a. Aircraft exterior preflight
b. Checklists
c. Taxi/marshal/TO (ground OPS)
d. Radio communications
e. Course rules
f. Stall series
g. Squirrel cage
h. Vertical recoveries
i. Downwind entry
j. VFR landing pattern
k. Touch-and-go, full flaps/slats
l. Touch-and-go, no flaps/slats
m. Precautionary approach (two desired)
n. Simulated emergencies (airborne)
o. Postflight
MODULE | MEDIA | SYMBOL | DESCRIPTION | DURATION
02-60 | T-45/FC | FAM-10 | FAMILIARIZATION TEN | 1.3

**Brief:**

QOD

**Practice:**

a. Aircraft exterior preflight
b. Checklists
c. Taxi/marshal/TO (ground OPS)
d. Radio communications
e. Course rules
f. Stall series
g. Squirrel cage
h. Vertical recoveries
i. Recovery (RTB w/o NAVAIDS, Wx permitting)
j. VFR landing pattern
k. Touch-and-go, full flaps/slats
l. Touch-and-go, no flaps/slats
m. Simulated emergencies (airborne)
n. Precautionary approach (two desired)
o. Postflight
Brief:

QOD

Practice:

a. Aircraft exterior preflight
b. Checklists
c. Taxi/marshal/TO (ground OPS)
d. Radio communications
e. Course rules
f. Stall series
g. Squirrel cage
h. Vertical recoveries
i. Recovery (RTB w/o NAVAIDS, Wx permitting)
j. VFR landing pattern
k. Touch-and-go, full flaps/slats
l. Touch-and-go, no flaps/slats
m. Simulated emergencies (airborne)
n. Precautionary approach (two desired)
o. Postflight
Brief:
  a. QOD
  b. Runaway trim
  c. Engine flameout
  d. Ejection situations

Introduce:
  a. High AOA/deep stall investigation/rudder induced departure
  b. Low airspeed recovery (70 degrees nose up)
  c. Low airspeed recovery (110 degrees nose up)
  d. Lateral stick adverse yaw departure
  e. Stuck throttle approach

Practice:
  a. Straight-in precautionary approach
  b. VFR landing pattern
  c. Touch-and-go, full flaps/slats
  d. Touch-and-go, no flaps/slats
  e. Full-stop landing
  f. Swerve after touchdown
  g. Field arrested landing with blown tire

NOTE: Two (2) stuck throttle approaches required (high, middle, or low).
MODULE MEDIA SYMBOL DESCRIPTION DURATION
02-64 T-45/FC OCF-02 OUT-OF-CONTROL FLIGHT TWO 0.6

Brief:

a. QOD
b. OCF departure/recovery procedures
c. Spin recovery procedures
d. Lateral stick adverse yaw departure

Practice:

a. High AOA/deep stall investigation/rudder induced departure
b. Low airspeed recovery (70 degrees nose up)
c. Low airspeed recovery (110 degrees nose up)
d. Lateral stick adverse yaw departure
e. Straight-in precautionary approach
f. VFR landing pattern
g. Touch-and-go, full flaps/slats
h. Touch-and-go, no flaps/slats
i. Crosswind landings (conditions permitting)
j. Full-stop landing
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<td>IR-01X</td>
<td>INSTRUMENT RATING ONE CHECK</td>
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</table>

**Brief:**

a. QOD  
b. Lost communications  
c. Airborne emergencies

**Review:**

a. Single-engine jet log  
b. Complete DD-175  
c. SID  
d. ATC clearance  
e. TACAN navigation  
f. Point-to-point  
g. Route/destination change  
h. TACAN/VOR DME holding  
i. TACAN/VOR DME approach  
j. Missed approach  
k. ILS approach  
l. PAR approach partial panel

**NOTES:**

(1) Jacket review required.  
(2) Must have completed Instrument Rating Examination prior to this check flight.
MODULE MEDIA SYMBOL DESCRIPTION DURATION
02-72 T-45/FC FAM-12X FAMILIARIZATION TWELVE CHECK 1.3

Brief:

QOD

Review:

a. Aircraft exterior preflight
b. Checklists
c. Taxi/marshal/TO (ground OPS)
d. Radio communications
e. Course rules
f. Stall series
g. Minimum radius turns
h. Wingover
i. Barrel roll
j. Squirrel cage
k. Vertical recoveries
l. Unusual attitude recoveries
m. Overhead pattern (break)
n. VFR landing pattern
o. Touch-and-go, full flaps/slats
p. Touch-and-go, no flaps/slats
q. Precautionary approaches
r. Simulated emergencies (airborne)
s. Postflight

NOTES:

(1) Jacket review required.

(2) FAM-12X shall be flown with visual reference to the ground.

(3) EP-03S, OCF-02, open and closed NATOPS examinations must be completed prior to brief.

(4) Instrument Rating Check (IR-01X) shall be completed prior to brief.
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<td>FAM-13</td>
<td>FAMILIARIZATION THIRTEEN</td>
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**Brief:**

a. QOD  
b. Solo brief  
c. Lost aircraft situations

**Practice:**

a. Power off stall  
b. Landing attitude maneuver  
c. Landing attitude stall  
d. Wingover  
e. Barrel roll  
f. Squirrel cage  
g. Overhead pattern (break)  
h. VFR landing pattern  
i. Touch-and-go, full flaps/slats  
j. Abeam PA (Wx permitting)

**NOTES:**

(1) Only "Headwork" will be grade by a qualified instructor.

(2) Intentional spins, accelerated stalls, unusual attitudes, approach turn stalls, and vertical recoveries are prohibited maneuvers for solo IUTs.
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<td>FAMILIARIZATION FOURTEEN</td>
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**Brief:**

QOD

**Practice:**

- a. Stall series
- b. Aileron roll
- c. Wingover
- d. Barrel roll
- e. Squirrel cage
- f. Vertical recoveries
- g. Recovery
- h. VFR landing pattern
- i. Touch-and-go, full flaps/slats
- j. Touch-and-go, no flaps/slats
- k. Precautionary approach
- l. Simulated emergencies (airborne)
Brief:

a. QOD
b. Identify human factor concerns of night flying
c. Lost communications
d. Inadvertent IMC
e. Lost aircraft
f. Electrical emergencies

Introduce:

Night aircraft preflight

Review:

a. Brief
b. Taxi/marshal/TO (ground OPS)
c. Normal takeoff
d. Departure/climbout
e. Visual navigation
f. DR navigation
g. Recovery to VFR pattern
h. Overhead pattern (break)
i. VFR landing pattern
j. Touch-and-go, full flaps/slats
k. Touch-and-go, no flaps/slats
l. Roll-and-go, full flaps/slats
m. Full-stop landing
n. Postflight
Brief:

QOD

Practice:

a. Inspect aircraft interior
b. Cockpit preflight checklist
c. Check/test OBOGS
d. BIT procedures
e. Prestart checklist
f. Aircraft start
g. Post-start checklist
h. Ground communications
i. Takeoff clearance
j. Engine checks
k. Normal takeoff
l. 10,000-ft checklist/15-minute report
m. TACAN/VOR/DME operations
n. Slow flight maneuver
o. Stall series
p. Descent/penetration checklist
q. PAR approach
r. Swerve after touchdown
s. Landing rollout (field) with blown tire
t. After landing checklist
u. After landing communications
v. Shutdown checklist
w. Normal egress procedures
Brief:
QOD

Practice:

a. Start emergencies
b. Taxi emergencies
c. Wheel brake failure
d. Ground communications
e. Normal takeoff
f. 10,000-ft checklist/15-minute report
g. Departure communications
h. Standard departure
i. Turn pattern
j. Level flight accel/decels
k. Prestall/aerobatic checklist
l. Stall series
m. Slow flight maneuver
n. Nose-high recovery
o. Nose-low recovery
p. Minimum radius turns
q. Aileron roll
r. Wingover
s. Barrel roll
t. Squirrel cage
u. Area familiarization
v. Straight-in PA
w. Abeam PA
x. Overhead PA
y. Break to downwind
z. VFR landing pattern
aa. Touch-and-go, full flaps/slats
bb. Roll-and-go, full flaps/slats
c. Waveoff
dd. Touch-and-go, no flaps/slats
ee. Crosswind landings
ff. Fuel system emergencies
MODULE MEDIA SYMBOL DESCRIPTION DURATION
02-81 T-45/RC HOOD AN-01 AIRWAYS NAVIGATION ONE 1.5

**Brief:**

a. QOD  
b. Lost communications  
c. Airborne emergencies

**Practice:**

a. Complete DD-175 with single-engine jet log  
b. Instrument communications  
c. SID  
d. ATC clearance  
e. TACAN/VOR DME holding  
f. Route/destination change  
g. Point-to-point  
h. Penetration/approach (optional)  
i. Missed approach  
j. En route descent  
k. ASR approach  
l. ILS approach  
m. No gyro GCA  
n. Emergency fuel instrument approach
Brief:

a. QOD
b. Lost communications
c. Airborne emergencies

Practice:

a. Complete DD-175 with single-engine jet log
b. Instrument communications
c. SID
d. ATC clearance
e. Route/destination change
f. TACAN/VOR approach partial panel
g. Missed approach
h. En route descent
i. PAR approach partial panel
j. ILS approach partial panel
<table>
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<td>NATOPS THREE SIMULATOR</td>
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<td>(INST - BI)</td>
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**Brief:**

- a. QOD
- b. GINA failure
- c. Erroneous GINA data
- d. MFD failures

**Practice:**

- a. Prestart checklist
- b. Aircraft start
- c. Communications for ground emergencies
- d. Abort
- e. ITO
- f. SID
- g. Turn pattern
- h. Level speed change half SRT
- i. S-1 pattern
- j. S-3 pattern
- k. Stall series
- l. Nose-high recovery
- m. Nose-low recovery
- n. Partial panel
- o. TACAN/VOR tracking
- p. TACAN/VOR DME approach
- q. Missed approach
- r. PAR approach
- s. ILS approach
- t. GTS fire
- u. Canopy malfunctions
- v. Unsafe gear conditions
- w. Gear door malfunctions
- x. Engine overtemp
- y. Engine surges and chugs
- z. FUEL low light
- aa. CWP light failure
- bb. Lost communications
- cc. Engine fire on shutdown
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<td>02-84</td>
<td>T-45C/RC</td>
<td>NA-04</td>
<td>NATOPS FOUR (INST - BI)</td>
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</table>

**Brief:**

QOD

**Practice:**

a. Observe preflight inspection  
b. Inspect area around aircraft  
c. Inspect canopy and seats  
d. AFT cockpit checks  
e. Verify hood installation  
f. Checklists  
g. ITO  
h. SID  
i. Turn pattern  
j. Partial panel  
k. Level speed change half SRT  
l. S-3 pattern  
m. Stall series  
n. Nose-high recovery  
o. Nose-low recovery  
p. TACAN/VOR tracking  
q. TACAN/VOR DME approach  
r. ILS approach  
s. Missed approach  
t. PAR approach  
u. Postflight  
v. Maintenance control activities
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<td>NA-05</td>
<td>NATOPS FIVE (FAM)</td>
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**Brief:**

QOD

**Introduce:**

Simulated emergencies (airborne)

**Practice:**

a. Preflight  
b. Communications  
c. Takeoff  
d. Standard departure  
e. Stall series  
f. Nose-high recovery  
g. Nose-low recovery  
h. Minimum radius turns  
i. Aileron roll  
j. Wingover  
k. Barrel roll  
l. Squirrel cage  
m. Straight-in PA  
n. Abeam PA  
o. Overhead PA (fuel permitting)  
p. VFR landing pattern  
q. Touch-and-go, full flaps/slats  
r. Roll-and-go, full flaps/slats  
s. Waveoff  
t. Touch-and-go, no flaps/slats  
u. Crosswind landings (conditions permitting)  
v. Postflight
MODULE MEDIA SYMBOL DESCRIPTION DURATION

02-86 T-45C/RC HOOD NA-06 NATOPS SIX (INST - RI) 1.5

Brief:

QOD

Introduce:

Perform engine shutdown from aft cockpit

Practice:

a. ITO
b. SID
c. Station passage
d. Waypoint navigation
e. Point-to-point
f. TACAN/VOR DME holding
g. TACAN/VOR tracking
h. TACAN/VOR DME approach
i. ILS approach
j. Missed approach
k. Partial panel approach(es)
l. PAR approach
Brief:

a. QOD
b. Departure/spin procedures

Introduce:

a. High AOA/deep stall investigation/rudder induced departure
b. Low airspeed recovery (70 degrees)
c. Low airspeed recovery (110 degrees)
d. Lateral stick adverse yaw departure
e. Engine stalls
f. Engine vibration
g. Engine seizure
h. Engine flameout
i. Engine fire at altitude with secondary indications
j. FIRE light, no secondary indications
k. FIRE light, light out with power reduced
l. Engine overspeed
m. ECA failure
n. ECA failure, full trim
o. ECA failure, no trim condition
p. Oil pressure failure
q. Ground ejection situations
r. Field arrested landing with blown tire

Practice:

Swerve after touchdown
<table>
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**Brief:**

a. QOD  
b. Departure/spin procedures

**Practice:**

a. Takeoff  
b. High AOA/deep stall investigation/rudder induced departure  
c. Low airspeed recovery (70 degrees)  
d. Low airspeed recovery (110 degrees)  
e. Lateral stick adverse yaw departure  
f. Recovery to pattern  
g. Precautionary approach  
h. Field landing activities  
i. VFR landing pattern  
j. Crosswind landings (conditions permitting)
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<td>NA-09S</td>
<td>NATOPS NINE SIMULATOR (2 PLANE FORMATION)</td>
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**Brief:**

a. QOD  
b. ECS emergencies  
c. Formation abort

**Introduce:**

a. Interval takeoff position  
b. Interval takeoff  
c. Section takeoff (wing)  
d. Section climbout  
e. Running rendezvous  
f. Crossunder  
g. Parade turns  
h. Breakup and rendezvous  
i. IFR parade  
j. Cruise formation  
k. Column  
l. Section approach (wing)  
m. Section missed approach  
n. Communications for emergency situations  
o. Double inverter failure  
p. Total electrical failure  
q. Essential bus failure  
r. Uncommanded RAT extension  
s. Total hydraulic failure  
t. Slow loss pressure (HYD 1)  
u. Slow loss pressure (HYD 2)  
v. Hydraulic failure (RAT operating)
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Brief:

QOD

Practice:

a. Marshal/hold short
b. Section takeoff (if done)
c. Running rendezvous
d. Visual communications
e. IFR parade
f. Crossunder
g. Breakup and rendezvous (250 KIAS; 300 KIAS)
h. Lead change
i. Formation recovery
j. Section approach
k. Section missed approach
l. Section break
m. Roll-and-go, full flaps/slats
n. Crosswind landings (conditions permitting)

NOTE: Should be flown as a wing.
### Brief:
QOD

### Demonstrate:
Minimum rollout landing (conditions permitting)

### Introduce:
Simulated low oil GCA (conditions permitting)

### Practice:
- a. ITO
- b. SID
- c. Turn pattern
- d. S-3 pattern
- e. Stall series
- f. TACAN/VOR tracking
- g. TACAN/VOR DME approach
- h. PAR approach
- i. Touch-and-go, full flaps/slats
- j. Touch-and-go, no flaps/slats
- k. Roll-and-go, full flaps/slats
- l. Full-stop, full flaps/slats
<table>
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<td>NATOPS TWELVE (NFAM)</td>
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**Brief:**

QOD

**Introduce:**

a. Takeoff
b. Area familiarization
c. ILS approach
d. PAR approach
e. Missed approach
f. Break
g. Touch-and-go, no flaps/slats
h. Touch-and-go, full flaps/slats
i. Crosswind landings (conditions permitting)
Brief:
QOD

Review:

a. ITO
b. Takeoff emergencies
c. SID
d. Departure communications
e. S-1 pattern
f. S-3 pattern
g. TACAN/VOR tracking
h. Point-to-point
i. Partial panel approach(es)
j. TACAN/VOR DME approach
k. PAR approach
l. Missed approach
m. ILS approach
n. Fuel system emergencies
o. Electrical emergencies
p. ECS emergencies
q. Hydraulic emergencies
r. Flight control emergencies
s. Swerve after touchdown
t. Field Arrested landing (field) with blown tire
<table>
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<td>NATOPS FOURTEEN CHECK</td>
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**Brief:**

QOD

**Review:**

- Preflight
- Communications
- Normal takeoff
- Standard departure
- Stall series
- Minimum radius turns
- Aileron roll
- Wingover
- Barrel roll
- Squirrel cage
- Low airspeed recovery (70 degree)
- Unusual attitudes
- Simulated emergencies (airborne)
- Precautionary approach(es)
- Overhead pattern/break
- VFR landing pattern
- Touch-and-go, no flaps/slats
- Roll-and-go, no flaps/slats
- Touch-and-go, full flaps/slats
- Crosswind landing (conditions permitting)
- Full-stop, full flaps/slats
- Postflight

**NOTE:** Open and closed book NATOPS examinations shall be complete prior to NA-14X.
MODULE 03

FIELD CARRIER LANDING PRACTICE

OBJECTIVE: Field Carrier Landing Practice (FCLP) is provided to ensure that the Transition IUT masters landing techniques required to instruct SNAs in tactical jet aircraft with emphasis on pattern, interval, power control, attitude control, airspeed control, glideslope control, and corrections.

Includes: Aviation Student Indoctrination (ASI-06); Carrier Qualification Flight Procedures (CQFP-01 through CQFP-04); FCLP simulator and flights (FCLP-01S through FCLP-19X); Emergency Procedures simulator (EP-04S); and Carrier Qualification flight (CQ-01X).

NOTE 1: A maximum of three (3) FCLP flights may be scheduled in one day.

NOTE 2: All FCLP night flights shall take off no earlier than 30 minutes after official sunset.

NOTE 3: Night solo flights require an operating radar altimeter.

NOTE 4: Prior to completion of the Jet Transition phase, the IUT must fly a total of 3 night FCLPs under LSO control.

NOTE 5: FCLP’S may be flown any time after FAM-14, but prior to MOD 04 as the CQ schedule permits.

NOTE 6: CQ-01X is flown by selected IUTs at the discretion of the TRAWING commander/Commanding officer. This flight is not considered part of the basic instructor qualification syllabus or advanced qualification.
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Brief:

QOD

Introduce:

a. Communications
b. Course rules/pattern entry procedure
c. Pattern
d. Start position
e. AOA control
f. Power control
g. Lineup control
h. Error detection/correction
i. Bolter/touch-and-go technique
j. Response to waveoff and technique
k. BINGO profile

Practice:

a. Swerve after touchdown
b. Field arrested landing with blown tire
<table>
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**Brief:**

- a. QOD
- b. Field carrier landing practice
- c. CAT grip takeoff
- d. Delta pattern
- e. Preflight
- f. Ground procedures
- g. Pattern entry
- h. Communications

**Demonstrate:**

- a. Lineup
- b. Waveoff

**Practice:**

- a. Communications
- b. Course rules/pattern entry procedures
- c. Pattern
- d. Start position
- e. AOA control
- f. Glideslope control
- g. Power control
- h. Lineup control
- i. Error detection
- j. Response to LSO calls
- k. Bolter/touch-and-go technique
- l. Response to waveoff and technique

**NOTE:** “Headwork” and “Procedures” are the only graded items on this flight.
Brief:

a. QOD
b. Pattern procedures
c. Arrestment procedures

Review:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique

NOTE: “Headwork” and “Procedures” are the only graded items on this flight.
MODULE  | MEDIA  | SYMBOL  | DESCRIPTION                     | DURATION
--------|--------|---------|----------------------------------|--------
03-09    | T-45/  | FCLP-04 | FIELD CARRIER LANDING SOLO PRACTICE FOUR | 0.6    
          |        |         |                                  |        

Brief:

a. QOD
b. Scan technique

Practice:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique

03-10    | T-45/  | FCLP-05 | FIELD CARRIER LANDING SOLO PRACTICE FIVE | 0.6    
          |        |         |                                  |        

Brief:

a. QOD
b. Glideslope corrections
c. Trend analysis

Practice:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique
m. Progress
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**Brief:**

QOD

**Practice:**

a. Communications  
b. Course rules/pattern entry procedures  
c. Pattern  
d. Start position  
e. AOA control  
f. Glideslope control  
g. Power control  
h. Lineup control  
i. Error detection/correction  
j. Response to LSO calls  
k. Bolter/touch-and-go technique  
l. Response to waveoff and technique

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**Brief:**

QOD

**Practice:**

a. Communications  
b. Course rules/pattern entry procedures  
c. Pattern  
d. Start position  
e. AOA control  
f. Glideslope control  
g. Power control  
h. Lineup control  
i. Error detection/correction  
j. Response to LSO calls  
k. Bolter/touch-and-go technique  
l. Response to waveoff and technique
03-13 T-45/ FCLP-08 FIELD CARRIER LANDING 0.6 
SOLO  PRACTICE EIGHT

Brief:

QOD

Practice:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique

03-14 T-45/ FCLP-09 FIELD CARRIER LANDING 0.6 
SOLO  PRACTICE NINE

Brief:

QOD

Practice:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique
**CNATRAINST 1542.150**

08 August 2002

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**Brief:**

- QOD

**Practice:**

- a. Communications
- b. Course rules/pattern entry procedures
- c. Pattern
- d. Start position
- e. AOA control
- f. Glideslope control
- g. Power control
- h. Lineup control
- i. Error detection/correction
- j. Response to LSO calls
- k. Bolter/touch-and-go technique
- l. Response to waveoff and technique
03-16 OFT EP-04S EMERGENCY PROCEDURES 1.5
FOUR SIMULATOR

Brief:

a. QOD
b. Carrier related emergency procedures

Introduce:

a. Ship arrival procedures Case I
b. Pattern
c. Start position
d. Bolter/touch-and-go techniques
e. Response to waveoff and technique
f. Carrier arrestment
g. Post-arrestment
h. Catapult hookup
i. Catapult launch procedures
j. Suspend procedures
k. Pattern entry from catapult launch
l. Communications
m. Brake failure on deck
n. NWS failure on deck
o. Communications failure on deck
p. Launch bar malfunction
q. Catapult malfunctions-soft/accel light
r. Communications failure in pattern
s. CQ-related emergencies
t. BINGO profile
Brief:

QOD

Practice:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique
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**Brief:**

**QOD**

**Practice:**

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique

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**Brief:**

**QOD**

**Practice:**

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique
03-21 T-45/ FCLP-15 FIELD CARRIER LANDING SOLO PRACTICE FIFTEEN

Brief:
QOD

Practice:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique

03-22 T-45/ FCLP-16 FIELD CARRIER LANDING SOLO PRACTICE SIXTEEN

Brief:
QOD

Practice:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique
03-23  T-45/ FCLP-17  FIELD CARRIER LANDING 0.6
        SOLO     PRACTICE SEVENTEEN

Brief:

QOD

Practice:

a.  Communications  
b.  Course rules/pattern entry procedures  
c.  Pattern  
d.  Start position  
e.  AOA control  
f.  Glideslope control  
g.  Power control  
h.  Lineup control  
i.  Error detection/correction  
j.  Response to LSO calls  
k.  Bolter/touch-and-go technique  
l.  Response to waveoff and technique

03-24  T-45/ FCLP-18  FIELD CARRIER LANDING 0.6
        SOLO     PRACTICE EIGHTEEN

Brief:

QOD

Practice:

a.  Communications  
b.  Course rules/pattern entry procedures  
c.  Pattern  
d.  Start position  
e.  AOA control  
f.  Glideslope control  
g.  Power control  
h.  Lineup control  
i.  Error detection/correction  
j.  Response to LSO calls  
k.  Bolter/touch-and-go technique  
l.  Response to waveoff and technique
03-27 T-45/ SOLO  FCLP-19X FIELD CARRIER LANDING PRACTICE NINETEEN CHECK 0.6

Brief:

QOD

Review:

a. Communications
b. Course rules/pattern entry procedures
c. Pattern
d. Start position
e. AOA control
f. Glideslope control
g. Power control
h. Lineup control
i. Error detection/correction
j. Response to LSO calls
k. Bolter/touch-and-go technique
l. Response to waveoff and technique

NOTES:

(1) Jacket review required.

(2) “Headwork” and “Procedures” are the only graded items.
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**Brief:**

a. QOD  
b. Carrier qualification procedures

**Review:**

a. Formation  
b. Pattern  
c. Start position  
d. AOA control  
e. Glideslope control  
f. Power control  
g. Lineup control  
h. Error detection/correction  
i. Response to LSO calls  
j. Bolter/touch-and-go technique  
k. Response to waveoff and technique  
l. Carrier flight deck procedures  
m. Communications  
n. Catapult launch procedures

**NOTES:**

(1) Jacket review required.

(2) CQ-01X is to be flown by selected IUTs at the discretion of the TRAWING Commander/Commanding Officer. This flight is not considered part of the basic Instructor Qualification syllabus or an advanced qualification.
MODULE 04

BASIC INSTRUCTOR QUALIFICATION

OBJECTIVE: Prepare the IUT for instructing SNAs in Familiarization, Instrument, and Night Familiarization stages. This module will provide the IUT with instructional phase goals and training techniques required to perform as a basic qualified flight instructor. Additionally, the Night Familiarization stage will emphasize the instrument aspects of night flying and night landing technique.

Includes: Familiarization flights (FAM-15 through FAM-17X); Basic Instruments simulator and flights (BI-08S through BI-10X); Radio Instruments simulator and flights (RI-08S through RI-10X); Airways Navigation flights (AN-03 and AN-04X); and Night Familiarization flights (NFAM-02 through NFAM-04X).

NOTE 1: Familiarization, Night Familiarization, Basic Instruments, Radio Instruments, Airways Navigation, and Instrument Rating flight procedures, including examinations, were completed in Module 02.

NOTE 2: IUT stages can be completed in any order.

NOTE 3: All night flights shall takeoff no earlier than 30 minutes after official sunset.

NOTE 4: Night solo flights require an operating radar altimeter.

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MODULE MEDIA SYMBOL DESCRIPTION DURATION
04-01 T-45/RC FAM-15 FAMILIARIZATION FIFTEEN 1.3

Brief:

a. QOD
b. Field arrested landing

Practice:

a. Ground communications
b. Checklists
c. Stall series
d. Accelerated stall and recovery
e. Minimum radius turns
f. Unusual attitude recoveries
g. Vertical recoveries
h. Aileron roll
i. Wingover
j. Barrel roll
k. Squirrel cage
l. Overhead pattern (break)
m. Touch-and-go, full flaps/slats
n. Touch-and-go, no flaps/slats
o. Roll and go, full flaps/slats
p. Simulated emergency (airborne)
q. Straight-in Precautionary Approach
r. Abeam Precautionary Approach
s. Overhead PA (fuel permitting)
Brief:

QOD

Perform:

Perform the following maneuvers and procedures stressing verbal presentation and instructional techniques. The IUT will brief and demonstrate competency to perform all required maneuvers in a satisfactory manner from the rear cockpit prior to FAM-17X.

Introduce:

a. Review student records
b. Event requirements
c. Brief
d. Presentation techniques
e. Guidance/feedback
f. Debrief
g. Grades assignment
h. Prepare for instruction
i. Performance evaluation

Practice:

a. Ground communications
b. Normal takeoff
c. After takeoff activities
d. Stall series
e. Accelerated stall and recovery
f. Minimum radius turns
g. Unusual attitude recoveries
h. Vertical recoveries
i. Aileron roll
j. Wingover
k. Barrel roll
l. Squirrel cage
m. Recovery to VFR landing pattern
n. Overhead pattern (break)
o. Touch-and-go, full flaps/slats
p. Touch-and-go, no flaps/slats
q. Abeam Precautionary Approach
r. Overhead Precautionary Approach
s. Roll and go, full flaps/slats
t. Crosswind landings (condition permitting)
u. Simulated emergency (airborne)
Brief:

QOD

Perform:

Flight briefed by IUT. Major emphasis will be on verbal skills and IUT’s ability to fly the aircraft proficiently. This flight will most approximate a typical student training mission. IP should demonstrate student deficiency areas and discuss student performance evaluation/grading standards.

Review:

a. Prepare for instruction
b. Brief
c. Ground communications
d. Normal takeoff
e. After takeoff activities
f. Stall series
g. Accelerated stall and recovery
h. Minimum radius turns
i. Unusual attitude recoveries
j. Vertical recoveries
k. Aileron roll
l. Wingover
m. Barrel roll
n. Squirrel cage
o. Recovery to VFR landing pattern
p. Overhead pattern (break)
q. Touch-and-go, full flaps/slats
r. Touch-and-go, no flaps/slats
s. Straight-in Precautionary Approach
t. Overhead Precautionary Approach
u. Roll and go, full flaps/slats
v. Crosswind landings (conditions permitting)
w. Simulated emergency (airborne)
x. Flight instruction
y. Performance evaluation
z. Guidance/feedback
aa. Debrief
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**Brief:**

QOD

**Practice:**

a. ITO  
b. SID  
c. TACAN/VOR tracking  
d. Turn pattern  
e. Level speed changes  
f. Half standard rate turn  
g. Level speed change half SRT  
h. Standard rate turn  
i. Stall series  
j. Slow flight  
k. S-1 pattern  
l. S-3 pattern  
m. Instrument transitions  
n. Partial panel  
o. Partial panel timed turns  
p. VOR penetration/approach  
q. Missed approach  
r. PAR approach  
s. ASR approach  
t. Partial panel approach(es)

**Note:** IUT will demonstrate maneuvers with verbal explanations as if demonstrating maneuvers to a SNA.
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**Brief:**

QOD

**Perform:**

Flight briefed by IUT. Major emphasis will be on verbal skills and knowledge of the FTI. IUT should be able to perform all maneuvers and discuss them in-flight. This flight will most approximate a typical student training mission. IP should demonstrate student deficiency areas and discuss grading standards.

**Demonstrate:**

Stan IP will take controls and familiarize IUT with all instrument failure indications activated by the MFD Training Display.

**Practice:**

a. Prepare for instruction  
b. Brief  
c. Instrument communications  
d. ITO  
e. SID  
f. TACAN/VOR tracking  
g. Turn pattern  
h. Half standard rate turn  
i. Standard rate turn  
j. Partial panel timed turns  
k. Stall series  
l. S-3 pattern  
m. Nose-high recovery  
n. Nose-low recovery  
o. Partial panel  
p. Unusual attitude partial panel  
q. TACAN/VOR DME approach  
r. ASR approach  
s. Missed approach  
t. PAR approach partial panel  
u. Missed approach partial panel  
v. Flight instruction  
w. Performance evaluation  
x. Guidance/feedback  
y. Debrief  
z. Grades assignment
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**Brief:**

QOD

**Perform:**

Flight briefed by IUT. Major emphasis is on verbal skills and knowledge of the FTI. IUT should be able to perform all maneuvers and discuss them in-flight. This flight will most approximate a typical student training mission. IP should demonstrate student deficiency areas and discuss grading standards.

**Review:**

a. Prepare for instruction  
b. Brief  
c. Instrument communications  
d. ITO  
e. SID  
f. TACAN/VOR tracking  
g. Turn pattern  
h. Half standard rate turn  
i. Standard rate turn  
j. Partial panel timed turns  
k. Stall series  
l. S-3 pattern  
m. Nose-high recovery  
n. Nose-low recovery  
o. Partial panel  
p. Unusual attitude partial panel  
q. TACAN/VOR DME approach  
r. ASR approach  
s. Missed approach  
t. PAR approach partial panel  
u. Missed approach partial panel  
w. Flight instruction  
x. Performance evaluation  
y. Debrief  
z. Grades assignment
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**Brief:**

QOD

**Practice:**

1. Communication
2. ITO
3. SID
4. Visual takeoff low ceiling
5. Point-to-point
6. Ground speed checks
7. Radial intercepts
8. Electrical emergencies
9. CNI failure
10. TACAN/VOR tracking
11. ILS approach
12. ASR approach partial panel
13. ILS glideslope failure
14. TACAN/VOR DME approach
15. Missed approach
16. Emergency fuel approach
17. No gyro GCA
18. Low oil GCA
19. Instrument to visual scan
20. Circling approach to land

**NOTE:** IUT will demonstrate maneuvers with verbal explanation as if demonstrating to a SNA.
MODULE MEDIA SYMBOL DESCRIPTION DURATION
04-08 T-45/FC RI-09 RADIO INSTRUMENTS NINE 1.5

Brief:

QOD

Perform:

Flight briefed by IUT. Major emphasis will be on verbal skills and IUT’s ability to fly the aircraft proficiently. This flight will most approximate a typical student training mission, i.e., demonstrate deficiency areas by IP. Discussion should emphasize student performance evaluation/grading standards.

Practice:

a. Prepare for instruction
b. Brief
c. Communications
d. SID
e. Airborne emergencies
f. Point-to-point
g. Ground speed checks
h. TACAN/VOR DME holding
i. Radial intercepts
j. TACAN/VOR approach partial panel
k. ILS approach partial panel
l. ASR approach
m. Missed approach
n. Introduce/demonstrate techniques
o. Presentation techniques
p. Performance evaluation
q. Guidance/feedback
r. Debrief
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Brief:

QOD

Perform:

Flight briefed by IUT. This flight will most approximate a typical student training mission. IP should demonstrate student deficiency areas and discuss grading standards.

Review:

a. Prepare for instruction
b. Brief
c. Communications
d. SID
e. TACAN/VOR tracking
f. Point-to-point
g. TACAN/VOR DME holding
h. Radial intercepts
i. TACAN/VOR DME approach
j. PAR approach partial panel
k. ILS approach
l. Missed approach
m. Flight instruction
n. Performance evaluation
o. Guidance/feedback
p. Debrief
Brief:

a. QOD
b. In-flight emergencies

Practice:

a. Prepare for instruction
b. Brief
c. Single-engine jet log
d. Complete DD-175
e. SID
f. Point-to-point
g. Route/destination change (if done)
h. En route delay (if done)
i. En route descent (if done)
j. TACAN/VOR DME approach
k. Missed approach
l. PAR approach
m. Flight instruction
n. Introduce/demonstrate techniques
o. Performance evaluation
p. Guidance/feedback
q. Debrief
04-11 T-45/FC AN-04X AIRWAYS NAVIGATION FOUR CHECK 1.5

Brief:

QOD

Perform:

Flight briefed by IUT. Major emphasis will be on verbal skills and IUT’s ability to fly the aircraft proficiently. This flight will most approximate a typical student training mission. IP should demonstrate student deficiency areas and discuss grading standards.

Review:

a. Prepare for instruction  
 b. Brief  
 c. Complete DD-175  
 d. Single-engine jet log  
 e. SID  
 f. Route/destination change (if done)  
 g. En route delay (if done)  
 h. En route descent (if done)  
 i. TACAN/VOR DME approach  
 j. Missed approach  
 k. PAR approach  
 l. ILS approach partial panel  
 m. In-flight emergencies  
 n. Flight instruction  
 o. Performance evaluation  
 p. Guidance/feedback  
 q. Debrief
Brief:

a. QOD
b. Identify human factor concerns of night flying
c. Lost communications
d. Inadvertent IMC
e. Lost aircraft
f. Electrical malfunction/failure

Practice:

a. Brief
b. Night aircraft preflight
c. Taxi/marshal/TO (Ground OPS)
d. Normal takeoff
e. Departure/climbout
f. Visual navigation
g. DR navigation
h. Recovery to VFR pattern
i. Overhead pattern (break)
j. VFR landing pattern
k. Touch-and-go, full flaps/slats
l. Touch-and-go, no flaps/slats
m. Roll-and-go, full flaps/slats
n. Full-stop landing
o. Postflight
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**Brief:**

QOD

**Practice:**

a. Brief  
b. Night aircraft preflight  
c. Taxi/marshal/TO (Ground OPS)  
d. Normal takeoff  
e. Departure/climbout  
f. Visual navigation  
g. DR navigation  
h. Recovery to VFR pattern  
i. Overhead pattern (break)  
j. VFR landing pattern  
k. Touch-and-go, full flaps/slats  
l. Touch-and-go, no flaps/slats  
m. Roll and go, full flaps/slats  
n. Full-stop landing  
o. Postflight
Perform:

Flight briefed by IUT. Major emphasis will be on verbal skills and IUT’s ability to fly the aircraft proficiently. This flight will most approximate a typical student training mission. IP should demonstrate student deficiency areas and discuss grading standards.

Brief:

a. QOD
b. Identify human factor concerns of night flying
c. Lost communications
d. Inadvertent IMC
e. Lost aircraft
f. Electrical malfunction/failure

Review:

a. Brief
b. Night aircraft preflight
c. Taxi/marshal/TO (Ground OPS)
d. Normal takeoff
e. Departure/climbout
f. Visual navigation
g. DR navigation
h. Recovery to VFR pattern
i. Overhead pattern (break)
j. VFR landing pattern
k. Touch-and-go, full flaps/slats
l. Touch-and-go, no flaps/slats
m. Roll-and-go, full flaps/slats
n. Full-stop landing
o. Postflight
MODULE 05

FORMATION AND NIGHT FORMATION

OBJECTIVE: This module is the first of 4 modules comprising the advanced instructor qualifications. IUTs will be selected to complete these individual stages by squadron commanding officers. This module will provide the IUT with instructional phase goals and training techniques required to perform as a flight instructor. Formation stage will develop basic section and division formation flying skills and provide additional landing practice.

Includes: Formation Flight Procedures (FFP-07 and FFP-08X); Formation simulators and flights (FORM-01S through FORM-21X); Night Formation Flight Procedures (NFFP-01); and Night Formation flights (NFORM-01 through NFORM-06).

NOTE 1: FFP-01 through FFP-06X were completed in MOD-02. The IUT may need a refresher of the lessons prior to starting formation.

NOTE 2: IUT must have 1 takeoff running rendezvous and 1 division break at the field prior to FORM-21X.

NOTE 3: Division FORM may be completed as three-plane flights, but either FORM-18 or FORM-19 must be flown as a four-plane flight.

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05-03 OFT FORM-01S FORMATION ONE SIMULATOR 1.5

Brief:

a. QOD
b. Underrun

Introduce:

a. Formation ground OPS
b. Formation communications
c. Marshal/holdshort
d. Interval takeoff
e. Running rendezvous
f. TACAN rendezvous
g. Parade position
h. Parade turns
i. Crossunder
j. Breakup and rendezvous
k. Section break

Practice:

a. Touch-and-go landings
b. Postlanding emergencies
05-04  T-45/FC  FORM-02  FORMATION TWO  1.5
2 A/C

Brief:

a. QOD
b. Underrun
c. Lead change
d. Postlanding emergencies

Introduce:

a. Formation ground OPS
b. Formation communications
c. Marshal/holdshort
d. Interval takeoff
e. Running rendezvous
f. Parade position
g. Parade turns
h. Crossunder
i. Breakup and rendezvous
j. TACAN rendezvous
k. Section break

Practice:

Touch-and-go landings
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**Brief:**

- a. QOD
- b. Midair collision
- c. SAR situations
- d. Form lost sight procedure

**Introduce:**

- a. Underrun
- b. Lead change

**Practice:**

- a. Formation ground OPS
- b. Formation communications
- c. Interval takeoff
- d. Running rendezvous/TACAN rendezvous
- e. Parade position
- f. Parade turns
- g. Crossunder
- h. Breakup and rendezvous (4 x 250, 2 x 300 desired)
- i. Section break (Wx permitting)
- j. Touch-and-go landings
Brief:

QOD

Practice:

a. Formation ground OPS
b. Formation communications
c. Interval takeoff
d. Running rendezvous/TACAN rendezvous
e. Parade position
f. Parade turns
g. Crossunder
h. Breakup and rendezvous (4 x 250, 2 x 300 desired)
i. Underrun
j. Lead change
k. Section break (Wx permitting)
l. Touch-and-go landings


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**Brief:**

QOD

**Introduce:**

a. IFR parade  
b. Section approach  
c. Section missed approach

**Practice:**

a. Formation ground OPS  
b. Formation communications  
c. Interval takeoff  
d. Running rendezvous  
e. Parade turns  
f. Crossunder  
g. Breakup and rendezvous (4 x 250, 2 x 300 desired)  
h. Underrun  
i. Lead change  
j. Section break  
k. Touch-and-go landings  
l. Precautionary approach
05-08  T-45/FC  FORM-06  FORMATION SIX  1.5
2  A/C

Brief:

QOD

Practice:

a. Formation ground OPS
b. Formation communications
c. Interval takeoff
d. Running rendezvous
e. Parade turns
f. Crossunder
g. Breakup and rendezvous (4 x 250, 2 x 300 desired)
h. Underrun
i. Lead change
j. Section break
k. Touch-and-go landings
l. Simulated operational emergency
m. Precautionary approach
Brief:

QOD

Practice:

a. Formation ground OPS
b. Formation communications
c. Interval takeoff
d. Running rendezvous
e. Parade turns
f. IFR parade
g. Crossunder
h. Breakup and rendezvous (4 x 250, 2 x 300 desired)
i. Underrun
j. TACAN rendezvous
k. Lead change
l. Section missed approach
m. Section break
n. Touch-and-go landings
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**Brief:**

QOD

**Review:**

a. Formation ground OPS  
b. Formation communications  
c. Interval takeoff  
d. Running rendezvous  
e. Parade turns  
f. IFR parade  
g. Crossunder  
h. Breakup and rendezvous (4 x 250, 2 x 300 desired)  
i. Underrun  
j. TACAN rendezvous  
k. Lead change  
l. Section approach  
m. Section missed approach  
n. Section break  
o. Precautionary approach  
p. Touch-and-go landings

**NOTE:** Jacket review required.

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**Brief:**

QOD

**Practice:**

a. Formation ground OPS  
b. Formation communications  
c. Interval takeoff  
d. Parade position  
e. Crossunder  
f. Breakup and rendezvous (4 x 250, 2 x 300 desired)  
g. Lead change  
h. Section break  
i. Landings (not graded)
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**Brief:**

QOD

**Introduce:**

a. Section takeoff (if done)
b. Cruise position
c. Cruise maneuvering

**Practice:**

a. Formation ground OPS
b. Formation communications
c. Running rendezvous
d. IFR parade
e. Parade position
f. Crossunder
g. Breakup and rendezvous (2 x 250/2 x 300)
h. Underrun
i. Lead change
j. Section break
k. Touch-and-go landings
Brief:

QOD

Practice:

a. Formation ground OPS
b. Formation communications
c. Section takeoff (if done)
d. IFR parade
e. Parade position
f. Crossunder
g. Breakup and rendezvous (2 x 250/2 x 300)
h. Cruise position
i. Cruise maneuvering
j. Underrun
k. Lead change
l. Section break
m. Precautionary approach
n. Touch-and-go landings
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**Brief:**

QOD

**Introduce:**

a. Column position  
b. Column maneuvering  
c. Tail chase (fuel permitting)

**Practice:**

a. Formation ground OPS  
b. Formation communications  
c. Section takeoff (if done)  
d. Parade position  
e. Crossunder  
f. Breakup and rendezvous (2 x 250/2 x 300)  
g. Underrun  
h. Cruise  
i. Lead change  
j. Section approach  
k. Section missed approach  
l. Section break  
m. Touch-and-go landings
CNATRAINST 1542.150
08 August 2002

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**Brief:**

QOD

**Practice:**

- a. Formation ground OPS
- b. Formation communications
- c. Section takeoff (if done)
- d. IFR parade
- e. Parade position
- f. Crossunder
- g. Breakup and rendezvous (2 x 250/2 x 300)
- h. Underrun
- i. Cruise
- j. Column formation
- k. Tail chase (fuel permitting)
- l. Lead change
- m. Section break
- n. Touch-and-go landings
Brief:

QOD

Introduce:

Approach wingman NORDO (IUT lead at IP discretion)

Review:

a. Formation ground OPS
b. Formation communications
c. Section takeoff (if done)
d. IFR parade
e. Parade position
f. Crossunder
g. Breakup and rendezvous (2 x 250/2 x 300)
h. Underrun
i. Cruise
j. Column formation
k. Tail chase (fuel permitting)
l. Lead change
m. Touch-and-go landings
n. Precautionary approach
Brief:
QOD

Practice:

a. Formation ground OPS
b. Formation communications
c. Section takeoff (if done)
d. IFR parade
e. Parade position
f. Crossunder
g. Breakup and rendezvous (2 x 250/2 x 300)
h. Underrun
i. Cruise
j. Column formation
k. Tail chase (fuel permitting)
l. Lead change
m. Section approach
n. Section missed approach
o. Section break
p. Precautionary approach
q. Touch-and-go landings
05-18  T-45/RC  FORM-16X  FORMATION SIXTEEN  1.5
        2  A/C  CHECK

Brief:

QOD

Review:

a. Prepare for instruction
b. Review student records
c. Event requirements
d. Brief
e. Event overview
f. Presentation techniques
g. Marshal
h. Visual communications
i. Section takeoff (if done)
j. IFR parade
k. Parade turns
l. Crossunder
m. Breakup and rendezvous (2 x 250; 2 x 300)
n. Underrun
o. Running rendezvous (altitude)
p. TACAN rendezvous
q. Cruise position
r. Column formation
s. Tail chase (fuel permitting)
t. Lead change
u. Section approach
v. Section missed approach
w. Section break
x. Full stop landing
y. Flight instruction
z. Introduce/demonstrate techniques
aa. Guidance/feedback
bb. Debrief
cc. Grades assignment
Brief:

QOD

Introduce:

a. Division ground OPS
b. Visual communications
c. Interval takeoff
d. Division rendezvous
e. Section crossunder
f. Balanced parade
g. Balanced parade turns
h. Breakup and rendezvous (4 x 250; 2 x 300)
i. Division cruise
j. Shuffle division
k. Division break

Practice:

a. Formation communications
b. Touch-and-go landings
Brief:

QOD

Practice:

a. Division ground OPS
b. Formation communications
c. Visual communications
d. Interval takeoff
e. Division rendezvous
f. Section crossunder
g. Balanced parade turns
h. Breakup and rendezvous (4 x 250; 2 x 300)
i. Division cruise
j. Shuffle division
k. Division break
l. Touch-and-go landings
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**Brief:**

QOD

**Practice:**

- Division ground OPS
- Formation communications
- Visual communications
- Interval takeoff
- Division rendezvous
- Section crossunder
- Balanced parade turns
- Breakup and rendezvous (4 x 250; 2 x 300)
- Division cruise
- Shuffle division
- Division break
- Touch-and-go landings

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**Brief:**

QOD

**Practice:**

- Division ground OPS
- Formation communications
- Visual communications
- Interval takeoff
- Division rendezvous
- Section crossunder
- Balanced parade turns
- Breakup and rendezvous (4 x 250; 2 x 300)
- Division cruise
- Shuffle division
- Division break
- Touch-and-go landings
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**Brief:**

QOD

**Review:**

a. Prepare for instruction  
b. Review student records  
c. Event requirements  
d. Brief  
e. Event overview  
f. Presentation techniques  
g. Division ground OPS  
h. Formation communications  
i. Visual communications  
j. Interval takeoff  
k. Division rendezvous  
l. Section crossunder  
m. Balanced parade turns  
n. Breakup and rendezvous (4 x 250; 3 x 300)  
o. Division cruise  
p. Shuffle division  
q. Division break  
r. Touch-and-go landings  
s. Flight instruction  
t. Introduce/demonstrate techniques  
u. Guidance/feedback  
v. Debrief  
w. Grades assignment
MODULE MEDIA SYMBOL DESCRIPTION DURATION

05-26 T-45/FC NFORM-01 NIGHT FORMATION ONE 1.5
   2 A/C

Brief:

   a. QOD
   b. Landing pattern
   c. Formation safety
   d. Emergencies

Introduce:

   a. Formation ground ops
   b. Marshal/holdshort
   c. Individual takeoff
   d. TACAN rendezvous
   e. IFR parade
   f. Crossunder
   g. Breakup and rendezvous (4 x 250)
   h. Running rendezvous (altitude)
   i. Lead change
   j. Section missed approach
   k. Touch-and-go/rejoin

Practice:

   a. Formation communications
   b. Section approach
   c. Section break
   d. Touch-and-go landings
MODULE MEDIA SYMBOL DESCRIPTION DURATION
05-27 T-45/FC NFORM-02 NIGHT FORMATION TWO 1.5
       2 A/C

Brief:
   a. QOD
   b. NORDO lead change
   c. Total electrical failure

Practice:
   a. Formation ground ops
   b. Marshal/holdshort
   c. Formation communications
   d. Individual takeoff
   e. TACAN rendezvous
   f. IFR parade
   g. Crossunder
   h. Breakup and rendezvous (4 x 250)
   i. Running rendezvous (altitude)
   j. Lead change
   k. Section approach
   l. Section missed approach
   m. Touch-and-go/rejoin
   n. Section break
   o. Touch-and-go landings
Brief:

a. QOD
b. Night BINGO procedures

Review:

a. Formation ground ops
b. Formation communications
c. Individual takeoff
d. TACAN rendezvous
e. IFR parade
f. Crossunder
g. Breakup and rendezvous
h. Running rendezvous (altitude)
i. Lead change
j. Section approach
k. Section missed approach
l. Section break
m. Touch-and-go landings

NOTE: Touch-and-go/rejoin (if not flown on NFORM-01 or 02).
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**Brief:**

QOD

**Introduce:**

a. Prepare for instruction  
b. Flight instruction

**Practice:**

a. Marshal  
b. Taxi  
c. Individual takeoff  
d. TACAN rendezvous  
e. IFR parade  
f. Crossunder  
g. Breakup and rendezvous (4 x 250)  
h. Running rendezvous (altitude)  
i. Lead change  
j. Section approach  
k. Section missed approach  
l. Section break  
m. Touch-and-go landings
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**Brief:**

QOD

**Practice:**

a. Marshal  
b. Taxi  
c. Individual takeoff  
d. TACAN rendezvous  
e. Section climbout  
f. IFR parade  
g. Crossunder  
h. Breakup and rendezvous  
i. Running rendezvous  
j. Lead change  
k. Section approach  
l. Configuration change  
m. Section missed approach  
n. Section break  
o. Touch-and-go landings
Perform:

Flight briefed and debriefed by IUT. This flight will be a typical formation lead for a student solo flight, and the IP will note common student errors to the IUT and discuss instructional techniques. IUT fill out the grade sheet on student. IP will ensure IUT conforms to proper grading standards and uses standard NATOPS hand signals. Rendezvous safety will be discussed. After satisfactory completion of this flight, IUT is qualified to instruct 2-plane Formation. Further flights may be required prior to designation as a section leader at the CO's discretion.

Brief:

QOD

Practice: (All as lead)

a. Marshal  
b. Taxi/hold short  
c. Individual takeoff  
d. TACAN rendezvous  
e. IFR parade  
f. Crossunder  
g. Breakup and rendezvous  
h. Running rendezvous  
i. Lead change  
j. Section approach  
k. Section missed approach  
l. Section break  
m. Touch-and-go landings

Review:

a. Prepare for instruction  
b. Brief  
c. Flight instruction  
d. Performance evaluation  
e. Guidance/feedback  
f. Debrief
MODULE 06

OPERATIONAL NAVIGATION AND WEAPONS

OBJECTIVES:

1. Operational Navigation Stage. Provide the IUT with initial training in performing and conducting effective instruction in Operational Navigation. The module will provide the IUT with phase goals and training techniques for instructing this stage.

   Includes: Operational Navigation ground school (ONAV-01 through ONAV-06X); Operational Navigation Flight Procedures (ONFP-01 through ONFP-03X); and Operational Navigation simulators and flights (ON-01S through ON-09X), including a standardization check.

   NOTE 1: ON-10 through ON-13X (road recce) are in Module 07.

   NOTE 2: IUTs without previous ONAV training will also attend ONAV Ground School (academics) to qualify for ON Stage.

   NOTE 3: Jacket review required prior to check flights.

2. Weapons Stage. Introduce the IUT to air-ground delivery with emphasis on dive angle control, airspeed control, pipper control, scan, corrections, accuracy, and pattern. Training will also provide the IUT with phase goals and training techniques for instructing the stage.

   Includes: Weapons Flight Procedures (WEPFP-01 through WEPFP-05X); Weapons simulators and flights (WEP-01S through WEP-14X).

   NOTE 1: Two off-target rendezvous are required prior to completion of WEP-08X.

   NOTE 2: One hung ordnance approach is required prior to WEP-08X.

   NOTE 3: A minimum of four bombs delivered is required to complete each flight.

   NOTE 4: CCIP target tracking may be practiced on WEP-07 and flown in the delivery mode and pattern as introduced on WEP-06.

   NOTE 5: Jacket review required prior to check flights.
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MODULE MEDIA SYMBOL DESCRIPTION DURATION
06-10 OFT ON-01S OPERATIONAL NAVIGATION ONE SIMULATOR 1.5

Brief:

a. QOD
b. Low altitude hazards
c. Weather Response

Demonstrate:

Enter HUD declutter mode

Introduce:

a. Check/test HUD
b. Enter system data
c. HUD failure
d. IMC transit to route
e. Route entry
f. Low-level basic airwork
g. Interpret charts
h. Recognize checkpoints
i. Fuel/time calculations
j. Course/time corrections
k. Communications

Practice:

a. ONAV planning
b. Chart preparation
c. Recovery to pattern
d. Landing(s)
Brief:

a. QOD
b. MFD failure
c. Low altitude hazards

Introduce:

a. Weather response
b. Low-level waypoint navigation
c. BINGO

Practice:

a. Chart preparation
b. ONAV planning
c. Enter system data
d. HUD failure
e. Route entry
f. Knowledge of route
g. Interpret charts
h. Recognize checkpoints
i. Fuel/time calculations
j. Course/time corrections
k. Communications
l. Recovery to pattern
m. Landing(s)
brief:

a. qod
b. emergency bingo
c. maximum range profile
d. inadvertent low altitude ifr
e. low altitude emergencies

practice:

a. chart preparation
b. onav planning
c. route entry
d. interpret charts
e. recognize checkpoints
f. knowledge of route
g. fuel/time calculations
h. course/time corrections
i. communications
j. bingo
k. recovery to pattern
l. landing(s)
Brief:

a. QOD
b. Low altitude flying safety
c. Sun angles
d. Shadows

Demonstrate:

Target attack (per SOP)

Practice:

a. Chart preparation
b. ONAV planning
c. Route entry
d. Interpret charts
e. Recognize checkpoints
f. Knowledge of route
g. Fuel/time calculations
h. Course/time corrections
i. Communications
j. Recovery to pattern
k. Landing(s)
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**Brief:**

- a. QOD
- b. Low altitude flying safety
- c. Ridgeline crossing
- d. Waypoint data entry
- e. Use of sequential steering

**Demonstrate:**

Target attack (per SOP)

**Introduce:**

Low-level waypoint navigation

**Practice:**

- a. Chart preparation
- b. ONAV planning
- c. Route entry
- d. Interpret charts
- e. Recognize checkpoints
- f. Knowledge of route
- g. Fuel/time calculations
- h. Course/time corrections
- i. Communications
- j. Recovery to pattern
- k. Landing(s)

**NOTE:** System navigation flight
Brief:

a. QOD
b. Low altitude flight safety
c. Mission task management
d. Auto sequential steering

Demonstrate:

Target attack (per SOP)

Review:

a. Chart preparation
b. ONAV planning
c. Route entry
d. Interpret charts
e. Low-level waypoint navigation
f. Recognize checkpoints
g. Knowledge of route
h. Fuel/time calculations
i. Course/time corrections
j. Communications
k. Recovery to pattern
l. Landing(s)

NOTES:

(1) Jacket review required.

(2) System navigation flight.
06-16  T-45/RC  ON-07  OPERATIONAL NAVIGATION  SEVEN  1.2

Brief:

a. QOD
b. Low altitude flying safety
c. Tactical implications of timing
d. Go/no go criteria

Practice:

a. Chart preparation
b. ONAV planning
c. Route entry
d. Interpret charts
e. Low-level waypoint navigation
f. Recognize checkpoints
g. Knowledge of route
h. Fuel/time calculations
i. Course/time corrections
j. Communications
k. BINGO
l. Min/emergencies fuel instrument approach
m. Landing(s)

06-17  T-45/RC  ON-08  OPERATIONAL NAVIGATION EIGHT  1.2

Brief:

a. QOD
b. Weather response
c. Low altitude flight safety

Practice:

a. ONAV planning
b. Route entry
c. Interpret charts
d. Low-level waypoint navigation
e. Recognize checkpoints
f. Monitor flight log
g. Fuel/time calculations
h. Course/time corrections
i. Communications
j. BINGO
k. Landing(s)
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Performer:

Flight briefed by IUT. This flight will most approximate a typical student training mission. Stan IP will fly and make common student errors with IUT correcting, evaluating, and debriefing.

Brief:

QOD

Review:

- a. Chart preparation
- b. ONAV planning
- c. Route entry
- d. Interpret charts
- e. Low-level waypoint navigation
- f. Recognize checkpoints
- g. Knowledge of route
- h. Fuel/time calculations
- i. Course/time corrections
- j. Communications
- k. BINGO
- l. Recovery to pattern
- m. Landing(s)

NOTE: Jacket review required.
Brief:

QOD

Introduce:

a. Enter system data
b. Target procedures
c. Armament system management
d. 30-degree bombs
e. Abeam
f. Roll-in
g. Tracking/dive angle (straight path technique)
h. Error corrections
i. Release parameters
j. Dive recovery
k. Abort run
l. Communications
m. Rendezvous
n. HUD failure (air-to-ground)
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**Brief:**

QOD

**Introduce:**

a. 20-degree bombs  
b. Tracking/dive angle (curvilinear to straight path technique)  
c. Transition to 20-degree pattern

**Practice:**

a. Enter system data  
b. Target procedures  
c. Armament system management  
d. 30-degree bombs  
e. Abeam  
f. Roll-in  
g. Tracking/dive angle (straight path technique)  
h. Error corrections  
i. Release parameters  
j. Dive recovery  
k. Abort run  
l. Communications  
m. Rendezvous
## 06-26 OFT WEP-03S WEAPONS THREE SIMULATOR 1.0

### Brief:

QOD

### Introduce:

- Transition to 10-degree bombs
- 10-degree bombs
- CCIP

### Practice:

- Enter system data
- Target procedures
- Armament system management
- 30-degree bombs
- Abeam
- Roll-in
- Tracking/dive angle
- Error corrections
- Release parameters
- Dive recovery
- Abort run
- Communications
- Rendezvous
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**Brief:**

a. QOD  
b. Compute offset aimpoint

**Introduce:**

a. 30-degree rockets  
b. Strafe  
c. Firing altitude  
d. Strafe recovery

**Practice:**

a. Enter system data  
b. Target procedures  
c. Armament system management  
d. Abeam  
e. Roll-in  
f. Tracking/dive angle  
g. CCIP target tracking  
h. Error corrections  
i. Firing parameters  
j. Dive recovery  
k. Abort run  
l. Communications  
m. Rendezvous
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Brief:

a. QOD
b. Compute CEP
c. Weapons emergencies
d. Emergency jettison

Review:

a. Compute offset aimpoint
b. Target procedures
c. Armament system management
d. 30-degree bombs
e. 20-degree pattern
f. 10-degree bombs
g. CCIP target tracking
h. Strafe
i. Abeam
j. Roll-in
k. Tracking/dive angle
l. Error corrections
m. Release/firing parameters
n. Dive recovery
o. Abort run
p. Communications
q. Rendezvous
MODULE MEDIA SYMBOL DESCRIPTION DURATION
06-29 T-45/FC WEP-06 WEAPONS SIX 1.3

Brief:

a. QOD
b. Formation safety
c. Mil settings
d. Master arm safety
e. Inadvertent release

Introduce:

a. Weapons preflight
b. Hung ordnance checks
c. CCIP bomb 10-degree/30-degree (if done)

Practice:

a. Target procedures
b. Armament system management
c. 30-degree bombs
d. 20-degree pattern
e. 10-degree bombs
f. Abeam
g. Roll-in
h. Tracking/dive angle
i. Error corrections
j. Release/firing parameters
k. Dive recovery
l. Pattern interval
m. Communications
n. Rendezvous
o. Hung ordnance approach (if flown)
p. Landing(s)
**MODULE MEDIA SYMBOL DESCRIPTION DURATION**

| 06-30 | T-45/FC | WEP-07 | WEAPONS SEVEN | 1.3 |

**Brief:**

a. QOD  
b. Wind correction, offset-aimpoint

**Practice:**

a. Weapons preflight  
b. Target procedures  
c. Armament system management  
d. 30-degree bombs  
e. CCIP bomb 10-degree/30-degree (if done)  
f. Roll-in  
g. Tracking/dive angle  
h. Error corrections  
i. Release/firing parameters  
j. Dive recovery  
k. Pattern interval  
l. Communications  
m. Rendezvous  
n. Hung ordnance checks  
o. Hung ordnance approach (if flown)  
p. Landing(s)  
q. Accuracy

**NOTES:**

1. One hung ordnance approach is required prior to WEP-08X.

2. WEP-07 or WEP-08X shall be flown as a 4-plane.
06-31  T-45/FC  WEP-08X  WEAPONS EIGHT CHECK  1.3

Brief:

a. QOD
b. Wind correction, offset-aimpoint
c. Switchology errors
d. Ordnance release trouble shoot

Practice:

Release/firing parameters

Review:

a. Weapons preflight
b. Target procedures
c. Armament system management
d. 30-degree bombs
e. 10-degree pattern
f. Roll-in
g. Tracking/dive angle
h. Error corrections
i. Dive recovery
j. Pattern interval
k. Communications
l. Rendezvous
m. Hung ordnance checks
n. Hung ordnance approach (if flown)
o. Landing(s)
p. Accuracy

NOTES:

(1) Jacket review required.

(2) WEP-07 or 08X must be flown as a 4 plane.
Brief:

a. QOD
b. FTI safety procedures

Practice:

a. Weapons preflight
b. Target procedures
c. Armament system management
d. 30-degree bombs
e. 10-degree pattern
f. Roll-in
g. Tracking/dive angle
h. Error corrections
i. Release/firing parameters
j. Dive recovery
k. Pattern interval
l. Communications
m. Rendezvous
n. Hung ordnance checks
o. Hung ordnance approach (if flown)
p. Landing(s) (not graded)
q. Accuracy
Brief:

a. QOD
b. Safety requirements for forward firing ordnance
c. Ricochet danger (jinking)
d. Emergencies

Review:

a. Weapons preflight
b. Arming/dearming
c. Target procedures
d. Armament system management
e. 30-degree bombs
f. 10-degree bombs
g. Roll-in
h. Tracking/dive angle
i. Error corrections
j. Release/firing parameters
k. Dive recovery
l. Pattern interval
m. Communications
n. Rendezvous
o. Hung ordnance checks
p. Hung ordnance approach
q. Landing(s)
r. Accuracy

NOTE: Jacket review required.
Brief:

a. QOD
b. FTI safety procedures

Practice:

a. Weapons preflight
b. Arming/dearming
c. Target procedures
d. Armament system management
e. 30-degree bombs
f. 10-degree bombs
g. Roll-in
h. Tracking/dive angle
i. Error corrections
j. Release/firing parameters
k. Dive recovery
l. Pattern interval
m. Communications
n. Rendezvous
o. Hung ordnance checks
p. Hung ordnance approach (if flown)
q. Landing(s)
r. Accuracy
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**Brief:**

QOD

**Introduce:**

Flight lead

**Practice:**

a. Weapons preflight  
b. Arming  
c. Target procedures  
d. 30-degree bombs  
e. 10-degree pattern  
f. Weapons pattern  
g. Roll-in  
h. Tracking/dive angle  
i. Error corrections  
j. Release parameters  
k. Dive recovery  
l. Pattern interval  
m. Communications  
n. Rendezvous  
o. Hung ordnance checks (if flown)  
p. Darming
Brief:

a. Flight will be briefed by Stan IP
b. QOD

Introduce:

a. Prepare for instruction
b. Flight instruction
c. Performance evaluation

Practice:

a. Review student records
b. Event requirements
c. Event overview
d. Flight lead
e. Weapons preflight
f. Arming
g. Target procedures
h. 30-degree bombs
i. 10-degree bombs
j. Weapons pattern
k. Roll-in
l. Tracking/dive angle
m. Error corrections
n. Release parameters
o. Dive recovery
p. Pattern interval
q. Communications
r. Rendezvous
s. Hung ordnance checks
t. Darming
u. Introduce/demonstrate techniques
v. Assess performance
w. Assess skills
x. Assess knowledge
y. Assess confidence
z. Guidance/feedback
aa. Safety
bb. Debrief
cc. Grades assignment
Brief:

QOD

Review:

a. Prepare for instruction  
b. Brief  
c. Flight lead  
d. Compute offset aim point  
e. Weapons preflight  
f. Check/test HUD  
g. Set HUD  
h. Arming  
i. Target procedures  
j. Set armament switches  
k. Weapons pattern  
l. Roll-in  
m. Tracking/dive angle  
n. Error corrections  
o. Release parameters  
p. Dive recovery  
q. Pattern interval  
r. 30-degree bombs  
s. 10-degree bombs  
t. 20-degree bombs  
u. Abort  
v. Communications  
w. Safe switches  
x. Rendezvous  
y. Hung ordnance checks  
z. Hung ordnance approach  
aa. Landing rollout  
bb. Dearming  
c. HUD failure  
dd. Weapons emergencies  
ee. Flight instruction  
ff. Performance evaluation  
gg. Guidance/feedback  
hh. Debrief  

NOTE: Jacket review required.
MODULE 07

TACTICAL FORMATION, OPERATIONAL NAVIGATION (ROAD RECCE),
OUT-OF-CONTROL FLIGHT AND AIR COMBAT MANEUVERING

OBJECTIVE:

1. Tactical Formation. Provide the IUT with instruction in Tactical Formation as a precursor to Air Combat Maneuvering in preparation for instructing these stages. The module will provide the IUT with phase goals, training techniques, and rules of engagement for instructing the stage.

Includes: Tactical Formation Flight Procedures (TFFP-01 through TFFP-04X); and Tactical Formation flights (TACF-01 through TACF-06X).

NOTE: Jacket review required prior to check flights.

2. Operational Navigation. This is a continuation of training initiated in Module 05. This part of training is the 2 aircraft road recce which will provide the IUT with phase goals and training techniques for instructing the stage.

Includes: Operational Navigation Flight Procedures (ONFP-04 and ONFP-05X); multi-aircraft Operational Navigation flights (ON-10 through ON-13X) and a standardization check.

NOTE: Jacket review required prior to check flights.

3. Out-of-Control Flight. Provide the IUT with training in Out-of-Control Flight instructional techniques. The module will provide the IUT with phase goals and training techniques for instructing this stage.

Includes: Out-of-Control Flight Procedures (OCFFP-02 and OCFFP-03X); and OCF simulator and flight (OCF-03S and OCF-04X).

NOTE 1: OCFFP-02 is a refresher of lesson materials covered in OCFFP-01. OCFFP-01 may be used for this lesson. OCFFP-03X is the same examination as OCFFP-02X used in the Regular IUT curriculum (CNATRAINST 1542.127).

NOTE 2: Jacket review required prior to check flights.

4. Air Combat Maneuvering. Introduce the IUT to the air combat maneuvering environment with emphasis on stall/out-of-control flight avoidance techniques, combat spread formation, lookout doctrine, and offensive and defensive maneuvering during 1 V 1 and 2 V 1 engagements.
Includes: Air Combat Maneuvering Flight Procedures (ACMFP-01 through ACMFP-07X); and Air Combat Maneuvering flights (ACM-01 through ACM-15X).

NOTE 1: IUT’s shall be expected to lead flight to base during ACM stage at IP’s discretion.

NOTE 2: OCF-04X must be completed prior to ACM-01.

NOTE 3: Jacket review required prior to check flights.

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**Brief:**

- a. QOD
- b. Lost sight
- c. VCR management
- d. GLOC maneuver
- e. 500' safety bubble

**Introduce:**

- a. Combat checks
- b. Voice communications
- c. Combat spread
- d. Check turns
- e. Shackle turns
- f. Cruise turns
- g. Uncalled cruise turns
- h. Tactical turns
- i. In-place turns
- j. Cross turns
- k. Gunsight tracking exercise
- l. Unknown airspeed rendezvous
- m. Situational awareness

**Practice:**

- a. HUD management
- b. Formation
- c. Touch-and-go landings
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**Brief:**

a. QOD  
b. Lost sight  
c. VCR management

**Introduce:**

a. Off-heading shackle turns  
b. Displacement roll/reversal  
c. Loose deuce exercise

**Practice:**

a. Combat checks  
b. Voice communications  
c. Formation  
d. Combat spread  
e. Check turns  
f. Shackle turns  
g. Cruise turns  
h. Uncalled cruise turns  
i. Tactical turns  
j. In-place turns  
k. Cross turns  
l. Gunsight tracking exercise (fuel permitting)  
m. Situational awareness  
n. Lead (if flown)  
o. Touch-and-go landings
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**Brief:**

a. QOD  
b. Lost sight  
c. VCR management  

**Practice:**

a. Combat checks  
b. Voice communications  
c. Formation  
d. Combat spread  
e. Check turns  
f. Shackle turns  
g. Cruise turns  
h. Tactical turns  
i. In-place turns  
j. Cross turns  
k. Loose deuce exercise  
l. Gunsight tracking exercise  
m. Displacement roll/reversal  
n. Unknown airspeed rendezvous  
o. Lead (if flown)  
p. Situational awareness  
q. Touch-and-go landings
MODULE MEDIA SYMBOL DESCRIPTION DURATION

07-08 T-45/FC TACF-04X TACTICAL FORMATION FOUR CHECK 1.2

Brief:

a. QOD
b. Lost sight

Review:

a. Combat checks
b. Voice communications
c. Formation
d. Combat spread
e. Check turns
f. Shackles turns
g. Cruise turns
h. Uncalled cruise turns
i. Tactical turns
j. In-place turns
k. Cross turns
l. Loose deuce exercise
m. Gunsight tracking exercise
n. Displacement roll/reversal
o. Unknown airspeed rendezvous
p. Lead (if flown)
q. Touch-and-go landings

NOTE: Jacket review required.
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**Brief:**

a. QOD
b. Lost sight

**Introduce:**

a. Brief
b. Event overview
c. Flight Instruction
d. Performance evaluation
e. Introduce/demonstrate techniques
f. Guidance/feedback
g. Debrief
h. Grades assignment

**Practice:**

a. Combat checks
b. Voice communications
c. Formation
d. Combat spread
e. Check turns
f. Shackle turns
g. Cruise turns
h. Uncalled cruise turns
i. Tactical turns
j. In-place turns
k. Cross turns
l. Loose deuce exercise
m. Displacement roll/reversal
n. Gunsight tracking exercise
o. Situational awareness
p. Landing(s)
Brief:

a. QOD
b. Lost sight

Review:

a. Brief
b. Flight instruction
c. Combat checks
d. Voice communications
e. Formation
f. Combat spread
g. Check turns
h. Shackle turns
i. Cruise turns
j. Uncalled cruise turns
k. Tactical turns
l. In-place turns
m. Cross turns
n. Loose deuce exercise
o. Displacement roll/reversal
p. Gunsight tracking exercise
q. Situational awareness
r. Landing(s)
s. Performance evaluation
t. Guidance/feedback
u. Debrief

NOTE: Jacket review required.
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**Brief:**

- a. QOD
- b. Emergency BINGO
- c. Maximum range profile
- d. Inadvertent low altitude IFR
- e. Low altitude emergencies
- f. NORDO procedures
- g. Display management

**Introduce:**

- a. Tactical lead
- b. Tactical wing
- c. Target description
- d. Target attack

**Practice:**

- a. Chart preparation
- b. ONAV planning
- c. Route entry
- d. Interpret charts
- e. Recognize checkpoints
- f. Knowledge of route
- g. Fuel/time calculations
- h. Course/time corrections
- i. Communications
- j. BINGO
- k. Recovery to pattern
- l. Landing(s)
Brief:

a. QOD
b. Two-plane armed reconnaissance missions
c. Attacks on approved targets of opportunity with simulated ordnance
d. Target area deconfliction
e. Visual reconnaissance
f. Lookout doctrine
g. Response to bandit

Introduce:

Target description

Practice:

a. ONAV planning
b. Route entry
c. Interpret charts
d. Fuel/time calculations
e. Course/time corrections
f. Communications
g. Tactical Wing
h. Tactical lead
i. BINGO
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**Brief:**

a. QOD
b. Lookout doctrine
c. Response to bandit

**Introduce:**

a. Prepare for instruction
b. Brief
c. Flight instruction
d. Performance evaluation
e. Guidance/feedback
f. Debrief

**Practice:**

a. Weather response
b. ONAV planning
c. Interpret charts
d. Fuel/time calculations
e. Course/time corrections
f. Tactical lead
g. Tactical wing
h. Target description
i. Communications
j. BINGO
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**Brief:**

a. QOD  

b. Two-plane armed reconnaissance missions  

c. Attacks on approved targets of opportunity with simulated ordnance  

d. Visual reconnaissance

**Review:**

a. Prepare for instruction  

b. Brief  

c. Flight instruction  

d. Weather response  

e. Chart preparation  

f. Check/test HUD  

g. Enter system data  

h. Interpret charts  

i. Low-level basic airwork  

j. Monitor flight log  

k. Fuel/time calculations  

l. Course/time corrections  

m. Communications  

n. BINGO  

o. Low altitude hazards  

p. Performance evaluation  

q. Guidance/feedback  

r. Debrief

**NOTE:** Jacket review required.
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**Brief:**

a. QOD  
b. Runaway trim  
c. Engine flameout  
d. Ejection situations

**Introduce:**

a. High AOA/deep stall investigation/rudder induced departure  
b. Low airspeed recovery (70 degrees nose up)  
c. Low airspeed recovery (110 degrees nose up)  
d. Lateral stick adverse yaw departure  
e. Stuck throttle approach

**Practice:**

a. Precautionary approach  
b. VFR landing pattern  
c. Touch-and-go, full flaps/slats  
d. Touch-and-go, no flaps/slats  
e. Full stop landing  
f. Straight-in Precautionary Approach  
g. Swerve after touchdown  
h. Field arrested landing with blown tire

**NOTE:** Two (2) stuck throttle approaches required (high, middle or low).
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**Brief:**

- a. QOD
- b. Runaway trim
- c. Engine flameout
- d. Ejection situations

**Introduce:**

- a. Acceleration check
- b. Timed turns (minimum radius)
- c. 1 V 0 maneuvers as briefed

**Review:**

- a. Prepare for instruction
- b. Brief
- c. Flight instruction
- d. High AOA/deep stall investigation/rudder induced departure
- e. Low airspeed recovery (70 degrees nose up)
- f. Low airspeed recovery (110 degrees nose up)
- g. Lateral stick adverse yaw departure
- h. Performance evaluation
- i. Guidance/feedback
- j. Debrief

**NOTE:** Jacket review required.
Brief:

a. QOD
b. HUD air-to-air mode set
c. Departure/spin recovery procedures
d. Spin recovery procedures
e. Training rules

Introduce: (Offensive Maneuvering)

a. Communications
b. Combat spread
c. Engaging turns
d. Snap shot drill
e. Break turn exercise
f. Low angle to hard counters
g. Horizontal scissors
h. Rolling scissors
i. Sight/lookout doctrine
j. Aggressiveness
k. Situational awareness
l. Training rules

Practice:

a. Formation activities
b. Tactical formation
c. Landing pattern
d. Touch-and-go landings
Brief:

a. QOD
b. Emergencies
c. Training rules

Practice: (Offensive maneuvering)

a. Formation activities
b. Tactical formation
c. Communications
d. Combat spread
e. Engaging turns
f. Snap shot drill
g. Break turn exercise
h. Low angle to hard counters
i. Horizontal scissors
j. Rolling scissors
k. Landing pattern
l. Touch-and-go landings
m. Sight/lookout doctrine
n. Aggressiveness
o. Situational awareness
p. Training rules
Brief:

a. QOD
b. Emergencies
c. Training rules
d. GLOC prevention

Review: (Offensive maneuvering)

a. Formation activities
b. Communications
c. Combat spread
d. Engaging turns
e. Snap shot drill
f. Break turn exercise
g. Low angle to hard counters
h. Horizontal scissors
i. Rolling scissors
j. Sight/lookout doctrine
k. Aggressiveness
l. Situational awareness
m. Training rules
n. Field entry/lead
o. Precautionary approach
p. Landing pattern
q. Touch-and-go landings

NOTE: Jacket review required.
MODULE MEDIA SYMBOL DESCRIPTION DURATION
07-29 T-45/FC ACM-04 AIR COMBAT MANEUVERING FOUR 1.1

Brief:

a. QOD
b. Energy management
c. Deck awareness
d. Bugout
e. Training rules

Introduce: (Defensive maneuvering)

Bugout

Practice:

a. Formation activities
b. Communications
c. Combat spread
d. Engaging turns
e. Snap shot drill
f. Break turn exercise
g. Low angle to hard counters
h. Horizontal scissors
i. Rolling scissors
j. Sight/lookout doctrine
k. Aggressiveness
l. Situational awareness
m. Training rules
n. Field entry/lead
o. Landing pattern
p. Touch-and-go landings
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<td>ACM-05</td>
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Brief:

a. QOD  
b. Training rules  
c. Emergencies  

Practice: (Defensive maneuvering)

a. Formation activities  
b. Communications  
c. Combat spread  
d. Engaging turns  
e. Snap shot drill  
f. Break turn exercise  
g. Low angle to hard counters  
h. Horizontal scissors  
i. Bugout  
j. Rolling scissors  
k. Sight/lookout doctrine  
l. Aggressiveness  
m. Situational awareness  
n. Training rules  
o. Landing pattern  
p. Touch-and-go landings  
q. Field entry/lead
Module Media Symbol Description Duration
07-31 T-45/FC ACM-06X Air Combat Maneuvering Six 1.1 Check

Brief:

a. QOD
b. Training rules
c. Emergencies

Review: (Defensive maneuvering)

a. Formation activities
b. Communications
c. Combat spread
d. Engaging turns
e. Snap shot drill
f. Break turn exercise
g. Low angle to hard counters
h. Horizontal scissors
i. Bugout
j. Rolling scissors
k. Sight/lookout doctrine
l. Aggressiveness
m. Situational awareness
n. Training rules
o. Field entry/lead
p. Precautionary approach
q. Landing pattern
r. Touch-and-go landings

NOTE: Jacket review required.
07-32  T-45/FC  ACM-07  AIR COMBAT MANEUVERING SEVEN  1.1

Brief:

a. QOD
b. Training rules
c. Emergencies
d. 1 circle engagement
e. 2 circle engagement

Introduce:

a. 1 V 1 neutral start
b. Energy management
c. 1 V 1 unknown start (fuel permitting)

Practice:

a. Formation activities
b. Communications
c. Combat spread
d. Engaging turns
e. Snap shot drill
f. Offensive 1 V 1
g. Defensive 1 V 1
h. 1 V 1 one circle (neutral start)
i. 1 V 1 two circle (neutral start)
j. Sight/lookout doctrine
k. Aggressiveness
l. Situational awareness
m. Training rules
n. Field entry/lead
o. Landings
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**Brief:**

- a. QOD
- b. Training rules
- c. Emergencies
- d. 1 circle engagement
- e. 2 circle engagements

**Practice:**

- a. Formation activities
- b. Communications
- c. Combat spread
- d. Engaging turns
- e. Snap shot drill
- f. Offensive 1 V 1
- g. Defensive 1 V 1
- h. 1 V 1 one circle (neutral)
- i. 1 V 1 two circle (neutral)
- j. Sight/lookout doctrine
- k. Aggressiveness
- l. Situational awareness
- m. Training rules
- n. Field entry/lead

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<td>AIR COMBAT MANEUVERING NINE</td>
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</table>

**Brief:**

- a. QOD
- b. Training rules

**Practice:**

- a. Combat spread
- b. Engaging turns
- c. Snap shot drill
- d. Offensive 1 V 1
- e. Defensive 1 V 1
- f. 1 V 1 neutral start
- g. Energy management
- h. Aggressiveness
- i. Situational awareness
- j. Training rules
07-35  T-45/RC  ACM-10  AIR COMBAT MANEUVERING TEN  1.2

**Brief:**

a. QOD  
b. Training rules

**Introduce:**

a. Prepare for instruction  
b. Flight instruction  
c. Performance evaluation

**Practice:**

a. Review student records  
b. Event requirements  
c. Brief  
d. Professional atmosphere  
e. Combat spread  
f. Engaging turns  
g. Snap shot drill  
h. Break turn exercise  
i. Offensive 1 V 1  
j. Defensive 1 V 1  
k. 1 V 1 neutral start  
l. Energy management  
m. Aggressiveness  
n. Situational awareness  
o. Training rules  
p. Introduce/demonstrate techniques  
q. Guidance/feedback  
r. Safety  
s. Debrief  
t. Grades assignment
Brief:

a. QOD
b. Training rules

Practice:

a. Prepare for instruction
b. Flight instruction
c. Performance evaluation

Review:

a. Review student records
b. Event requirements
c. Brief
d. Professional atmosphere
e. Combat spread
f. Engaging turns
g. Snap shot drill
h. Break turn exercise
i. Offensive 1 V 1
j. Defensive 1 V 1
k. 1 V 1 neutral start
l. Energy management
m. Aggressiveness
n. Situational awareness
o. Introduce/demonstrate techniques
p. Guidance/feedback
q. Safety
r. Debrief
s. Grades assignment

NOTE: Jacket review required.
MODULE | MEDIA | SYMBOL | DESCRIPTION                      | DURATION |
--------|-------|--------|-----------------------------------|----------|
07-39   | T-45/FC | ACM-12 | AIR COMBAT MANEUVERING            | 1.2      |
          |        |        | TWELVE                            |          |

**Brief:**

a. QOD
b. Training rules

t. **Introduce:**

a. Call bandit exercise
b. 2 V 1 combat
c. Counterflow
d. No switch
e. Single switch
f. Multi switch
g. Section bugout

t. **Practice:**

a. Combat spread
b. Mutual support
c. Aggressiveness
d. Situational awareness
e. Training rules
Brief:
   a. QOD
   b. Training rules

Introduce:
   Forward quarter attack

Practice:
   a. Combat spread
   b. Call bandit exercise
   c. 2 V 1 combat
   d. Mutual Support
   e. Counterflow
   f. Single Switch
   g. Multi Switch
   h. Section bugout
   i. Aggressiveness
   j. Situational awareness
   k. Training rules
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<td>ACM-14</td>
<td>AIR COMBAT MANEUVERING FOURTEEN (OBSERVED LEAD)</td>
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**Brief:**

a. QOD  
b. Training rules

**Introduce:**

a. Prepare for instruction  
b. Flight instruction  
c. Performance evaluation

**Practice:**

a. Review student records  
b. Event requirements  
c. Brief  
d. Professional atmosphere  
e. Call bandit exercise  
f. Counterflow  
g. Single Switch  
h. Multi Switch  
i. Forward quarter attack  
j. Section bugout  
k. Aggressiveness  
l. Situational awareness  
m. Training rules  
n. Introduce/demonstrate techniques  
o. Guidance/feedback  
p. Safety  
q. Debrief  
r. Grades assignment
Brief:

a. QOD
b. Training rules

Review:

a. Prepare for instruction
b. Brief
c. Flight instruction
d. Call bandit exercise
e. Counterflow
f. Multi Switch
g. Forward quarter attack
h. Section bugout
i. Aggressiveness
j. Situational awareness
k. Training rules
l. Performance evaluation
m. Guidance/feedback
n. Debrief

NOTE: Jacket review required.
A. IUT TRAINING OBJECTIVES. The T-45C Jet Transition Strike Flight Instructor Training curriculum, is designed to satisfy eight training objectives, which results in the transition of the IUT into a jet aircraft instructor, capable of teaching Navy tactical flying skills. Standards of military decorum expected of all naval officers, as defined in prior training directives, will be observed on a daily basis. The goal of all T-45C flight instructors under training is to meet the appropriate terminal learning objectives within the specified flight hour and calendar day limitations. Upon satisfactory completion of the curriculum, the IUT will be able to fulfill the following task objectives:

1. **Aviation.** Instruct student naval aviators (SNAs) in controlling the aircraft dual or solo, day and night in various meteorological conditions, and stages of flight as required. Aircraft controls must be maintained while meeting all other objectives.

2. **Navigation.** Instruct SNAs in maintaining aircraft position within a desired geographical area or along a desired ground track using visually acquired landmarks, aircraft-installed electronic equipment, aeronautical charts, voice communications with controlling agencies, and dead reckoning techniques while complying with Federal Aviation Regulations and standard operating procedures.

3. **Communications.** Instruct SNAs in communicating clearly with ground facilities and with other aircraft using approved radio procedures, and light, hand, or aircraft maneuvering signals as appropriate.

4. **Systems Management.** Instruct SNAs in the management of aircraft flight, communications, navigation, and weapons delivery systems as required for successful mission completion.

5. **Flight Planning.** Instruct SNAs in planning the safe conduct of each flight from preflight to mission completion, considering pilot, aircraft, and weather limitations.

6. **Headwork.** Ensure SNAs demonstrate understanding of aerodynamics, navigation, communications, systems management, and planning principles by the exercise of sound judgment while accomplishing all training objectives. Compliance with all conditions and standards shall be subordinated to the safety of the aircrew, other personnel, and the aircraft.
7. Instructional Technique. Convey procedural information and associated flying techniques to SNAs utilizing standardized instructional methods. Analyze and critique student performance and direct future progress toward achievement of the strike student curriculum objectives.

8. Aircrew Coordination Training. Ensure an understanding of the concept of aircrew coordination training (ACT), including the seven critical skills associated with ACT. Demonstrate proficiency in ACT behavioral skills.

B. IUT STAGE OBJECTIVES

1. Aircrew Familiarization. After this stage, the IUT will demonstrate competency to instruct SNAs in controlling the aircraft utilizing normal and emergency systems in rudimentary flight maneuvers in the T-45C aircraft.

2. Basic Instruments. After this stage, the IUT will demonstrate competency to instruct SNAs in controlling the aircraft without visual references utilizing the characteristics, theory, and operations of flight instrumentation and its applicability to aircraft control.

3. Radio Instruments. After this stage, the IUT will demonstrate competency to instruct SNAs in operating the aircraft in the high and low IFR environments utilizing instruments, navigation equipment, and communication equipment.

4. Airways Navigation. After this stage, the IUT will demonstrate competency to instruct SNAs in planning a flight terminating away from home base utilizing the high altitude jet structure.

5. Field Carrier Landing Practice (FCLP). After this stage, the IUT will demonstrate competency to instruct SNAs in field carrier landing practice.

6. Formation Flight. After this stage, the IUT will demonstrate competency to instruct SNAs in controlling the aircraft in multi-plane formation flight, rendezvous, maintaining wing position, and flight integrity as leader.

7. Night Familiarization. After this stage, the IUT will demonstrate competency to instruct SNAs in operating the aircraft in normal and emergency modes at night in the following evolution: start, taxi, takeoff, en route navigation, formation, and landing.
8. Operational Navigation. After this stage, the IUT will demonstrate competency to instruct SNAs in flying the aircraft in day visual conditions along a low-level high-speed training route.

9. Air-to-Ground Weapons. After this stage, the IUT will demonstrate competency to instruct SNAs in the conduct of air-to-ground weapons delivery, during visual daylight conditions, during which the student will fly prescribed target patterns. The IUT will instruct the SNA in determining relationships of dive angle, airspeed, and release altitude to weapon trajectory as used in error analysis and successful operation of the armament system.

10. Tactical Formation. After this stage, the IUT will demonstrate competency to instruct SNAs in controlling the aircraft in tactical formation flights under visual conditions.

11. Air Combat Maneuvering. After this stage, the IUT will demonstrate competency to instruct SNAs in flying ACM maneuvers performing offensively and defensively in the multi-plane tactical environment, while maintaining flight integrity in accordance with NATOPS manual, tactical doctrine, and command directives.

12. Out-of-Control Flight. After this stage, the IUT will demonstrate competency to instruct SNAs in recognizing the various phases of out-of-control flight from instrument references, applying the proper recovery controls for an uncontrolled flight situation, and indications of OCF.
# MASTER PUBLICATIONS LIST

1. **Individually Issued Materials**

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<td>a. T-45C Jet Transition Strike Flight Instructor Training Curriculum.</td>
<td>CNATRAINST 1542.150</td>
<td>8 Aug 02</td>
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<td>b. Flight Training Instructions (FTI).</td>
<td>CNAT P-1204 through 1209 &amp; 1221-1224</td>
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<td>(1) En Route IFR Supplement U.S.</td>
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i. Aviation Training Forms are generated by the Training Integrated Management System (TIMS).
2. Support Materials

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<td>d. NATOPS Instrument Flight Manual.</td>
<td>Stock No. 0437LP900109</td>
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<td>e. NATOPS General Operating Inst.</td>
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f. Flight clothing (Identification and quantity listed in CNATRAINST 10126.1D; cost listed in NAVSUP PUB. 4100)
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