

NAVAL AIR TRAINING COMMAND



NAS CORPUS CHRISTI, TEXAS
CIN O-2D-0059, O-2D-3096

CNATRAINST 1542.123C

CHIEF OF NAVAL AIR TRAINING



**ADVANCED NAVAL FLIGHT OFFICER
(NFO)/AIR FORCE COMBAT SYSTEMS
OFFICER (AF CSO)/NAVAL AVIATOR/AIR
FORCE PILOT INSTRUCTOR UNDER
TRAINING (IUT) MULTI-SERVICE NAVIGATOR
TRAINING SYSTEM (MNTS) CURRICULUM**

2008



DEPARTMENT OF THE NAVY

CHIEF OF NAVAL AIR TRAINING
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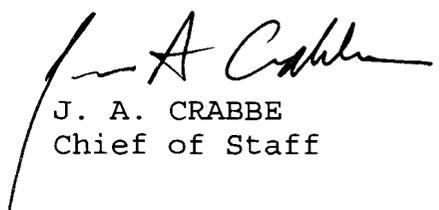
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CNATRA INSTRUCTION 1542.123C

Subj: ADVANCED NAVAL FLIGHT OFFICER (NFO)/AIR FORCE COMBAT
SYSTEMS OFFICER (AF CSO)/NAVAL AVIATOR/AIR FORCE
PILOT INSTRUCTOR UNDER TRAINING (IUT) MULTI-SERVICE
NAVIGATOR TRAINING SYSTEM (MNTS) CURRICULUM

1. Purpose. To publish the curriculum for training Flight Instructors to qualify them for the purpose of instructing Student NFOs and AF CSOs in the Advanced phase of NFO/AF CSO training.
2. Cancellation. Cancels CNATRAINST 1542.123B when the last student finishes the curriculum.
3. Action. This instruction is effective on receipt. No changes will be made without written authorization by the Chief of Naval Air Training (CNATRA).
4. Forms. The CNATRA forms required by this directive are automated in the TIMS computer program. This system has been assigned a system form number of CNATRA 1542/2019. An update of these forms shall be accomplished no later than the issuance of this curriculum.


J. A. CRABBE
Chief of Staff

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SUMMARY OF CHANGES

CHANGE NUMBER	DATE OF CHANGE	CHANGE DESCRIPTION	PAGES AFFECTED/ INITIALS
1	1/9/2009	Incorporated	Revised pages 3/4, v-x, xii-xiv, I-3/4/5/6/7/8/9/10, II-2, II-4, II-7/8/9/10/11/12/13/14, III-3, III-6/7/8, IV-2, VIII-3/4, VIII-11/12/13/14/15/16/17, VIII-21, VIII-25/26; reprinted pages xi, II-1, II-3, III-4/5, IV-1, VIII-18, VIII-22
2	6/9/2010	Incorporated	Revised pages 3, ii, v, vii, xiii, xv, VII-1, VIII-4, VIII-23/24, IX-8; reprinted pages 4, i, vi, viii, xiv, xvi, VII-2, VIII-3, IX-7

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COURSE DATA

1. Course Title. Advanced NFO/Naval Aviator/Air Force Pilot IUT MNTS Curriculum.
2. Course Identification Number (CIN). Q-2D-0123 (Strike), Q-2D-2124 (Fighter), Q-2D-3096 (T-45 Pilot).
3. Location. NAS Pensacola, FL.
4. Course Status. Active.
5. Course Mission. The Advanced NFO/Naval Aviator/Air Force Pilot IUT MNTS Curriculum is designed to provide NFOs and Instructor Pilots instruction in the techniques and procedures required to administer the approved CNATRA Advanced NFO training curriculum. Successful completion of applicable curricula qualifies the graduate as an advanced phase NFO instructor. This course will require:
 - a. Flight training to teach the principles and techniques used in air-to-air and air-to-ground training.
 - b. Ground training to supplement and reinforce flight training.
6. Prerequisite Training. Designated NFO, Naval Aviator, or Air Force Pilot as required by CNATRA.
7. Security Clearance Requirements. None.
8. Follow-on Training. As required to maintain currency for instructors or upgrade training if applicable.
9. Course Length. Overall time to train calculated in accordance with CNATRAINST 1550.6E. Training days account for factors including weather, personnel and equipment availability, briefing and preparation time, and historical delays. Calendar weeks further account for weekends, holidays, safety stand-downs, and other expected nonworking days.

	<u>Training</u> <u>Days</u>	<u>Calendar</u> <u>Weeks</u>
a. Strike (Initial Qualifications):	44.0	9.7
b. Fighter (Initial Qualifications):	36.3	8.1
c. T-45C ATM* (Initial Qualifications):	40.0	8.8

* Overall time for T-45C may be slightly more if optional events are flown.

10. Class Capacity. Variable.

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11. Instructor Requirements. As determined by Chief of Naval Operations (CNO) planning factors.

12. Course Curriculum Model Manager. Commander, Training Air Wing SIX (COMTRAWING SIX).

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

14. Quota Control. Chief of Naval Operations.

15. Course Training Subjects

a. Ground Training

ADMINISTRATION (ALL)		
Stage	Symbol	Hours
Administration/Check-In	G0101	4.0
Administration/Checkout	G0113	0.1
Totals		4.1

GROUND TRAINING (ALL)		
Stage	Symbol	Hours
Physiology*	G0102	6.0
Refresher Swim*	G0103	6.0
FITC	G0104	26.0
Safety Procedures	G0105	3.0
High Risk Screening	G0107	2.0
IGS/Exam	G0108-10	6.5
TRB	G0112	1.5
Totals		51.0

* Optional events accomplished only if required by NATOPS.

STRIKE GROUND TRAINING		
Stage	Symbol	Hours
CRM	G0111	2.0
NATOPS Lectures	G1001-09	18.0
NATOPS Open/Closed-Book Exams	G1010-11	6.0
Low-Level and Radar Navigation	G1101	3.0
Low-Level and Radar Planning	G1102	5.0
Radar Principles and Operations	G1103	3.0
Radar Predictions	G1104	2.0

Turnpoint Procedures	G1105	2.5
Aircraft Carrier Procedures	G1106	3.0
Conventional Weapons	G1107	1.5
Flight Preparation	G1108	6.0
Strike Seminar/Composite Ground School	G1201-02	6.0
Totals		58.0

FIGHTER GROUND TRAINING		
Stage	Symbol	Hours
CRM	G0111	2.0
NATOPS Lectures	G1001-09	18.0
NATOPS Open/Closed-Book Exams	G1010-11	6.0
Totals		26.0

FIGHTER UPGRADE GROUND TRAINING		
Stage	Symbol	Hours
Composite Preparation Lecture	G1203	3.0
Totals		3.0

T-45C ATM GROUND TRAINING		
Stage	Symbol	Hours
Systems	G1301-38	41.6
Systems Exam(s)	G1339-40	2.0
NATOPS Open-Book Exam	G1341	2.0
NATOPS Closed-Book Exam	G1342	2.0
Instrument Navigation	G1343-48	7.2
Instrument Navigation Exam	G1349	1.0
Course Rules	G1350	2.0
Course Rules Exam	G1351	1.0
Emergency Flight Procedures Part One	G1352-56	7.0
Emergency Flight Procedures Exam One	G1357	1.0
Emergency Flight Procedures Part Two	G1358-61	5.7
Emergency Flight Procedures Exam Two	G1362	1.0
Out-of-Control Flight Procedures	G1363	1.0
Out-of-Control Flight Exam	G1364	1.0
Contact Flight Procedures	G1365	3.0
CRM	G1366	1.0
Totals		79.5

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b. Flight Support

STRIKE FLIGHT SUPPORT (AIR-TO-AIR QUALIFICATION)		
Stage	Symbol	Hours
Intercept Display and Flight Path Visualization	T1001	1.0
Fundamentals of Intercept Geometry I and II Lectures	T1002-3	1.0
Target Aspect Formula and Collision Course Corrections Lecture	T1004	1.5
Displacement Turn Fundamentals Lecture	T1005	0.5
Counterturn Fundamentals Lecture	T1006	0.2
Speed Variations Lecture	T1007	1.0
Attack-Reattack Lecture	T1008	2.0
Intercept Progression I and II Lectures	T1009-10	3.0
Advanced Radar Modes Lecture	T1011	1.3
Flight Preparation Lectures	T1016-17	1.0
Totals		12.5

FIGHTER FLIGHT SUPPORT		
Stage	Symbol	Hours
Intercept Display and Flight Path Visualization	T1001	1.0
Fundamentals of Intercept Geometry I and II Lectures	T1002-3	1.0
Target Aspect Formula and Collision Course Corrections Lecture	T1004	1.5
Displacement Turn Fundamentals Lecture	T1005	0.5
Counterturn Fundamentals Lecture	T1006	0.2
Speed Variations Lecture	T1007	1.0
Attack-Reattack Lecture	T1008	2.0
Intercept Progression I and II Lectures	T1009-10	3.0
Advanced Radar Modes Lecture	T1011	1.3
Conversion Procedures Lecture	T1012	3.5
Advanced Intercepts Procedures Lecture	T1013	4.0
Introduction to 2 V X	T1014	3.5
Self-Escort Strike Route	T1015	1.0
Flight Preparation Lectures	T1016-17	1.0
Totals		24.5

T-45C ATM FLIGHT SUPPORT UPGRADE		
Stage	Symbol	Hours
Low-Level Waypoint Navigation One	A1001	0.7
Weapons Data Entry Procedures	A1002	0.7
Section Weapons Flight Procedures	A1003	2.0
Division Weapons Flight Procedures	A1004	2.0
HUD/Data Entry Procedures	A1101	0.7
Basic Fighter Maneuvers Theory	A1102	3.0
Basic Fighter Maneuvers Flight Procedures	A1103	3.0
Totals		12.1

c. Flight Training*

STRIKE FLIGHT TRAINING				
Flight/Events	2B49		T-39	
	Flts	Hrs	Dual Flts	Hrs
Refresher Flight Training			2	5.0
Airways Navigation Flight Training			2	4.6
Radar Navigation Simulator	2	4.0		
Radar Navigation Flight Training			4	8.8
Low-Level Navigation Flight Training			4	8.0
Strike Mission Flight Training			2	4.0
Composite Mission Simulator Training	2	5.0		
Composite and Fighter Composite Flight Training			1	2.4
Composite Check Flight			1	2.4
T-39 NATOPS Check Flight			1	2.5
Totals	4	9.0	17	37.7

STRIKE FLIGHT TRAINING (AIR-TO-AIR QUALIFICATION)				
Flight/Events	2B49		T-39	
	Flts	Hrs	Dual Flts	Hrs
Strike Air-to-Air Radar Training	7	10.5	2	2.2
Strike Air-to-Air Radar Flight Training Check Flight			1	1.1
Totals	7	10.5	3	3.3

FIGHTER FLIGHT TRAINING				
Flight/Events	2B49		T-39	
	Flts	Hrs	Dual Flts	Hrs
Refresher Flight Training			2	5.0
Airways Navigation Flight Training			2	4.6
Air-to-Air Radar Training	10	15.0	5	13.0
Air-to-Air Radar Simulator Check	1	1.5		
Fighter Flight Training Check Flight			1	2.6
T-39 NATOPS Check Flight			1	2.5
Totals	11	16.5	11	27.7

FIGHTER UPGRADE FLIGHT TRAINING				
Flight/Events	2B49		T-39	
	Flts	Hrs	Dual Flts	Hrs
Radar Navigation Simulator	1	2.0		
Composite Mission Simulator Training	2	5.0		
Composite and Fighter Composite Flight Training			2	4.8
Totals	3	7.0	2	4.8

T-45C ATM FLIGHT TRAINING				
Flight/Events	2F205A		T-45C	
	Flts	Hrs	Dual Flts	Hrs
T-45C Simulator Training	8	12.0		
T-45C NATOPS Flight Training			7	10.5
T-45C NATOPS Check Flight			1	1.5
T-45C Instrument Training			1	1.5
T-45C Instrument Check Flight			1	1.5
Contact Flight Training			2	3.0
Totals	8	12.0	12	18.0

T-45C ATM FLIGHT TRAINING (UPGRADES)				
Flight/Events	T-45C Solo		T-45C Dual	
	Flts	Hrs	Flts	Hrs
Section Weapons Flight Training			2	2.4
Section Weapons Check Flight			1	1.2
Division CAS Procedures			2	2.4
Division CAS Check Flight			1	1.2
BFM Flight Training	2	2.4	4	4.8
BFM Check Flight			1	1.2
Totals	2	2.4	11	13.2

16. Training Time Analysis

ADDITIONAL TRAINING TIME PER CURRICULUM HOUR/EVENT				
Training Area	Brief/Preflight /Taxi	Prep Study	Taxi/ Debrief	Total
Simulator	0.50	1.0	0.5	2.00
Refresher Flight	0.75	2.0	0.5	3.25
Strike Flight	1.75	2.0	1.0	4.75
Fighter Flight	1.75	2.0	1.0	4.75
T-45C Flight	1.75	2.0	1.0	4.75

17. Physical Requirements. As specified in Chapter 15 of the Manual of the Medical Department and all applicable anthropometric standards.

18. Obligated Service. Refer to MILPERSMAN Article 661036 for Naval personnel or to Air Force Instruction (AFI) 362107 for USAF personnel.

19. Primary Instructional Methods. Lecture, computer-assisted instruction (CAI), self- and group-paced study, and in-flight instruction.

20. Preceding Curriculum Data. Replaces CNATRAINST 1542.123B.

21. Student Performance Measurement/Application of Standards. The standards outlined in Chapter IX, Course Training Standards, are used to evaluate student performance of individual items and maneuvers. Final judgment regarding the satisfactory performance of any flight maneuver rests with the SI who must assess the environmental and systems factors affecting the conditions under which the performance is measured and the student's experience within the stage.

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ABBREVIATIONS

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

ANAV	- Airways Navigation
ASI	- Aviation Student Indoctrination
ASR	- Airport Surveillance Radar
ATF	- Aviation Training Form
ATJ	- Aviation Training Jacket
ATM	- Air Tactical Maneuvering
ATS	- Aviation Training Summary
BAR	- Basic Air Work Recognition
BAW	- Basic Air Work
BFM	- Basic Fighter Maneuvers
BFMFP	- Basic Fighter Maneuvers Flight Procedures
CAI	- Computer-Aided Instruction
CAS	- Close Air Support
CNATRA	- Chief of Naval Air Training
CRM	- Crew Resource Management
CONFP	- Contact Flight Procedures
CTS	- Course Training Standard
CVP	- Aircraft Carrier Procedures
EMFP	- Emergency Flight Procedures
EOB	- End of Block
EP	- Emergency Procedure
FAM	- Familiarization
FAR	- Federal Aviation Regulation
FFL	- Full-Flap Landing
FITC	- Flight Instructor Training Course
FLIP	- Flight Information Publication

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FPC - Final Progress Check
FTI - Flight Training Instruction
GCA - Ground-Controlled Approach
GLOC - G-Induced Loss of Consciousness
GMRT - Ground Mapping Radar Trainer
IAW - In Accordance With
IFR - Instrument Flight Rules
IGS - Instrument Ground School
INAV - Instrument Navigation
INST - Instrument Training
IP - Instructor Pilot/Intercept Procedures
IPC - Initial Progress Check
ITF - Instructor Training Form
IUT - Instructor Under Training
LLNAVFP - Low-Level Navigation Flight Procedures
MC - Mission Commander
MCG - Master Curriculum Guide
MIF - Maneuver Item File
MIL - Mediated Interactive Lecture
MNTS - Multi-Service Navigator Training System
MOA - Military Operations Area
MRT - Military-Rated Thrust
NATOPS - Naval Air Training and Operating Procedures
Standardization
NFL - No-Flap Landing
NFO - Naval Flight Officer
NOTAMS - Notices to Airmen
OCF - Out-of-Control Flight

OCFFP - Out-of-Control Flight, Flight Procedures
OPNAV - Office of the Chief of Naval Operations
PAR - Precision Approach Radar
PCL - Power Control Lever
PP - Partial Panel
PPEL - Practice Precautionary Emergency Landing
RDR - Radar
RRU - Ready Room Unsatisfactory
S/F - Strike/Fighter
SI - Standardization Instructor
SMS - Student Monitoring Status
SOP - Standard Operating Procedure
SRT - Standard Rate Turn
SSR - Special Syllabus Requirement
SUA - Special Use Airspace
SYS - Systems
T39SYS - T-39 Systems
T45BFMFP - T-45C BFM Flight Procedures
T45CONFP - T-45C Contact Flight Procedures
T45CRM - T-45C Crew Resource Management
T45EMFP - T-45C Emergency Flight Procedures
T45INST - T-45C Instrument Training
T45OCFFP - T-45C Out-of-Control Flight, Flight Procedures
T45SYS - T-45C Systems
T45WEPFP - T-45C Weapons Flight Procedures
TAC - Tactical
TACAN - Tactical Air Navigation

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TRB	- Training Review Board
UHF	- Ultra-High Frequency
UMFO	- Universal Military Flight Officer
USAF	- United States Air Force
VFR	- Visual Flight Rules
VHF	- Very-High Frequency
VR	- Visual Route
WEP	- Weapons
WEPFP	- Weapons Flight Procedures

GLOSSARY

1. Advancing X. Completed event within the normal syllabus flow. Excludes events with last characters in the range 86-89.
2. Aviation Training Jacket. The ATJ is the IUT's training record. It contains ATFs/ITFs, calendar card, grade reports, and all other associated training information. It is filed in student control and follows the IUT through all phases of training.
3. Aviation Training Summary. A tabular sheet listing the Maneuver Item File (MIF) and maneuver grades within a training stage.
4. Block of Training. A sequential series of lessons within a training stage sharing an identical MIF. The third character in the lesson designator identifies a block.
5. Check Flight (XXX90). A flight check in any stage of training.
6. Contact. The stage of training that combines flight familiarization, radar intercept procedures, and visual navigation procedures.
7. Course of Training. The entire program of preflight, flight, simulation, academics, and officer development conducted in all media during the programmed training days.
8. Course Training Standard. A description of required behaviors and standards of performance for a specific maneuver. These standards are in Chapter IX.
9. Courseware. The technical data, flight training instructions, audio, video, film, CAI, instructor guides, student study guides, and other training material developed to support and implement the syllabus of instruction.
10. Critical Item. Any maneuver coded with a plus sign (+). This symbol indicates the maneuver is required and must be accomplished to the specified standard in that block of training.
11. Deliverables. A supplemental ITF generated by the TRB, which summarizes a specific IUT's progress in a given syllabus and provides detailed information on the application of MNTS IUT training for that IUT. Deliverables indicate whether the quality and continuity of training provided was IAW CNATRAINST 1542.123C, indicate the degree of influence by "human factors" on the IUT performance, and make a recommendation on elimination/retention based on those items.
12. Emergency Procedure. Any degradation of aircraft systems or flight conditions requiring crew action or intervention.

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13. End of Block. Last event in block. In order to progress past EOB, the IUT must meet or exceed MIF on all critical items, and all optional items attempted, in the block.

14. Extra Training (XXX87). Additional IUT training flights ordered by the Operations Officer, or higher, in order to make up for squadron/IP instructional deficiencies.

15. Final Progress Check (XXX89). A special check, normally given by the commanding officer (CO) or executive officer (XO). The CO may delegate FPC duty to a qualified 0-4 or above, in the event that neither the CO nor XO are qualified or available to instruct in the required stage. There are two categories of FPC: FPC/F for flight and FPC/R for ready room. A satisfactory FPC returns the IUT to normal syllabus flow. An unsatisfactory FPC results in a TRB.

16. Flight Training Instruction. A CNATRA-approved manual describing flight procedures and techniques for each training stage.

17. Hours per X (H/X). The average length for each event in a block, rounded to the nearest tenth of an hour.

18. Initial Progress Check (XXX88). A special check, given by the operations officer or his representative. There are two categories of IPC: IPC/F for flight and IPC/R for ready room. A satisfactory IPC returns the IUT to normal syllabus flow. An unsatisfactory IPC results in an FPC.

19. Instructor Training Form (ITF). A grade sheet documenting IUT performance for all categories of training regardless of media, phase, or stage.

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20. Lesson Designator. All syllabus events have a five-character lesson designator in the following format:

Char	Meaning	Remarks
1 st	Stage	G—Ground C—Contact I—Instrument
		N—Navigation F—Formation T—Tactical
		A—ATM S—Strike R—Radar
2 nd	Media	0—Ground Training 1—Academics 2—2B49 Trainer
		3—2F205A Trainer 4—T-39 Aircraft 5—T-45C Aircraft
3 rd	Block	Sequential, indicating block within stage.
4 th & 5 th	Event/ Check Identifier	Sequential, indicating event within block, or other event types as shown below: 84—Adaptation Flight 85—Practice Trainer 86—Warmup 87—Extra Training
		88—Initial Progress Check 89—Final Progress Check 90—Check Flight

21. Maneuver Item File. A listing of required maneuvers and associated proficiency levels for each block of training.

22. Master Syllabus. Chapters I-VIII list all training syllabus activities, prerequisites, and desired training flow for Advanced MNTS.

23. Outcomes. Potential courses of action following a Progress Check (XXX88/89). There are only two outcomes:

- a. Pass - Return to training.
- b. Fail - Proceed with the elimination process/eliminate.

24. Phase of Training. A major division in the course of training.

25. Progress Check Instructor. An instructor authorized to administer initial (XXX88) or final (XXX89) progress checks.

26. Ready Room Unsatisfactory. An unsatisfactory grade given for inadequate knowledge of flight procedures, systems, discuss items, emergency procedures, or deficient preflight planning.

27. Special Syllabus Requirement. A one-time, ungraded demonstration item.

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28. Stage of Training. All training of a particular type (Ground, Contact, Instrument, Navigation, Formation, Tactical, Radar, Strike, Advanced Tactical Maneuvering) within a phase. The first letter in the lesson designator identifies the stage of each lesson. (For example, R2190 is in the Radar stage.)

29. Standardization Instructor. The squadron commander will designate the SIs for each stage.

30. Student Monitoring Status. Squadron-initiated status to address substandard IUT performance.

31. Training Media. MNTS media include aircraft, cockpit procedures trainers (CPTs), ground training, and CAI. The second character in the lesson identifier designates the training media.

32. Training Review Board. A fact-finding board appointed to conduct an administrative review of circumstances and procedures relative to an FPC recommendation for an IUT's elimination.

33. Warmup Event (XXX86). Additional events given to allow an IUT to regain a level of proficiency previously demonstrated, which has diminished due to an extended break in training.

Chapter I

General Instructions

1. Syllabus Management

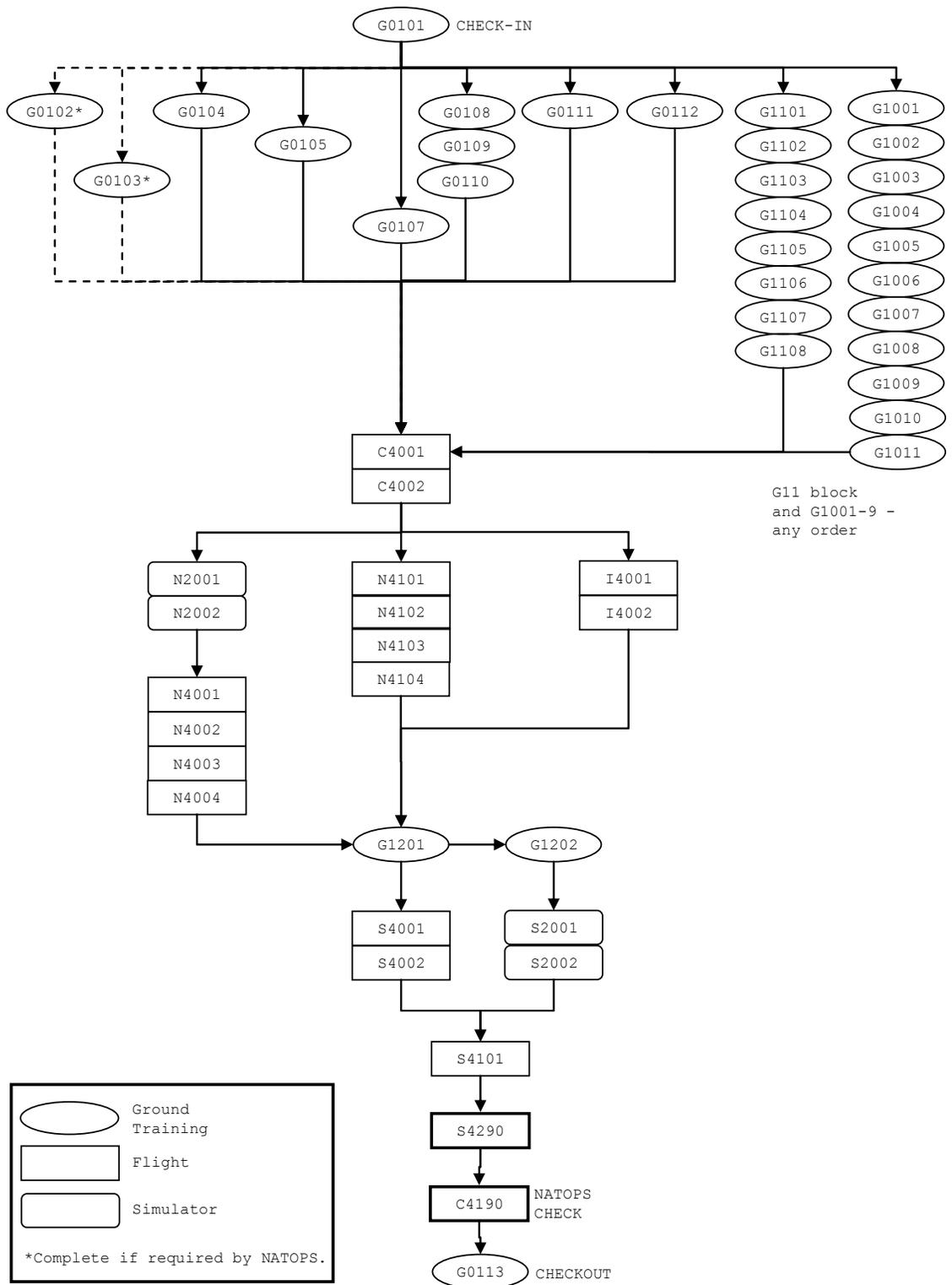
- a. Distribution. Participating squadron personnel.
- b. Interpretation. The syllabus is directive. Should circumstances create situations not covered within the scope of this syllabus, or a specific course of action appears to conflict with other directives, consult CNATRA (N71).
- c. Deviations. Document all deviations on the event's ITF.
- d. Changes. Recommended changes shall be submitted to CTW-6.
- e. Syllabus Description. The syllabus is divided into stages; the stages are grouped by like flight training regimes, such as Contact, Instrument, and Tactical. Each stage is subdivided into training blocks. The training blocks consist of a specified number of flights. Course Training Standards (CTSs) are modified by the MIFs to identify the acceptable level of performance that must be achieved at the completion of each training block.

2. Training Management

- a. Syllabus Progression. Fly syllabus events within each stage sequentially. Do not start a block without all prerequisites. IUTs may not be in different stages simultaneously. IUTs must complete all events. System training management is designed to facilitate two graded events (flight, simulator, or exam) per IUT per day.
- b. Maneuver Continuity. IUTs must accomplish previously introduced maneuvers frequently enough to ensure maintaining required proficiency.
- c. H/X. Standardization Instructors shall plan and execute missions to meet H/X as closely as practical. If actual event length varies from H/X by more than 0.3 hrs, annotate reason(s) in ITF's general comment section.
- d. Special Syllabus Requirements. The SSRs may be allocated to events. Unless noted otherwise, IUTs may accomplish SSRs on any flight within the block. SSRs shall be completed in the specified block. Annotate completed SSRs in the ITF's SSR comments section. Assign NG/1 as the SSR maneuver grade.
- e. Aviation Training Jacket Reviews. Standardization officers will conduct jacket reviews at least monthly. SMS IUTs require biweekly ATJ reviews.

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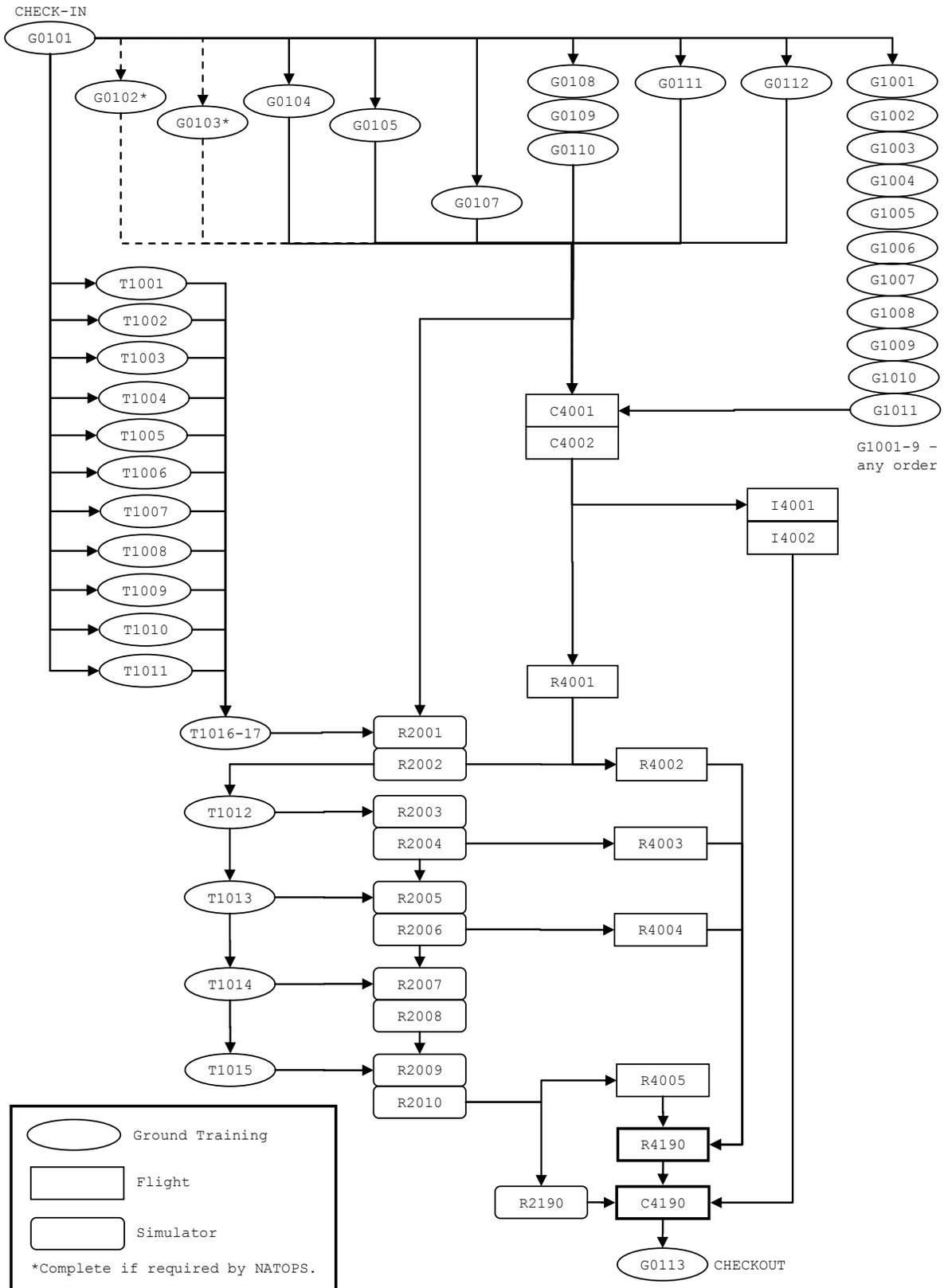
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STRIKE IUT COURSE FLOW

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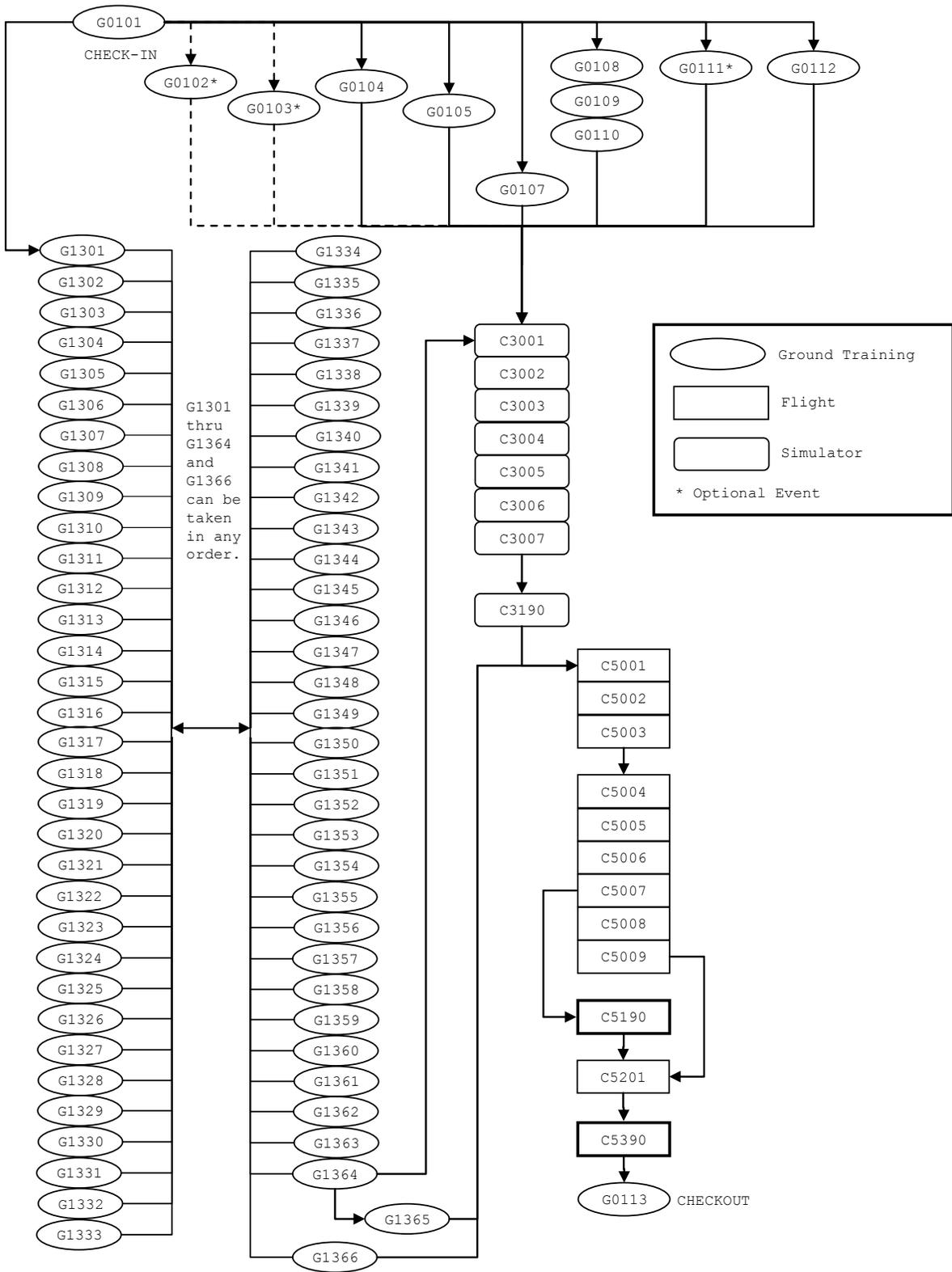
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FIGHTER IUT COURSE FLOW

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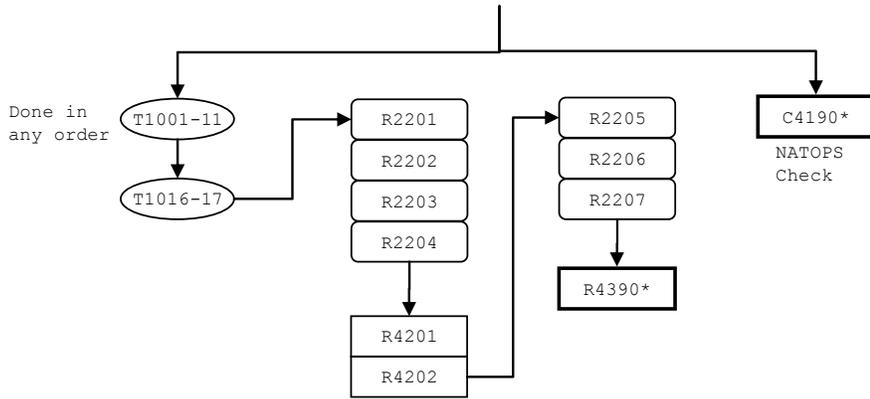


T-45C IUT COURSE FLOW

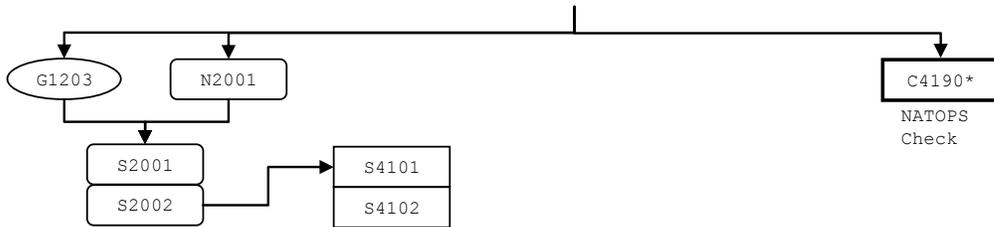
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COMPLETION OF STRIKE IUT



COMPLETION OF FIGHTER IUT

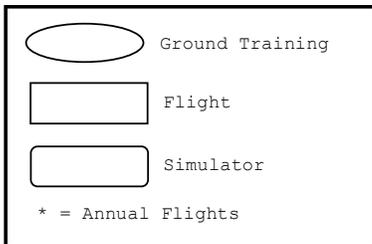
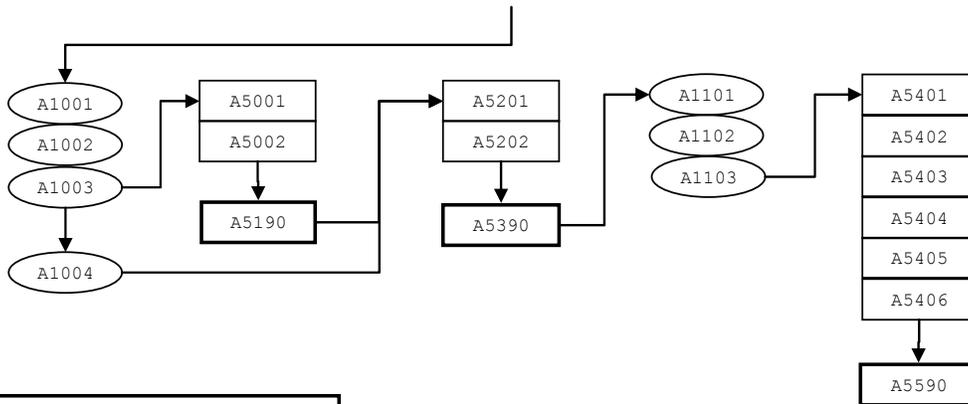


Complete only if required by NATOPS.

Physiology Refresher Swim



COMPLETION OF T-45C IUT



UPGRADES/REQUALIFICATIONS

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3. Ground Training and Briefing Requirements

a. Mission Preparation, Briefings, and Debriefings

(1) End of Block Events. The SI shall carefully review the ATS in planning the EOB event to ensure the profile includes opportunities to reach MIF on all critical items and optional items attempted in the block.

(2) Preparation. The IUT shall arrive for each flight with:

(a) Thorough knowledge of:

1. The flight's discuss items, as listed in Chapters III-VIII.

2. Procedural knowledge of the critical items for the event's training block.

(b) A flight profile tailored to training requirements, weak areas, and continuity.

(c) The latest ATS for the stage.

(3) Briefing. Monitor and critique the student's brief, adding additional techniques and procedures, as required, while the student covers the mission's:

(a) Specific objectives.

(b) Techniques and required procedures for accomplishing those objectives.

(c) Planned profile, contingencies, and Operational Risk Management (ORM) considerations.

(4) Debriefing

(a) After each event, the IUT shall evaluate and critique student performance based on the CTS. Additional techniques may be discussed.

(b) After each event, the SI shall critique the IUT's performance using cause/effect analysis, particularly with respect to the CTS.

(c) The mission's complexity and IUT's progress will govern the time required for the debrief.

(d) The SI shall provide the IUT with a new ATS, and may provide a copy of the event's ITF.

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b. Emergency Procedures Briefing and Training

(1) Incorporate EP training into trainer events when practical; however, instructional block objectives take precedence.

(2) Grade the IUT's overall EP knowledge and performance under Emergency Procedures as required.

4. Mission Grading Procedures and Evaluation Policies

a. General Evaluation Policy. Course Training Standards listed in this instruction and the Maneuver Item Files are minimum stage completion standards per maneuver. CTSs/MIFs are designed to allow for minimum performance in a specific area with the understanding that performance above the minimum CTS/MIF will offset the weak area.

b. Grading Procedures (Aircraft and Training Devices)

(1) Overall Grading

(a) The overall grade for all flight and device events, with the exception of the NATOPS Check Flight, will be pass/fail.

(b) The overall grade for the NATOPS Check Flight will be UQ, CQ, or Q as described below:

1. Unqualified (UQ Level) - Fails to meet minimum acceptable criteria and needs supervised instruction.

2. Conditionally Qualified (CQ Level) - Meets minimum acceptable criteria and is safe to fly as the Mission Commander.

3. Qualified (Q Level) - Displays good knowledge of operational procedures and a thorough understanding of the aircraft.

(2) Standard Maneuver Grading. Use the following grading scale to document the IUT's characteristic performance on all flight and device maneuvers attempted during each dual event, with the exception of maneuvers done during the NATOPS phase of training. This is an absolute grading scale. Judge the IUT's proficiency **only** against the item's course training standard.

(a) Demonstrated (NG/1 Level). Enter "No Grade (NG)":

1. When the SI demonstrates the maneuver and the IUT does not subsequently perform it during the event.

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2. To indicate accomplishing SSRs. Specify the completed SSRs in the ITF's SSR comments section.

(b) Unable (U/2 Level). Performance is unsafe or lacks sufficient knowledge, skill, or ability. Deviations greatly exceed CTS, significantly disrupting performance. Corrections significantly lag deviations, or aggravate the deviation.

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

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

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

(3) NATOPS Maneuver Grading. During the NATOPS phase of training, grading will be IAW NATOPS standards. This applies to the following syllabus training events:

C4001	C3001-07	C5190
C4002	C3190	
C4190	C5001-09	

Judge the IUT's proficiency only against the item's CTS or NATOPS grading criteria. The grading scale will be as per the NATOPS as listed below:

5 = Not applicable to NATOPS Block Training
 4 = Q
 3 = CQ
 2 = UQ
 1 = Demonstrate

(4) Progression Rule. Performance must meet MIF by the end of block. IUT shall maintain or exceed MIF performance from one block, stage, or media to the next.

(5) Maneuver Requirements. For each block:

(a) Mandatory Items. Items with a number and a plus (+) are mandatory, and the IUT must meet the required proficiency by EOB.

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(b) Optional Items. Items with a number, but without a plus (+), are optional. However, if flown, the IUT must meet the required proficiency by EOB.

(6) Incomplete Events. If an IUT has had ample opportunity to learn a task and subsequently flies a short mission, do not incomplete the mission solely to provide unwarranted extra training. Assess the flight event complete if:

(a) Seventy-five percent of the event's H/X was used for training, and

(b) Sufficient events remain in the block to redress the imbalance, and

(c) Individual maneuvers can still be accomplished within the block.

(d) Otherwise, assess the event incomplete.

(7) Completion Events

(a) An event may both complete a previous event and count as an advancing X.

(b) For events flown exclusively to clear an incomplete, grades on maneuvers repeated from the incomplete event do not count.

(8) Trainer Event Completion. Assess a trainer event complete if the IUT has received a full 1.5-hour training period.

c. Policies for Evaluation Flights and Ground Evaluations

(1) Check Flights (XXX90)-Single Event Training Blocks. Check flights amount to single event training blocks. Therefore, all rules regarding progressing out of a block apply, except as noted below:

(a) Should fly a representative cross section of optional maneuvers.

(b) Up to two optional maneuvers may be graded F/3 where G/4 is required without requiring an overall unsatisfactory.

(c) SIs may allow IUT to reaccomplish maneuvers.

(d) The entire event should be devoted to assessing the IUT's ability and readiness to progress to the next stage of training. All maneuvers indicated with a plus (+) are check flight critical and must be accomplished to MIF.

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(e) The IUT should be able to demonstrate required levels of proficiency without SI assistance. However, instruction is allowed on check flights, and IUTs may reaccomplish maneuvers at the SI's discretion.

(2) Incomplete Check Flight. The check flight shall be incomplete when:

(a) Any critical (+) item was not flown, or

(b) The SI was unable to sample sufficient examples of a given maneuver to assess the IUT's overall performance.

NOTE: The subsequent flight need only include maneuvers required to complete the check.

(c) Exceptions. The check is complete and the overall grade is unsatisfactory if:

1. Any critical item is below MIF, or

2. More than two noncritical items were graded F/3 where G/4 is required, or

3. Any maneuver is U/2.

5. Special Instructions and Restrictions

a. Schedule limitations for IUTs will be left to the discretion of the Instructor Training Unit (ITU) or cognizant squadron, but consistent with the provisions of OPNAVINST 3710.7T.

b. All IUT flights will be conducted in accordance with the current T-39 or T-45C NATOPS/Technical Orders, FTIs, and local SOPs, as applicable. No deviations from standard maneuvers are authorized except in cases of emergency.

c. Completion of the NATOPS stage as described in this instruction meets the NATOPS qualification requirements for the specific aircraft.

d. Reasonable accelerations and decelerations in the curriculum are authorized when warranted by previous experience or demonstrated ability. Accelerations of the curriculum require TRAWING commander approval and shall be annotated in writing in the Instructor Training Jacket.

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Chapter II

Ground Training

1. Ground Training Philosophy. Newly reporting IUTs must regain NATOPS-mandated currencies, develop proper instructional technique, and become knowledgeable of their respective systems and flight preparation procedures.
2. Flight Support Training Philosophy. IUTs learn fundamentals and procedures of air-to-ground and air-to-air training and become knowledgeable of current standardization. The two primary methods of instruction are CAI and MIL. A CAI is a self-paced, computer-based instructional module. A MIL is a traditional lecture format, where an instructor teaches with the aid of electronic media.

Block	Media	Title	Events	Hrs	Stage
G01	Sqdn/ Class	Administration/ Ground Training	12	57.1	See Below

1. Events

G0101	Admin	Administration/Check-In. IUTs will check in with the Wing, Ground School, and Squadron. This event includes Publications Issue and Curriculum Introduction.		4.0	ASI
G0102	MIL	Physiology. Includes classroom instruction and procedures trainers (R2/N5) to regain necessary currency.		6.0	ASI
G0103	Lect/ Pool	Refresher Swim. Includes classroom instruction and procedures trainers (R2/N5) to regain necessary currency.		6.0	ASI
G0104	MIL	FITC		26.0	ASI
G0105	MIL	Safety Procedures. The safety officer will provide the IUT with a general overview of safety procedures.		3.0	ASI
G0107	MIL	High Risk Screening. The flight surgeon will complete this event after surveying the IUT.		2.0	ASI
G0108	MIL	Instrument Ground School		3.0	IGS
G0109	P/P	IGS Open-Book Exam		2.0	IGS
G0110	P/P	IGS Closed-Book Exam		1.5	IGS
G0111	MIL	Crew Resource Management		2.0	CRM
G0112	MIL	Training Review Board		1.5	ASI
G0113	Sqdn	Administration/Checkout		0.1	ASI

2. Syllabus Notes

- a. Complete G0101 prior to succeeding events.
- b. Complete G0102-G0107 and G0112 in any order.
- c. Complete G0108-10 in order.
- d. Complete G0111 in succession with G0108 or as required.
- e. Complete all applicable events for specific phase prior to G0113.
- f. All IUTs accomplish all these events, except G0102, G0103, and G0111. G0102 and G0103 are accomplished only if required by NATOPS. T-45C ATM IUTs do not accomplish G0111.
- g. T-45C ATM IUTs will accomplish the Course Rules Exam during IGS.

3. Discuss Items. None.

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Block	Media	Title	Events	Hrs	Stage
G10	CAI/ Class	T-39 Academics	11	24.0	T39SYS

1. Events

G1001	CAI	NATOPS 1 - Engines		2.0	
G1002	CAI	NATOPS 2 - Fuel		2.0	
G1003	CAI	NATOPS 3 - Electrical		2.0	
G1004	CAI	NATOPS 4 - Hydraulics		2.0	
G1005	CAI	NATOPS 5 - Flight Controls		2.0	
G1006	CAI	NATOPS 6 - Anti-Ice		2.0	
G1007	CAI	NATOPS 7 - Environmental		2.0	
G1008	CAI	NATOPS 8 - Avionics		2.0	
G1009	CAI	NATOPS 9 - Emergency Procedures		2.0	
G1010	P/P	T-39 NATOPS Open-Book Exam		3.0	
G1011	P/P	T-39 NATOPS Closed-Book Exam		3.0	

2. Syllabus Notes

a. Complete G0101 prior to G1001-G1009; complete G1010 prior to G1011.

b. Complete events G1001 through G1009 in any order prior to G1010.

c. Only Strike and Fighter IUTs accomplish this block of training.

3. Discuss Items. None.

Block	Media	Title	Events	Hrs	Stage
G11	MIL/ CAI	T-39 Strike Core Academics	8	26.0	See Below

1. Events

G1101	MIL	Low-Level and Radar Navigation		3.0	LLNAVFP
G1102	MIL	Low-Level and Radar Planning		5.0	LLNAVFP
G1103	CAI	Radar Principles and Operations		3.0	RDR
G1104	MIL	Radar Predictions		2.0	RDR
G1105	MIL	Turnpoint Procedures		2.5	DCONFP
G1106	MIL	Aircraft Carrier Procedures		3.0	CVP
G1107	MIL	Conventional Weapons		1.5	WEPFP
G1108	MIL	Flight Preparation		6.0	ASI

2. Syllabus Notes

- a. Complete G0101 prior to succeeding events.
- b. May complete events in any order, but sequential progression through the block is preferred.
- c. Only Strike IUTs accomplish the events in this block; Fighter and T-45C ATM IUTs do not take this block.

3. Discuss Items. None.

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Block	Media	Title	Events	Hrs	Stage
G12	MIL	T-39 Advanced Air- to-Ground Preflight Training	Strike/2 Fighter/1	6.0 3.0	DCONFP

1. Events. The G12 block provides the procedures and fundamentals for advanced air-to-ground training.

G1201	MIL	Strike Seminar		3.0	
G1202	MIL	Composite Ground School		3.0	
G1203	MIL	Composite Preparation Lecture		3.0	

2. Syllabus Notes

- a. Complete the events in order.
- b. Strike IUTs complete N4004, N4104, and I4002 prior to G1201.
- c. Fighter IUTs complete all Fighter IUT events prior to G1203.
- d. Only Strike IUTs accomplish G1201 and G1202.
- e. Only Fighter Upgrade IUTs accomplish G1203.

3. Discuss Items. None.

Block	Media	Title	Events	Hrs	Stage	
T10	MIL	Fighter Flight Support Training	Strike/10 Fighter/17	10.2 24.5	See Below	(R
1. <u>Events</u>						
T1001	MIL	Intercept Display and Flight Path Visualization		1.0	IP	
T1002	MIL	Fundamentals of Intercept Geometry I Lecture		0.5	IP	
T1003	MIL	Fundamentals of Intercept Geometry II Lecture		0.5	IP	
T1004	MIL	Target Aspect Formula and Collision Course Corrections Lecture		1.5	IP	
T1005	MIL	Displacement Turn Fundamentals Lecture		0.5	IP	
T1006	MIL	Counterturn Fundamentals Lecture		0.2	IP	
T1007	MIL	Speed Variations Lecture		1.0	IP	
T1008	MIL	Attack-Reattack Lecture		2.0	IP	
T1009	MIL	Intercept Progression I Lecture		1.5	IP	
T1010	MIL	Intercept Progression II Lecture		1.5	IP	
T1011	MIL	Advanced Radar Modes Lecture		1.3	RDR	
T1012	MIL	Conversion Procedures Lecture		3.5	TAC	
T1013	MIL	Advanced Intercepts Procedures Lecture		4.0	TAC	
T1014	MIL	Introduction to 2 V X		3.5	TAC	
T1015	MIL	Self-Escort Strike Route		1.0	TAC	(A
T1016	MIL	Flight Preparation Lecture		0.5	IP	(A
T1017	MIL	Flight Preparation Lecture		0.5	IP	(A

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2. Syllabus Notes

- a. Complete G0101 prior to T1001-11.
- b. Accomplish events T1001 through T1011 in any order, but prior to T1016.
- c. Accomplish T1016 prior to T1017.
- d. Accomplish T1012 through T1015 in order. Subsequent simulator and flight prerequisites will be adhered to per flow chart.
- e. Strike IUTs selected for additional air-to-air qualification must accomplish T1001-T1011 and T1016-17.
- f. Fighter IUTs accomplish all events in block.

3. Discuss Items. None.

Block	Media	Title	Events	Hrs	Stage
G13	Class	T-45C ATM Preflight Academics	66	79.5	See Below

1. Events

G1301	LECT	Introduction to CAI		0.5	T45SYS
G1302	MIL	Introduction to OFT		1.5	T45SYS
G1303	MIL	Introduction to T-45C Configuration		1.3	T45SYS
G1304	MIL	Electrical System		1.3	T45SYS
G1305	CAI	Electrical System Malfunctions		0.7	T45SYS
G1306	MIL	Engine and Related Systems		1.5	T45SYS
G1307	CAI	Engine and Related Systems Malfunctions		1.4	T45SYS
G1308	CAI	Engine Systems Malfunctions		0.7	T45SYS
G1309	MIL	Aircraft Fuel System		0.9	T45SYS
G1310	CAI	Fuel System Malfunctions		0.5	T45SYS
G1311	MIL	Hydraulic System		1.0	T45SYS
G1312	CAI	Hydraulic System Malfunctions		1.0	T45SYS
G1313	MIL	Hydraulic Subsystems		1.8	T45SYS
G1314	CAI	Hydraulic Subsystems Malfunctions		1.0	T45SYS
G1315	MIL	Flight Control System		1.3	T45SYS
G1316	CAI	Flight Control System Malfunctions		0.7	T45SYS
G1317	MIL	Egress System		1.0	T45SYS
G1318	CAI	Egress System Malfunctions		0.5	T45SYS
G1319	MIL	OBOGS and ECS/Pressurization Systems		0.9	T45SYS
G1320	CAI	OBOGS and ECS/Pressurization System Malfunctions		0.5	T45SYS
G1321	MIL	Flight Instruments		1.3	T45SYS
G1322	CAI	Flight Instruments Malfunctions		0.8	T45SYS
G1323	MIL	CNI System		1.7	T45SYS
G1324	CAI	CNI System Malfunctions		1.0	T45SYS
G1325	MIL	Other T-45C Systems		1.0	T45SYS
G1326	MIL	INS/GPS Operations and Concepts		1.5	T45SYS
G1327	CAI	Display System and Malfunctions		1.5	T45SYS
G1328	MIL	Engine Start Procedures		1.0	T45SYS
G1329	MIL	NACES Flight Physiology		2.0	T45SYS
G1330	CAI	Exterior Preflight Checks		0.6	T45SYS
G1331	CAI	Engine Start & Post-start Procedures		1.0	T45SYS

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G1332	CAI	Multi-function Display and Navigation System Operation	1.2	T45SYS
G1333	CAI	Display System (HUD)	0.8	T45SYS
G1334	CAI	Waypoint Navigation Procedures	1.2	T45SYS
G1335	LECT	Ejection Seat Lecture/NACES	1.0	T45SYS
G1336	MIL	Velocity Vector	1.0	T45SYS
G1337	CAI	Engineering Review	2.0	T45SYS
G1338	MIL	Engineering Review	1.0	T45SYS
G1339	CAI	Engineering Block Examination	1.0	T45SYS
G1340	CAI	Engineering Block Examination	1.0	T45SYS
G1341	P/P	NATOPS OPEN-BOOK EXAMINATION	2.0	T45SYS
G1342	P/P	NATOPS CLOSED-BOOK EXAMINATION	2.0	T45SYS
G1343	MIL	Introduction to INAV	1.8	T45INST
G1344	MIL	Departure and Terminal Procedures	0.8	T45INST
G1345	CAI	Interpretation of High Altitude Instrument Approach Plates	0.8	T45INST
G1346	MIL	Flight Planning (Departure and En Route)	1.5	T45INST
G1347	WKBK	Practical Problems	1.5	T45INST
G1348	MIL	INAV Review	0.8	T45INST
G1349	CAI	Instrument Navigation Block Examination	1.0	T45INST
G1350	LECT	Course Rules	2.0	T45INST
G1351	P/P	Course Rules Stage Examination	1.0	T45INST
G1352	MIL	Start, Ground, and Takeoff Emergency Procedures	1.5	T45EMFP
G1353	CAI	Start, Ground, and Takeoff Emergency Procedures	1.5	T45EMFP
G1354	MIL	Operational and Ejection Emergency Procedures (Includes Workbook)	1.0	T45EMFP
G1355	MIL	Engine and Hydraulic Emergency Procedures	1.5	T45EMFP
G1356	CAI	Engine and Hydraulic Emergency Procedures	1.5	T45EMFP
G1357	CAI	Emergency Flight Procedures Examination One	1.0	T45EMFP
G1358	MIL	Canopy and Flight Control Emergency Procedures (Includes Workbook)	1.0	T45EMFP
G1359	MIL	Electrical and Indicator Emergency Procedures	1.7	T45EMFP

G1360	CAI	Electrical and Indicator Emergency Procedures	1.5	T45EMFP
G1361	MIL	Operational and Landing Emergency Procedures (Includes Workbook)	1.5	T45EMFP
G1362	CAI	Emergency Flight Procedures Examination Two	1.0	T45EMFP
G1363	MIL	Out-of-Control Flight Procedures	1.0	T45OCFFP
G1364	CAI	Out-of-Control Flight Exam	1.0	T45OCFFP
G1365	MIL	Contact Flight Procedures	3.0	T45CONFP
G1366	MIL	CRM	1.0	T45CRM

2. Syllabus Notes

- a. Complete G0101 prior to G1301-64 and G1366.
- b. Complete G1301-64 prior to G1365.
- c. Only T-45C ATM IUTs accomplish these events.

3. Discuss Items. None.

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Block	Media	Title	Events	Hrs	Stage
A10	Class	T-45C ATM Weapons Flight Procedures (Upgrade)	4	5.4	T45WEPFP

1. Events

A1001	CAI	Low-Level Waypoint Navigation One		0.7	
A1002	CAI	Weapons Data Entry Procedures		0.7	
A1003	MIL	Section Weapons Flight Procedures		2.0	
A1004	MIL	Division Weapons Flight Procedures		2.0	

2. Syllabus Note. Complete T-45C IUT prior to beginning of block.

3. Discuss Items. None.

Block	Media	Title	Events	Hrs	Stage
A11	Class	T-45C ATM Basic Fighter Maneuvers Flight Procedures (Upgrade)	3	6.7	T45BFMFP

1. Events

A1101	CAI	HUD/Data Entry Procedures		0.7	T45BFMFP
A1102	MIL	Basic Fighter Maneuvers Theory		3.0	T45BFMFP
A1103	MIL	Basic Fighter Maneuvers Flight Procedures		3.0	T45BFMFP

2. Syllabus Notes

- a. Complete A5390 prior to A1101-A1103.
- b. Complete events in any order.

3. Discuss Items. None.

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Chapter III

NATOPS Training

1. Refresher Flight Training Philosophy. Allow IUT a chance to experience the "hot seat" and to gain experience in the T-39 or T-45C. Comply with T-39 and T-45C NATOPS check-flight requirements.
2. Matrices. The following matrices are an overview of the entire NATOPS Stage, separated into T-39 NATOPS and T-45C NATOPS. The purpose of these matrices is to provide the IUT and SI the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.
3. T-39 NATOPS Stage MIF

 Check Flight Event

T-39 NATOPS STAGE MANEUVER ITEM FILE			
CTS REF	MANEUVER	C4002	C4190
1	General Knowledge/Procedures	4+	4+
2	Emergency Procedures	4+	4+
3	Headwork/Situational Awareness	4+	4+
4	BAR	4+	4+
5	Mission Planning	4+	4+
6	In-Flight Planning/Area Orientation	4	4+
7	In-Flight Checks	4+	4+
8	Radio Procedures	4+	4+
9	Ground Operations	4+	4+
10	Pressurization System	4	4
11	Electrical (DC) System	4	4
12	Electrical (AC) System	4	4
13	Hydraulic System	4	4
14	Fuel System	4	4
15	Anti-Ice System	4	4
16	Avionics	4	4
17	Stalls/Unusual Attitudes	4	4
18	Course Rules/INAV	4	4+
19	Limitations	4+	4+

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4. T-45C ATM NATOPS Stage MIF



Simulator Event



Check Simulator/Flight Event

T-45C ATM NATOPS STAGE MANEUVER ITEM FILE					
CTS REF	MANEUVER	C3007	C3190	C5009	C5190
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	BAW	4+	4+	4+	4+
31	NATOPS Procedures	4+	4+	4+	4+
32	Landings			4+	4+
33	Stalls/OCF	4+	4+	4+	4+

Block	Media	Title	Events	Hrs	H/X
C40	T-39G/N	T-39 Refresher Flight Training	2	5.0	2.5

1. Prerequisites

- a. G0102-3 (Physiology/Swim) if required.
- b. G0104-G0112 (FITC, Safety, High Risk Screening, IGS, CRM, TRB) for Strike and Fighter IUTs.
- c. G1011 (T-39 NATOPS Closed-Book Exam) for Strike and Fighter IUTs.
- d. G1108 (Flight Preparation) for Strike IUTs.

2. Syllabus Notes

C4001

This flight should consist of area work to include stalls, unusual attitude recoveries, and pattern work with review of NATOPS systems and procedures.

C4002

This flight should be flown as a multiple approach hop with review of autopilot operation and NATOPS systems and procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items. During block, discuss preflight procedures, all ground operations, all checklist procedures, takeoff, unusual attitudes, spin recovery, autopilot operation, avionics usage, and all NATOPS systems.

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5. Block MIF

CTS REF	MANEUVER	C4002
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4
7	In-Flight Checks	4+
8	Radio Procedures	4+
9	Ground Operations	4+
10	Pressurization System	4
11	Electrical (DC) System	4
12	Electrical (AC) System	4
13	Hydraulic System	4
14	Fuel System	4
15	Anti-Ice System	4
16	Avionics	4
17	Stalls/Unusual Attitudes	4
18	Course Rules/INAV	4
19	Limitations	4+

Block	Media	Title	Events	Hrs	H/X
C41	T-39G/N	T-39 NATOPS Check Flight	1	2.5	2.5

1. Prerequisites

- a. S4290 for Strike IUTs.
- b. R2190, R4190, and I4002 for Fighter IUTs.

2. Syllabus Notes

C4190

The IUT will perform the items introduced in block C40. At least two of the specific system maneuver items shall be graded as required items.

3. Special Syllabus Requirements. None.

4. Discuss Items. C40 discuss items at instructor discretion.

5. Block MIF

CTS REF	MANEUVER	C4190
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
9	Ground Operations	4+
10	Pressurization System	4
11	Electrical (DC) System	4
12	Electrical (AC) System	4
13	Hydraulic System	4
14	Fuel System	4
15	Anti-Ice System	4
16	Avionics	4
17	Stalls/Unusual Attitudes	4
18	Course Rules/INAV	4+
19	Limitations	4+

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Block	Media	Title	Events	Hrs	H/X
C30	2F205A	T-45C ATM Simulator Training	7	10.5	1.5

1. Prerequisites. G0101, G0102-3 (if required), G0104-12 and G1301-64.

2. Syllabus Notes. All IUTs shall complete all events.

C3001-02

Cockpit Orientation

C3003

Instrument-Familiarization

C3004

Familiarization-Ground Emergencies

C3005

Instrument-Airborne Emergencies

C3006

Out-of-Control Flight-Engine Emergencies

C3007

Formation-Electrical and Hydraulic Emergencies

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	C3007
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
31	NATOPS Procedures	4+
33	Stalls/OCF	4+

Block	Media	Title	Events	Hrs	H/X
C31	2F205A	T-45C ATM Simulator Check	1	1.5	1.5

1. Prerequisites. C3001-07

2. Syllabus Notes

C3190

The IUT will perform selected items from Block C30 at the discretion of the SI.

3. Special Syllabus Requirements. None.

4. Discuss items. None.

5. Block MIF

CTS REF	MANEUVER	C3190
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
31	NATOPS Procedures	4+
33	Stalls/OCF	4+

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Block	Media	Title	Events	Hrs	H/X
C50	T-45C	T-45C ATM NATOPS Flight Training	9	13.5	1.5

1. Prerequisites

- a. C3190 prior to C5001-C5008.
- b. G1365-66 (Contact Flight Procedures/CRM) prior to C5001-C5008.
- c. G0102-03, if required, prior to C5001-C5008.
- d. C5008 prior to C5009.

2. Syllabus Notes. IUTs will occupy the front cockpit.

C5001
Instrument-Familiarization

C5002
Familiarization

C5003
Instrument-Familiarization

C5004
Out-of-Control Flight

C5005
2-plane formation

C5006
Instrument-Familiarization

C5007
Night Familiarization

C5008
Airways Navigation

C5009
Instrument Check Flight

3. Special Syllabus Requirements. None.4. Discuss items. None.

5. Block MIF

CTS REF	MANEUVER	C5009
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
31	NATOPS Procedures	4+
32	Landings	4+
33	Stalls/OCF	4+

Block	Media	Title	Events	Hrs	H/X
C51	T-45C	T-45C ATM NATOPS Check Flight	1	1.5	1.5

1. Prerequisites

a. C5001-07

b. G1341-42

2. Syllabus Notes. The IUT will occupy the front cockpit during this event.

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	C5190
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
31	NATOPS Procedures	4+
32	Landings	4+
33	Stalls/OCF	4+

Chapter IV

Contact Training

1. Matrices. There is a single matrix following the block description of the single block in this chapter.
2. Stage MIF. None.

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Block	Media	Title	Events	Hrs	H/X
C52	T-45C	T-45C ATM Contact Flight Training	1	1.5	1.5

1. Prerequisites

a. C5190.

b. C5009.

2. Syllabus Notes. The IUT will occupy the front cockpit.

C5201

The SI will assume the role of the student NFO and the IUT will assess performance during C5201. The SI will will demonstrate an average student on C5201.

3. Special Syllabus Requirements. None.

4. Discuss Items

C5201

Local IFR departures, commonly used stereo routes, course rules, (home and outlying fields), MOA/SUA operations, MNTS grading system and student MCG, currency requirements, standardization notes, briefing techniques, and common mistakes.

5. Block MIF

CTS REF	MANEUVER	C5201
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+

Block	Media	Title	Events	Hrs	H/X
C53	T-45C	T-45C ATM Contact Flight Check	1	1.5	1.5

1. Prerequisite. C5201.
2. Syllabus Notes. The IUT will occupy the front cockpit.

a. The SI will assume the role of the student NFO and the IUT will assess performance during C5390. The SI will demonstrate a below average student on C5390.

3. Special Syllabus Requirements. None.

4. Discuss Items

C5390

Local IFR departures, commonly used stereo routes, course rules (home and outlying fields), MOA/SUA operations, MNTS grading system and student MCG, currency requirements, standardization notes, briefing techniques, and common mistakes.

5. Block MIF

CTS REF	MANEUVER	C5390
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+

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Chapter V

Instrument Training

1. Training Philosophy. T-39 IUTs observe and instruct airways navigation flight events under supervision of a qualified SI.
2. Matrices. There is a single matrix following the block description of the single block in this chapter.
3. Stage MIF. None.

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Block	Media	Title	Events	Hrs	H/X
I40	T-39G/N	Airways Navigation Flight Training	Observe/1 Instruct/1	4.6	2.3

1. Prerequisite. C4002.

2. Syllabus Notes. For I4001, observe any AirNav event; for I4002, instruct any AirNav event.

I4001

Observe required items.

I4002

Perform graded items. The IUT should demonstrate the ability to identify and correct student errors in regards to airways navigation procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items. Preflight planning to include weather, NOTAMS, and jet card; enroute planning; and approaches. Review NATOPS systems.

5. Block MIF

CTS REF	MANEUVER	I4002
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
20	Chart, Jet Log, and DD 175 Review	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
29	Grading	4+
30	Debrief	4+

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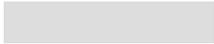
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Chapter VI

Navigation Training

1. Matrices. The following matrix is an overview of the entire Navigation Stage. The purpose of this matrix is to provide the IUT and SI the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.

2. T-39 Core Training Navigation Stage MIF



Simulator Event

T-39 CORE TRAINING NAVIGATION STAGE MANEUVER ITEM FILE				
CTS REF	MANEUVER	N2002	N4004	N4104
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	BAR	4+	4+	4+
5	Mission Planning	4+	4+	4+
6	In-Flight Planning/Area Orientation		4+	4+
7	In-Flight Checks		4+	4+
8	Radio Procedures		4+	4+
20	Chart, Jet Log, & Radar Predictions Review	4	4+	4+
21	Briefing	4+	4+	4+
22	Procedures Knowledge	4+	4+	4+
23	Detect and Correct Student Errors	4+	4+	4+
24	Instructional Assistance	4	4+	4+
25	Patience	4+	4+	4+
26	ATJ Review	4	4	4+
27	Radar Trainer Knowledge	4+		
29	Grading	4+	4+	4+
30	Debrief	4	4+	4+

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Block	Media	Title	Events	Hrs	H/X
N20	2B49	Radar Navigation Simulator	Strike/2 Fighter/1	4.0 2.0	2.0

1. Prerequisites

- a. C4002 (Strike).
- b. Completion of all Fighter IUT events (Fighter Upgrade).

2. Syllabus NotesN2001 (Strike and Fighter Upgrade)

Introduce chart, jet log, and radar predictions review; trainer briefing; instructional assistance; detect and correct student errors; debrief; grading; patience; and ATJ review. Practice radar procedures and GMRT knowledge.

N2002 (Strike only)

The IUT will perform items introduced and practiced during N2001.

3. Special Syllabus Requirements. None.4. Discuss Items. None.5. Block MIF

CTS REF	MANEUVER	N2002
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
20	Chart, Jet Log, & Radar Predictions Review	4
21	Briefing	4+
22	Procedures Knowledge	4+
23	Detect and Correct Student Errors	4+
24	Instructional Assistance	4
25	Patience	4+
26	ATJ Review	4
27	Radar Trainer Knowledge	4+
29	Grading	4+
30	Debrief	4

Block	Media	Title	Events	Hrs	H/X
N40	T-39N	Radar Navigation Flight Training	4	8.8	2.2

1. Prerequisite. N2002.
2. Syllabus Notes. Only Strike IUTs complete this block of training.

N4001

IUT will sit in the right seat and execute radar navigation procedures on a route selected by the SI. SI will sit in the jump seat. No students are allowed on the flight.

N4002

IUT observes SI instruct two radar navigation events.

N4003

IUT observes SI instruct one radar navigation event, and SI grades IUT instructing one radar navigation event.

N4004

SI grades IUT instructing two radar navigation events.

3. Special Syllabus Requirements. None.
4. Discuss Items. None.

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5. Block MIF

CTS REF	MANEUVER	N4004
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
20	Chart, Jet Log, & Radar Predictions Review	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4
29	Grading	4+
30	Debrief	4+

Block	Media	Title	Events	Hrs	H/X
N41	T-39N	Low-Level Navigation Flight Training	4	8.0	2.0

1. Prerequisite. C4002.
2. Syllabus Notes. Only Strike IUTs complete this block of training.

N4101

IUT will sit in the right seat and execute low-level procedures on a low-level selected by the SI. SI will sit in the jump seat. No students are allowed on the flight.

N4102

IUT observes SI instruct two low-level events.

N4103

IUT observes SI instruct one low-level event, and SI grades IUT instructing one low-level event.

N4104

SI grades IUT instructing two low-level events.

3. Special Syllabus Requirements. None.
4. Discuss Items. Use of CFIT checklist (Appendix A).

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5. Block MIF

CTS REF	MANEUVER	N4104
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
20	Chart, Jet Log, & Radar Predictions Review	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
29	Grading	4+
30	Debrief	4+

Chapter VII

Formation Training

This chapter does not apply to Advanced NFO Instructor Under Training.

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Chapter VIII

Tactical Training

1. Training Philosophy. IUTs observe and instruct flight and simulator events in all phases under supervision of a qualified SI.

2. Matrices. The following matrices are an overview of the entire Tactical Stage, separated into T-39 Strike Training, T-39 Fighter Training, and T-45C ATM Training. The purpose of these matrices is to provide the IUT and SI the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.

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3. T-39 Strike Training Tactical Stage MIF

	Simulator Event
	Check Flight Event

T-39 STRIKE TRAINING TACTICAL STAGE MANEUVER ITEM FILE								
CTS REF	MANEUVER	S4002	S2002	S4101	S4290	R2207*	R4202*	R4390*
1	General Knowledge/ Procedures	4+	4+	4+	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+	4+	4+	4+
4	BAR	4+	4+	4+	4+	4+	4+	4+
5	Mission Planning	4+	4+	4+	4+	4+	4+	4+
6	In-Flight Planning/Area Orientation	4+		4+	4+		4+	4+
7	In-Flight Checks	4+		4+	4+		4+	4+
8	Radio Procedures	4+		4+	4+		4+	4+
20	Chart, Jet Log, & Radar Predictions Review	4+	4+	4+	4+			
21	Briefing	4+	4+	4+	4+	4+	4+	4+
22	Procedures Knowledge	4+	4+	4+	4+	4+	4+	4+
23	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+	4+	4+		4+
24	Instructional Assistance	4+	4+	4+	4+	4+		4+
25	Patience	4+	4+	4+	4+	4+		4+
26	ATJ Review	4+	4+	4+	4+	4+		4+
27	Radar Trainer Knowledge		4+			4+		
28	Coverage of Check Items					4+		4+
29	Grading	4+	4+	4+	4+	4+		4+
30	Debrief	4+	4+	4+	4+	4+	4+	4+

*Only Strike IUTs selected for additional Air-to-Air Instructor Qualification accomplish these blocks.

4. T-39 Fighter Training Tactical Stage MIF

Simulator Event
 Check Flight Event

T-39 FIGHTER TRAINING TACTICAL STAGE MANEUVER ITEM FILE							
CTS REF	MANEUVER	R2010	R2190	R4005	R4190	S2002*	S4102*
1	General Knowledge/ Procedures	4+	4+	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+	4+	4+
4	BAR	4+	4+	4+	4+	4+	4+
5	Mission Planning	4+	4+	4+	4+	4+	4+
6	In-Flight Planning/Area Orientation		4+	4+	4+		4+
7	In-Flight Checks		4+	4+	4+		4+
8	Radio Procedures		4+	4+	4+		4+
20	Chart, Jet Log, & Radar Predictions Review					4+	4+
21	Briefing	4+	4+	4+	4+	4+	4+
22	Procedures Knowledge	4+	4+	4+	4+	4+	4+
23	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+	4+	4+	4+
24	Instructional Assistance	4+	4+	4+	4+	4+	4+
25	Patience	4+	4+	4+	4+	4+	4+
26	ATJ Review	4+	4+	4+	4+	4+	4+
27	Radar Trainer Knowledge	4+	4+			4+	
28	Coverage of Check Items	4+	4+	4+	4+		
29	Grading	4+	4+	4+	4+	4+	4+
30	Debrief	4+	4+	4+	4+	4+	4+

*Optional Upgrade blocks.

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5. T-45C ATM Upgrade Training Stage MIF



Check Flight Event

T-45C ATM UPGRADE TRAINING STAGE MANEUVER ITEM FILE							
CTS REF	MANEUVER	A5002	A5190	A5202	A5390	A5406	A5590
1	General Knowledge/Procedures	4+	4+	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+	4+	4+
4	BAW	4+	4+	4+	4+	4+	4+
23	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+	4+	4+	4+
31	NATOPS Procedures	4+	4+	4+	4+	4+	4+
32	Landings	4+	4+	4+	4+	4+	4+
33	Stalls/OCF					4+	4+
34	Weapons Flight Procedures	4+	4+	4+	4+		
35	BFM Flight Procedures					4+	4+
	Special Syllabus Requirements			1			

Block	Media	Title	Events	Hrs	H/X
S40	T-39N	Strike Mission Flight Training	Observe/1 Instruct/1	4.0	2.0

1. Prerequisite. G1201 (Strike Seminar).
2. Syllabus Notes. Only Strike IUTs complete this block of training.

S4001

Strike IUT observes SI instruct a Strike event.

S4002

Strike IUT instructs a Strike event under the supervision of an SI.

3. Special Syllabus Requirements. None.
4. Discuss Items. Timing techniques.
5. Block MIF

CTS REF	MANEUVER	S4002
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
20	Chart, Jet Log, & Radar Predictions Review	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
29	Grading	4+
30	Debrief	4+

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Block	Media	Title	Events	Hrs	H/X
S20	2B49	Composite Mission Simulator Training	Observe/1 Instruct/1	5.0	2.5

1. Prerequisites

- a. G1202 (Composite Ground School) for Strike IUTs.
- b. G1203 (Composite Preparation Lecture) for Fighter IUT Upgrade.
- c. N2001 for Fighter IUT Upgrade.

2. Syllabus Notes. Strike and Fighter Upgrade IUTs complete this block of training.

S2001

IUT observes SI instruct a Composite Simulator event.

S2002

IUT instructs a Composite Simulator event under the supervision of an SI.

3. Special Syllabus Requirements. None.
4. Discuss Items. Timing techniques.

5. Block MIF

CTS REF	MANEUVER	S2002
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
20	Chart, Jet Log, & Radar Predictions Review	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
27	Radar Trainer Knowledge	4+
29	Grading	4+
30	Debrief	4+

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Block	Media	Title	Events	Hrs	H/X
S41	T-39N	Composite and Fighter Composite Flight Training	Observe/1 Instruct/1	4.8	2.4

1. Prerequisites

- a. S2002 for Fighter IUT Upgrade.
- b. S2002 and S4002 for Strike IUTs.

2. Syllabus Notes. Strike IUTs complete S4290 in place of S4102.S4101

IUT observes SI instruct a Composite Flight event.

S4102

IUT instructs a Composite Flight event under the supervision of an SI.

3. Special Syllabus Requirements. None.4. Discuss Items. Timing techniques.

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5. Block MIF

CTS REF	MANEUVER	S4102
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
20	Chart, Jet Log, & Radar Predictions Review	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
29	Grading	4+
30	Debrief	4+

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Block	Media	Title	Events	Hrs	H/X
S42	T-39N	Composite Check Flight	1	2.4	2.4

1. Prerequisite. S4101.
2. Syllabus Notes. Strike IUT only.
3. Special Syllabus Requirements. None.
4. Discuss Items. As required.
5. Block MIF

CTS REF	MANEUVER	S4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
20	Chart, Jet Log, & Radar Predictions Review	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
29	Grading	4+
30	Debrief	4+

Block	Media	Title	Events	Hrs	H/X
R20	2B49	Air-to-Air Radar Simulator Training	Observe/5 Instruct/5	15.0	1.5

1. Prerequisites

- a. G0102-3 (Physiology/Swim), if required.
- b. G0104, G0105, G0107-12 (FITC, Safety, High Risk Screening, IGS, CRM, TRB) and T1016-17 (Flight Preparation Lectures) prior to R2001.
- c. R2001 prior to R2002.
- d. T1012 (Conversion Procedures Lecture) prior to R2003.
- e. R2003 prior to R2004.
- f. T1013 (Advanced Intercepts Procedures Lecture) prior to R2005.
- g. R2005 prior to R2006.
- h. T1014 (Introduction to 2 V X) and R2006 prior to R2007.
- i. R2007 prior to R2008.
- j. R2009 prior to R2010.

2. Syllabus Notes

- a. For R2001, observe Reattacks event; for R2002, instruct Reattack event.
- b. For R2003, observe Conversions event; for R2004, instruct Conversions event.
- c. For R2005, observe Advanced 1 V 1 Intercepts event; for R2006, instruct Advanced 1 V 1 Intercepts event.
- d. For R2007, observe any Advanced Multibogey EOB event; for R2008, instruct any Advanced Multibogey event.
- e. For R2009, observe Advanced Strike Route Intercepts event; for R2010, instruct any Advanced Strike Route Intercepts event.

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3. Special Syllabus Requirements. None.

4. Discuss Items. As required.

5. Block MIF

CTS REF	MANEUVER	R2010
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
27	Radar Trainer Knowledge	4+
28	Coverage of Check Items	4+
29	Grading	4+
30	Debrief	4+

Block	Media	Title	Events	Hrs	H/X
R21	2B49	Air-to-Air Radar Simulator Check	1	1.5	1.5

1. Prerequisite. R2010.
2. Syllabus Notes. Instruct any Strike or Fighter Air-to-Air Simulator event.
3. Special Syllabus Requirements. None.
4. Discuss Items. None.
5. Block MIF

CTS REF	MANEUVER	R2190
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
27	Radar Trainer Knowledge	4+
28	Coverage of Check Items	4+
29	Grading	4+
30	Debrief	4+

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Block	Media	Title	Events	Hrs	H/X
R40	T-39N	Air-to-Air Radar Flight Training	Observe/1 Instruct/4	13.0	2.6

1. Prerequisites

- a. C4002 prior to R4001.
- b. R2002 and R4001 prior to R4002.
- c. R2004 prior to R4003.
- d. R2006 prior to R4004.
- e. R2010 prior to R4005.

2. Syllabus Notes

- a. For R4001, observe any Strike or Fighter Air-to-Air event.
- b. For R4002, instruct Reattacks event.
- c. For R4003, instruct Conversions event.
- d. For R4004, instruct Advanced Intercepts event.
- e. For R4005, instruct Advanced Strike Route event.
- f. An IUT may not instruct a -90 event.

3. Special Syllabus Requirements. None.4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	R4005
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
28	Coverage of Check Items	4+
29	Grading	4+
30	Debrief	4+

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Block	Media	Title	Events	Hrs	H/X
R41	T-39N	Fighter Flight Training Check Flight	1	2.6	2.6

1. Prerequisites. R4002-5.
2. Syllabus Notes. Instruct any Strike or Fighter Air-to-Air event, except a -90.
3. Special Syllabus Requirements. None.
4. Discuss Items. None.
5. Block MIF

CTS REF	MANEUVER	R4190
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
28	Coverage of Check Items	4+
29	Grading	4+
30	Debrief	4+

Block	Media	Title	Events	Hrs	H/X
R22	2B49	Strike Air-to-Air Radar Simulator Training (Upgrade)	Execute/4 Observe/2 Instruct/1	10.5	1.5

1. Prerequisites

- a. T1017 prior to R2201.
- b. R4202 prior to R2205.

2. Syllabus Notes

- a. For R2201-4, IUT executes the UMFO Reattacks syllabus event.
- b. For R2205 and R2206, observe any two Reattacks events; for R2207, instruct any Reattacks event.
- c. Only Strike IUTs selected for additional Air-to-Air Instructor Qualification complete this block.

3. Special Syllabus Requirements. None.

4. Discuss Items. As required.

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5. Block MIF

CTS REF	MANEUVER	R2207
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
27	Radar Trainer Knowledge	4+
28	Coverage of Check Items	4+
29	Grading	4+
30	Debrief	4+

Block	Media	Title	Events	Hrs	H/X
R42	T-39N	Strike Air-to-Air Radar Flight Training (Upgrade)	2	2.2	1.1

1. Prerequisite. R2204.
2. Syllabus Notes
 - a. For R4201-2, IUT executes the UMFO Reattacks syllabus event.
 - b. Only Strike IUTs selected for additional Air-to-Air Instructor Qualification complete this block.
3. Special Syllabus Requirements. None.
4. Discuss Items. As required.
5. Block MIF

CTS REF	MANEUVER	R4202
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
21	Briefing	4+
22	Procedures Knowledge	4+
30	Debrief	4+

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Block	Media	Title	Events	Hrs	H/X
R43	T-39N	Strike Air-to-Air Radar Flight Training Check Flight (Upgrade)	Instruct/1	1.1	1.1

1. Prerequisite. R2207.
2. Syllabus Notes
 - a. Instruct any Reattacks event.
 - b. Only Strike IUTs selected for additional Air-to-Air Instructor Qualification complete this block.
3. Special Syllabus Requirements. None.
4. Discuss Items. As required.
5. Block MIF

CTS REF	MANEUVER	R4390
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Mission Planning	4+
6	In-Flight Planning/Area Orientation	4+
7	In-Flight Checks	4+
8	Radio Procedures	4+
21	Briefing	4+
22	Procedures Knowledge	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
24	Instructional Assistance	4+
25	Patience	4+
26	ATJ Review	4+
28	Coverage of Check Items	4+
29	Grading	4+
30	Debrief	4+

Block	Media	Title	Events	Hrs	H/X
A50	T-45C	T-45C ATM Section Weapons Flight Procedures (Upgrade)	2	2.4	1.2

1. Prerequisites

- a. A1001-03.
- b. Completion of T-45C IUT.

2. Syllabus Notes. IUT will occupy the front cockpit.

A5001

Introduction to Section Weapons Flights. IUT will fly as -2.

A5002

a. IUT will fly as -2.

b. The SI will assume the role of the student NFO and the IUT will assess performance during A5002. The SI will demonstrate an average student on A5002.

3. Special Syllabus Requirements. None.

4. Discuss Items. As required.

5. Block MIF

CTS REF	MANEUVER	A5002
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+
32	Landings	4+
34	Weapons Flight Procedures	4+

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Block	Media	Title	Events	Hrs	H/X
A51	T-45C	T-45C ATM Section Weapons Check Flight (Upgrade)	1	1.2	1.2

1. Prerequisite. A5002.
2. Syllabus Notes. IUT will occupy the front cockpit.

A5190

- a. IUT will fly as -2.
 - b. The SI will assume the role of the student NFO and the IUT will assess performance during A5190. The SI will demonstrate a below average student on A5190.
3. Special Syllabus Requirements. None.
 4. Discuss Items. As required.
 5. Block MIF

CTS REF	MANEUVER	A5190
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+
32	Landings	4+
34	Weapons Flight Procedures	4+

Block	Media	Title	Events	Hrs	H/X
A52	T-45C	T-45C ATM Division CAS Procedures (Upgrade)	2	2.4	1.2

1. Prerequisites

- a. A1004.
- b. A5190.

2. Syllabus Notes. IUT will occupy the front cockpit. One flight in block will be conducted as a medium-threat scenario and one flight as a high-threat scenario.

A5201

Introduction to Division Close Air Support Tactics/ Procedures. IUT will fly as a wingman.

A5202

IUT will fly as a wingman. The SI will assume the role of the student NFO and the IUT will assess performance. The SI will demonstrate an average student.

3. Special Syllabus Requirements. Low-threat scenario will be demonstrated at least once in block.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	A5202
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+
32	Landings	4+
34	Weapons Flight Procedures	4+
	Special Syllabus Requirements	1

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Block	Media	Title	Events	Hrs	H/X
A53	T-45C	T-45C ATM Division CAS Check Flight (Upgrade)	1	1.2	1.2

1. Prerequisite. A5202.
2. Syllabus Notes
 - a. The IUT will occupy the front cockpit.
 - b. IUT will fly as a wingman.
 - c. The SI will assume the role of the student NFO and the IUT will assess performance. The SI will demonstrate a below average student.
3. Special Syllabus Requirements. None.
4. Discuss Items. As required.
5. Block MIF

CTS REF	MANEUVER	A5390
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+
32	Landings	4+
34	Weapons Flight Procedures	4+

Block	Media	Title	Events	Hrs	H/X
A54	T-45C	T-45C ATM Basic Fighter Maneuvers Flight Procedures (Upgrade)	6: Solo/2 Dual/4	7.2	1.2

1. Prerequisites. A1101-03

2. Syllabus Notes

a. IUT will occupy the front cockpit.

b. Standardization Officer, via the Commanding Officer, has the option of providing additional sorties for IUTs with non-Strike/Fighter backgrounds.

A5401-03

Dual flights. IUT will fly as -2.

A5404-05

Solo flights. IUT will fly as -2.

A5406

a. Dual flight. IUT will fly as -2.

b. The SI will assume the role of the student NFO and the IUT will assess performance during A5406. The SI will demonstrate an average student on A5406.

3. Special Syllabus Requirements. None.

4. Discuss Items. As required.

5. Block MIF

CTS REF	MANEUVER	A5406
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+
32	Landings	4+
33	Stalls/OCF	4+
35	BFM Flight Procedures	4+

Block	Media	Title	Events	Hrs	H/X
A55	T-45C	T-45C ATM Basic Fighter Maneuvers Check Flight (Upgrade)	1	1.2	1.2

1. Prerequisite. A5406.
2. Syllabus Notes. IUT will occupy the front cockpit.

A5590

- a. Dual flight.
- b. IUT will fly as -2.
- c. The SI will assume the role of the student NFO and the IUT will assess performance during A5590. The SI will demonstrate a below average student on A5590.

3. Special Syllabus Requirements. None.

4. Discuss Items. As required.

5. Block MIF

CTS REF	MANEUVER	A5590
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	BAW	4+
23	Flight Instruction/Detect and Correct Student Errors	4+
31	NATOPS Procedures	4+
32	Landings	4+
33	Stalls/OCF	4+
35	BFM Flight Procedures	4+

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Chapter IX

Course Training Standards

1. Purpose. These standards outline the tasks and proficiency required of Instructors Under Training (IUT) during Advanced training. This training prepares an officer to perform the duties of a T-39 Mission Commander/Instructor or T-45C ATM Instructor Pilot.

2. IUT Duties and Responsibilities

- a. Plan or manage the overall mission as appropriate.
- b. Ensure the aircraft is preflighted, inspected, and equipped for the assigned mission.
- c. Help the student operate the aircraft or aircraft systems, as applicable, to accomplish the mission using sound judgment and airmanship.

3. General Standards

- a. Achieve training standards to be qualified as a T-39 Mission Commander/Instructor or T-45C ATM Instructor Pilot.
- b. Unless otherwise specified, use **BASIC AIR WORK RECOGNITION (BAR)** standards for all items with altitude, airspeed, or heading parameters.
- c. "Standard" equates to **good** (G/4).
- d. Momentary deviations outside CTS that do not compromise flight safety are acceptable if subsequent corrections are timely.
- e. Procedural knowledge and application must comply with applicable directives and allow efficient mission accomplishment. If individual tasks require pre-mission planning, the standards from **MISSION PLANNING** apply.

4. Execution. The Maneuver Item File (MIF) regulates IUT progression to meet required standards prior to phase completion. SIs shall evaluate IUT performance against these standards.

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5. Job Tasks. Specific performance and standards required are described as follows:

BEHAVIOR STATEMENT	STANDARDS
GRADED ITEM	
<ul style="list-style-type: none"> • A brief description of the behavior, required action, and/or conditions. 	<ul style="list-style-type: none"> • The specific standards for the action. May be read as "The Instructor Under Training..."

6. Graded Items. The Maneuver Item File (MIF) for specific graded items varies for each stage. Several items are graded on all complete syllabus events. The standards for these Universally Graded Items are listed first. Then beginning with NATOPS, each stage's MIF table is listed followed by the Course Training Standards unique to that stage. Once the standard for a graded item has been established, it will be omitted from later stages where it is also graded.

7. Course Training Standards

UNIVERSALLY GRADED ITEMS

BEHAVIOR STATEMENT	STANDARDS
1. General Knowledge/Procedures	
<ul style="list-style-type: none"> • Maintain working knowledge of all appropriate flight training instructions and directives, as well as NATOPS and mission specific items. 	<ul style="list-style-type: none"> • Recites, discusses, and/or performs all applicable items essential to the aircraft and mission. • Demonstrates knowledge of MNTS CTS and CNATRA 1500.
2. Emergency Procedures	
<ul style="list-style-type: none"> • Maintain in-depth knowledge of NATOPS emergency procedures and appropriate directives. 	<ul style="list-style-type: none"> • Correctly analyzes situation. • Performs/recites critical action steps from memory, 100%. • Uses checklist when conditions permit. • Completes procedures in a timely manner. • Correctly prioritizes tasks to include aviation, navigation, communication, and checklists.

BEHAVIOR STATEMENT	STANDARDS
3. Headwork/Situational Awareness	
<ul style="list-style-type: none"> ● Comply with the FTI and NATOPS while maintaining situational awareness sufficient for flight safety and mission completion. 	<ul style="list-style-type: none"> ● Understands instructions, demonstrations, and explanations. ● Foresees and avoids possible difficulties. ● Remains alert and spatially oriented.
4. Basic Air Work Recognition (BAR)/Basic Air Work (BAW)	
<ul style="list-style-type: none"> ● Establish and maintain or monitor, as required, desired altitude, airspeed, and heading during flight. 	<ul style="list-style-type: none"> ● Makes recommendations to: <ul style="list-style-type: none"> ▶ Maintain aircraft within 100 feet, 10 KIAS, 10° of heading. ▶ Appropriately use power, attitude, and trim. ▶ Level off within 100 feet of desired altitude. ▶ Accomplish within ±10 seconds of correct time as applicable. ● T-45C ATM IUT accomplishes above standards.
5. Mission Planning	
<ul style="list-style-type: none"> ● Perform mission planning to include takeoff, climb, en route, mission specific tasks, descent, approach, and landing data. ● Plan alternate course of action. ● Prepare Flight Log/DD 175. 	<ul style="list-style-type: none"> ● Uses required directives and forms. ● Plans mission in a timely manner to meet requirements. ● Completes all forms correctly. ● Complies with all directives.
6. In-Flight Planning/Area Orientation	
<ul style="list-style-type: none"> ● Plan and execute a sequence of maneuvers or actions, as required. ● Understand current and required position. 	<ul style="list-style-type: none"> ● Efficiently sequences maneuvers. ● Adjusts mission profile for external factors (weather, traffic, etc.). ● Maintains positional awareness using ground references, navigational aids, VFR charts, or FLIP publications.

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BEHAVIOR STATEMENT	STANDARDS
7. In-Flight Checks	
<ul style="list-style-type: none"> ● Complete checks as required. 	<ul style="list-style-type: none"> ● Performs: <ul style="list-style-type: none"> ▶ Required in-flight checklist items appropriately. ▶ Operational checks at least every 20 minutes.
8. Radio Procedures	
<ul style="list-style-type: none"> ● Use UHF/VHF radio. 	<ul style="list-style-type: none"> ● Makes all calls when required. ● Responds when addressed. ● Uses correct terminology. ● Does not step on others' transmissions.
9. Ground Operations	
<ul style="list-style-type: none"> ● Prepare aircraft for flight. ● Perform thorough preflight of the aircraft. ● Provide backup for aircrew from parking area to runway. 	<ul style="list-style-type: none"> ● Correctly and expeditiously performs appropriate ground checklists. ● Correctly inspects all critical aircraft external components. ● Maintains adequate lookout for ground traffic and other hazards.
10. Pressurization System	
<ul style="list-style-type: none"> ● Maintain an in-depth knowledge of the aircraft pressurization system. 	<ul style="list-style-type: none"> ● Correctly identifies components of and can safely operate the aircraft pressurization system. ● Verbalizes emergency oxygen procedures to 100%.
11. Electrical (DC) System	
<ul style="list-style-type: none"> ● Maintain an in-depth knowledge of the aircraft DC electrical system. 	<ul style="list-style-type: none"> ● Correctly identifies components of and can safely operate the DC electrical system. ● Correctly identifies components that are lost in the event of specific failures of the DC electrical system.
12. Electrical (AC) System	
<ul style="list-style-type: none"> ● Maintain an in-depth knowledge of the aircraft AC electrical system. 	<ul style="list-style-type: none"> ● Correctly identifies components of and can safely operate the AC electrical system. ● Correctly identifies components that are lost in the event of specific failures of the AC electrical system.

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BEHAVIOR STATEMENT	STANDARDS
13. Hydraulic System	
<ul style="list-style-type: none"> ● Maintain an in-depth knowledge of the aircraft hydraulic system. 	<ul style="list-style-type: none"> ● Correctly identifies components of the hydraulic system with associated gauges and can safely operate the hydraulic system. ● Verbalizes the consequences of specific failures of the hydraulic system.
14. Fuel System	
<ul style="list-style-type: none"> ● Maintain an in-depth knowledge of the aircraft fuel system. 	<ul style="list-style-type: none"> ● Correctly identifies components of the fuel system and associated gauges and can safely operate the fuel system. ● Recognizes indications of any fuel system malfunctions.
15. Anti-Ice System	
<ul style="list-style-type: none"> ● Maintain an in-depth knowledge of the aircraft anti-ice systems, as required. 	<ul style="list-style-type: none"> ● Correctly identifies components of the anti-ice system and can safely operate the anti-ice system.
16. Avionics	
<ul style="list-style-type: none"> ● Maintain an in-depth knowledge of the various communications and navigation aids in the aircraft. 	<ul style="list-style-type: none"> ● Correctly identifies aircraft avionics components. ● Operates all radios and navigation aids effectively in all regimes of flight.
17. Stalls/Unusual Attitudes	
<ul style="list-style-type: none"> ● Execute or provide backup, as required, during recoveries from stalls and unusual attitudes. 	<ul style="list-style-type: none"> ● Recovery minimizes altitude/airspeed loss. ● Correctly identify individual unusual attitudes and correctly recite recovery procedures. ● As required, keep from or keep a pilot from: <ul style="list-style-type: none"> ▶ Overstressing or stalling aircraft. ▶ Entering subsequent unusual attitude.

BEHAVIOR STATEMENT	STANDARDS
18. Course Rules/INAV	
<ul style="list-style-type: none"> ● Provide safe navigation using a filed IFR flight plan. ● Return to home field using local course rules. 	<ul style="list-style-type: none"> ● Complies with all IFR clearances IAW FAR and OPNAV 3710.7T. ● Complies with the FTI and local course rules. ● Navigation - proceeds or directs under own navigation to initial point (± 1 NM and 3 radials).
19. Limitations	
<ul style="list-style-type: none"> ● Maintain in-depth knowledge of all limitations of the aircraft. 	<ul style="list-style-type: none"> ● Verbalizes and recognizes performance limitations of the aircraft. ● Can provide adequate backup to pilot to keep aircraft safe in all regimes of flight.
20. Chart, Jet Log, and Approach Review	
<ul style="list-style-type: none"> ● Provide overall review of student chart, jet log, and approach plates. 	<ul style="list-style-type: none"> ● Reviews materials for accuracy. ● Provides appropriate guidance or input for student if needed.
21. Briefing	
<ul style="list-style-type: none"> ● Review student mission brief, objectives, and conduct. 	<ul style="list-style-type: none"> ● Provides meaningful discussion of administration and mission procedures. ● Contributes experience to briefing items. ● Ensures applicable procedures are understood by student. <p><u>ANAV/FAM</u></p> <ul style="list-style-type: none"> ● Ensures student covers all pertinent information in the briefing guide. ● Ensures student finishes brief to allow enough time for aircraft preflight.
22. Procedures Knowledge	
<ul style="list-style-type: none"> ● Possess thorough knowledge of established applicable procedures. 	<ul style="list-style-type: none"> ● Demonstrates knowledge of established applicable procedures.

BEHAVIOR STATEMENT	STANDARDS
23. Flight Instruction/Detect and Correct Student Errors	
<ul style="list-style-type: none"> ● Maintain vigilance in order to recognize student errors and correct them effectively. ● Help student improve individual performance. 	<ul style="list-style-type: none"> ● Understands typical student errors for the specific stage and flight. ● Detects and corrects student errors IAW FTI and standardization. ● Ensures student understands his/her errors and how to avoid them in the future.
24. Instructional Assistance	
<ul style="list-style-type: none"> ● Provide appropriate guidance to ensure mission completion and safety. 	<ul style="list-style-type: none"> ● Provides helpful techniques to student to improve navigation procedures and increase overall situational awareness. ● Assists student in decision-making process. ● Allows student to correct self to maximum extent.
25. Patience	
<ul style="list-style-type: none"> ● Understand that the student is still in training. 	<ul style="list-style-type: none"> ● Demonstrates patience and contributes to teaching effectiveness and learning environment.
26. Aviation Training Jacket (ATJ) Review	
<ul style="list-style-type: none"> ● Perform thorough review of student training jacket, including previous simulator and flight grades. 	<ul style="list-style-type: none"> ● Demonstrates knowledge of syllabus and flight requirements (understands required MIF items to be performed). ● Recognizes overall student trends.
27. Radar Trainer Knowledge	
<ul style="list-style-type: none"> ● Understand the setup and operation of the radar training device. 	<ul style="list-style-type: none"> ● Correctly sets up the trainer. ● Demonstrates ability to smoothly operate the trainer while effectively instructing student.
28. Coverage of Check Items	
<ul style="list-style-type: none"> ● Ensure appropriate MIFs are addressed and performed. 	<ul style="list-style-type: none"> ● Discusses and addresses all required MIF items.
29. Grading	
<ul style="list-style-type: none"> ● Objective measure of performance for specific graded items for the event. 	<ul style="list-style-type: none"> ● Grades fairly IAW established MNTS CTS.

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BEHAVIOR STATEMENT	STANDARDS
30. Debrief	
<ul style="list-style-type: none"> ● Conduct thorough review of overall mission conduct and effectiveness. 	<ul style="list-style-type: none"> ● Reviews overall strengths and weaknesses exhibited by the student for the flight. ● Provides feedback to improve techniques and make subsequent events better.
31. NATOPS Procedures	
<ul style="list-style-type: none"> ● Demonstrate competence in the safe and effective operation of the T-45C aircraft IAW NATOPS procedures (normal and emergency), precautions, and practices. 	<ul style="list-style-type: none"> ● Safely and effectively executes all required procedures from preflight to post-flight IAW T-45C NATOPS Chapters 6-7, 9, 11-18 (Flight Preparation, Shore-based Procedures, Special Procedures, Flight Characteristics and Emergency Procedures).
32. Landings	
<ul style="list-style-type: none"> ● Demonstrate the ability to land safely. 	<ul style="list-style-type: none"> ● Safely lands the T-45C aircraft in all normal and emergency configurations IAW NATOPS and squadron directives.
33. Stalls/OCF	
<ul style="list-style-type: none"> ● Demonstrate proper stall/OCF recovery procedures IAW NATOPS and squadron directives. 	<ul style="list-style-type: none"> ● Safely and effectively recovers from stalls and departures IAW T-45C NATOPS procedures (Ch. 11, Flight Characteristics) and squadron directives.
34. Weapons Flight Procedures	
<ul style="list-style-type: none"> ● Demonstrate sound procedures for weapons flight instruction. 	<ul style="list-style-type: none"> ● Executes all section weapons flight procedures and maneuvers IAW FTI and squadron directives.
35. BFM Flight Procedures	
<ul style="list-style-type: none"> ● Demonstrate sound procedures for BFM flight instruction. 	<ul style="list-style-type: none"> ● Executes all BFM flight procedures and maneuvers IAW FTI and squadron directives. ● Adheres to BFM training rules.

Chapter X

Master Materials List

Individually Issued Materials

<u>NOMENCLATURE</u>	<u>IDENTIFICATION</u>	<u>QTY PER STUDENT</u>
1. <u>Flight Training Instructions</u>		
a. All applicable T-39 FTIs	CNATRA P-XXX	1
b. Advanced Naval Flight Officer (T-45C) FTI	CNATRA P-821	1

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APPENDIX A

CFIT Checklist - Evaluate the Risk and Take Action

Use the checklist to evaluate specific flight operations and to enhance pilot awareness of the controlled-flight-into-terrain (CFIT) risk. The checklist is divided into three parts. In each part, numerical values are assigned to a variety of factors that the pilot/operator will use to score his/her own situation and to calculate a numerical total.

In *Part I: CFIT Risk Assessment*, the level of CFIT risk is calculated for each flight, sector or leg. In *Part II: CFIT Risk-reduction Factors*, Company Culture, Flight Standards, Hazard Awareness and Training, and Aircraft Equipment are factors, which are calculated in separate sections. In *Part III: Your CFIT Risk*, the totals of the four sections in *Part II* are combined into a single value (a positive number) and compared with the total (a negative number) in *Part I: CFIT Risk Assessment* to determine your CFIT Risk Score. To score the checklist, use a nonpermanent marker (do not use a ballpoint pen or pencil) and erase with a soft cloth.

PART I: CFIT RISK ASSESSMENT

Section 1 - Destination CFIT Risk Factors

Value Score

Airport and Approach Control Capabilities:

ATC approach radar with MSAWS	0	_____
ATC minimum radar vectoring charts	0	_____
ATC radar only	-10	_____
ATC radar coverage limited by terrain masking	-15	_____
No radar coverage available (out of service/not installed) ..	-30	_____
No ATC service	-30	_____

Expected Approach:

Airport located in or near mountainous terrain	-20	_____
ILS	0	_____
VOR/DME	-15	_____
Nonprecision approach with the approach slope from the FAF to the airport TD shallower than 2¾ degrees	-20	_____
NBD	-30	_____
Visual night "black-hole" approach	-30	_____

Runway Lighting:

Complete approach lighting system	0	_____
Limited lighting system	-30	_____

Controller/Pilot Language Skills:

Controllers and pilots speak different primary languages	-20	_____
Controllers' spoken English or ICAO phraseology poor	-20	_____
Pilots' spoken English poor	-20	_____

Departure:

No published departure procedure	-10	_____
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Destination CFIT Risk Factors Total (-) _____

Section 2 - Risk Multiplier

Value

Score

Your Company's Type of Operation (select only one value):

Scheduled	1.0	_____
Nonscheduled	1.2	_____
Corporate	1.3	_____
Charter	1.5	_____
Business owner/pilot	2.0	_____
Regional	2.0	_____
Freight	2.5	_____
Domestic	1.0	_____
International	3.0	_____

Departure/Arrival Airport (select single highest applicable value):

Australia/New Zealand	1.0	_____
United States/Canada	1.0	_____
Western Europe	1.3	_____
Middle East	1.1	_____
Southeast Asia	3.0	_____
Euro-Asia (Eastern Europe and Commonwealth of Independent States)	3.0	_____
South America/Caribbean	5.0	_____
Africa	8.0	_____

Weather/Night Conditions (select only one value):

Night - no moon	2.0	_____
IMC	3.0	_____
Night and IMC	5.0	_____

Crew (select only one value):

Single-pilot flight crew	1.5	_____
Flight crew duty day at maximum and ending with a night nonprecision approach	1.2	_____
Flight crew crosses five or more time zones	1.2	_____
Third day of multiple time-zone crossings	1.2	_____

Add Multiplier Values to Calculate **Risk Multiplier Total**

Destination CFIT Risk Factors Total X Risk Multiplier Total =
CFIT Risk Factors Total (-)

PART II: CFIT RISK-REDUCTION FACTORS

Section 1 - Company Culture

Value

Score

Corporate/Company Management:

Places safety before schedule	20	_____
CEO signs off on flight operations manual	20	_____
Maintains a centralized safety function	20	_____
Fosters reporting of all CFIT incidents without threat of discipline	20	_____
Fosters communication of hazards to others	15	_____
Requires standards for IFR currency and CRM training	15	_____
Places no negative connotation on a diversion or missed approach	20	_____

115-130 points	Tops in company culture		
105-115 points	Good, but not the best		
80-105 points	Improvement needed		
Less than 80 points	High CFIT risk	Company Culture Total	(+) _____ *

Section 2 - Flight Standards		Value	Score
Specific procedures are written for:			
Reviewing approach or departure procedure charts	10	_____	
Reviewing significant terrain along intended approach or departure course	20	_____	
Maximizing the use of ATC radar monitoring	10	_____	
Ensuring pilot(s) understand that ATC is using radar or radar coverage exists	20	_____	
Altitude changes	10	_____	
Ensuring checklist is complete before initiation of approach .	10	_____	
Abbreviated checklist for missed approach	10	_____	
Briefing and observing MSA circles on approach charts as part of plate review	10	_____	
Checking crossing altitudes at IAF positions	10	_____	
Checking crossing altitudes at FAF and glideslope centering ..	10	_____	
Independent verification by PNF of minimum altitude during stepdown DME (VOR/DME or LOC/DME) approach	20	_____	
Requiring approach/departure procedure charts with terrain in color, shaded contour formats	20	_____	
Radio-altitude setting and light-aural (below MDA) for backup on approach	10	_____	
Independent charts for both pilots, with adequate lighting and holders	10	_____	
Use of 500-foot altitude call and other enhanced procedures for NPA	10	_____	
Ensuring a sterile (free from distraction) cockpit, especially during IMC/night approach or departure	10	_____	
Crew rest, duty times and other considerations especially for multiple-time-zone operation	20	_____	
Periodic third-party or independent audit of procedures	10	_____	
Route and familiarization checks for new pilots Domestic	10	_____	
International	20	_____	
Airport familiarization aids, such as audiovisual aids	10	_____	
First officer to fly night or IMC approaches and the captain to monitor the approach	20	_____	
Jump-seat pilot (or engineer or mechanic) to help monitor terrain clearance and the approach in IMC or night conditions	20	_____	
Insisting that you fly the way that you train	25	_____	

300-335 points	Tops in CFIT flight standards		
270-300 points	Good, but not the best		
200-270 points	Improvement needed		
Less than 200	High CFIT risk	Flight Standards Total	(+) _____ *

Section 3 - Hazard Awareness and Training

	Value	Score
Your company reviews with the training department or training contractor	10	_____
Your company's pilots are reviewed annually about the following:		
Flight standards operating procedures	20	_____
Reasons for and examples of how the procedures can detect a CFIT "trap"	30	_____
Recent and past CFIT incidents/accidents	50	_____
Audiovisual aids to illustrate CFIT traps	50	_____
Minimum altitude definitions for MORA, MOCA, MSA, MEA, etc.	15	_____
You have a trained flight safety officer who rides the jump seat occasionally	25	_____
You have flight safety periodicals that describe and analyze CFIT incidents	10	_____
You have an incident/exceedance review and reporting program .	20	_____
Your organization investigates every instance in which minimum terrain clearance has been compromised	20	_____
You annually practice recoveries from terrain with GPWS in the simulator	40	_____
You train the way that you fly	25	_____
<hr/>		
285-315 points	Tops in CFIT training	
250-285 points	Good, but not the best	
190-250 points	Improvement needed	Hazard Awareness and Training Total
Less than 190	High CFIT risk	(+) _____ *

Section 4 - Aircraft Equipment

	Value	Score
Aircraft includes:		
Radio altimeter with cockpit display of full 2,500-foot range - captain only	20	_____
Radio altimeter with cockpit display of full 2,500-foot range - copilot	10	_____
First-generation GPWS	20	_____
Second-generation GPWS or better	30	_____
GPWS with all approved modifications, data tables, and service bulletins to reduce false warnings	10	_____
Navigation display and FMS	10	_____
Limited number of automated altitude callouts	10	_____
Radio-altitude automated callouts for nonprecision approach (not heard on ILS approach) and procedure	10	_____
Preselected radio altitudes to provide automated callouts that would not be heard during normal nonprecision approach	10	_____
Barometric altitudes and radio altitudes to give automated "decision" or "minimums" callouts	10	_____
An automated excessive "bank angle" callout	10	_____
Auto flight/vertical speed mode	-10	_____
Auto flight/vertical speed mode with no GPWS	-20	_____
GPS or other long-range navigation equipment to supplement NDB-only approach	15	_____
Terrain-navigation display	20	_____
Ground-mapping radar	10	_____

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175-195 points	Excellent equipment to minimize CFIT risk	
155-175 points	Good,	*
115-155 points	but not the best	
Less than 115	Improvement needed	
	High CFIT risk	
		Aircraft Equipment Total (+) _____

Company Culture _____ + Flight Standards _____ + Hazard Awareness and Training _____ + Aircraft Equipment _____ = **CFIT Risk-reduction Factors Total (+)** _____

*If any section in Part II scores less than "Good," a thorough review is warranted of that aspect of the company's operation.

PART III: YOUR CFIT RISK

Part I CFIT Risk Factors Total (-) _____ + Part II CFIT Risk-reduction Factors Total _____ (+) = **CFIT Risk Score (±)** _____

A negative CFIT Risk Score indicates a significant threat; review the sections in Part II and determine what changes and improvements can be made to reduce CFIT risk.

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