NAVAL AIR TRAINING COMMAND

NAS CORPUS CHRISTI, TEXAS **CNATRAINST 1542.164A**
CIN Q-2D-1164 **12 JAN 2015**

CHIEF OF NAVAL AIR TRAINING

ADVANCED STRIKE FIGHTER UNDERGRADUATE MILITARY FLIGHT OFFICER (UMFO) TRAINING SYSTEM CURRICULUM

2015

DEPARTMENT OF THE NAVY
CHIEF OF NAVAL AIR TRAINING
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CNATRAINST 1542.164A
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CNATRA INSTRUCTION 1542.164A

Subj: ADVANCED STRIKE FIGHTER UNDERGRADUATE MILITARY FLIGHT OFFICER (UMFO) TRAINING SYSTEM CURRICULUM

1. Purpose. To publish the curriculum for training Undergraduate Military Flight Officers (UMFOs) in the Advanced phase of Naval Air Training Command (NATRACOM) flight training.

2. Cancellation. CNATRAINST 1542.164 will be cancelled when the last student enrolled completes the curriculum.

3. Action. This curriculum 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 instruction are automated in the Training Integration Management System (TIMS) computer program. Additional CNATRA forms are available on the CNATRA website https://www.cnatra.navy.mil/pubs/forms.htm.

D. M. EDGECOMB
Chief of Staff

Distribution:
CNATRA Sharepoint
CNATRA Website

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SUMMARY OF CHANGES

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COURSE DATA

1. Course Title. Advanced Strike Fighter Undergraduate Military Flight Officer (UMFO) Training System Curriculum.

2. Course ID Number (CIN). Advanced Strike Fighter UMFO, Q-2D-1164.

3. Location. NAS Pensacola.

4. Course Status. Active.

5. Course Mission. The mission of the Advanced Strike Fighter UMFO Training System Curriculum is to further enhance navigation, communication, and aircraft systems management skills. Crew coordination and mission priorities are stressed in this curriculum. Skill and performance levels required for completion are outlined in the Course Training Standards (CTS). Successful completion of the applicable curricula qualifies UMFOs as Naval Flight Officers. This requires:

a. Flight training to teach the principles and techniques used in operating high-performance aircraft.

b. Flight and synthetic training to teach the principles and techniques used in visual navigation, strike mission execution, close air support, basic fighter maneuvering, radar targeting, and radar intercept principles.

c. Ground training to supplement and reinforce flight training.

6. Prerequisite Training. Successful completion of Intermediate UMFO Training System Curriculum (Q-2D-0585).

7. Security Clearance Requirements. None.

8. Follow-on Training. Assigned by the graduate's parent service.

9. Course Length. Overall time to train (TTT) is 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.

	Training Days	Calendar Weeks
Advanced UMFO:	139.8	31.0

10. Class Capacity. Six optimal.

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

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

13. Quota Management Authority. Chief of Naval Air Training (CNATRA).

14. Quota Control. CNO.

15. Course Training Subjects

a. Ground Training

ADMINISTRATION		
Stage	**Symbol**	**Hours**
Familiarization Stage	G0101-3	8.0
Strike Stage	G0201-4	17.5
CAS Stage	G0301-3	10.0
BFM Stage	G0401-2	2.0
AWI Stage	G0501-7	39.0
Total		**76.5**

GROUND TRAINING		
Stage	**Symbol**	**Hours**
Familiarization Stage	G1101-44	62.5
Total		**62.5**

b. Flight Support

FLIGHT SUPPORT		
Stage	**Symbol**	**Hours**
Familiarization Stage	FAM1101-3	7.0
Strike Stage	STK1101-15	37.9
CAS Stage	CAS1101-2	4.0
BFM Stage	BFM1101-4	7.7
AWI Stage	AWI1101-31	49.8
Total		**106.4**

c. Flight Training. Below are the programmed times for each phase, stage, and media:

FLIGHT TRAINING								
Flight/Events	**IGS**		**PTT** SS**		**2F205A**		**T-45C Dual**	
	Flts	**Hrs**	**Evnts**	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Familiarization					13	19.5	8	11.0
Strike			2	16.0	11	22.0	12	14.4
Close Air Support (CAS)			1	8.0	4	8.0	4	4.8
Basic Fighter Maneuvers (BFM)					1	1.5	5	5.5
All Weather Intercepts (AWI)	11*	12.8*	4	32.0	15	30.0	11	12.8
Totals	11	12.8	7	56.0	44	81.0	40	48.5

*The IGS is used as part of dual T-45C flight events on AWI41-44.

**OFT (2F205A) can be used as a substitute for PTT if PTT is not available. CSI resource not required for SS OFT.

16. Training Time Analysis. In addition to the hours formally planned for classes, simulators, and flights, significant additional time to prepare and study should be expected outside of scheduled training hours. This range will vary depending on the complexity of the material and individual student needs, and may be up to several hours per event. For simulator and flight events, specific brief and taxi times will be programmed into TIMS and accounted for on the flight schedule, per the following table:

ADDITIONAL TRAINING TIME PER CURRICULUM HOUR/EVENT			
Training Area	**Brief/Preflight/ Taxi**	**Taxi/ Debrief**	**Total**
Simulator Familiarization/ BFM (CSI)	0.5	0.5	1.0
Simulator STK, CAS, AWI (INFO)	1.0	1.0	2.0
Flight (IP)	2.0	1.5	3.5
AWI 41-44 (IGS INFO*)	1.0	1.5	2.5

*Note that IGS INFO is in addition to the IPs who fly the events. These times account for 2 SNFO events per IGS INFO.

17. Physical Requirements. As specified in the Manual of the Medical Department (NAVMED P-117) and all applicable anthropometric standards.

18. Obligated Service. Refer to MILPERSMAN for Naval personnel.

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

20. Self-Study. Designed to prepare students for their next block of events during the syllabus. This ground event includes time for mission planning, brief development, and mission rehearsal on a part-task trainer or similar device.

21. Preceding Curriculum Data. This curriculum replaces CNATRAINST 1542.164.

22. Summary of Lead Overhead. The Summary of the Instructor Lead planning factor hours for the Advanced Strike Fighter Undergraduate Military Flight Officer Training System is tabulated below. The table is a compilation of events requiring Instructor Lead that can be found in Chapter VIII of this publication.

ADDITIONAL UMFO T-45 LEAD HOURS				
Flight/Event	**# Events**	**Lead Hrs/Event**	**# Student per Lead**	**Total Lead Hrs/Student (# events X hrs/event)**
CAS41 (FAC)	3	1.2	2	1.8
CAS42 (FAC)	1	1.2	2	0.6
AWI43 (SES)	1	1.2	1	1.2
AWI44 (SES)	1	1.2	1	1.2
Totals	**6**	**4.8**	**N/A**	**4.8**

23. CSI Resource Requirements. STK, CAS, and AWI simulator events require a CSI to operate the OFT, but the CSI is not required for the brief or debrief. On those events, an IP or INFO will brief, debrief, and run the bogey station during the simulator event. In the Familiarization and BFM simulator events, the CSI will brief, debrief, and instruct in the OFT with no IP or INFO participation. These requirements are tabulated below.

CSI RESOURCE REQUIREMENTS IN THE OFT		
Flight/Event	**CSI**	
	2F205A	**Hrs**
Familiarization	13	19.5
STK	11	22.0
CAS	4	8.0
BFM	1	1.5
AWI	15	30.0
Totals	**44**	**81.0**

24. Student Performance Measurement/Application of Standards. The standards outlined in Chapter IX, Course Training Standards, are used to evaluate student performance for all items on all events. Final judgment regarding the satisfactory performance of any item rests with the instructor. Refer to CNATRAINST 1500.4H, Chapter VI, for further guidance.

ABBREVIATIONS

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

A/A	-	Air-to-Air
A/G	-	Air-to-Ground
ACAD	-	Academic
ACM	-	Air Combat Maneuvering
ADB	-	Aircraft Discrepancy Book
AGL	-	Above Ground Level
AIC	-	Air Intercept Control
AO	-	Angle Off
AOA	-	Angle of Attack
AOB	-	Angle of Bank
AREO	-	Angle-off, Range, Elevation, Overtake
ASI	-	Aviation Student Indoctrination
ASR	-	Airport Surveillance Radar
ATC	-	Air Traffic Control
ATF	-	Aviation Training Form
ATJ	-	Aviation Training Jacket
ATS	-	Aviation Training Summary
AUG	-	Augmentation
AWI	-	All Weather Intercepts
BAR	-	Basic Airwork Recognition
BASH	-	Bird/Animal Strike Hazard
BDA	-	Battle Damage Assessment
BFM	-	Basic Fighter Maneuver(s)
BFMFP	-	Basic Fighter Maneuver Flight Procedures
BRP	-	Ballistic Release Point

BVR	-	Beyond Visual Range
CAI	-	Computer-Assisted Instruction
CAS	-	Close Air Support
CNATRA	-	Chief of Naval Air Training
CNI	-	Communication, Navigation, and Identification
CNO	-	Chief of Naval Operations
CO	-	Commanding Officer
COMTRAWING	-	Commander, Training Air Wing
CP	-	Control Point
CPT	-	Cockpit Procedures Trainer
CRM	-	Crew Resource Management
CT	-	Counterturn
CTS	-	Course Training Standard(s)
CV	-	Carrier
CVNP	-	Aircraft Carrier Procedures
DASC	-	Direct Air Support Center
Demo	-	Demonstration
DEU	-	Display Electronics Unit
DJET	-	Delayed Jet Water Survival
DME	-	Distance Measuring Equipment
DTG	-	Degrees to Go
ECS	-	Environmental Control System
EGT	-	Exhaust Gas Temperature
EMFP	-	Emergency Flight Procedures
EOB	-	End of Block
EP	-	Emergency Procedure
ET	-	Extra Training

ETA	-	Estimated Time of Arrival
EW	-	Electronic Warfare
FAA	-	Federal Aviation Administration
FAC	-	Forward Air Controller
FAC(A)	-	Forward Air Controller Airborne
FAMFP	-	Familiarization Flight Procedures
FAR	-	Federal Aviation Regulation
FCLP	-	Field Carrier Landing Practice
FLIP	-	Flight Information Publication
FOD	-	Foreign Object Damage
FPC	-	Final Progress Check
FQ	-	Forward Quarter
FTI	-	Flight Training Instruction
GINA	-	GPS/Inertial Navigation Assembly
GP	-	General Purpose
GPS	-	Global Positioning Satellite
GTS	-	Gas Turbine Starter
H/X	-	Hours per X
HUD	-	Head-Up Display
IAF	-	Initial Approach Fix
IAW	-	In Accordance With
ICS	-	Intercom System
IFR	-	Instrument Flight Rules
IGS	-	Instructor Ground Station
ILS	-	Instrument Landing System
IMS	-	International Military Student
IMSO	-	International Military Student Officer

IP	-	Instructor Pilot, Intercept Procedures, or Initial Point
IPC	-	Initial Progress Check
JCAS	-	Joint Close Air Support
JOG	-	Joint Operations Graphic (1:250,000 Chart)
JTAR	-	Joint Tactical Air Request
KIAS	-	Knots Indicated Airspeed
LAR	-	Launch Acceptability Region
LATOMS-T	-	Low Altitude Warning, Air-to-Ground, Target Elevation, Ordnance, Master Arm, Symbology – Target Designated
LECT	-	Lecture
LL	-	Low Level
LS	-	Lateral Separation
MAF	-	Maintenance Action Form
MCG	-	Master Curriculum Guide
MFCD	-	Multi-Function Color Display
MIF	-	Maneuver Item File
MIL	-	Mediated Interactive Lecture
MNPOTTA	-	(Check-in Format) Mission #, Number/Type Aircraft, Position, Ordnance, Time on Station, Targeting Source, Abort Code
MNTS	-	Multi-service NFO Training System
MOA	-	Military Operating Area
MRM	-	Medium-Range Missile
MTR	-	Military Training Route
NATOPS	-	Naval Air Training and Operating Procedures Standardization
NFO	-	Naval Flight Officer

NFS - Naval Flight Student

NG - No Grade

NM - Nautical Mile(s)

NORDO - No Radio (Lost Communications)

NOTAMs - Notices to Airmen

NSS - Navy Standard Score

NWS - Nose Wheel Steering

OBOGS - On-Board Oxygen Generating System

OFT - Operational Flight Trainer

OLQ - Officer-Like Qualities

ORM - Operational Risk Management

PAR - Precision Approach Radar

PAS - Phase Aggregate Score

PGM - Precision-Guided Munitions

PTT - Partial Task Trainer

PUP - Pull-Up Point

RBGM - Real Beam Ground Map

RDR - Radar

RHC - Radar Hand Controller

RIP - Roll-In Point

RPM - Revolutions per Minute

RQ - Rear Quarter

RRU - Ready Room Unsatisfactory

RTB - Return-to-Base

RVSM - Reduced Vertical Separation Minimum

RWR - Radar Warning Receiver

RWT - Real-World Timing

SA	-	Situational Awareness
SADS	-	Stability Augmentation Data Sensor
SEAD	-	Suppression of Enemy Air Defenses
SITREP	-	Situation Report
SMS	-	Student Monitoring Status or Stores Management System
SNFO	-	Student Naval Flight Officer
SOP	-	Standard Operating Procedures
SRA	-	Section Radar Attack
SRM	-	Short-Range Missile
SRR	-	Short-Range Radar
SSR	-	Special Syllabus Requirement
STAN	-	Standardization
STKFP	-	Strike Flight Procedures
STKNAVFP	-	Strike Navigation Flight Procedures
STRS	-	Stores (Display)
STT	-	Single Target Track
SUA	-	Special Use Airspace
SYS	-	Systems
TA	-	Target Aspect
TACAN	-	Tactical Air Navigation
TFR	-	Temporary Flight Restrictions
TGT	-	Target
TOT	-	Time on Target
TRB	-	Training Review Board
TTFACORLH	-	(Intel Format) Target, Threat, Friendlies, Artillery, Clearance Authority, Ordnance, Restrictions, Localized SEAD, Hazards

TW	-	Training Air Wing
TWS	-	Track While Scan
UHF	-	Ultra High Frequency
UNSAT	-	Unsatisfactory
VFR	-	Visual Flight Rules
VHF	-	Very High Frequency
VID	-	Visual Identification
VMTS	-	Virtual Mission Training System
VOR	-	VHF Omnidirectional Range
XO	-	Executive Officer

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GLOSSARY

1. Advancing X. Completed event within the normal syllabus flow. Excludes events with last characters in the range 84-89.

2. Aviation Training Form (ATF). A grade sheet documenting student performance for all categories of training regardless of media, phase, or stage.

3. Aviation Training Jacket (ATJ). The ATJ is the student's training record. It contains ATFs, calendar card, grade reports, and all other associated training information. It is filed in student control and follows the student through all phases of training.

4. Block of Training. A sequential series of lessons within a training stage sharing an identical MIF. The second numerical character in the lesson designator identifies a block.

5. Blue ATF. A standard ATF that is printed on blue paper. The blue ATF is used to denote a Marginal event. Blue ATFs are also used to outline Student Monitoring Status (SMS) requirements.

6. Check Ride (SXX90). A flight/simulator check in any stage of training.

7. Class Advisor. An instructor assigned to provide counseling and guidance to a specific class throughout the applicable syllabus.

8. Contact. The chapter of training that includes familiarization, emergency procedures, and basic copilot skills.

9. Course of Training. The entire program of preflight, flight, simulation, academics, and officer development conducted in all media during the programmed training days.

10. Course Training Standard (CTS). A description of required behaviors and standards of performance for a specific maneuver. These standards are in Chapter IX.

11. Courseware. The technical data, flight training instructions, audio, video, film, mediated interactive lecture (MIL), computer-assisted instruction (CAI), instructor guides, student study guides, and other training material developed to support and implement the syllabus of instruction.

12. 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.

13. Deliverables. A CNATRA 1542/1827 TRB Summary Form generated by the TRB that summarizes a specific student's progress in a given syllabus and provides detailed information on the application of UMFO training for that student. Deliverables indicate whether the quality and continuity of training provided was IAW CNATRAINST 1542.164A.

14. Drop On Request. A student's voluntary option to request termination of training IAW CNATRAINST 1500.4H.

15. Emergency Procedure. Any degradation of aircraft systems or flight conditions requiring aircrew action or intervention.

16. End of Block. The last event in a block. The student must meet or exceed MIF on all critical items and all optional items attempted in the block to progress past EOB.

17. Extra Training (SXX87). Additional student training flights ordered by the Operations Officer (OPSO) or higher in order to make up for Squadron/IP instructional deficiencies.

18. Final Progress Check (SXX89). A special check normally given by the Commanding Officer (CO) or Executive Officer (XO) in the CO's absence. The CO may delegate Final Progress Check (FPC) duty in writing to a qualified O-4 or above, in the event that neither the CO nor XO are qualified or available to instruct in the required stage. A satisfactory FPC returns the student to normal syllabus flow. An UNSAT FPC results in an attrition recommendation to Commander, Training Air Wing SIX, and a TRB.

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

20. Hours per X. The average length for each event in a block, rounded to the nearest tenth of an hour.

21. Initial Progress Check (SXX88). A special check given by an experienced instructor (senior O-3 or above) as designated in writing by the CO. A satisfactory IPC returns the student to normal syllabus flow. An UNSAT IPC results in an FPC.

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

Char	Meaning	Remarks		
1st*	Stage	AWI-All Weather Intercept	BFM-Basic Fighter Maneuvers CAS-Close Air Support	FAM—Familiarization G—Ground STK—Strike
2nd	Media	0—Ground Event 1—Academics	2—Not Used 3—2F205A Simulator	4—T-45C Aircraft
3rd	Block	Sequential, indicating block within stage.		
4th & 5th	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 Ride	

* In a seven-character lesson designator, the alphanumeric characters represent the Stage and the four-digits after the Stage identifier are in the same format as the 2nd-5th characters in a five-character lesson designator.

23. Maneuver Item File (MIF). A listing of required maneuvers and associated proficiency levels for each block of training.

24. Master Syllabus. Chapters I-VIII list all training syllabus activities, prerequisites, and training flow for UMFO.

25. Outcomes. Potential courses of action following a Progress Check.

a. Pass – Return to training.

b. Fail (IPC) – Results in an FPC.

c. Fail (FPC) – Proceed with the attrition process/attrite.

26. Phase of Training. A major division in the course of training. The UMFO syllabus consists of Primary (Primary 1 and 2), Intermediate, and Advanced (Strike Fighter and Maritime Command and Control) phases of training.

27. Pink ATF. A standard ATF that is printed on pink paper. The pink ATF is used to denote an UNSAT event generating a progress check.

28. Progress Check Instructor. An instructor authorized and designated in writing by the CO to administer Initial or Final Progress Checks.

29. Ready Room UNSAT (RRU). An UNSAT grade given for inadequate knowledge of flight procedures, systems, discuss items, emergency procedures, or deficient preflight planning.

30. Special Syllabus Requirement (SSR). One time, ungraded demonstration item.

31. Stage of Training. All training of a particular type within a phase. The alphanumeric letter(s) in the lesson designator identifies the stage of each lesson (Example: FAM4101 is in the Familiarization stage; AWI4101 is in the All Weather Intercepts stage).

32. Student Monitoring Status. SMS is a squadron-initiated status to address substandard student performance.

33. Training Media. UMFO media include aircraft, 2F205A trainer (OFT), partial task trainer (PTT), ground training, CAIs, and MILs. The first numerical character in the lesson identifier designates the training media (Example: G1101 and STK1101 are academic events).

34. Training Review Board. A fact-finding board appointed to conduct an administrative review of circumstances and procedures relative to an FPC recommendation for a student's attrition.

35. Training Time Out. Cessation of any training evolution initiated when a student or instructor expresses concern for personal safety or a condition warrants clarification of procedures or requirements IAW CNATRAINST 1500.4H.

36. Warmup Event(s) (SXX86). Additional events given to allow a student to regain a level of proficiency previously demonstrated which has diminished due to an extended break in training.

37. Yellow ATF. A standard ATF that is printed on yellow paper. The yellow ATF is used to denote an UNSAT event that does not generate a progress check.

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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 specific course of action appears to conflict with other directives, consult CNATRA (N71).

c. Deviations. Document all deviations on the event's ATF.

d. Changes. Recommended changes shall be submitted IAW CNATRAINST 1550.6E.

e. Execution. All students execute Chapters II through VIII.

f. Syllabus Description. Advanced UMFO is flown in the Advanced training platform and is divided into stages. Stages are grouped by like-flight training regimes such as Familiarization, Strike, and CAS. Each stage is subdivided into training blocks. The training blocks consist of a specified number of flights/simulator events. MIFs identify the minimum acceptable level of performance in relation to the CTS that must be achieved at the completion of each training block.

g. Grade Calculation

(1) Phase Aggregate Score (PAS). An SNFO's PAS is a comparative ranking based on the previous population of completers for a specific phase of aviation training. PAS indicates only SNFO performance relative to a normative population of other recent SNFOs. Under the UMFO system, PAS is not by itself an indication of whether an SNFO has met the criteria necessary for winging or continuation in aviation training.

UMFO SNFO Calculations. From a population of previous SNFOs, an SNFO's PAS is calculated using equation (1), below:

$$SNFO\_PAS = 50 + 10 * \left(0.81 * \frac{S - M1}{S1} + 0.1 * \frac{M2 - NMU}{S2} + 0.09 * \frac{Acad - M3}{S3} \right) \quad (1)$$

Where

S – SNFO Score
NMU – SNFO Number of Marginals and Unsats (NMU)
Acad – SNFO Academic Grades
M1 – Squadron Average Score
M2 – Squadron Average NMU
M3 – Squadron Average Academic Grades
S1 – Standard Deviation of Squadron Score
S2 – Standard Deviation of Squadron NMU
S3 – Standard Deviation of Squadron Academic Grades

(2) Naval Standard Score (NSS). NSS is calculated to correct for potential non-normality in the distribution of PAS. NSS is calculated from PAS by using equation (2), below:

$$NSS = 50 + 10 * \left(\frac{PAS - MPAS}{SDPAS} \right) \quad (2)$$

Where

PAS – SNFO PAS
MPAS – Squadron Average PAS
SDPAS – Standard Deviation of Squadron PAS

2. Training Management

a. Syllabus Progression. Fly syllabus events within each stage sequentially. Do not start a block without all prerequisites. Students must complete all events. System training management is designed to facilitate two graded events (flight, simulator, or exam) per student per day.

b. Maneuver Continuity. Students must accomplish previously graded procedures frequently enough to ensure required proficiency is maintained.

c. Hours per X (H/X). Mission Commanders 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 hours, the instructor shall annotate reason(s) in the ATF's general comments section.

d. Location of Training. Student events may be accomplished at home station or on cross-country/detachments where applicable.

e. Special Syllabus Requirements. SSRs may be allocated to blocks. Unless noted otherwise, instructors may accomplish SSRs on any flight within the block. The SSRs shall be completed in the specified block. Annotate completed SSRs in the following three places on the ATF: Specify the SSR completed in the Comments section, assign NG/1 as the SSR maneuver grade, and date/save SSR exposure on the TIMS SSR tab.

f. Aviation Training Jacket Reviews. The Class Advisor (CA) or other qualified flight instructor shall conduct jacket reviews at least weekly. Additionally, SMS students require weekly ATJ reviews from the Student Control Officer.

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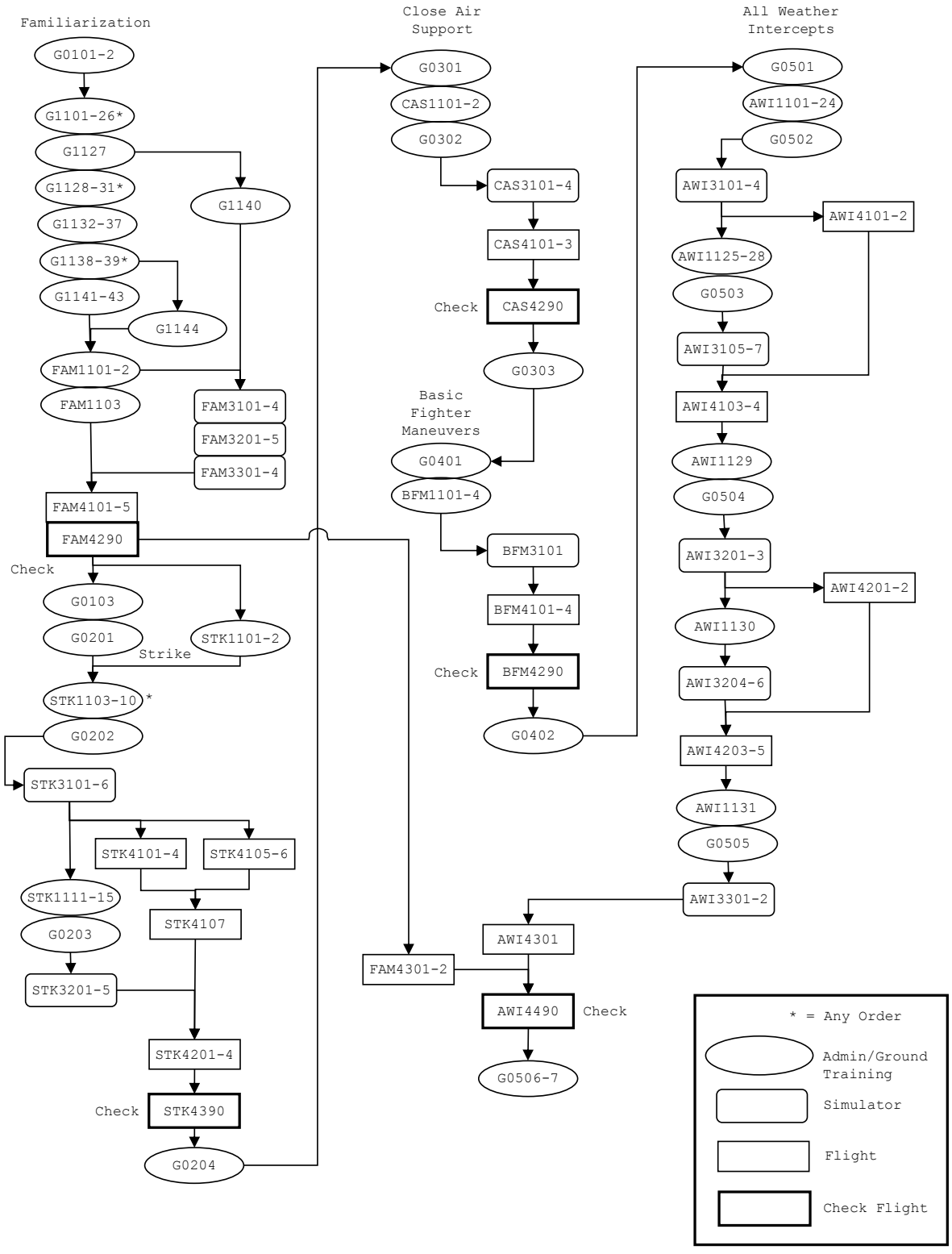
ADVANCED STRIKE FIGHTER UMFO COURSE FLOW



3. Unsatisfactory (UNSAT) Performance. (See also ***Progress Check Procedures,*** Chapter I, paragraph 9c(3).)

a. Flight/Simulator

(1) If syllabus events remain in the block, the student shall progress to the next syllabus event, until the second consecutive UNSAT or third cumulative UNSAT in the block.

(2) If no syllabus events remain, repeat the last syllabus event in the block until the student meets MIF, the second consecutive UNSAT, or third cumulative UNSAT in the block.

(3) If the SNFO receives an UNSAT that does not result in an IPC/FPC, the ATF shall be printed on yellow paper.

(4) An UNSAT check flight (SXX90), two consecutive UNSATs in block, three cumulative UNSATs (in the same block), four total UNSATs in phase, or RRU result in a Progress Check. Document the failed check flight or second consecutive/third (in block) cumulative UNSAT on a pink ATF for that syllabus event.

b. Ready Room UNSAT (RRU). An RRU is defined as either of the following:

(1) An SNFO is inadequately prepared for the scheduled event. The RRU shall be documented on a pink version of the event's ATF. The event will be marked as incomplete with a U/2 grade in the maneuver column(s) that triggered the RRU. Upon completion of the progress check, the event shall be flown to completion and general knowledge and emergency procedures shall be incorporated into the overall grading solution.

(2) The SNFO fails a nonacademic examination (e.g., NATOPS quiz).

(3) For purposes of determining when IPCs or FPCs are required, RRUs and UNSAT flight/simulator events all contribute to the same IPC/FPC process; each SNFO may only have one IPC per phase of training.

c. Academic. Two academic examination failures in a phase trigger an FPC. The FPC shall be completed prior to retake.

d. Remediation. A simulator or ground evaluation emphasizing the deficient areas may clear an UNSAT check ride or EOB syllabus event caused solely by ground operations.

e. Restrictions. Until remediating the UNSAT:

(1) The student shall not accomplish training in any other stage.

(2) The student may accomplish academic classes, examinations, and ground training events, provided the UNSAT event was not a prerequisite.

4. Training Review Board. The TRAWING shall conduct a TRB on all NFSs recommended for attrition.

a. The TRB shall consider the quality of training provided, continuity of training provided, outside influences, and extenuating circumstances.

b. The TRB shall not make recommendations based on perceived NFS potential or aspects unrelated to the administrative application of the NFS's training.

c. For more information, refer to CNATRAINST 1500.4H.

5. Break in Training Warmup Events (SXX86). Nonsyllabus warmup events compensate for breaks in training. Eligibility is based on the number of days since the last flight or simulator in the same stage. All warmups shall be coded as an SXX86, e.g., STK4186. Warmup grades do not satisfy block or MIF requirements and shall not be included in the cumulative totals.

a. Warmup Flights for Extended Breaks in Training. For administration of warmup events for breaks in training of more than 30 days, the CO shall determine an appropriate warmup plan per CNATRAINST 1500.4H.

b. Warmup Events Between Stages. Warmup events shall not be given prior to the first event in stage unless more than 30 days have elapsed since any syllabus event has been conducted (refer to CNATRAINST 1500.4H for warmup event guidelines).

c. Optional Warmup Event Criteria. Optional warmup criteria are defined in CNATRAINST 1500.4H. Optional warmup events are based on the student's performance. If the student is in the optional warmup window and their performance meets MIF or is sufficient to meet MIF by the end of block, the event shall count as the next syllabus event. If the student's performance is Marginal or UNSAT, the event will be ***graded as such and*** coded as a warmup.

CRITERIA FOR AWARDING WARMUP EVENTS IN STAGE		
Break* (Days)	**Warmup Events**	**Remarks**
7-13 Sim to A/C	1 Mandatory Simulator	• Mandatory WU is not an advancing event. • WU event may be flown in aircraft with the TRAWING Commander's approval.
7-13 All Others	1 Optional	• Optional WU based on performance and is required if overall grade is Marginal or UNSAT. • Optional WU is prohibited if performance meets MIF or is sufficient to meet MIF by EOB.
14-30 Sim to A/C	2 Mandatory Simulators	• Mandatory WUs are not advancing events. • For blocks with a single simulator event, only one mandatory WU event is required.
14-30 All others	1 Mandatory 1 Optional	• Mandatory WU is not an advancing event. • Optional WU based on performance and is required if overall grade is Marginal or UNSAT. • Optional WU is prohibited if performance meets MIF or is sufficient to meet MIF by EOB.

*Break = (Current Julian Date) – (Julian Date of last simulator or flight event in stage).

d. Mandatory WU A/C to Sim. An A/C-to-Sim mandatory WU shall be flown in the simulator and coded as the last completed simulator in stage.

6. Additional Flights/Trainers

a. Extra Training (ET) Events (SXX87). All ETs shall be coded as SXX87, e.g., FAM3187. ET events include, but are not limited to, IPC/FPC ET events. Award these events to compensate for training deficiencies, e.g., poor event/maneuver continuity or improper instruction.

(1) The CO may authorize one ET prior to an IPC and up to two ETs prior to an FPC.

(2) Authorization for IPC and FPC ET events shall be documented on a Supplementary ATF and shall clearly state the training deficiency that warrants the ET(s).

(3) IPC/FPC 87 events ***shall not*** be awarded to remediate UNSAT student performance unrelated to unit/instructional training deficiencies or for BFM currency (utilize mandatory WU event procedures).

b. Adaptation Events (SXX84). The Squadron CO may provide events for adaptation to the flying environment when requested in writing by the flight surgeon, e.g., airsickness, eyeglasses, etc. These events shall be coded as SXX84 events.

7. Student Monitoring Status

a. The objective of SMS is to focus supervisory attention to a student's progress in training, address performance deficiencies, and assess the student's potential to complete the program. SMS may also be applied to students who require supervisory attention while trying to resolve personal issues. The intent of SMS is to focus on struggling students to help them overcome their difficulties, and provide an expedited route to attrition if this focused attention is unsuccessful.

b. A student who receives two UNSATs in a block of training or three UNSATs within a phase of training shall be placed on SMS.

c. The squadron CO is not constrained to the UNSAT-related SMS trigger; a CO may place a student on SMS anytime that the CO perceives a need for focused attention to resolve student difficulties.

d. SMS is intended as a short-term program to address specific performance deficiencies within a block or stage of training. SMS requires that specific goals be met by student within a specific time period. Specific performance goals shall be related to training standards rather than relative performance against a student's peers. The time period may reference syllabus events.

e. An SMS training plan should include, but is not limited to, training tailored to correct specific deficiencies or to address personal issues.

f. A student's Class Advisor shall document placement on and removal from SMS in the student's ATJ via a Supplementary ATF. All SMS-related documentation shall be completed on blue paper. Documentation placing a student on SMS shall include:

(1) The reason the student is being placed on SMS,

(2) The specific goals to be met for successful removal from SMS,

(3) The period of time the student is to be on SMS in order to achieve the specific goals,

(4) Consequences for not meeting the goals (student shall proceed to FPC),

(5) Specific additional training or extra instruction (if any),

(6) Specific scheduling restrictions (if any), and

(7) Any other applicable requirements or restrictions.

g. Documentation for unsuccessful removal from SMS shall include the specific goal(s) not achieved. For SMS that is triggered by a syllabus event, file the initiating blue SMS Supplementary ATF on the right side of the ATJ, directly above said event's grade sheet. Upon successful completion of SMS, file the closeout blue SMS Supplementary ATF on the right side of the ATJ, and directly above the closeout-event grade sheet. If SMS is not related to a syllabus event (i.e., personal issues, academic failure, etc.), then file the initiating and closeout blue SMS Supplementary ATFs on the left side of the ATJ, below the DOR and TTO policy statements.

h. If a student achieves their SMS goals within the SMS period, or when personal issues have been resolved, then the student is returned to the normal syllabus flow. If the student is unable to meet the specific goals of SMS, or performance does not improve, the student shall be referred to a Command-Directed FPC.

8. Ground Training and Briefing Requirements

a. Mission Preparation, Briefings, and Debriefings

(1) EOB Events. The instructor shall carefully review the student's previous ATFs 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. Students shall arrive for each flight and simulator with:

(a) A thorough knowledge of:

1. The Discuss Items, as listed in Chapters III-VIII.

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

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

(c) The latest ATF for the stage.

(3) Briefing. The instructor shall review the SNFO's previous block ATFs before each event. Thoroughly cover the current mission's:

(a) Discuss Items, as listed in Chapters III-VIII.

(b) Specific objectives.

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

(d) Planned profile and contingencies.

(4) Debriefing

(a) After each event, the instructor shall critique the student's performance using cause/effect analysis, particularly with respect to CTS.

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

(c) Debriefing must be detailed and comprehensive. The ATF shall be completed prior to the SNFO's next event. Exceptions may be made for out-and-ins and cross-country flights. In such instances, the SNFO will be provided feedback on performance as soon as possible following the event.

b. Emergency Procedures (EP) Briefing and Training

(1) EP training builds the student's confidence in the aircraft. The instructor shall conduct EP training on all aircraft events, either on the ground or in the aircraft. Correct procedural deficiencies through additional instruction and study assignments.

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

(3) Grade the student's overall EP knowledge and performance under EPs.

9. Mission Grading Procedures and Evaluation Policies

a. General Grading and Evaluation Policy. MIFs listed are minimum block completion standards per maneuver. Students who consistently perform at the absolute minimum standard through multiple blocks of training may not possess the skills required to complete follow-on training. MIF is designed to allow for minimum performance in a specific area, with the understanding that performance in other areas above the minimum MIF, will offset the weak area.

b. Grading Procedures (Aircraft and Training Devices)

(1) Absolute Maneuver Grading. Use the following grading scale to document the student's characteristic performance on maneuvers attempted during each event. This is an absolute grading scale. Judge the student's proficiency only against the item's CTS. Maneuver grades shall be consistent with the ATF comments.

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

1. When the instructor demonstrates the maneuver and the student does not subsequently perform it during the event.

2. To indicate accomplishing all SSRs for that block or event. Also specify completed SSRs in the ATF's maneuver item content line and document date of exposure via the SSR button on the ATF menu bar.

(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. The student initiates corrections, if required, and they are appropriate, smooth, and rapid.

(2) Overall Event Grades. Overall event grades represent the student's progression through the syllabus. Grade events "Pass," "Marginal," or "UNSAT." Use the following definitions to characterize event grades. See ***Awarding Overall Event Grades*** for specific rules defining UNSAT performance.

(a) Pass

1. Prior to EOB. Progress is adequate to meet standards by EOB.

2. EOB. The student's performance meets or exceeds standards.

(b) Marginal. Ability to meet the standards by the EOB is questionable. The ATF shall be printed on blue paper. Instructors shall not award a Marginal on an EOB event, check ride, IPC, or FPC. If performance is Marginal on an optional WU, the instructor shall ensure the event is re-coded as a WU (SXX86) prior to ATF completion.

(c) UNSAT. Student exhibits dangerous tendencies or progress toward meeting EOB standards is insufficient. UNSAT overall is at the instructor's discretion, unless it is triggered by regression rules. It should be noted that an event may be graded UNSAT without any individual maneuvers graded 2/Unable. If the student receives an UNSAT that does not result in an IPC or FPC, the ATF shall be printed on yellow paper. UNSAT Progress Checks and UNSAT events that result in a Progress Check shall be printed on pink paper.

(3) Awarding Overall Event Grades. The student's overall grade is based on the student's performance against the MIF. The following rules govern overall event grading.

(a) EOB MIF Performance. Performance must meet MIF by EOB. If the student has previously met MIF in the block, he or she must still meet MIF in the EOB flight if the maneuver is reattempted.

(b) Prior to EOB. Performance must meet/exceed previous block MIF. Example:

1. STK32XX MIF requires an F/3 for Section Target Attack. STK42XX MIF requires a G/4.

2. The student must meet or exceed F/3 to progress out of STK32XX.

3. The student must maintain or exceed F/3 until the last STK42XX event, by which time the student must attain G/4.

(c) MIF Performance Maintenance. Students shall maintain or exceed MIF performance from one block to the next within stage or between media within stage, except as noted below or when MIF on a subsequent block is below the preceding block MIF.

(4) Regression Rules. Regression addresses uneven progress through training. Regression rules do not apply to the first simulator or flight block in each stage. Additionally, regression rules do not apply to FAM32 block. The following specifies allowable regression:

(a) The student is allowed up to two maneuver grades of F/3 where a G/4 is required on previous block MIF, and the instructor is satisfied the student is ready to progress to the next event.

(b) The instructor shall award an overall UNSAT due to regression rules if:

1. Regression was to a U/2 where F/3 or G/4 was required on previous block MIF, or

2. Performance on the same maneuver for two consecutive events resulted in an F/3 where a G/4 was required on previous block MIF, or

3. There was regression on more than two items during one event.

(5) Maneuver Requirements. For each block:

(a) Critical (Mandatory) Items. Items with a number and a plus (+) are mandatory and the student must meet the required proficiency by EOB. When a maneuver is performed multiple times in a block of training, the last grade assigned for the maneuver will determine if the student meets EOB MIF.

(b) Optional Items. Items with a number, but without a plus (+), are optional; however, if flown, the student must meet the required proficiency by EOB see paragraph 9.c.(2)(a) for check-ride exceptions).

(c) Not Demonstrated/Not Performed. The instructor will not demonstrate, nor will the student perform:

1. Unnumbered items.

2. Items not in the stage.

3. Exceptions:

a. Weather-driven instrument approaches.

b. Prebriefed maneuvers for instructor proficiency.

(6) Incomplete Events. In general, instructors should consider an event complete if the student is able to accomplish a sufficient amount of the planned profile. This rule is particularly true when weather precludes finishing all maneuver items, and the instructor is able to emphasize training where weather permits. Subsequent events in the block, when available, can reverse this emphasis, hence achieving overall training balance. If a student has had ample opportunity to learn a task and subsequently flies a short mission, the mission shall not be marked incomplete solely to provide unwarranted extra training.

(a) Assessment. Assess the event complete if:

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

2. There are sufficient events remaining in block to allow for completion of all remaining required maneuvers.

3. Otherwise, assess the event incomplete.

(b) Completion Events

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

2. For events flown exclusively to clear an incomplete, grades on maneuvers repeated from the incomplete event do not count toward the student's score, except where the grade assigned for the repeated item is lower than the lowest grade previously assigned on that item from all previous attempts at that event.

(c) Simulator Event Completion. Assess a simulator event complete if the student has received the full training period per the curriculum.

c. Policies for Evaluation Flights and Ground Evaluations

(1) Authorized Evaluators. The CO will designate check ride instructors for each stage.

(2) Check Rides (SXX90)

(a) Check Ride Progression. Check rides are single-event training blocks; therefore, all rules regarding progressing out of a block apply, except:

1. Student should fly a representative cross section of optional maneuvers.

2. Up to two optional maneuvers may be graded F/3 where G/4 is required without requiring an overall UNSAT.

3. The student should be able to demonstrate required levels of proficiency without instructor assistance. However, instruction is allowed on check events and students may reattempt maneuvers at the instructor's discretion.

4. The entire event should be devoted to assessing the student's skill attainment, ability, and readiness to progress to the next block of training. All maneuvers indicated with a plus (+) are check ride critical and must be completed to MIF. Regression rules do not apply.

(b) Incomplete Check Event. A check event shall be graded as incomplete when:

1. Any critical (+) item was not flown, or

2. The instructor was unable to sample sufficient examples of a given maneuver to assess the student's overall performance. If the flight profile is incomplete because too much time was dedicated to reattempting maneuvers or additional training, it should be graded UNSAT/Incomplete.

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

3. Exceptions. The check event is complete and the overall grade is UNSAT if:

a. Any critical (+) item is below MIF, or

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

c. Any maneuver is graded U/2.

(c) UNSAT Check Ride—Ground Operations. A check ride graded UNSAT solely for ground operations, like all UNSAT check rides, requires a progress check. The OPSO or CO will decide whether to perform the progress check as a ground evaluation, in the simulator, or in the aircraft.

(3) Progress Check Procedures

(a) Progress checks flown in the aircraft or simulator are holistic reviews of a student's proficiency, judgment, situational awareness, and overall ability to complete the mission. The intent of every Progress Check is to determine whether the student has the potential to reach the defined training standards of his/her current phase of training within the designated TTT, while demonstrating the potential to successfully complete remaining undergraduate and, for Advanced students, FRS-level training. All progress checks must meet MIF for the most recently completed block of training. Progress checks in the aircraft or simulator should focus on the student's weak areas and will normally be comprised of a representative cross-section of area and pattern maneuvers. All critical items do not need to be accomplished. Failed Progress Checks shall be documented on a pink version of the ATF for the failed event that generated the Progress Check. Refer to CNATRAINST 1500.4H for additional guidance and requirements.

(b) IPC. The following defines when to conduct an IPC, IPC outcomes, and IPC instructors.

1. IPC Triggers:

a. Two consecutive UNSATs in a block.

b. Three cumulative UNSATs in a block, but not including events coded XX84, XX85, XX86, XX87, or graded Marginal.

c. An UNSAT check event (SXX90).

d. A Ready Room UNSAT (RRU).

e. At the discretion of the OPSO or CO when there is doubt regarding the student's potential to successfully complete.

2. IPC outcomes:

a. Pass. Returns the student to normal syllabus flow. This will normally return the student to the event that triggered the IPC.

b. Fail. An UNSAT IPC results in an FPC.

c. Marginal is not a possible outcome of an IPC.

3. IPC instructors. Shall be senior 0-3 or above, and shall be designated in writing by the CO. The IPC is the student's first step in the attrition process, and IPCs should only be performed by experienced instructors who carry the CO's confidence that they have a complete understanding of standards-based grading, MNTS, MIF/CTS requirements of the syllabus, and the IPC/FPC process.

(c) FPC. The following defines when to conduct an FPC, FPC outcomes, and FPC instructors.

1. FPC triggers:

a. Failure of an IPC.

b. In any case where a student has undergone an IPC in phase and subsequently meets any of the IPC triggers listed above.

c. Two academic examination failures in a phase.

d. Four cumulative UNSATs in a phase, including academic failures.

e. Failure to meet SMS goals.

f. At the discretion of the CO when there is doubt regarding the student's potential to successfully complete. Refer to CNATRAINST 1500.4H for additional guidance.

2. Outcomes are:

a. Pass. Returns the student to normal syllabus flow. This will normally return the student to the event that triggered the FPC.

b. Fail. An UNSAT FPC results in an attrition recommendation to Commander, Training Air Wing SIX, and a TRB.

c. Marginal is not a possible outcome for an FPC.

3. FPC Instructors. Whenever possible, FPCs should be conducted by the CO or the Executive Officer (XO) in the CO's absence. In the event that neither the CO nor XO are available or qualified to instruct in the required stage, FPC Instructors shall be O-4 or above, and shall be designated in writing by the CO. An FPC conducted in a simulator shall be evaluated and graded by a qualified squadron FPC Instructor. A qualified Contract Simulator Instructor (CSI) shall be assigned to assist.

(d) Progress Check Counseling

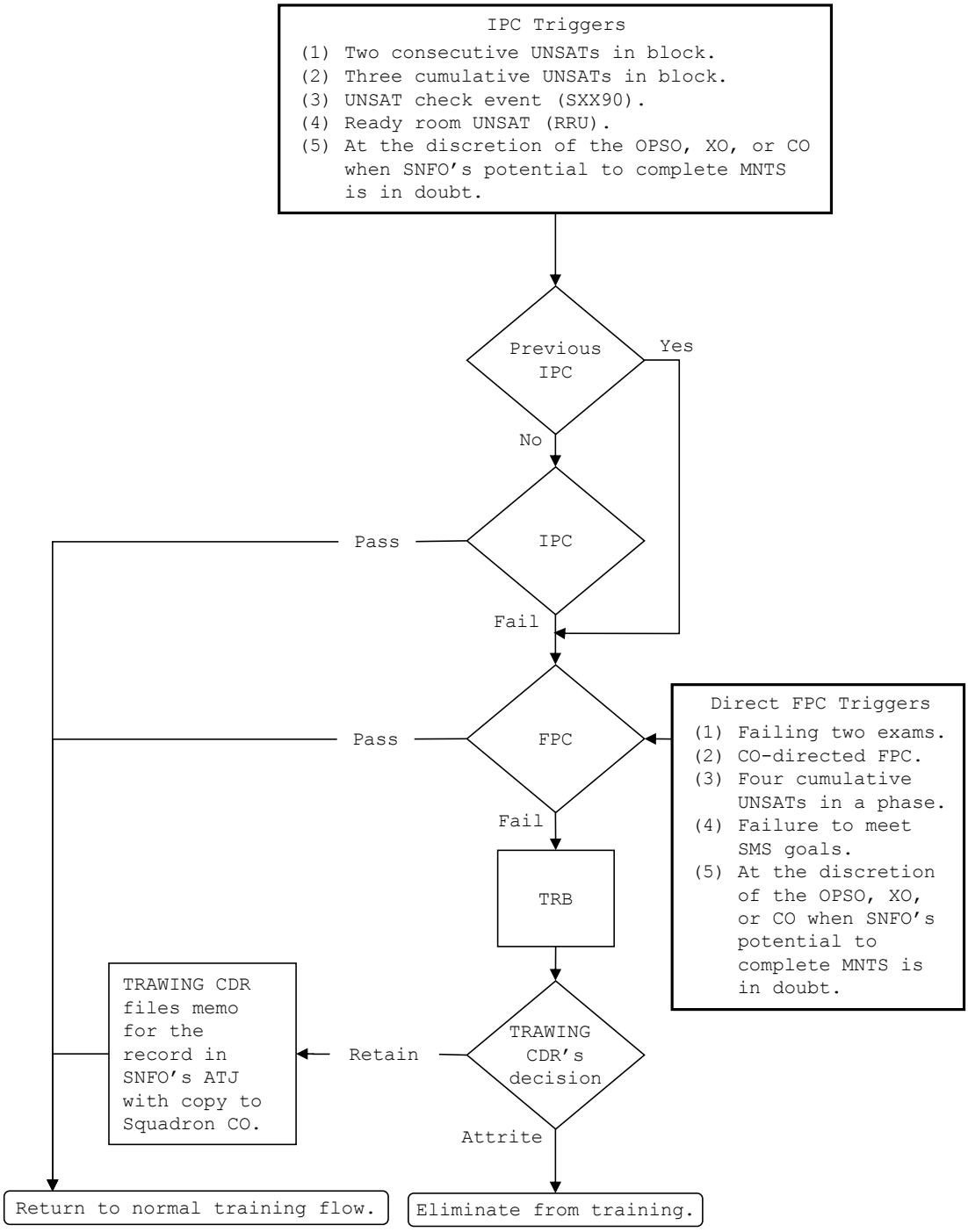
1. Prior to an IPC (SXX88). The student's Class Advisor, Student Control Officer, or Operations Officer shall counsel the student on the Progress Check process and document counseling on a Supplemental ATF.

2. Upon Completion of an IPC. The IPC instructor shall counsel the student on the Progress Check process, his/her retention/attrition recommendations, and future courses of action. The IPC Instructor should also strive to ensure the student is coping with the Progress Check process appropriately, and notify appropriate squadron leadership immediately if there are any concerns. Post-IPC counseling shall be documented on the IPC ATF.

3. Prior to an FPC (SXX89). The FPC Instructor shall counsel the student on the Progress Check process. This counseling shall be documented on the FPC ATF.

4. Upon Completion of an FPC. The CO shall counsel the student. Counseling should consist of the Progress Check process, attrition/retention recommendations, and future courses of action. The CO shall document counseling on the FPC ATF, or on a Supplementary ATF if the CO was not the FPC Instructor.

UMFO PROGRESS CHECK TRAINING REVIEW PROCESS



10. Special Instructions and Restrictions

a. Flight Hour/Event Requirements and Restrictions

(1) Programmed Hours and Events. Programmed syllabus flight hours are 48.5 hours. Event lengths or SXX86, 87, 88, and 89 events will cause variation. Accomplish all syllabus events.

(2) Minimum Night Hours. 2.0.

(3) Minimum Solo Hours. N/A.

(4) Minimum Instrument Hours (Actual or Simulated). N/A.

(5) Maximum Daily Student Activities (Aircraft, Simulator, or Academic). Students shall not exceed two activities during one duty day or three flights during cross-country flights.

(6) Minimum Student Turn-Times. One hour is required between debriefing of an event and the brief for a follow-on event. This does not apply to out-and-in or cross-country profiles; however, the instructor shall ensure adequate debrief and brief time is allocated.

(7) Crew Day. The period from the beginning of the student's first event or official duty of the day until completion of the last event of the day, including associated paperwork and debrief. Crew day shall not exceed 12 hours.

(8) Crew Rest. A minimum of 12 hours shall elapse between the conclusion of the student's last scheduled event of the day (including associated debrief) and his or her first scheduled event (including associated brief) of the following day. After six consecutive scheduled days, students shall receive one day off.

b. Maneuver Demonstrations. Maneuver demonstrations will be accomplished as required.

c. Airspace Utilization. Conduct training events in designated areas. These events may be conducted as out-and-ins with OPSO approval.

d. Aircraft/Simulator Interchangeability. Simulator events may not be substituted for flight events. Simulator events may be substituted in the aircraft when the simulator is unavailable for extended periods of time.

Chapter II

Ground Training

1. Familiarization Training Philosophy. Advanced Strike Fighter UMFO Familiarization training enhances previously learned skills developed in the Intermediate phase of training (navigation, communications, CRM/crew coordination, and aircraft performance/systems management), and adapts them to the T-45C aircraft. The primary focus will be emphasizing mission ownership and building situational awareness in a dynamic flight environment.

2. Strike Training Philosophy. The primary focus will be emphasizing strike planning, radar/EW theory and air-to-ground (A/G) radar operation, A/G targeting procedures, crew coordination, formation procedures in a low-altitude environment, and aircraft carrier (CVN) operations and procedures.

3. Close Air Support (CAS) Training Philosophy. The CAS stage of advanced training will build on the foundation of the two previous stages of training and familiarize the student with the components, structure, and procedures of CAS missions.

4. Basic Fighter Maneuvers (BFM) Training Philosophy. The BFM stage of training is designed to introduce and familiarize the SNFO with BFM theory, weapons employment techniques, BFM geometry, and offensive and defensive procedures and principles. The focus of this stage is to gain proficiency in solving range, angle, and closure problems in order to achieve positional advantage and either employ a weapon or deny an opponent a shot opportunity.

5. All Weather Intercepts (AWI) Training Philosophy. The AWI stage of training enhances briefing, navigation, communication, and aircraft systems management skills developed in the previous stages of the advanced syllabus. The primary focus is learning how to effectively employ the air-to-air (A/A) radar and intercept procedures to maneuver the aircraft into a position to employ weapons. In addition, this stage will build situational awareness and improve systems management skills and mission ownership. This training will culminate in the Self-Escort Strike block, which builds and tests Strike and Fighter proficiency.

Blk #	Media	Title	Events	Hrs	Blk Name
G01	Sqdn/ Class	Familiarization Stage Administration	3	8.0	ASI

1. Prerequisites

   a. G0101 prior to G0102.

   b. FAM4290 prior to G0103.

2. Events

G0101	Lect	Welcome Aboard	1.0
G0102	Sqdn	VT-86 Class Check-in	6.0
G0103	Sqdn	Familiarization Stage Debrief	1.0

3. Syllabus Notes. None.

4. Discuss Items. Advanced syllabus flow, scheduling/snivels, class advisor program, standardization program, NAVFLIR, philosophy of training, and cross-country request policy.

Blk #	Media	Title	Events	Hrs	Blk Name
G11	Class/ CAI	Familiarization Stage Ground Training	44	62.5	See Below

1. Prerequisites

a. G0102 (VT-86 Class Check-in) prior to G1101-26 (any order).

b. G1101-26 prior to G1127; G1127 prior to G1128-31 (any order) and G1140.

c. G1128-31 prior to G1132-37 (in order); G1137 prior to G1138-39 (any order).

d. G1138-39 prior to G1141-43 (in order) and G1144.

2. Events

G1101	Lect	Introduction to T-45C	1.0	SYS
G1102	MIL	Intro to T-45C Configuration	1.3	SYS
G1103	MIL	Electrical System	1.9	SYS
G1104	MIL	Engine and Related Systems	1.7	SYS
G1105	MIL	Fuel System	1.0	SYS
G1106	MIL	Hydraulic System	1.3	SYS
G1107	MIL	Hydraulic Subsystems	1.7	SYS
G1108	MIL	Flight Control System	1.5	SYS
G1109	MIL	Egress System	1.0	SYS
G1110	MIL	ECS/OBOGS	1.0	SYS
G1111	MIL	Flight Instruments and Related Systems	1.5	SYS
G1112	MIL	CNI Systems	1.5	SYS

2. Events (Cont)

G1113	MIL	Other T-45C Systems	1.0	SYS
G1114	MIL	GINA Operation Characteristics	1.5	SYS
G1115	MIL	T-45C VMTS Operation	1.0	SYS
G1116	CAI	Exterior Preflight Checks	0.6	SYS
G1117	CAI	Engine Start and Poststart Procedures	1.0	SYS
G1118	CAI	Multi-Function Color Display and Navigation System Operation	1.2	SYS
G1119	CAI	Display System (HUD)	0.8	SYS
G1120	CAI	Waypoint Navigation Procedures	1.2	SYS
G1121	Lect	Ejection Seat/Egress Lecture	1.5	EJECT
G1122	MIL	Start, Ground, and Takeoff Emergency Procedures I	1.5	EMFP1
G1123	MIL	Start, Ground, and Takeoff Emergency Procedures II	1.5	EMFP1
G1124	MIL	Operational and Ejection Emergency Procedures	1.0	EMFP1
G1125	MIL	Engine and Hydraulic Emergency Procedures I	1.5	EMFP1
G1126	MIL	Engine and Hydraulic Emergency Procedures II	1.5	EMFP1
G1127	CAI Test	Emergency Flight Procedures Exam I/Review	1.5	EMFP1
G1128	MIL	Canopy and Flight Control Emergency Procedures	1.0	EMFP2
G1129	MIL	Electrical and Indicator Emergency Procedures I	1.5	EMFP2

2. Events (Cont)

G1130	MIL	Electrical and Indicator Emergency Procedures II	1.7	EMFP2
G1131	MIL	Operational and Landing Emergency Procedures	1.5	EMFP2
G1132	CAI Test	Emergency Flight Procedures Exam II/Review	1.5	EMFP2
G1133	Lect	NATOPS Review Lecture	2.0	NATOPS
G1134	P/P	NATOPS Open-Book Exam	2.0	NATOPS
G1135	P/P	NATOPS Closed-Book Exam/Review	2.5	NATOPS
G1136	MIL	Out-of-Control Flight Procedures	1.0	OCFFP
G1137	CAI Test	Out-of-Control Flight Exam/Review	1.5	OCFFP
G1138	CAI	Use and Operation of TACAN, VOR, and VOR/DME	0.8	INST
G1139	CAI	Components and Characteristics of the ILS	0.8	INST
G1140	Lect	Ejection Seat Brief/ GLOC/GTIP/Hypoxia	2.0	EJECT
G1141	Lect	Advanced Instrument Planning Lecture	3.0	INST
G1142	P/P	Advanced Instrument Planning Open-Book Exam	2.0	INST
G1143	P/P	Advanced Instrument Planning Closed-Book Exam/Review	2.0	INST
G1144	MIL	CRM	1.0	CRM

3. Syllabus Note. Accomplish the following during G1121: SJU-17 brief, survival gear inspection and review, egress review, and ejection seat weigh-in and documentation.

4. Discuss Items. Discuss the following during G1121: survival gear and emergency ground egress.

Blk #	Media	Title	Events	Hrs	Blk Name
FAM11	Class	Familiarization Stage Flight Support	3	7.0	FAMFP

1. Prerequisites

a. G1143 (Advanced Instrument Planning Closed-Book Exam/Review).

b. G1144 (CRM).

2. Events

FAM1101	MIL	Familiarization Flight Procedures/Prep and Course Rules	3.0
FAM1102	Lect	Familiarization Crew Coordination Stan	1.0
FAM1103	Lect	Familiarization Flight 0 (FAM-0)	3.0

3. Syllabus Note. FAM1103: Full flight gear and static aircraft required.

4. Discuss Items. FAM1103: FOD prevention, flight gear inspection, aircraft manup procedure, ADB, MAF, briefing room setup, NAVFLIR, pre/postflight inspection, aircraft discrepancies, and flight-line hazards.

Blk #	Media	Title	Events	Hrs	Blk Name
G02	Class/ PTT/OFT/ Sqdn	Strike Stage Administration	4	17.5	See Below

1. Prerequisites

   a. G0103 (Familiarization Stage Debrief) prior to G0201.

   b. STK1103-10 prior to G0202.

   c. STK1115 prior to G0203.

   d. STK4390 prior to G0204.

`2. Events

G0201	Lect	Introduction to Strike	0.5	ASI
G0202	PTT/OFT	Strike Self-Study I	8.0	SS
G0203	PTT/OFT	Strike Self-Study II	8.0	SS
G0204	Sqdn	Strike Stage Debrief	1.0	ASI

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
STK11	Class/ CAI	Strike Stage Flight Support	15	37.9	See Below

1. Prerequisites

a. FAM4290 prior to STK1101-2.

b. G0201 (Introduction to Strike) and STK1101-2 prior to STK1103-10 (any order).

c. STK3106 prior to STK1111-15.

2. Events

STK1101	CAI	RDR Principles and Operation I	3.0	STKFP
STK1102	MIL	RDR Principles and Operation II	1.5	STKFP
STK1103	MIL	A/G Radar Procedures	2.5	STKFP
STK1104	CAI	Weapons Data Entry Procedures (STRS versus SMS)	0.7	STKFP
STK1105	MIL	Section Flight Procedures	1.5	STKFP
STK1106	MIL	Low-Level Planning	3.0	STKNAVFP
STK1107	Lab	Joint Mission Planning System Lab	8.0	STKNAVFP
STK1108	MIL	Low-Level Procedures	2.5	STKNAVFP
STK1109	MIL	Low Altitude Awareness Training	2.0	STKNAVFP
STK1110	MIL	Carrier Operations	3.0	CVNP
STK1111	MIL	Electronic Warfare Fundamentals	1.5	STKFP
STK1112	MIL	A/G Targeting Procedures	3.2	STKFP
STK1113	P/P	EP/Limits Exam I/Review	1.0	EMFP3

2. Events (Cont)

STK1114	Lect	Midstage Review	2.0	ASI
STK1115	CAI Test	Midstage Exam/Review	2.5	ASI

3. Syllabus Note. STK1103 and STK1112 require use of the RHC.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G03	Class/ PTT/OFT/ Sqdn	CAS Stage Administration	3	10.0	See Below

1. Prerequisites

   a. G0204 (Strike Stage Debrief) prior to G0301.

   b. CAS1102 (CAS Flight Procedures) prior to G0302.

   c. CAS4290 prior to G0303.

2. Events

G0301	Lect	Introduction to CAS	1.0	ASI
G0302	PTT/OFT	CAS Self-Study	8.0	SS
G0303	Sqdn	CAS Stage Debrief	1.0	ASI

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
CAS11	Class/ CAI	CAS Stage Flight Support	2	4.0	CASFP

1. Prerequisite. G0301 (Introduction to CAS) prior to CAS1101-2 (in order).

2. Events

CAS1101	CAI	CAS Fundamentals	2.0
CAS1102	MIL	CAS Flight Procedures	2.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G04	Class/ Sqdn	BFM Stage Administration	2	2.0	ASI

1. Prerequisites

   a. G0303 (CAS Stage Debrief) prior to G0401.

   b. BFM4290 prior to G0402.

2. Events

G0401	Lect	Introduction to BFM	1.0
G0402	Sqdn	BFM Stage Debrief	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
BFM11	Class/ CAI	BFM Stage Flight Support	4	7.7	BFMFP

1. Prerequisite. G0401 (Introduction to BFM) prior to BFM1101-4 (in order).

2. Events

BFM1101	CAI	HUD/Data Entry Procedures	0.7
BFM1102	MIL	BFM Theory	3.0
BFM1103	CAI	BFM Weapons	1.0
BFM1104	MIL	Basic Fighter Maneuvers Flight Procedures	3.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G05	Class/ PTT/OFT/ Sqdn	AWI Stage Administration	7	39.0	See Below

1. Prerequisites

a. G0402 (BFM Stage Debrief) prior to G0501.

b. AWI1124 (EP/Limits Exam II) prior to G0502.

c. AWI1128 (Intercept Progression IV) prior to G0503.

d. AWI1129 (Introduction to Section Radar Attacks (SRA)) prior to G0504.

e. AWI1131 (Self-Escort Strike Route) prior to G0505.

f. AWI4490 prior to G0506-7 in order.

2. Events

G0501	Lect	Introduction to AWI	1.5	ASI
G0502	PTT/OFT	AWI Self-Study I	8.0	SS
G0503	PTT/OFT	AWI Self-Study II	8.0	SS
G0504	PTT/OFT	AWI Self-Study III	8.0	SS
G0505	PTT/OFT	AWI Self-Study IV	8.0	SS
G0506	Sqdn	AWI Stage Debrief	1.0	ASI
G0507	Sqdn	Critique and Graduation	4.5	ASI

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
AWI11	Class/ CAI	AWI Stage Flight Support	31	49.8	See Below

1. Prerequisites

a. G0501 (Introduction to AWI) prior to AWI1101-24 (in order).

b. AWI3104 prior to AWI1125-28 (in order).

c. AWI4104 prior to AWI1129.

d. AWI3203 prior to AWI1130.

e. AWI4205 prior to AWI1131.

2. Events

AWI1101	CAI	Introduction to Air-to-Air Radar I	1.0	AWIFP1
AWI1102	CAI	Air-to-Air Radar Modes I	2.0	AWIFP1
AWI1103	MIL	Air-to-Air Radar Modes II	1.3	AWIFP1
AWI1104	CAI	Strike Fighter Purpose	0.5	AWIFP1
AWI1105	CAI	Fighter Missions	1.5	AWIFP1
AWI1106	CAI	Air Intelligence	1.5	AWIFP1
AWI1107	CAI	Air Intercept Control	1.0	AWIFP1
AWI1108	CAI	Descriptive and Directive Commentary	0.5	AWIFP1
AWI1109	CAI	Intercept Visualization	1.5	AWIFP1
AWI1110	CAI	Fundamentals of Intercept Geometry	1.0	AWIFP1
AWI1111	MIL	Intercept Visualization and Geometry	1.5	AWIFP1
AWI1112	CAI	Managing Intercept Geometry I	3.0	AWIFP1

2. Events (cont)

AWI1113	MIL	Managing Intercept Geometry II	3.0	AWIFP1
AWI1114	CAI	Stern Conversions Intercepts I	1.0	AWIFP1
AWI1115	CAI	Intercept Progression I	1.0	AWIFP1
AWI1116	MIL	Stern Conversions Intercepts II	1.5	AWIFP1
AWI1117	MIL	Intercept Progression II	1.0	AWIFP1
AWI1118	CAI	Air-to-Air Radar Missiles	1.0	AWIFP1
AWI1119	CAI	BVR Weapons Employment I	1.0	AWIFP1
AWI1120	MIL	BVR Weapons Employment II	1.5	AWIFP1
AWI1121	Lect	End of AWI Review Lecture	1.5	AWIIFP1
AWI1122	CAI Test	End of AWI Exam/Review	2.5	AWIFP1
AWI1123	MIL	Flight Preparation Lecture	1.0	AWIFP2
AWI1124	P/P	EP/Limits Exam II/Review	1.0	EMFP4
AWI1125	CAI	1 V 1 AWI Procedures I	3.5	AWIFP2
AWI1126	MIL	1 V 1 AWI Procedures II	3.5	AWIFP2
AWI1127	CAI	Intercept Progression III	1.0	AWIFP2
AWI1128	MIL	Intercept Progression IV	1.0	AWIFP2
AWI1129	MIL	Introduction to Section Radar Attacks (SRA)	2.0	AWIFP2
AWI1130	MIL	Introduction to 2 V X	3.5	AWIFP2
AWI1131	MIL	Self-Escort Strike Route	2.0	AWIFP2

3. Syllabus Note. AWI1102, AWI1118, and AWI1125 require the use of the RHC.

4. Discuss Items. None.

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Chapter III

NATOPS Training

This chapter does not apply to Advanced UMFO training.

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Chapter IV

Contact Training

1. Seating. The student shall occupy the rear cockpit for all events.

2. Matrices. The following matrix is an overview of the Advanced Strike/Fighter UMFO Familiarization Stage for the T-45C. The purpose of this matrix is to provide the SNFO and IP/INFO the easiest way to track progress, regression, and overall status in relation to the MIF. A single matrix follows each block description throughout this chapter.

3. Familiarization Stage MIF

Simulator Event
Check Ride Event

FAMILIARIZATION STAGE MANEUVER ITEM FILE							
CTS REF	**MANEUVER**	**FAM3104**	**FAM3205**	**FAM3304**	**FAM4105**	**FAM4290**	**FAM4302**
1	General Knowledge/Procedures	3+	3+	4+	4+	4+	4+
2	Emergency Procedures	3+	3+	4+	4+	4+	4+
3	Headwork/Situational Awareness	3+	3+	3+	3+	3+	4+
4	Basic Airwork Recognition	3+	3+	4+	4+	4+	4+
5	Mission Planning/Briefing/ Debriefing	3+	3+	4+	4+	4+	4+
6	CRM/Crew Coordination	3+	3+	4+	4+	4+	4+
7	Mission Ownership/Assertiveness	3+	3+	3+	3+	3+	4+
8	Flight Admin	3+	3+	4+	4+	4+	4+
8	Route/Destination Change		3+		4	4	
8	SUA/MTR Entry/Exit Procedures and Airspace Management	3+	3+	4+	4+	4+	
2	Start Malfunctions	3+					
2	Ground Emergencies	3+					

MIF continued on next page.

FAMILIARIZATION STAGE MANEUVER ITEM FILE							
CTS REF	**MANEUVER**	**FAM3104**	**FAM3205**	**FAM3304**	**FAM4105**	**FAM4290**	**FAM4302**
2	Aborted Takeoff	3+					
2	Takeoff EPs	3+					
2	Engine EPs	3+	3+				
2	Flight Control EPs	3+	3				
2	Gear EPs	3+					
2	Electrical EPs	3+	3+				
2	Hydraulic EPs		3+				
2	ECS EPs	3+	3+				
2	Fuel System EPs		3+				
2	Ejection	3+					
9	Ground Operations	3+	3+	4+	4+	4+	4+
10	Communications	3+	3+	4+	4+	4+	4+
11	Takeoff/Departure Procedure	3+	3+	4+	4+	4+	4+
12	Navigation Procedures		3+	3+	4+	4+	4+
12	Intercept/Maintain Course		3+				
12	Arcing		3+				
12	Nonsystem Point-to-Point Navigation		3+				
12	System Point-to-Point Navigation		3+				
12	High Altitude Penetration		3+				
13	Approach/Landing	3+	3+	3+	4+	4+	4+
13	ILS/LOC Approach		3+		4+	4	4
13	PAR/ASR		3+		4+	4	4
13	TACAN/VOR/VOR-DME Approach		3+		4+	4	4
13	No-Gyro PAR/ASR		3+		4+	4	4
13	NF Touch-and-Go	3+		4+	4+	4	
13	FF Roll-and-Go	3+		4+	4+	4	

MIF continued on next page.

FAMILIARIZATION STAGE MANEUVER ITEM FILE							
CTS REF	**MANEUVER**	**FAM3104**	**FAM3205**	**FAM3304**	**FAM4105**	**FAM4290**	**FAM4302**
13	Missed Approach		3+		4+	4	
14	Visual/Instrument Scan/Lookout Doctrine		3+	3+	3+	3+	4+
15	Holding		3+		4+	4	
16	Accelerated Stall			3+	3+	3+	
16	Break Turn Stall			3+	3+	3	
16	Power Off Stall			3+	3+	3	
16	Landing Attitude Maneuver			3+	3+	3	
16	Landing Attitude Stall			3+	3+	3+	
16	Approach Turn Stall			3+	3+	3+	
16	Spin/Spin Recovery			3+			
16	Vertical Recovery			3+	3+	3	
18	Course Rules	3+		4	4+	4	
19	Unusual Attitude/Recovery (IMC)		3+	3			
19	Unusual Attitude/Recovery (VMC)			3+	4+	4	
30	Precautionary Approach(es)	3+	3+	3+	3+	3	
30	Min/Emergency Fuel Approach	3+	4+		4+	4	
30	Low Oil Approach	3+	4+		4+	4	
30	Emergency Instrument Approach			4+			4+
50	Aileron Roll			3+	3+	3	
50	Wingover			3+	3+	3	
50	Barrel Roll			3+	3+	3	
50	Squirrel Cage			3+	3+	3	

Blk #	Media	Title	Events	Hrs	H/X
FAM31	2F205A	Cockpit Orientation/ Instrument Familiarization	4	6.0	1.5

1. Prerequisites

a. FAM1102 (Familiarization Crew Coordination Stan).

b. G1140 (Ejection Seat Preflight).

2. Syllabus Notes

a. Practice all checklists, applicable FTI briefings, radio calls, and basic aircraft control. Ensure student's checklist proficiency is adequate to proceed to flight operations.

b. Multiple items are listed as discuss items; however, due to time constraints, it may not be possible to discuss all items prior to the simulator event. Therefore, a ***Discuss Item*** may be addressed during or after the SIM, but the priority is to complete the simulator event.

c. Student shall operate the flight controls to the maximum extent possible in this block of training.

d. The student will perform/direct the following procedures IAW FTI, NATOPS, and SOP on the indicated event:

FAM3101
Don flight equipment, canopy/ejection seat preflight, strap-in procedures, ground operations, ground communications, engine runup checks, takeoff/departure procedure, 10,000-feet checks/15-minute report, descent/penetration checklist, landing checklist, landing pattern procedures, FF roll-and-go, after landing ground operations, and normal egress procedures. Enter mission data into display system.

EPs/malfunctions: Flaps/slats failure.

FAM3102
Don flight equipment, canopy/ejection seat preflight, strap-in procedures, ground operations, ground communications, engine runup checks, takeoff/departure procedure, 10,000-feet checks/15-minute report, descent/penetration checklist, straight-in precautionary approach (low oil approach), landing checklist, landing pattern procedures, after landing ground operations, and normal egress procedures.

EPs/malfunctions: engine fire on start, start malfunctions, ejection, GTS fire on start, and emergency engine shutdown/egress.

FAM3103
Don flight equipment, canopy/ejection seat preflight, strap-in procedures, ground operations, ground communications, engine runup checks, takeoff/departure procedure, 10,000-feet checks/15-minute report, descent/penetration checklist, overhead precautionary approach, landing checklist, landing pattern procedures, after landing ground operations, and normal egress procedures.

EPs/malfunctions: start malfunctions, bleed valve failure, engine failure on takeoff, ejection, abort.

FAM3104
Don flight equipment, canopy/ejection seat preflight, strap-in procedures, ground operations, ground communications, engine runup checks, takeoff/departure procedure, 10,000-feet checks/15-minute report, descent/penetration checklist, abeam precautionary approach, landing checklist, landing pattern procedures, after landing ground operations, and normal egress procedures.

EPs/malfunctions: blown tire during takeoff or landing, generator failure, landing gear unsafe/fail to retract.

3. Special Syllabus Requirements. None.

4. Discuss Items

FAM3101
QOD, abnormal start indications, clear engine procedures, ground operations and checklists, in-flight checklists, course rules, and landing pattern procedures.

FAM3102
QOD, fire light, abort decision/procedures, ground ejection situations, VMC low oil approach procedures, and straight-in precautionary approach procedures. NFO responsibilities in PA or landing pattern.

FAM3103
QOD, engine failure, ejection decision/procedures, overhead precautionary approach procedures, abort decision and procedures, airstarts, and ground ejection situations.

FAM3104
QOD, blown tire, min/emergency fuel approach, unsafe gear, generator warning light, short-field arrestment, and abeam precautionary approach procedure.

5. Block MIF

CTS REF	MANEUVER	FAM3104
1	General Knowledge/Procedures	3+
2	Emergency Procedures	3+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	3+
5	Mission Planning/Briefing/ Debriefing	3+
6	CRM/Crew Coordination	3+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	3+
8	SUA/MTR Entry/Exit Procedures and Airspace Management	3+
2	Start Malfunctions	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM3104
2	Ground Emergencies	3+
2	Aborted Takeoff	3+
2	Takeoff EPs	3+
2	Engine EPs	3+
2	Flight Control EPs	3+
2	Gear EPs	3+
2	Electrical EPs	3+
2	ECS EPs	3+
2	Ejection	3+
9	Ground Operations	3+
10	Communications	3+
11	Takeoff/Departure Procedure	3+
13	Approach/Landing	3+
13	NF Touch-and-Go	3+
13	FF Roll-and-Go	3+
18	Course Rules	3+
30	Precautionary Approach(es)	3+
30	Min/Emergency Fuel Approach	3+
30	Low Oil Approach	3+

Blk #	Media	Title	Events	Hrs	H/X
FAM32	2F205A	Instrument Familiarization Simulators	5	7.5	1.5

1. Prerequisite. FAM3104.

2. Syllabus Notes

a. Two emergency procedure scenarios that conclude with emergency instrument approach to landing shall be completed on two of the five events (minimum).

b. Full instrument familiarization mission profiles will be executed on each event to include mission and fuel planning, brief, engine start, ground operations, takeoff/departure, navigation procedures, communications, high work, multiple approaches/landings, postlanding ground operations, and debrief.

c. Student shall perform rear cockpit NFO responsibilities in this block and should only operate flight controls during FAM3202 while experiencing controllability difficulties.

d. FAM3204 is a Night Familiarization event. Night conditions will be simulated throughout the entire event to include manup, postshutdown egress, and postflight cockpit inspection.

e. Multiple items are listed as discuss items; however, due to time constraints, it may not be possible to discuss all items prior to the simulator event. Therefore, a ***Discuss Item*** may be addressed during or after the SIM but the priority is to complete the simulator event.

f. Accomplish the following ***EPs***, ***instrument maneuvers/approach,*** and ***high-work maneuvers*** for each event as follows:

FAM3201
EPs: engine overspeed, engine stalls, engine flameout, airstart (high altitude), engine failure (seizure), and oil pressure failure.

Instrument maneuvers/approach: (IMC) low oil GCA.

High-work: unusual attitude recovery (IMC).

FAM3202
EPs: GTS fire, speed brake fails to retract, engine fire on shutdown, emergency egress, generator warning light, short-field arrestment, and ground emergency communications.

Instrument maneuvers/approach: PAR, ASR.

High-work: unusual attitude recovery (IMC).

FAM3203
EPs: Uncommanded RAT extension, FPRESS caution light, cabin altitude failure, HYD 1 failure, min/emergency fuel approach, and short-field arrestment.

Instrument maneuvers/approach: HI TACAN/ILS.

High-work: unusual attitude recovery (IMC).

FAM3204
EPs: GINA failure, pitot static malfunctions, total electrical failure, ACCEL light, and AVHOT caution light.

Instrument maneuvers/approach: Night area familiarization, field lighting, night field entry/landing pattern, and HI VOR/ILS.

High-work: unusual attitude recovery (IMC).

FAM3205
EPs: inverter failure, fuel leak, LP fuel pump failure, and engine flameout.

Instrument maneuvers/approach: (IMC) Min/emergency fuel approach, high TACAN.

High-work: unusual attitude recovery (IMC).

3. Special Syllabus Requirements. None.

4. Discuss Items

FAM3201
QOD, instrument navigation procedures, system/nonsystem point-to-point, unusual attitude recovery (IMC), EGT/RPM warning light, and low-oil approach.

FAM3202
QOD, holding, generator failure, high-altitude penetration, ASR/PAR approach, high TACAN approach, brake failure, and missed approach.

FAM3203
QOD, holding, arcing, HI TACAN, and ILS approach.

FAM3204 - Night Familiarization
QOD, cockpit lighting and controls, aircraft lighting and controls, night manup considerations, field lighting, ALDIS lamp signals, and HI VOR-DME approach.

FAM3205
QOD, full procedure turn VOR approach, min/emergency fuel approach, and filing requirements.

5. Block MIF

CTS REF	MANEUVER	FAM3205
1	General Knowledge/Procedures	3+
2	Emergency Procedures	3+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	3+
5	Mission Planning/Briefing/ Debriefing	3+
6	CRM/Crew Coordination	3+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	3+
8	Route/Destination Change	3+
8	SUA/MTR Entry/Exit Procedures and Airspace Management	3+
2	Engine EPs	3+
2	Flight Control EPs	3
2	Electrical EPs	3+
2	Hydraulic EPs	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM3205
2	ECS EPs	3+
2	Fuel System EPs	3+
9	Ground Operations	3+
10	Communications	3+
11	Takeoff/Departure Procedure	3+
12	Navigation Procedures	3+
12	Intercept/Maintain Course	3+
12	Arcing	3+
12	Nonsystem Point-to-Point Navigation	3+
12	System Point-to-Point Navigation	3+
12	High Altitude Penetration	3+
13	Approach/Landing	3+
13	ILS/LOC Approach	3+
13	PAR/ASR	3+
13	TACAN/VOR/VOR-DME Approach	3+
13	No-Gyro PAR/ASR	3+
13	Missed Approach	3+
14	Visual/Instrument Scan/Lookout Doctrine	3+
15	Holding	3+
19	Unusual Attitude/Recovery (IMC)	3+
30	Precautionary Approach(es)	3+
30	Min/Emergency Fuel Approach	4+
30	Low Oil Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
FAM33	2F205A	Familiarization Simulators	4	6.0	1.5

1. Prerequisite. FAM3205.

2. Syllabus Notes

a. Selected emergency procedure scenarios that conclude with full precautionary approach to landing shall be completed on each event to the maximum extent practicable.

b. Full familiarization mission profile will be executed on each event to include mission planning, brief, engine start, ground operations, takeoff/departure, navigation procedures, communications, high work, approach/landing, postlanding ground operations and debrief.

c. Multiple items are listed as discuss items; however, due to time constraints, it may not be possible to discuss all items prior to the simulator event. Therefore, a ***Discuss Item*** may be addressed during or after the SIM, but the priority is to complete the simulator event.

d. Accomplish the following EPs, Instruction maneuvers/ approach and high-work maneuvers for each event as follows:

FAM3301
EPs: OIL PRESS warning light, OBOGS system malfunctions, flap failure, NF touch-and-go, and short-field arrestment.

Instrument maneuvers/approach: precautionary approach and instrument approach(es).

High-work: vertical recovery, unusual attitude recovery (VMC), accelerated stall, break turn stall, power-off stall, aileron roll, and wingover.

FAM3302
EPs: Engine failure (high and low), airstart procedures, brake failure.

Instrument maneuvers/approach: precautionary approach, landing pattern (if practical).

High-work: vertical recovery, unusual attitude recovery (VMC), landing attitude maneuver, landing attitude stall, approach turn stall, barrel roll, and squirrel cage.

FAM3303

EPs: Departure/spin, TP HOT caution light, EGT/RPM warning light or compressor stall, and loss of directional control.

Instrument maneuvers/approach: course rules, landing pattern, PA pattern (low key), and approach turn stall.

High-work: vertical recovery, unusual attitude recovery (VMC), spin/spin recovery, and squirrel cage.

FAM3304

EPs: OIL PRESS warning light, NORDO, and full-flap roll-and-go.

Instrument maneuvers/approach: precautionary approach, landing pattern (if practical), and instrument approach(es).

High-work: vertical recovery, unusual attitude recovery (VMC), accelerated stall, break turn stall, power-off stall, landing attitude maneuver, landing attitude stall, approach turn stall, and squirrel cage.

3. Special Syllabus Requirements. None.

4. Discuss Items

FAM3301

QOD, SUA/MTR entry and exit procedures, prohibited maneuvers, vertical recovery, accelerated stall, break turn stall, power off stall, aileron roll, wingover procedures, and OBOGS malfunction procedures.

FAM3302

QOD, vertical recovery, unusual attitude recovery (VMC), landing attitude maneuver, landing attitude stall, approach turn stall, barrel roll, squirrel cage, engine failure, and airstart procedures.

FAM3303
QOD, overhead precautionary approach-parallel entry, spin recognition/spin recovery, departure/spin, EGT/RPM, and TP HOT caution light procedures.

FAM3304
QOD, lost comm procedures, smoke or fumes in cockpit, and loss of directional control procedures.

5. Block MIF

CTS REF	MANEUVER	FAM3304
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	4+
8	SUA/MTR Entry/Exit Procedures and Airspace Management	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	3+
13	Approach/Landing	3+
13	NF Touch-and-Go	4+
13	FF Roll-and-Go	4+
14	Visual/Instrument Scan/Lookout Doctrine	3+
16	Accelerated Stall	3+
16	Break Turn Stall	3+
16	Power Off Stall	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM3304
16	Landing Attitude Maneuver	3+
16	Landing Attitude Stall	3+
16	Approach Turn Stall	3+
16	Spin/Spin Recovery	3+
16	Vertical Recovery	3+
18	Course Rules	4
19	Unusual Attitude/Recovery (IMC)	3
19	Unusual Attitude/Recovery (VMC)	3+
30	Precautionary Approach(es)	3+
30	Emergency Instrument Approach	4+
50	Aileron Roll	3+
50	Wingover	3+
50	Barrel Roll	3+
50	Squirrel Cage	3+

Blk #	Media	Title	Events	Hrs	H/X
FAM41	T-45C	Familiarization Flight Training	5	6.5	1.3

1. Prerequisites

a. FAM1103 (FAM-0).

b. FAM3304.

2. Syllabus Notes

a. A minimum of one of the FAM4102-4 events shall be flown at night. Block flights may be flown as instrument or familiarization flight profiles or a combination of both (delays in MOA/SUA for high work) in order to obtain MIF by the EOB.

b. Full familiarization mission profile will be executed on each event to include mission planning, brief, engine start, ground operations, takeoff/departure, navigation procedures, communications, high work, approach/landing, postlanding ground operations and debrief.

c. FAM4101: Student will be prepared to brief/debrief the flight IAW FTI and squadron directives, but Instructor will demonstrate a proper brief/debrief. Instructor will observe student's preflight inspection and manup procedures on this event.

d. FAM4102-5: Student will brief and debrief each event IAW FTI and squadron directives.

3. Special Syllabus Requirements. None.

4. Discuss Items

FAM4101
QOD, basic T-45C single-ship flight procedures and flight conduct, unusual attitudes, crew coordination, and alternate planning.

FAM4102
QOD, NATOPS operating limitations, Mission Commander responsibilities, abort considerations, and VFR landing pattern procedures.

FAM4103
QOD, engine failure procedures/considerations, precautionary approach procedures, and ORM review.

FAM4104
QOD, single-ship emergency procedures, and OBOGS malfunctions/considerations.

FAM4105
QOD, emergency approach procedures, and CRM review.

5. Block MIF

CTS REF	MANEUVER	FAM4105
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	4+
8	Route/Destination Change	4
8	SUA/MTR Entry/Exit Procedures and Airspace Management	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	ILS/LOC Approach	4+
13	PAR/ASR	4+
13	TACAN/VOR/VOR-DME Approach	4+
13	No-Gyro PAR/ASR	4+
13	NF Touch-and-Go	4+
13	FF Roll-and-Go	4+
13	Missed Approach	4+
14	Visual/Instrument Scan/Lookout Doctrine	3+
15	Holding	4+
16	Accelerated Stall	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM4105
16	Break Turn Stall	3+
16	Power Off Stall	3+
16	Landing Attitude Maneuver	3+
16	Landing Attitude Stall	3+
16	Approach Turn Stall	3+
16	Vertical Recovery	3+
18	Course Rules	4+
19	Unusual Attitude/Recovery (VMC)	4+
30	Precautionary Approach(es)	3+
30	Min/Emergency Fuel Approach	4+
30	Low Oil Approach	4+
50	Aileron Roll	3+
50	Wingover	3+
50	Barrel Roll	3+
50	Squirrel Cage	3+

Blk #	Media	Title	Events	Hrs	H/X
FAM42	T-45C	Familiarization Flight Training Check Ride	1	1.5	1.5

1. Prerequisite. F4105.

2. Syllabus Note

a. Student will assume role of Mission Commander in the complete execution of the flight from preflight planning to postflight debrief IAW FTI, squadron directives, and instructor recommendations.

b. If all events in previous block were taught by the same IP, this event should be taught by a different IP.

c. A minimum of one instrument approach is required for completion.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, any boldface emergency procedures review, Mission Commander responsibilities, and CRM.

5. Block MIF

CTS REF	MANEUVER	FAM4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	4+
8	Route/Destination Change	4

MIF continued on next page.

CTS REF	MANEUVER	FAM4290
8	SUA/MTR Entry/Exit Procedures and Airspace Management	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	ILS/LOC Approach	4
13	PAR/ASR	4
13	TACAN/VOR/VOR-DME Approach	4
13	No-Gyro PAR/ASR	4
13	NF Touch-and-Go	4
13	FF Roll-and-Go	4
13	Missed Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	3+
15	Holding	4
16	Accelerated Stall	3+
16	Break Turn Stall	3
16	Power Off Stall	3
16	Landing Attitude Maneuver	3
16	Landing Attitude Stall	3+
16	Approach Turn Stall	3+
16	Vertical Recovery	3
18	Course Rules	4
19	Unusual Attitude/Recovery (VMC)	4
30	Precautionary Approach(es)	3
30	Min/Emergency Fuel Approach	4
30	Low Oil Approach	4
50	Aileron Roll	3
50	Wingover	3
50	Barrel Roll	3
50	Squirrel Cage	3

Blk #	Media	Title	Events	Hrs	H/X
FAM43	T-45C	Instrument Familiarization Flight Training	2	3.0	1.5

1. Prerequisite. FAM4290.

2. Syllabus Note

a. Student will assume role of Mission Commander in the complete execution of the flight from preflight planning to postflight debrief IAW FTI, squadron directives, and instructor recommendations.

b. Each flight will be flown as a single-ship flight.

c. This block of training is designed to refresh SNFO's instrument proficiency during late phase training blocks and should be accomplished during later stages to the maximum extent practicable.

d. These events should be scheduled as out-and-in flights to the maximum extent practicable.

e. A minimum of two instrument approaches are required on each event.

f. Flights in this block may be used to obtain syllabus night minimums.

3. Special Syllabus Requirements. None.

4. Discuss Items

FAM4301
QOD, instrument navigation procedures, ASR/PAR approach, missed approach, and low oil approach.

FAM4302
QOD, holding, arcing, HI TACAN, ILS approach, and min/emergency fuel approach.

5. Block MIF

CTS REF	MANEUVER	FAM4302
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	ILS/LOC Approach	4
13	PAR/ASR	4
13	TACAN/VOR/VOR-DME Approach	4
13	No-Gyro PAR/ASR	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
30	Emergency Instrument Approach	4+

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Chapter V

Instrument Training

This chapter does not apply to Advanced UMFO training.

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Chapter VI

Navigation Training

This chapter does not apply to Advanced UMFO training.

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Chapter VII

Formation Training

This chapter does not apply to Advanced UMFO training.

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Chapter VIII

Tactical Training

1. Strike Stage Training Objectives. The Strike stage is designed to develop and prepare the SNFO for service in tactical fleet aircraft. The stage is structured to familiarize and practice Strike mission planning and procedures, mission fuel analysis and management, and mission ownership during low- and high-altitude Strike training events.

2. Close Air Support (CAS) Stage Training Objectives. The CAS stage is designed to develop and prepare the SNFO for service in tactical fleet aircraft. The CAS stage of training is designed to familiarize the student with CAS procedures and communications.

3. Basic Fighter Maneuvers (BFM) Stage Training Objectives. The BFM stage is designed to develop and prepare the SNFO for service in tactical fleet aircraft. The BFM stage of training is designed to introduce and practice BFM skills against a single bandit.

4. All Weather Intercepts (AWI) Stage Training Objectives. The AWI stage is designed to develop and prepare the SNFO for service in tactical fleet aircraft. The AWI stage of training is designed to familiarize students with air-to-air tactics, procedures, and communications.

5. Matrices. The following matrices are an overview of all stages included in the Tactical Training chapter. The chapter includes Strike, CAS, BFM, and AWI stages. The purpose of these matrices is to provide the SNFO and IP/INFO the easiest way to track progress, regression, and overall status in relation to the MIF. Stage MIFs and corresponding blocks are presented in the order in which they are to be completed with complete stage MIFs shown first, followed by the individual block MIF tables.

6. Strike Stage MIF

Simulator Event
Check Ride

STRIKE STAGE MANEUVER ITEM FILE						
CTS REF	**MANEUVER**	**STK3106**	**STK4107**	**STK3205**	**STK4204**	**STK4390**
1	General Knowledge/Procedures	4+	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	3+	4+	4+	4+	4+
4	Basic Airwork Recognition	3+	4+	4+	4+	4+
5	Mission Planning/Briefing/ Debriefing	3+	4+	4+	4+	4+
6	CRM/Crew Coordination	3+	3+	4+	4+	4+
7	Mission Ownership/ Assertiveness	3+	3+	4+	4+	4+
8	Flight Admin	3+	3+	4+	4+	4+
9	Ground Operations	4+	4+	4+	4+	4+
10	Communications	3+	4+	4+	4+	4+
11	Takeoff/Departure Procedure	4+	4+	4+	4+	4+
12	Navigation Procedures	4+	4+	4+	4+	4+
13	Approach/Landing	4+	4+	4+	4+	4+
13	Section Approach as Lead		4+	4	4	4
13	Section Approach as Wing		4+	4	4	4
14	Visual/Instrument Scan/Lookout Doctrine	4+	4+	4+	4+	4+
17	Tactical Admin	3+	3+	4+	4+	4+
20	Turnpoint Procedures	3+	4+	4+	4+	4+
21	A/G Radar Operation and Interpretation	3+	4+	4+	4+	4
22	Timing	4+	4+	4+	4+	4+

MIF continued on next page.

STRIKE STAGE MANEUVER ITEM FILE						
CTS REF	**MANEUVER**	**STK3106**	**STK4107**	**STK3205**	**STK4204**	**STK4390**
23	Directive/Descriptive Comm	4+	4+	4+	4+	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	3+	4+	4+	4+	4+
25	Course Analysis/Corrections	3+	4+	4+	4+	4+
26	Speed Control	3+	3+	4+	4+	4+
27	Target Acquisition	3+	3+	4+	4+	4+
28	A/G Timeline Awareness			3+	4+	4+
29	EW Recognition/Considerations			3+	3+	3
30	Precautionary Approach(es)	3+	3+	3+	3	3
30	Emergency Instrument Approach	4	4	4	4	4
31	Formation Coordination, Communication, and Hand Signals	3+	3+	4+	4+	4+
32	Engaging Turns		3+		4+	4+
33	Section Target Attack	3+		3+	4+	4+
34	Rendezvous		4+		4+	4+

7. Close Air Support (CAS) Stage MIF

Simulator Event
Check Ride Event

CAS STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**CAS3104**	**CAS4103**	**CAS4290**
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+

MIF continued on next page.

CAS STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**CAS3104**	**CAS4103**	**CAS4290**
4	Basic Airwork Recognition	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	3+	4+	4+
6	CRM/Crew Coordination	3+	4+	4+
7	Mission Ownership/Assertiveness	3+	4+	4+
8	Flight Admin	3+	3+	3+
9	Ground Operations	4+	4+	4+
10	Communications	4+	4+	4+
11	Takeoff/Departure Procedure	4+	4+	4+
12	Navigation Procedures	4+	4+	4+
13	Approach/Landing	4+	4+	4+
13	Section Approach	3+	4	4
14	Visual/Instrument Scan/Lookout Doctrine	4+	4+	4+
17	Tactical Admin	3+	4+	4+
22	Timing	3+	4+	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	3+	4+	4+
25	Course Analysis/Corrections	3+	4+	4+
26	Speed Control	3+	4+	4+
27	Target Acquisition	3+	4+	4+
30	Precautionary Approach(es)	4+	4	4
30	Emergency Instrument Approach	4+	4	4
31	Formation Coordination, Communication, and Hand Signals	4+	4+	4+
34	Rendezvous		4+	4+
35	Weapons Pattern Attacks	3+	3+	3+
36	Division Recovery	3	3	3

8. Basic Fighter Maneuvers (BFM) Stage MIF

Simulator Event
Check Ride Event

BFM STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**BFM3101**	**BFM4104**	**BFM4290**
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	Basic Airwork Recognition	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	3+	4+	4+
2	Stuck Throttle Approach	3+		
6	CRM/Crew Coordination	4+	4+	4+
7	Mission Ownership/Assertiveness	3+	4+	4+
8	Flight Admin	3+	3+	3+
9	Ground Operations		4+	4+
10	Communications	3+	4+	4+
11	Takeoff/Departure Procedure	3+	4+	4+
12	Navigation Procedures	4+	4+	4+
13	Approach/Landing	4+	4+	4+
13	Section Approach		4	4
13	NF Touch-and-Go	3+		
14	Visual/Instrument Scan/Lookout Doctrine	4+	4+	4+
16	Pattern Stall and Recovery	3+		
16	High AOA/Deep Stall Investigation/ Rudder-Induced Departure	3+		
16	70-Degree Nose-High Departure	3+		
16	90-Degree Nose-High Departure	3+		
16	110-Degree Nose-High Departure	3+		

MIF continued on next page.

BFM STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**BFM3101**	**BFM4104**	**BFM4290**
16	Lateral Stick Adverse Yaw Departure	3+		
16	Spin/Spin Recovery	3+		
17	Tactical Admin		4+	4+
18	Course Rules		4+	4+
23	Directive/Descriptive Comm		3+	3+
30	Precautionary Approach(es)	4+	4+	4
31	Formation Coordination, Communication, and Hand Signals		4+	4+
32	Engaging Turns		4+	4+
34	Rendezvous		4+	4+
37	Deck and Performance Awareness		4+	4+
38	Pursuit Curves (Lag, Pure, Lead)		3+	3+
39	Offensive Maneuvering		3+	3+
40	Defensive Maneuvering		3+	3+
41	1 V 1 Neutral Engagements		3+	3+
44	A/A Radar Operation		3	3

9. All Weather Intercepts (AWI) Stage MIF

Simulator Event
Check Ride Event

AWI STAGE MANEUVER ITEM FILE								
CTS REF	**MANEUVER**	**AWI3107**	**AWI4104**	**AWI3206**	**AWI4205**	**AWI3302**	**AWI4301**	**AWI4490**
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	3+	4+	4+	4+	4+	4+	4+
4	Basic Airwork Recognition	3+	4+	4+	4+	4+	4+	4+
5	Mission Planning/Briefing/ Debriefing	3+	4+	4+	4+	4+	4+	4+
6	CRM/Crew Coordination	3+	4+	4+	4+	4+	4+	4+
7	Mission Ownership/ Assertiveness	3+	3+	4+	4+	4+	4+	4+
8	Flight Admin	3+	4+	4+	4+	4+	4+	4+
9	Ground Operations	4+	4+	4+	4+	4+	4+	4+
10	Communications	3+	4+	4+	4+	4+	4+	4+
11	Takeoff/Departure Procedure	3+	4+	4+	4+	4+	4+	4+
12	Navigation Procedures	3+	4+	4+	4+	4+	4+	4+
13	Approach/Landing	4+	4+	4+	4+	4+	4+	4+
13	Section Approach	3	4	4	4		4	4
14	Visual/Instrument Scan/ Lookout Doctrine	3+	4+	4+	4+	4+	4+	4+
17	Tactical Admin	3+	3+	4+	4+	4+	4+	4+
21	A/G Radar Operation and Interpretation					4+	4+	4+

MIF continued on next page.

AWI STAGE MANEUVER ITEM FILE								
CTS REF	**MANEUVER**	**AWI3107**	**AWI4104**	**AWI3206**	**AWI4205**	**AWI3302**	**AWI4301**	**AWI4490**
22	Timing					4+	4+	4+
23	Directive/Descriptive Comm	3+	3+	4+	4+	4+	4+	4+
25	Course Analysis/ Corrections					4	4	4
26	Speed Control	3+	4+	4+	4+	4+	4+	4+
27	Target Acquisition					3+	4+	4+
28	A/G Timeline Awareness					3+	4+	4+
29	EW Recognition/ Considerations		3	3+	3+	4+	4+	4+
30	Precautionary Approach(es)	3+	4		4+			
31	Formation Coordination, Communication and Hand Signals	4+	4+	4+	4+	4+	4+	4+
33	Section Target Attack					4+	4+	4+
34	Rendezvous		4+		4+		4+	4+
41	1 V 1 Neutral Engagements	3	3		3			
42	Target Aspect Awareness and Control	3+	3+	4+	4+	4+	4+	4+
43	Target Altitude Recognition/Correction	3+	3+	4+	4+	4+	4+	4+
44	A/A Radar Operation	3+	3+	4+	4+	4+	4+	4+
45	A/A Timeline Awareness	3+	3+	3+	4+	4+	4+	4+
46	Counterturn Fundamentals	3+	3+	4+	4+	4+	4+	4+
47	Merge/SRM Employment	3+	3+	4+	4+	4+	4+	4+
48	Tactical Situational Awareness	3+	3+	3+	4+	4+	4+	4+
49	Bandit Maneuver Recognition/Reaction	3+	3+	3+	4+	4+	4+	4+

Blk #	Media	Title	Events	Hrs	H/X
STK31	2F205A	Strike Simulator Training	6	12.0	2.0

1. Prerequisite. G0202 (Strike Self-Study I).

2. Syllabus Notes

   a. SNFO will lead each section event.

   b. CV operations may be incorporated on any event.

   STK3101
   Introduce CV operations to include Case I and III departures and recoveries with proper CV holding, timing, and communications. Perform a Bingo profile. Instructor will conduct the brief.

   STK3102
   Introduce VMTS A/G systems and strike procedures on a medium altitude route.

   STK3103
   Execute medium-altitude route as a single ship to a prebriefed TOT.

   STK3104
   Execute a medium-altitude route as a section to a prebriefed TOT.

   STK3105
   Execute a low-level route as a single ship to a prebriefed TOT.

   STK3106
   Execute a low-level route as a section to a prebriefed TOT.

3. Special Syllabus Requirements. None.

4. Discuss Items

   STK3101
   QOD, Case I and III departure, recovery, and communications.

STK3102
QOD, VMTS A/G systems, and strike procedures.

STK3103
QOD and strike fuel planning.

STK3104
QOD, section approach procedures, and NORDO aircraft procedures.

STK3105
QOD, bird strike on route, and controllability check procedures.

STK3106
QOD, engine stall, and overhead precautionary approach.

5. Block MIF

CTS REF	MANEUVER	STK3106
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	3+
5	Mission Planning/Briefing/ Debriefing	3+
6	CRM/Crew Coordination	3+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	3+
9	Ground Operations	4+
10	Communications	3+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	3+

MIF continued on next page.

CTS REF	MANEUVER	STK3106
20	Turnpoint Procedures	3+
21	A/G Radar Operation and Interpretation	3+
22	Timing	4+
23	Directive/Descriptive Comm	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	3+
25	Course Analysis/Corrections	3+
26	Speed Control	3+
27	Target Acquisition	3+
30	Precautionary Approach(es)	3+
30	Emergency Instrument Approach	4
31	Formation Coordination, Communication, and Hand Signals	3+
33	Section Target Attack	3+

Blk #	Media	Title	Events	Hrs	H/X
STK41	T-45C	Strike Flight Training	7	8.4	1.2

1. Prerequisites

a. STK3106 prior to STK4101-4 (in order) and STK4105-6 (in order).

b. STK4104 and STK4106 prior to STK4107.

2. Syllabus Notes

a. STK4101 and STK4102 may be flown at night to obtain syllabus night minimums.

b. SNFO will alternate leading section events. SNFO will assume lead during section flights when not paired up with SNFO wingman.

c. Wing SNFO should be prepared to take the lead at any point on the route.

d. During this block, students must fly one each of the following maneuvers: pattern precautionary approach, section instrument approach as lead, and section instrument approach as wing.

STK4101-2
Execute medium-altitude route as a single ship to a prebriefed TOT.

STK4103-4
Execute medium-altitude route as a section to a prebriefed TOT.

STK4105
Execute a low-level route as a single ship to a prebriefed TOT.

STK4106-7
Execute a low-level route as a section to a prebriefed TOT.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK4101
QOD, OFT and VMTS differences, display management, and STRS setup.

STK4102
QOD and VMC weather requirements.

STK4103
QOD and section approach procedures.

STK4104
QOD, OFT and VMTS differences, display management, and STRS setup.

STK4105
QOD and low-oil approach procedures.

STK4106
QOD and section emergency procedure considerations.

STK4107
QOD and any emergency procedure.

5. Block MIF

CTS REF	MANEUVER	STK4107
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	3+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	3+
9	Ground Operations	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4107
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach as Lead	4+
13	Section Approach as Wing	4+
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	3+
20	Turnpoint Procedures	4+
21	A/G Radar Operation and Interpretation	4+
22	Timing	4+
23	Directive/Descriptive Comm	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	4+
25	Course Analysis/Corrections	4+
26	Speed Control	3+
27	Target Acquisition	3+
30	Precautionary Approach(es)	3+
30	Emergency Instrument Approach	4
31	Formation Coordination, Communication, and Hand Signals	3+
32	Engaging Turns	3+
34	Rendezvous	4+

Blk #	Media	Title	Events	Hrs	H/X
STK32	2F205A	Strike Simulator Training	5	10.0	2.0

1. Prerequisite. G0203 (Strike Self-Study II).

2. Syllabus Notes

a. Each event will be flown as a section, and the SNFO will fly all events as the lead.

b. CV ops may be incorporated on any event.

STK3201
Execute a medium-altitude strike route. Introduce PGM and roll-in dive deliveries.

STK3202-3
Execute a medium-altitude strike route to a prebriefed TOT with surface-to-air threats and PGM deliveries.

STK3204-5
Execute a low-altitude strike route to a prebriefed TOT with surface-to-air threats and low-altitude pop attacks.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK3201
QOD, PGM delivery, and roll-in dive deliveries.

STK3202-5
QOD, surface-air-threat indications and countertactics, and any emergency procedure.

5. Block MIF

CTS REF	MANEUVER	STK3205
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach as Lead	4
13	Section Approach as Wing	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
20	Turnpoint Procedures	4+
21	A/G Radar Operation and Interpretation	4+
22	Timing	4+
23	Directive/Descriptive Comm	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	4+
25	Course Analysis/Corrections	4+
26	Speed Control	4+
27	Target Acquisition	4+
28	A/G Timeline Awareness	3+

MIF continued on next page.

CTS REF	MANEUVER	STK3205
29	EW Recognition/Considerations	3+
30	Precautionary Approach(es)	3+
30	Emergency Instrument Approach	4
31	Formation Coordination, Communication, and Hand Signals	4+
33	Section Target Attack	3+

Blk #	Media	Title	Events	Hrs	H/X
STK42	T-45C	Strike Flight Training	4	4.8	1.2

1. Prerequisites

a. STK4107.

b. STK3205.

2. Syllabus Notes

a. All events will be flown in section; SNFO will alternate leading events.

b. Wing SNFO should expect to take the lead at any point on the route. SNFO will assume lead during section flights if not paired up with another SNFO.

STK4201
Execute the visual bombing pattern with roll-in and low pop attacks. Student must accomplish three roll-in and three low pop attacks to complete event.

STK4202-3
Execute a medium-altitude strike route to a prebriefed TOT with surface-to-air threats and PGM deliveries.

STK4204
Execute a low-altitude strike route to a prebriefed TOT with surface-to-air threats and low pop attacks.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK4201
QOD and "Z" diagrams.

STK4202
QOD.

STK4203
QOD, surface-to-air threat indications, and countertactics.

STK4204
QOD and section emergency procedure considerations.

5. Block MIF

CTS REF	MANEUVER	STK4204
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach as Lead	4
13	Section Approach as Wing	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
20	Turnpoint Procedures	4+
21	A/G Radar Operation and Interpretation	4+
22	Timing	4+
23	Directive/Descriptive Comm	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	4+
25	Course Analysis/Corrections	4+
26	Speed Control	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4204
27	Target Acquisition	4+
28	A/G Timeline Awareness	4+
29	EW Recognition/Considerations	3+
30	Precautionary Approach(es)	3
30	Emergency Instrument Approach	4
31	Formation Coordination, Communication, and Hand Signals	4+
32	Engaging Turns	4+
33	Section Target Attack	4+
34	Rendezvous	4+

Blk #	Media	Title	Events	Hrs	H/X
STK43	T-45C	Strike Flight Training Check Ride	1	1.2	1.2

1. Prerequisite. STK4204.

2. Syllabus Notes

a. Flight will be flown in section. Wing SNFO should expect to take the lead at any point on the route. SNFO is required to lead this event unless he or she was the lead of STK4204.

b. Execute a low-altitude strike route to a prebriefed TOT with surface-to-air threats and section target attacks. A medium-altitude strike route may be substituted at the discretion of the Check Flight IP if weather or airspace availability inhibit low-altitude flight training.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, dive delivery abort parameters, and low-level terrain clearance crew coordination procedures.

5. Block MIF

CTS REF	MANEUVER	STK4390
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4390
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach as Lead	4
13	Section Approach as Wing	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
20	Turnpoint Procedures	4+
21	A/G Radar Operation and Interpretation	4
22	Timing	4+
23	Directive/Descriptive Comm	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	4+
25	Course Analysis/Corrections	4+
26	Speed Control	4+
27	Target Acquisition	4+
28	A/G Timeline Awareness	4+
29	EW Recognition/Considerations	3
30	Precautionary Approach(es)	3
30	Emergency Instrument Approach	4
31	Formation Coordination, Communication, and Hand Signals	4+
32	Engaging Turns	4+
33	Section Target Attack	4+
34	Rendezvous	4+

Blk #	Media	Title	Events	Hrs	H/X
CAS31	2F205A	CAS Procedures Simulator Training	4	8.0	2.0

1. Prerequisite. G0302 (CAS Self-Study).

2. Syllabus Note. This block of training is designed to introduce and practice the CAS mission, in a simulated medium- and high-threat environment.

CAS3101
Division procedures, medium threat, JCAS procedures, JCAS communication, medium-altitude roll-in, and visual talk-on.

CAS3102
Division procedures, high threat, JCAS procedures, JCAS communication, low-altitude pop attacks, and EW integration.

CAS3103
Division procedures, medium threat, JCAS procedures, JCAS communication, key-hole procedures, simulated level PGM attacks, and EW integration.

CAS3104
Division procedures, variable threat, JCAS procedures, JCAS communication, key-hole procedures, medium-altitude and low pop attacks, simulated level PGM attacks, and EW integration.

3. Special Syllabus Requirements. None.

4. Discuss Items

CAS3101
QOD and division flight coordination procedures.

CAS3102
QOD and JCAS procedures.

CAS3103
QOD and JCAS communication.

CAS3104
QOD and key-hole CAS procedures.

5. Block MIF

CTS REF	MANEUVER	CAS3104
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	3+
6	CRM/Crew Coordination	3+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	3+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	3+
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	3+
22	Timing	3+
24	Checkpoint Utilization and Chart Terrain/Correlation	3+
25	Course Analysis/Corrections	3+
26	Speed Control	3+
27	Target Acquisition	3+
30	Precautionary Approach(es)	4+
30	Emergency Instrument Approach	4+
31	Formation Coordination, Communication, and Hand Signals	4+
35	Weapons Pattern Attacks	3+
36	Division Recovery	3

Blk #	Media	Title	Events	Hrs	H/X
CAS41	T-45C	CAS Flight Training	3	3.6	1.2

1. Prerequisite. CAS3104.

2. Syllabus Notes. This block of training is designed to introduce and practice the CAS mission, in a medium- and high-threat flight environment.

a. A minimum of three aircraft is required; four are desired.

b. FAC experienced instructor will perform FAC-to-Striker/Fighter brief and will fly support aircraft to simulate the FAC(A) role for event. The FAC IP/INFO will fly in formation position 3 or 4.

c. Lead student will perform Strike element brief and will utilize student wingmen for mission planning and brief preparation IAW FTI.

d. SNFO must lead at least one event in this block.

e. SNFO must execute at least two medium-altitude roll-ins, two low pop attacks and two precision-guided munition (PGM) attacks in this block using CP/IP and key-hole procedures.

f. CAS4101-3 may be executed by using any of the three CAS scenarios (high-threat, medium-/low-threat, or key-hole procedures) interchangeably. SNFOs shall execute one scenario per flight.

3. Special Syllabus Requirements. None.

4. Discuss Items. Division procedures; high-threat, medium-threat, key-hole procedures; JCAS procedures; JCAS communication; low-altitude pop attacks; medium-altitude roll-in; simulated level PGM attacks; visual talk-on; and EW integration.

5. Block MIF

CTS REF	MANEUVER	CAS4103
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	3+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
22	Timing	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	4+
25	Course Analysis/Corrections	4+
26	Speed Control	4+
27	Target Acquisition	4+
30	Precautionary Approach(es)	4
30	Emergency Instrument Approach	4
31	Formation Coordination, Communication, and Hand Signals	4+
34	Rendezvous	4+
35	Weapons Pattern Attacks	3+
36	Division Recovery	3

Blk #	Media	Title	Events	Hrs	H/X
CAS42	T-45C	CAS Flight Training Check Ride	1	1.2	1.2

1. Prerequisite. CAS4103.

2. Syllabus Notes. This block of training is designed to practice the CAS mission, in a high- and medium-threat environment. The conduct of flight will provide for evaluation of the student's proficiency in all aspects of the CAS stage of training.

a. A minimum of three aircraft is required; four are desired.

b. FAC experienced instructor will perform FAC-to-Striker/Fighter brief and will fly support aircraft to simulate the FAC(A) role for event. The FAC IP/INFO will fly in formation position 3 or 4.

c. Lead student will perform Strike element brief and will utilize student wingmen for mission planning and brief preparation IAW FTI.

d. CAS4290 may be completed by using any of the three CAS scenarios (high-threat, medium-/low-threat, or key-hole procedures) interchangeably. SNFOs may execute one or more scenarios at FAC(A) discretion.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD; high-threat, medium-threat, key-hole procedures; JCAS procedures; and JCAS communication.

5. Block MIF

CTS REF	MANEUVER	CAS4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	3+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
22	Timing	4+
24	Checkpoint Utilization and Chart Terrain/Correlation	4+
25	Course Analysis/Corrections	4+
26	Speed Control	4+
27	Target Acquisition	4+
30	Precautionary Approach(es)	4
30	Emergency Instrument Approach	4
31	Formation Coordination, Communication, and Hand Signals	4+
34	Rendezvous	4+
35	Weapons Pattern Attacks	3+
36	Division Recovery	3

Blk #	Media	Title	Events	Hrs	H/X
BFM31	2F205A	Out-of-Control Flight Simulator	1	1.5	1.5

1. Prerequisite. BFM1104 (BFM Flight Procedures).

2. Syllabus Notes

a. Two stuck throttle approaches are required (high, middle, or low) for completion.

b. Perform all normal checklists and procedures, high-AOA/deep stall investigation/rudder-induced departure, low-airspeed recovery (vertical, 70-/110-/90-degree), lateral stick adverse yaw departure, out-of-control flight (fully developed spin and recovery), engine failure/flameout (immediate/assisted airstarts), and locked-in compressor stall.

c. Due to simulator limitations, SNFO shall operate aircraft flight controls for the completion of the following maneuvers: high-AOA/deep stall investigation/rudder-induced departure, low-airspeed recovery (vertical, 70-/110-/90-degree), lateral stick adverse yaw departure, out-of-control flight (fully developed spin and recovery). SNFO will be graded against the CTS only for procedural knowledge and execution IAW FTI, not for basic airwork.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, departure/spin procedures, engine flameout, ejection situations, locked-in compressor stall, airstart, and NATOPS Chapter 11.

5. Block MIF

CTS REF	MANEUVER	BFM3101
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	3+
2	Stuck Throttle Approach	3+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	3+
10	Communications	3+
11	Takeoff/Departure Procedure	3+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	NF Touch-and-Go	3+
14	Visual/Instrument Scan/Lookout Doctrine	4+
16	Pattern Stall and Recovery	3+
16	High AOA/Deep Stall Investigation/ Rudder-Induced Departure	3+
16	70-Degree Nose-High Departure	3+
16	90-Degree Nose-High Departure	3+
16	110-Degree Nose-High Departure	3+
16	Lateral Stick Adverse Yaw Departure	3+
16	Spin/Spin Recovery	3+
30	Precautionary Approach(es)	4+

Blk #	Media	Title	Events	Hrs	H/X
BFM41	T-45C	BFM Flight Training	4	4.4	1.1

1. Prerequisite. BFM3101.

2. Syllabus Notes

a. This block of training is designed to introduce and practice 1 V 1 offensive, defensive, and neutral engagement BFM.

b. All events flown as section with lead SNFO briefing the event. SNFOs should be paired up and alternate lead/wing positions during this block.

BFM4101
BFM fence-in/out procedures, eyeball calibration drill, snapshot drill, introduction to D's, flats demo, roller demo, high-aspect BFM flow demo, and performance characteristics exercise.

BFM4102
BFM fence-in/out procedures, snapshot drill, uncalled D's, offensive/defensive perch sets (9,000, 6,000, 3,000), and HABFM butterfly set.

BFM4103
BFM fence-in/out procedures, snapshot drill, uncalled D's, offensive/defensive perch sets (9,000, 6,000, 3,000), and HABFM butterfly set.

BFM4104
BFM fence-in/out procedures, snapshot drill, uncalled D's, and HABFM butterfly sets (MAX, MIN, AUTO, CREW).

3. Special Syllabus Requirements. None.

4. Discuss Items

BFM4101
QOD, EM diagram, engine-related prohibited maneuvers, and EGT/RPM warning light.

BFM4102
QOD, training rules, and BFM crew coordination for terrain avoidance.

BFM4103
QOD, and locked in compressor stall.

BFM4104
QOD and departure/spin recognition and recovery procedures.

5. Block MIF

CTS REF	MANEUVER	BFM4104
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	3+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
18	Course Rules	4+
23	Directive/Descriptive Comm	3+
30	Precautionary Approach(es)	4+
31	Formation Coordination, Communication, and Hand Signals	4+
32	Engaging Turns	4+
34	Rendezvous	4+

MIF continued on next page.

CTS REF	MANEUVER	BFM4104
37	Deck and Performance Awareness	4+
38	Pursuit Curves (Lag, Pure, Lead)	3+
39	Offensive Maneuvering	3+
40	Defensive Maneuvering	3+
41	1 V 1 Neutral Engagements	3+
44	A/A Radar Operation	3

Blk #	Media	Title	Events	Hrs	H/X
BFM42	T-45C	BFM Flight Training Check Ride	1	1.1	1.1

1. Prerequisite. BFM4104.

2. Syllabus Notes

a. This flight is designed to evaluate proficiency in section admin and tactical admin while practicing HABFM against a specific threat.

b. Flight will be flown as section.

c. SNFO leads this event if he/she did not lead BFM4104.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD and overhead precautionary approach procedures.

5. Block MIF

CTS REF	MANEUVER	BFM4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	3+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+

MIF continued on next page.

CTS REF	MANEUVER	BFM4290
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
18	Course Rules	4+
23	Directive/Descriptive Comm	3+
30	Precautionary Approach(es)	4
31	Formation Coordination, Communication, and Hand Signals	4+
32	Engaging Turns	4+
34	Rendezvous	4+
37	Deck and Performance Awareness	4+
38	Pursuit Curves (Lag, Pure, Lead)	3+
39	Offensive Maneuvering	3+
40	Defensive Maneuvering	3+
41	1 V 1 Neutral Engagements	3+
44	A/A Radar Operation	3

Blk #	Media	Title	Events	Hrs	H/X
AWI31	2F205A	AWI Procedures Simulator Training	7	14.0	2.0

1. Prerequisites

   a. G0502 (AWI Self-Study I) prior to AWI3101-4 in order.

   b. G0503 (AWI Self-Study II) prior to AWI3105-7 in order.

2. Syllabus Notes. Student will be prepared to brief/debrief the event IAW FTI and squadron directives.

   AWI3101
   Section procedures, area entry procedures, stern conversion timeline, commit, target aspect control, air-to-air radar operation, MRM employment, counterturn, SRM employment, and VID procedures. The instructor will demonstrate the low-TA, medium-TA, and high-TA game plan. The student will explore all modes and functions of the air-to-air radar.

   AWI3102-5
   Section procedures, area entry procedures, stern conversion timeline, commit, target aspect control, air-to-air radar operation, MRM employment, counterturn, SRM employment, and VID procedures.

   AWI3106-7
   Section procedures, area entry procedures, 1 V 1 timeline, commit, sanitize, target, meld, MRM employment, EW awareness, SRM employment, merge, 1 V 1 neutral engagement, short range radar, and VID procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items

   AWI3101
   QOD and stern conversion timeline.

   AWI3102
   QOD, target aspect control, and VID procedures.

AWI3103
QOD, MRM employment, and SRM employment.

AWI3104
QOD.

AWI3105
QOD, merge tally crew coordination communications, postmerge radar mechanics.

AWI3106
QOD and 1 V 1 timeline.

AWI3107
QOD, EW awareness, 1 V 1 neutral engagement, and short-range radar.

5. Block MIF

CTS REF	MANEUVER	AWI3107
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	3+
5	Mission Planning/Briefing/ Debriefing	3+
6	CRM/Crew Coordination	3+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	3+
9	Ground Operations	4+
10	Communications	3+
11	Takeoff/Departure Procedure	3+
12	Navigation Procedures	3+
13	Approach/Landing	4+
13	Section Approach	3
14	Visual/Instrument Scan/Lookout Doctrine	3+

MIF continued on next page.

CTS REF	MANEUVER	AWI3107
17	Tactical Admin	3+
23	Directive/Descriptive Comm	3+
26	Speed Control	3+
30	Precautionary Approach(es)	3+
31	Formation Coordination, Communication and Hand Signals	4+
41	1 V 1 Neutral Engagements	3
42	Target Aspect Awareness and Control	3+
43	Target Altitude Recognition/Correction	3+
44	A/A Radar Operation	3+
45	A/A Timeline Awareness	3+
46	Counterturn Fundamentals	3+
47	Merge/SRM Employment	3+
48	Tactical Situational Awareness	3+
49	Bandit Maneuver Recognition/ Reaction	3+

Blk #	Media	Title	Events	Hrs	H/X
AWI41	T-45C	AWI Flight Training	4	4.4	1.1

1. Prerequisites

a. AWI3104 prior to AWI4101-2.

b. AWI4102 and AWI3107 prior to AWI4103-4.

2. Syllabus Notes

a. Student will be prepared to brief/debrief the flight IAW FTI and squadron directives.

b. These four events will utilize the IGS. The INFO operating the IGS will attend coordination brief with aircrew one hour prior to takeoff.

c. All events will be flown in section; SNFO will alternate leading events.

AWI4101-2
Section procedures, area entry procedures, stern conversion timeline, commit, target aspect control, air-to-air radar operation, MRM employment, counterturn, SRM employment, and VID procedures.

AWI4103-4
Section procedures, area entry procedures, 1 V 1 timeline, commit, sanitize, target, meld, MRM employment, maneuvering targets, EW awareness, SRM employment, merge, 1 V 1 neutral engagement, short-range radar, and VID procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI4101
QOD, stern conversion timeline, and target aspect control.

AWI4102
QOD and VID procedures.

AWI4103
QOD, sanitization game plan, MRM employment, and SRM employment.

AWI4104
QOD, merge, and 1 V 1 neutral engagement.

5. Block MIF

CTS REF	MANEUVER	AWI4104
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	3+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	3+
23	Directive/Descriptive Comm	3+
26	Speed Control	4+
29	EW Recognition/Considerations	3
30	Precautionary Approach(es)	4
31	Formation Coordination, Communication and Hand Signals	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4104
34	Rendezvous	4+
41	1 V 1 Neutral Engagements	3
42	Target Aspect Awareness and Control	3+
43	Target Altitude Recognition/ Correction	3+
44	A/A Radar Operation	3+
45	A/A Timeline Awareness	3+
46	Counterturn Fundamentals	3+
47	Merge/SRM Employment	3+
48	Tactical Situational Awareness	3+
49	Bandit Maneuver Recognition/ Reaction	3+

Blk #	Media	Title	Events	Hrs	H/X
AWI32	2F205A	AWI SRA/2 V X Procedures Simulator Training	6	12.0	2.0

1. Prerequisites

   a. G0504 (AWI Self-Study III) prior to AWI3201-3.

   b. AWI1130 (Introduction to 2 V X) prior to AWI3204-6.

2. Syllabus Notes. Student will be prepared to brief/debrief the flight IAW FTI and squadron directives.

   AWI3201-3
   Section procedures, area entry procedures, SRA timeline, commit, sanitize, single-group targeting, meld, sort, MRM employment, maneuvering targets, section missile defense, abort criteria, SRM employment, merge, VID procedures, and section short-range radar.

   AWI3204-6
   Section procedures, area entry procedures, 2 V X timeline, commit, sanitize, multiple-group targeting, meld, sort, MRM employment, maneuvering targets, section missile defense, abort criteria, SRM employment, merge, VID procedures, and section short-range radar.

3. Special Syllabus Requirements. None.

4. Discuss Items

   AWI3201-3
   QOD, single-group targeting, section missile defense, abort criteria, VID procedures, and section short-range radar.

   AWI3204-6
   QOD, 2 V X timeline, multiple-group targeting, and maneuvering targets.

5. Block MIF

CTS REF	MANEUVER	AWI3206
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
23	Directive/Descriptive Comm	4+
26	Speed Control	4+
29	EW Recognition/Considerations	3+
31	Formation Coordination, Communication and Hand Signals	4+
42	Target Aspect Awareness and Control	4+
43	Target Altitude Recognition/Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	3+

MIF continued on next page.

CTS REF	MANEUVER	AWI3206
46	Counterturn Fundamentals	4+
47	Merge/SRM Employment	4+
48	Tactical Situational Awareness	3+
49	Bandit Maneuver Recognition/ Reaction	3+

Blk #	Media	Title	Events	Hrs	H/X
AWI42	T-45C	AWI SRA Flight Training	5	6.0	1.2

1. Prerequisites

a. AWI3203 prior to AWI4201.

b. AWI4202 and AWI3206 prior to AWI4203.

2. Syllabus Notes

a. Student will be prepared to brief/debrief the flight IAW FTI and squadron directives.

b. All events will utilize the IGS. The INFO operating the IGS will attend coordination brief with aircrew one hour prior to takeoff.

c. Students shall lead at least one of the events in AWI4201-2 and at least one of the events in AWI4203-5.

d. All events will be flown in section; SNFO will alternate leading events.

AWI4201-2
Section procedures, area entry procedures, SRA timeline, commit, sanitize, single-group targeting, meld, sort, MRM employment, maneuvering targets, section missile defense, abort criteria, SRM employment, merge, VID procedures, section short-range radar.

AWI4203-5
Section procedures, area entry procedures, 2 V X timeline, commit, sanitize, multiple-group targeting, meld, sort, MRM employment, maneuvering targets, section missile defense, abort criteria, SRM employment, merge, VID procedures, section short-range radar.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI4201-2
QOD, single-group targeting, section missile defense, abort criteria, VID procedures, and section short-range radar.

AWI4203-5
QOD, 2 V X timeline, multiple-group targeting, and maneuvering targets.

5. Block MIF

CTS REF	MANEUVER	AWI4205
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
23	Directive/Descriptive Comm	4+
26	Speed Control	4+
29	EW Recognition/Considerations	3+
30	Precautionary Approach(es)	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4205
31	Formation Coordination, Communication and Hand Signals	4+
34	Rendezvous	4+
41	1 V 1 Neutral Engagements	3
42	Target Aspect Awareness and Control	4+
43	Target Altitude Recognition/Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	4+
46	Counterturn Fundamentals	4+
47	Merge/SRM Employment	4+
48	Tactical Situational Awareness	4+
49	Bandit Maneuver Recognition/Reaction	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI33	2F205A	AWI SES Procedures Simulator Training	2	4.0	2.0

1. Prerequisite. G0505 (AWI Self-Study IV).

2. Syllabus Notes

a. Student will be prepared to brief/debrief the flight IAW FTI and squadron directives.

b. Events flown as section with SNFO in the lead aircraft.

3. Special Syllabus Requirements. None.

4. Discuss Items. 2 V X timeline, A/G timeline, target acquisition route timing, S/A missile defense, and weapons delivery profile.

5. Block MIF

CTS REF	MANEUVER	AWI3302
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI3302
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
21	A/G Radar Operation and Interpretation	4+
22	Timing	4+
23	Directive/Descriptive Comm	4+
25	Course Analysis/Corrections	4
26	Speed Control	4+
27	Target Acquisition	3+
28	A/G Timeline Awareness	3+
29	EW Recognition/Considerations	4+
31	Formation Coordination, Communication and Hand Signals	4+
33	Section Target Attack	4+
42	Target Aspect Awareness and Control	4+
43	Target Altitude Recognition/Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	4+
46	Counterturn Fundamentals	4+
47	Merge/SRM Employment	4+
48	Tactical Situational Awareness	4+
49	Bandit Maneuver Recognition/ Reaction	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI43	T-45C	AWI SES Flight Training	1	1.2	1.2

1. Prerequisite. AWI3302.

2. Syllabus Notes

a. Student will be prepared to brief/debrief the flight IAW FTI and squadron directives.

b. This event will utilize the IGS. The INFO operating the IGS will attend coordination brief with aircrew one hour prior to takeoff.

c. Event will be flown as a section with SNFO as lead and a dedicated IP/INFO wingman.

3. Special Syllabus Requirements. None.

4. Discuss Items. 2 V X timeline, A/G timeline, target acquisition route timing, S/A missile defense, and weapons delivery profile.

5. Block MIF

CTS REF	MANEUVER	AWI4301
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
21	A/G Radar Operation and Interpretation	4+
22	Timing	4+
23	Directive/Descriptive Comm	4+
25	Course Analysis/Corrections	4
26	Speed Control	4+
27	Target Acquisition	4+
28	A/G Timeline Awareness	4+
29	EW Recognition/Considerations	4+
31	Formation Coordination, Communication and Hand Signals	4+
33	Section Target Attack	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4301
34	Rendezvous	4+
42	Target Aspect Awareness and Control	4+
43	Target Altitude Recognition/Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	4+
46	Counterturn Fundamentals	4+
47	Merge/SRM Employment	4+
48	Tactical Situational Awareness	4+
49	Bandit Maneuver Recognition/ Reaction	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI44	T-45C	AWI SES Flight Training Check Ride	1	1.2	1.2

1. Prerequisites

a. AWI4301.

b. FAM4302.

2. Syllabus Notes

a. Student will be prepared to brief/debrief the flight IAW FTI and squadron directives.

b. This event will utilize the IGS. The INFO operating the IGS will attend coordination brief with aircrew one hour prior to takeoff.

c. Event will be flown as a section with SNFO as lead and a dedicated IP/INFO wingman.

3. Special Syllabus Requirements. None.

4. Discuss Items. 2 V X timeline, A/G timeline, target acquisition route timing, S/A missile defense, and weapons delivery profile.

5. Block MIF

CTS REF	MANEUVER	AWI4490
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	Mission Planning/Briefing/ Debriefing	4+
6	CRM/Crew Coordination	4+
7	Mission Ownership/Assertiveness	4+
8	Flight Admin	4+
9	Ground Operations	4+
10	Communications	4+
11	Takeoff/Departure Procedure	4+
12	Navigation Procedures	4+
13	Approach/Landing	4+
13	Section Approach	4
14	Visual/Instrument Scan/Lookout Doctrine	4+
17	Tactical Admin	4+
21	A/G Radar Operation and Interpretation	4+
22	Timing	4+
23	Directive/Descriptive Comm	4+
25	Course Analysis/Corrections	4
26	Speed Control	4+
27	Target Acquisition	4+
28	A/G Timeline Awareness	4+
29	EW Recognition/Considerations	4+
30	Precautionary Approach(es)	4

MIF continued on next page.

CTS REF	MANEUVER	AWI4490
31	Formation Coordination, Communication and Hand Signals	4+
33	Section Target Attack	4+
34	Rendezvous	4+
42	Target Aspect Awareness and Control	4+
43	Target Altitude Recognition/Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	4+
46	Counterturn Fundamentals	4+
47	Merge/SRM Employment	4+
48	Tactical Situational Awareness	4+
49	Bandit Maneuver Recognition/ Reaction	4+

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Chapter IX

Course Training Standards

1. Purpose. These standards outline the tasks and proficiency required of SNFOs during the appropriate stages. This training prepares an officer to perform the duties of an NFO in a dynamic tactical environment.

2. Student 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 pilot operate the aircraft to accomplish the mission using sound judgment and airmanship.

3. General Standards

a. Achieve training standards to be qualified as a Naval Flight Officer.

b. Unless otherwise specified, use ***Basic Airwork 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/Preparation*** apply.

4. Execution. The MIF regulates student progression to meet required standards prior to phase completion. Instructors shall evaluate student performance against these standards.

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

BEHAVIOR STATEMENT	STANDARDS
GRADED ITEM	
• A brief description of the behavior, required action, and/or conditions.	• The specific standards for the action. May be read as "The SNFO…"

6. Graded Items. The 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.

7. Course Training Standards

BEHAVIOR STATEMENT	STANDARDS
1. General Knowledge/Procedures	
• Demonstrate knowledge of aircraft systems, procedures, and associated directives and instructions.	• Demonstrates a thorough understanding of aircraft systems capabilities, aircraft directives, and local procedures. • Is knowledgeable of local working area WRT boundaries, altitudes, and significant landmarks without reference to in-flight guide or charts. • Demonstrates ability to apply procedures from all applicable source guidance.

BEHAVIOR STATEMENT	STANDARDS
2. Emergency Procedures	
• Recognize system malfunction and/or emergency situation.	• Expeditiously analyzes situation and systems and recognizes malfunction or emergency situation. • Ensures pilot maintains control of aircraft while responding appropriately to malfunction/ emergency. • Directs pilot to maneuver aircraft smartly to prevent degradation of situation with respect to external factors such as weather, traffic, nearest divert, etc.
• Direct/verbalize NATOPS immediate action emergency procedures.	• Verbally states emergency NATOPS immediate action items in sequence, from memory, without error. • Verifies pilot performance of proper steps of NATOPS immediate action items in sequence.
• Direct/verbalize NATOPS noncritical action emergency procedures.	• Directs the performance of emergency procedure steps to a satisfactory conclusion, effectively using NATOPS PCL to troubleshoot or complete NATOPS procedures. • Incorporates effective CRM to secure additional assistance where applicable. • Maintains situational awareness WRT local area and airfields while troubleshooting systems/ responding appropriately to situation. • Directs the successful recovery of aircraft to suitable airfield or recognizes extremis situation and recommends ejection within safe parameters.

BEHAVIOR STATEMENT	STANDARDS
3. Headwork/Situational Awareness	
• Comply with the FTI, SOP, and NATOPS while maintaining SA sufficient for safety-of-flight and mission accomplishment. • Assess self and aircraft in relation to the dynamic environment of flight, threats, and mission forecast; then execute tasks based on this assessment.	• Understands instructions, demonstrations, and explanations. • Foresees and avoids possible difficulties. • Makes recommendations that enhance the situation and/or overall mission effectiveness. • Remains alert and spatially oriented. • Maintains overall awareness with regard to fuel state, aircraft configuration, traffic in vicinity of own ship, and dynamic weather conditions.
4. Basic Airwork Recognition (BAR)	
• Establish and maintain desired altitude, airspeed, and heading during flight. • Intercept and fly a specified course on an airway or to a navigation point. • Maintain course as assigned by air traffic control (ATC). • Perform normal cruise procedures. • Proceed direct to an assigned fix using point-to-point procedures.	• Performs IAW FAR, OPNAVINST 3710.7U, and TRAWING SIX SOP. • Coordinates with the pilot to keep the aircraft within ±100 feet, ±10 KIAS, and ±10° of planned, directed, or required altitude, airspeed, or heading. • Advises distance to level off no later than 200 feet prior to the desired altitude. • Maintains ±2 NM TACAN point-to-point accuracy. • Maintains ±2 NM or ±3° (whichever is less) on assigned course. • Expeditiously establishes an initial heading of ±20° to the fix/navaid. • Updates heading to: ► Avoid large (>20°) heading changes within two minutes prior. ► Arrive within 2 miles of desired point. • Accurately considers/compensates for wind's effects on determined headings.

BEHAVIOR STATEMENT	STANDARDS
5. Mission Planning/Briefing/Debriefing	
• Perform appropriate mission planning to include route selection, weather, NOTAMS, fuel optimization, computing takeoff, climb, flight route, descent, approach, and landing data: planning mission profile and alternate course of action where appropriate.	• Plans mission in a timely manner to meet training objectives, completes all applicable Navy and command forms correctly, and complies with all directives. • Applies OPNAVINST 3710.7U filing and approach criterion to planning and execution of flight. • Uses JMPS to mission plan fuel, route, and timing. • Accurately completes DD-175 without error. • Maintains mission planning accuracy: Fuel ±100 pounds, time ±1 minute, course within 2°. • Adjusts tactical admin based on weather forecast and appropriate controlling documents. • Provides mission data card, kneeboard card, weather brief, bull's-eye card, and strike route (when applicable).
• Brief the flight in preparation for the mission.	• Adequately briefs the flight for all members including specific mission and training objectives, flight conduct, and contingency planning. • Debriefs the event in the proper format.
• Recall the conduct of the flight and provide learning points.	• Adequately recalls the conduct of the flight and provides learning points relevant to the mission.

BEHAVIOR STATEMENT	STANDARDS
6. Crew Resource Management (CRM)/Crew Coordination	
• Use available crew and cockpit resources to minimize workload and enhance situational awareness.	• Incorporates all aspects of CRM. • Delegates cockpit tasks as appropriate. • Makes timely recommendations to maintain aircraft flight parameters through all regimes of flight.
• Effective communication of mission essential information and interaction between crewmembers.	• Uses appropriate interaction between crewmembers with regard to normal aircraft procedures. • Uses SA-building communications. • Executes crew coordination tasks without prompting from IP/INFO 90 percent of the time.
7. Mission Ownership/Assertiveness	
• Exhibit aviation leadership by taking charge of the mission in all aspects of planning and execution.	• Leads planning, briefing, and execution of the mission. • Identifies contingencies and offers solutions to the crew. • Prioritizes and delegates as necessary to direct all aspects of the mission from brief to debrief. • Confidently influences aircrew to work in a coordinated effort toward successful task completion within the parameters of the mission objectives. • Determines actionable solutions to potential problems, articulating proactive alternatives/courses of action. • Takes command of mission execution and as required provides reasoned alternatives to mission plan due to evolving and dynamic circumstances.

BEHAVIOR STATEMENT	STANDARDS
8. Flight Admin	
● Perform in-flight planning and administrative functions, to include: ► Effectively utilize in-flight publications and charts. ► Accomplish in-flight briefings and checks IAW NATOPS, FTI, and SOP as required. ► Direct flight course and destination deviations as appropriate for weather, fuel, or emergencies. ► Area management.	● Accurately locates and utilizes flight information from appropriate flight publications. ● Navigates using appropriate high/low charts and approach plates. ● Completes in-flight checklists without error or omission IAW NATOPS, FTI, and SOP. ● Identifies nearest suitable landing field and is able to discuss/execute divert procedures as applicable IAW OPNAVINST 3710.7U and FTI without error. ● Contacts appropriate controller and requests deviations in a timely manner. ● Uses assigned airspace in an efficient manner with minimum delay between maneuvers. ● Remains within area boundaries with or without ground references. ● Performs entry/exit procedures for SUA/MTR IAW FTI, briefing, and local standards. ● Directs adherence to published or directed entry/exit restrictions with respect to altitude (to include VFR hemispheric altitudes), heading, airspeed, position, squawk, etc. ● Maintains appropriate boundaries and altitude block within a working area as required.

BEHAVIOR STATEMENT	STANDARDS
8. Flight Admin (continued)	
► Task management.	● Prioritizes and accomplishes tasks in order of importance as they pertain to flight and mission accomplishment. ● Properly utilizes mission cross-check time based on terrain/task load/personal performance.
► Fuel management.	● Actively monitors fuel state throughout the mission. ● Complies with all established fuel requirements. ● Recognizes Joker or Bingo fuel within ±100 pounds of briefed quantity and makes timely call to IP/lead. ● Monitors fuel status on deck at intended point of landing. ● Uses groundspeed to update estimated fuel at entry point or IAF as appropriate. ● As lead – monitors wingman's fuel state with appropriate fuel checks performed IAW FTI and local standards. ● As wing – ensures lead is aware of fuel state through compliance with fuel checks performed IAW FTI and local standards. ● Recommends Joker/Bingo in-flight as weather or area conditions dictate. ● Informs flight/IP upon reaching Joker/Bingo fuel and updates bingo bug.
► Weather planning.	● Recognizes and applies OPNAV/FLIP weather minima required for selected type of approach to field.

BEHAVIOR STATEMENT	STANDARDS
9. Ground Operations	
• Prepare aircraft for flight. • Comply with all FTI, SOP, and NATOPS ground procedures. • Successfully completes NATOPS-directed procedures for each start sequence. • Provide backup for pilot between parking area and runway.	• Correctly and expeditiously performs preflight/postflight exterior/interior inspections, all ground checklists, and required briefs prior to takeoff roll IAW NATOPS/FTI with minimal instructor input. • Maintains an adequate lookout for ground traffic and other hazards. • Executes start procedures IAW NATOPS and local standards. • Monitors engine instruments for proper indications during start. • Safely directs the taxi of the aircraft via local procedures and cleared routing using applicable airfield diagram as a reference.
• Perform formation ground procedures.	• Performs appropriate formation ground procedures as lead or wingman as applicable.
• Perform formation taxi and marshal flight.	• Properly executes formation line and taxi procedures IAW FTI and local directives as applicable.
• Perform engine shutdown and postflight.	• Monitors engine shutdown and performs postflight checks IAW NATOPS and local standardization.
10. Communications	
• The effective use of UHF/VHF radios and ICS, as required.	• Communicates clearly and concisely with appropriate agencies using standard military and FAA terminology. • Demonstrates the ability to execute NORDO procedures. • Makes all calls when required to an accuracy of 90 percent. • Makes timely transmissions without stepping on other radio transmissions. • Uses nonstandard communication brevity when appropriate.

BEHAVIOR STATEMENT	STANDARDS
10. Communications (continued)	
	• Uses standard terminology and communications brevity to an accuracy of 90 percent. • Maintains appropriate level of communications with other crewmembers. • Uses proper switchology for effective use of the ICS. • Performs proper and timely emergency communications during emergency procedure.
11. Takeoff/Departure Procedure	
• Safely navigate the aircraft during departure stage of flight. • Perform takeoff in parade formation as applicable. • Perform Case I, II, and III carrier launch procedures as applicable.	• Ensures the takeoff checklist is complete with 100-percent accuracy prior to takeoff. • Correctly analyzes indications for runup checks. • Directs compliance with departure procedures and ATC instructions. • Safely navigates the aircraft during the departure stage of flight. • Monitors attitude, airspeed, and rate of climb during the departure. • Determines whether conditions permit a section-go IAW FTI and SOP as applicable. • Performs responsibilities based on formation position IAW FTI and SOP.

BEHAVIOR STATEMENT	STANDARDS
12. Navigation Procedures	
• Perform procedures while flying between departure transition point and destination.	• Complies with applicable aircraft navigation procedures. • Directs compliance with ATC instructions. • Utilizes aircraft systems for accurate navigation to include: ► Appropriate NAVAID selected. ► Use of appropriate HSI scale. ► Use of PLAN and CDI to maintain accurate course. ► Use of heading bug to direct wind-corrected heading. ► Use of CALT to hold assigned altitude. ► Use of TACAN/VOR to verify accuracy of waypoint navigation. ► Use of GEO REF and/or waypoints to maintain awareness to nearest divert fields. ► Use of offset function for IAF identification. ► Proper selection of runway waypoint, course line, and 5-NM scale when entering the VFR landing pattern. ► Use of sequence(s) for SUA/MTR navigation, awareness and airspace management.
• Perform flight navigation to include: ► Intercept/Maintain course - perform VOR or TACAN course intercepts inbound, outbound, or immediately after station passage, and maintain VOR, TACAN, or RNAV course.	• Directs a valid course intercept. • Maintains course ±5 degrees/ 1 dot/½ scale, ±2 NM.

BEHAVIOR STATEMENT	STANDARDS
12. Navigation Procedures (continued)	
► Arcing - Perform VOR/DME and TACAN radial-to-arc intercepts and maintain arcs.	● Establishes valid arc intercept, utilizing appropriate lead turn as needed. ● Maintains arc ±0.3 mile. ● Establishes valid arc-to-radial intercept.
► Nonsystem Point-to-Point.	● Performs steps to TACAN or VOR/DME point-to-point IAW FTI without use of waypoint or NAVAID offset. ● Corrects initial turn and maintains heading ±10 degrees to arrive at the desired point ±1 NM. ● Compensates for known wind drift as required.
► System Point-to-Point.	● Enters proper fix and all required navigational information into GINA and proceeds direct using RNAV/TACAN waypoint offset procedures. ● Arrives at the desired point ±0.5 NM.
13. Approach/Landing	
<u>Approach</u> ● Navigate/coordinate a published instrument approach, course rules, or other visual approach. ● Perform appropriate maneuvers to comply with radar vectors to TACAN final. ● Perform instrument approach IAW FTI, briefing, and local standards.	<u>Approach</u> ● Performs published approach procedures IAW FAR, OPNAVINST 3710.7U and TRAWING SIX SOP. ● Calculates/joins the arc ±1 DME or ±3° (radials), and maintains the arc ±1 DME. ● Complies with ATC instructions. ● Slows and configures aircraft/ section for landing within 30 degrees of final approach course within 10 DME of runway threshold. ● Makes required altitude calls and safety checks IAW FTI and SOP.

BEHAVIOR STATEMENT	STANDARDS
13. Approach/Landing (continued)	
Approach (continued) ● Perform a section approach as applicable. ● Perform CV-1, Case I, II, and III carrier recovery procedures.	Approach (continued) ● Maintains approach course within 2 radials. ● Maintains desired airspeed within ±10 KIAS. ● Maintains assigned headings within ±2°. ● Commences turns, roll-outs, and descents as directed without delay. ● Properly coordinates/communicates with wingman using verbal and visual hand signals.
Missed Approach ● Perform responsibilities associated with a missed approach and partial panel missed approach. ● Perform responsibilities associated with climbout for additional approaches.	Missed Approach ● Directs compliance with FLIP document and ATC instructions for missed approach or climbout instructions. ● Directs completion IAW Familiarization FTI and Instrument Flight Rules.
Landing ● Perform responsibilities associated with landing.	Landing ● Directs safe landing procedures IAW NATOPS, SOP, and local procedures to include: initiation of landing checklist, confirmation of all landing checklist items completed, verification of on-speed calculation, verbalization of sink rate and groundspeed limitations when other than full flaps. ● Verbally confirms completion of applicable aircraft checklist and gear down and locked.

BEHAVIOR STATEMENT	STANDARDS
	• Provides board speeds on landing roll-out IAW FTI. • Directs go-around during roll-and-go procedure IAW FTI.
14. Visual/Instrument Scan/Lookout Doctrine	
• Maintain lookout doctrine essential for safe ground/airborne operations. • Maintain aircraft control and effective visual navigation, relying primarily on outside references.	• Utilizes appropriate visual cross checks for applicable aircraft configurations. • Continuously clears the aircraft's taxi route visually for other aircraft, hazards, and obstacles.
• Keep visual scan outside the cockpit to the extent practicable for proper traffic, terrain, and hazard/weather avoidance.	• Timely recognition of ground/ airborne hazards (i.e., traffic, weather, birds, and obstacles). • Maintains an effective visual scan 90 percent outside the cockpit during low-level flight. • Locates and notifies crew of checkpoints and hazards in a timely manner.
• Keep visual on all formation members as applicable.	• Maintains visual and/or SA on all members of the formation flight.
• Keep tally on all bandits in the engagement as applicable.	• Maintains tally and/or SA on all bandits in the engagements. • Understands and appropriately executes lost sight procedures.
• Keep visual scan for any traffic or obstacles that are potential conflicts.	• Keeps an active visual scan for any traffic/obstacles that are potential conflicts.
• Maintain instrument scan essential for safe operation and navigation.	• Monitors aircraft airspeed, engine/flight instruments, altitude, and rate of climb/ descent during all regimes of flight. • Reports out-of-limits situations to crew.

BEHAVIOR STATEMENT	STANDARDS
15. Holding	
• Perform high- and low-altitude VOR/TACAN holding as described by controller or IAW FLIP document. • Perform CV holding IAW CV NATOPS and FTI.	• Correctly calculates initial heading on entry into the holding pattern. • Correctly uses timing or distances to determine lengths of holding legs. • Correctly executes holding procedures. • Properly computes and applies compensations for wind effects (drift and/or leg timing) IAW FTI. • Properly enters marshal and hits push time ±10 seconds.
16. Stall/OCF Recognition and Recovery	
• Directs procedures for approaches to stall, full stalls, and recoveries IAW FTI, to include the following: ► Power-off stall. ► Break turn stall. ► Landing attitude maneuver. ► Landing attitude stall. ► Approach turn stall. ► Accelerated stall. ► Stall series.	• Directs initial maneuver setup parameters IAW FTI. • Recognizes approach-to-stall indications and directs recovery IAW NATOPS and FTI procedures. Verbalizes altitude, AOA, airspeed, and T/N indications. Verbalizes "recovery complete" when two positive rates of climb established. • Recognizes full-stall indications and directs recovery IAW NATOPS and FTI procedures. Verbalizes altitude, AOA, airspeed, and T/N indications. Verbalizes "recovery complete" when two positive rates of climb established. • Recognizes secondary stall, if entered, and directs recovery.

BEHAVIOR STATEMENT	STANDARDS
16. Stall/OCF Recognition and Recovery (continued)	
● Directs OCF procedures IAW FTI, to include: ► Spin recovery. ► Vertical recovery.	● Demonstrates working knowledge of NATOPS OCF procedures and prohibited maneuvers. ● Verbalizes spin recovery procedures and verifies correct control inputs.
17. Tactical Admin	
● Direct tactical flight maneuvering and administrative items to include:	
► G-warm.	● Ensures G-awareness turns completed IAW OPNAVINST 3710.7U. ● Ensures proper anti-G straining technique and proper anti-G suit operation. ● Ensures G-loading within NATOPS limits.
► Armament system management.	● Manages armament system to ensure proper program for mission. ● Ensures proper system management after exercise has been terminated.
► Combat (FENCE) checks.	● Completes combat checks per FTI, and expeditiously reports FENCE check completion. ● Ensures aircraft safely maneuvers to deconflict with other aircraft while returning to prebriefed position.
► G/Fuel checks.	● Correctly initiates/responds to postmaneuvering fuel checks.

BEHAVIOR STATEMENT	STANDARDS
17. Tactical Admin (continued)	
► PADS.	● Directs aircraft to proper position, altitude, and distance for next expected syllabus maneuver. ● Directs briefed engagement start parameters within the following standards: airspeed ±10 KIAS, range ±0.1 NM, altitude ±200 feet, position ±10 degrees from bearing line or prescribed AOT.
18. Course Rules	
● Return to home field in accordance with local procedures.	● Obtains ATIS information. ● Directs navigation to course rules checkpoints and utilizes aircraft navigation systems as visual backup. ● Directs corrections as necessary to comply with course rules altitude, airspeed, and heading requirements. ● Visually navigates via published routing using directive and descriptive comm without error.
19. Unusual Attitude/Recovery	
● Directs pilot to perform unusual attitude recovery IAW FTI for: ► Nose-high recovery (IMC/VMC).	● Uses correct instrument flight references throughout recoveries. ● Directs applicable procedures IAW the FTI. ● Directs recovery so as not to enter subsequent unusual attitude. ● Directs recovery to level flight expeditiously without stalling or exceeding aircraft limitations. ● Recovery minimizes airspeed loss.

BEHAVIOR STATEMENT	STANDARDS
19. Unusual Attitude/Recovery (continued)	
► Nose-low recovery (IMC/VMC).	● Directs recovery to level flight without excessive altitude loss, stall, or exceeding aircraft limitations. ● Recovery minimizes altitude loss and airspeed buildup.
20. Turnpoint Procedures	
● Performs crew coordination tasks with the priority of aviate, navigate, and communicate at navigation turnpoints.	● Gives 1-minute-prior, on-top, and wings-level calls IAW FTI to an accuracy of 80 percent. ● Gives an outbound course, accurate within ±5°. ● Updates TACAN appropriately and selects proper waypoint as required. ● When wings level after passing each preplanned turnpoint, analyzes fuel and updates ETA to next preplanned turnpoint to an accuracy of 80 percent.
21. A/G Radar Operation and Interpretation	
● Identify returns on a ground mapping radar display. ● Correlate radar mode information to refine designation. ● Manipulate the radar to obtain usable radar information for targeting.	● Differentiates between terrain features, cultural returns, far shore brightening, shadowing, and lines of communications. ● Allows picture to build to sufficient detail to minimize required updates to cursor position. ● Correlates turnpoint with BRA information from HSI or use of dead reckoning within ±5 degrees and ±2 miles.

BEHAVIOR STATEMENT	STANDARDS
22. Timing	
• Directs aircraft speed and course to arrive at the target on time.	• Arrives at the target within ±30 seconds from preflight/ROLEX, as applicable in Strike and AWI. • Arrives at the target within ±10 seconds from TOT, as applicable in CAS. • Gives an accurate time hack during brief. • Analyzes total distance and total time left to formulate desired groundspeed to an accuracy of 80 percent.
23. Directive/Descriptive Comm	
• Maneuver the jet as required with timely and effective directive comm. • Build crew situational awareness with timely and concise descriptive comm.	• Effectively maneuvers aircraft utilizing directive comm. • Prioritizes directive over descriptive comm. • Communicates to the flight the location of upcoming checkpoints (towers, roads, etc.). • Provides a brief description of upcoming checkpoints and turnpoints/target. • Alerts flight of the location and elevation of upcoming terrain in a timely manner IAW the FTI, SOP, and sound judgment. • Gives accurate angle-off, range, elevation, overtake (AREO) and other descriptive comm when appropriate. • Utilizes clear, concise, properly formatted, standardized communication when applicable when under broadcast or tactical control. • Accurately describes flow and changes to picture to build tactical situational awareness. • Communicates effectively with AIC to build intercept picture.

BEHAVIOR STATEMENT	STANDARDS
24. Checkpoint Utilization and Chart Terrain/Correlation	
• Use visual checkpoints to determine aircraft position. • Maintain SA and position on flight planned route as required. • Use visually distinct terrain features as aids to navigation.	• Determines geographic position from visual references. • Maintains positional awareness during route of flight using HSI, chart, and ground. • Uses terrain and selected cultural and noncultural features for visual navigation to maintain position accuracy within 1 NM.
25. Course Analysis/Corrections	
• Determine aircraft position in relation to intended course.	• Directs course using visual references and the HSI to maintain flight within route corridor or SUA/MOA. • Updates ETA to next turnpoint as appropriate. • Uses checkpoints to backup position within 1 NM. • Navigates with wind-corrected heading cue.
26. Speed Control	
• Use standard speed corrections IAW FTI. • Maintain awareness of fighter speed and its tactical use.	• Applies procedures IAW FTI for speed corrections to an accuracy of 80 percent. • As lead or single ship, makes appropriate airspeed adjustments based on distance to go to next point or target. • As wing, backs up lead to the same standard. • Applies timely speed correction IAW FTI. • Maintains speed awareness and directs throttle corrections IAW FTI. • Directs speed to match bandit speed (if fast) or maintains speed advantage on the majority of intercepts.

BEHAVIOR STATEMENT	STANDARDS
27. Target Acquisition	
• Effective radar interpretation, visual scan, and correlation to identify/acquire target.	• Uses target environment's visual/radar cues to correctly correlate and identify target, placing designation on target or directs overflight to an accuracy of ±1/2 NM. • Acquires targets NLT 3 NM prior to target overflight for PGM attacks.
28. A/G Timeline Awareness	
• Performs mission critical tasks required to conduct an A/G target attack.	• Initiates A/G timeline within ±1 NM of briefed range. • Directs aircraft-to-target capture, terminal attack maneuver, and weapons release. • Releases weapon within parameters for PGM and recognizes IN LAR within 1 NM. • Accomplishes 80 percent of all required timeline actions.
29. EW Recognition/Considerations	
• Determine own ship targeted status through RWR and bandit TA. • Execute missile defense when targeted.	• Recognizes and interprets RWR indications on EW, SA, or radar display within 10 seconds. • Directs a defensive maneuver to put S/A threats at 90 ±10 degrees off the nose in the shortest direction. • Uses chaff in defensive maneuver. • Directs a defensive maneuver to the beam ±5 degrees when targeted by an A/A threat. • Adheres to NLT defend range when targeted by an A/A threat at 100 percent accuracy.

BEHAVIOR STATEMENT	STANDARDS
30. Precautionary Approach(es)	
• Directs precautionary approach procedure IAW NATOPS, FTI and local SOP/course rules, to include: ► Overhead. ► Abeam. ► Straight-in.	• Properly coordinates maneuver with ATC. • Effectively manages airspace for entry, including appropriate voice reports. • Demonstrates recognition and appropriate use of Precautionary Approach IAW NATOPS, FTI, briefing, and local standards. • Verbally confirms completion of applicable aircraft and configuration checklists (landing gear checklist). • Makes appropriate altitude and airspeed calls and safety checks IAW FTI and SOP. • Recognizes and verbalizes PA profile deviations (±15 knots, +300/-200 feet).
• Directs emergency instrument approach IAW NATOPS, FTI and local SOP/course rules, to include: ► Low oil approach. ► Min/emer fuel approach.	• Properly coordinates maneuver with ATC. • Effectively directs energy state via configuration to maintain adequate approach profile.

BEHAVIOR STATEMENT	STANDARDS
31. Formation Coordination, Communication, and Hand Signals	
• Use radio in multijet formation. • Communicate using hand signals. • Perform appropriate coordination items within the section.	• Uses clear, concise, standardized comm to affect formation activities. • Demonstrates proper frequency change procedures. • Utilizes hand signals to direct frequency changes and communicate within the section. • Maintains SA on appropriate coordination requirements for the formation. • Executes timely and accurate radio calls, formation changes, or other briefed items as required.
32. Engaging Turns	
• Execute engaging turns IAW FTI procedures.	• Uses the turns properly to maneuver the section to the center of the working area. • Makes all radio/ICS calls when required. • Executes lookout IAW FTI. • Recommends engaging turns as appropriate IAW FTI.
33. Section Target Attack	
• Perform section target attack IAW FTI, briefing, and local standards.	• Executes section target attack IAW A/G timeline. • Lead directs attack for section ±1 NM. • Lead directs section to achieve proper attack formation prior to RIP/PUP/BRP.
34. Rendezvous	
• Safely effect formation joinup.	• Performs rendezvous responsibilities IAW FTI, briefing, and local standards. • Monitors closure. • Directs underrun if required. • Makes required airspeed calls.

BEHAVIOR STATEMENT	STANDARDS
35. Weapons Pattern Attacks	
• Perform weapons pattern attack procedures IAW FTI, briefing, and local standards.	• Performs weapons pattern attack procedures IAW FTI, briefing, and local standards to include: ► Demonstrates knowledge and execution of spacer pass as applicable. ► Performs LATOMS-T checks IAW FTI at 90 percent. ► Ensures dive delivery is conducted within briefed/ planned parameters. ► Directs dive abort IAW training rules, FTI, and SOP, if required.
36. Division Recovery	
• Execute RTB procedures in a division.	• Appropriately executes applicable VFR/IFR recovery procedures based on formation position.
37. Deck and Performance Awareness	
• Maintain aircraft performance with respect to airspeed altitude and angle of attack. • Prevent aircraft maneuvers below the established hard deck.	• Maintains awareness of the established hard deck during BFM engagements. • Makes effective deck calls to pilot to direct deck avoidance. • Maintains spatial orientation to prevent directing maneuvers that would cause aircraft flight below the established hard deck. • Effectively directs and communicates aircraft performance state with respect to airspeed, altitude, and angle of attack. • Maintains awareness of aircraft maneuvering envelope and directs maneuvers within maneuvering limitations.

BEHAVIOR STATEMENT	STANDARDS
38. Pursuit Curves (Lag, Pure, Lead)	
• Display knowledge and performance of pursuit curves.	• Utilizes lead, lag, and pure pursuit to effectively achieve valid weapons employment parameters.
39. Offensive Maneuvering	
• Demonstrate ability to fight the jet, beginning from a position of advantage.	• Begins each setup IAW FTI, briefing, and local standards. • Uses standard terminology and communication brevity. • Complies with training rules IAW OPNAVINST 3710.7U. • Accomplishes timely execution of each maneuver to produce the desired effect. • Records adequate notes for use in debrief. • Executes appropriate knock-it-off/terminate procedures to ensure safe separation at the completion of the engagement.
40. Defensive Maneuvering	
• Demonstrate ability to fight the jet, beginning from a position of disadvantage.	• Begins each setup IAW FTI, briefing, and local standards. • Uses standard terminology and communication brevity. • Complies with training rules IAW OPNAVINST 3710.7U. • Accomplishes timely execution of each maneuver to produce the desired effect. • Records adequate notes for use in debrief. • Executes appropriate knock-it-off/terminate procedures to ensure safe separation at the completion of the engagement. • Correctly analyzes and takes advantage of reversal opportunities on bandit overshoots.

BEHAVIOR STATEMENT	STANDARDS
41. 1 V 1 Neutral Engagements	
• Demonstrate ability to fight the jet, beginning from a neutral position.	• Begins each setup IAW FTI, briefing, and local standards. • Uses standard terminology and communication brevity. • Complies with training rules IAW OPNAVINST 3710.7U. • Executes sound BFM in relation to the bandit. • Accomplishes timely execution of each maneuver to produce the desired effect. • Recognizes and transitions to offensive/defensive BFM as appropriate, directing appropriate maneuvers with appropriate communication brevity. • Records adequate notes for use in debrief. • Executes appropriate knock-it-off/terminate procedures to ensure safe separation at the completion of the engagement.
42. Target Aspect Awareness and Control	
• Perform all weather intercepts using AIC information and airborne radar information in search and track modes. • Manage maneuvering target's target aspect to preserve tactical advantage and BVR weapon employment opportunity. • Direct a displacement turn to create or preserve 40,000 feet of lateral separation.	• Determines necessary change in TA and LS. • Determines TA to within ±10 degrees. • Makes course corrections to capture or prevent the uncontrolled growth of TA. • Contact TA never exceeds 60 degrees at any point outside 10 NM. • Maintains tactical advantage through proper intercept geometry implementation on a majority of runs.

BEHAVIOR STATEMENT	STANDARDS
42. Target Aspect Awareness and Control (continued)	
	• Achieves 40,000 feet of lateral separation by 10 NM during stern conversion intercepts. • Commands crank IAW briefed game plan on a majority of the intercepts.
43. Target Altitude Recognition/Correction	
• Determine contact using radar and AIC information.	• Accurately interprets altitude delta. • Maneuvers to achieve 1,000 feet of lookup prior to merge on a majority of intercepts.
44. A/A Radar Operation	
• Select appropriate radar mode and antenna sector scan to enhance earliest target detection. • Manipulate the radar to obtain usable radar information as an aid to navigation and targeting.	• Uses briefed modes/sets while searching for contacts in assigned AOR. • Correlates AIC target information with displayed radar information within ±5 degrees and ±5 NM. • Commands STT IAW briefed timeline. • Executes appropriate meld mechanics IAW with briefed timeline on a majority of intercepts. • Selects proper sort IAW briefed timeline on a majority of intercepts. • Executes short-range radar IAW game plan on a majority of intercepts. • Troubleshoots radar effectively. • Optimizes radar presentation to acquire the best display and information in a majority of runs. • Selects appropriate radar mode (TWS or STT) IAW briefed game plan. • Executes appropriate maneuvering target radar procedures.

BEHAVIOR STATEMENT	STANDARDS
45. A/A Timeline Awareness	
• Performs A/A timeline.	• Recognizes commit criteria on 75 percent of intercepts. • Assigns correct targeting NLT meld IAW game plan on 75 percent of intercepts. • Employs valid MRM on briefed timeline ±1 NM on 75 percent of intercepts. • Recognizes targeted status and defends prior to NLT defense to 75 percent accuracy. • Recognizes untargeted status and executes stern conversion to an accuracy of 75 percent. • Executes abort prior to NLT abort IAW briefed game plan to an accuracy of 75 percent. • Maintains awareness of untargeted groups to an accuracy of 75 percent.
46. Counterturn Fundamentals	
• Direct counterturn to arrive in bandit's RQ.	• Initiates counterturn at appropriate range IAW timeline. • Compensates for hot or cold stern conversions by using geometry and speed. • Arrives at 0.5-2.0 NM in RQ in the majority of stern conversion intercepts. • Manages all aspects of the CT appropriately while spending the necessary time looking outside to gain tally. • Directs appropriate AOB to maintain required drift curve.

BEHAVIOR STATEMENT	STANDARDS
47. Merge/SRM Employment	
• Recognize merge. • Establish SRM firing position. • Control drift in the rear quarter through aircraft maneuvers. • Maneuver to maintain/ regain radar contact.	• Directs merge geometry. • Makes appropriate decision to bug out or continue to engage bandits. • Gains/maintains tally and maneuvers appropriately. • Uses ACM modes to acquire bandits inside 5 NM. • Employs valid SRM from IN LAR position. • Determines and retains kill/VID status. • Visually identifies aircraft as friendly/hostile type on a majority of intercepts.
48. Tactical Situational Awareness	
• Visualize fighter's position relative to the bandit. • Properly assess the situation, prioritize, and take the proper course of action. • Use all available information to recognize and direct the jet to a point of advantage.	• Manages geometry, speed, and altitude to gain and keep tactical advantage. • Accurately targets intercept IAW briefed game plan. • Recognizes multigroup flow range and makes proper flow decisions on a majority of intercepts. • Recognizes abort criteria. • Maintains SA to wingman. • Exercises missile constraint IAW bandit declaration. • Uses intercockpit comm to enhance pilot/crew SA.
49. Bandit Maneuver Recognition/Reaction	
• Recognize and compensate for bandit maneuvers in heading and altitude.	• Reacts to speed, heading, altitude, and complex maneuvers appropriately, including changing radar modes, scan volume to maintain/regain radar SA to bandit on a majority of intercepts.

BEHAVIOR STATEMENT	STANDARDS
50. Aerobatics	
• Direct flight parameters for aerobatic maneuvers IAW Familiarization FTI, to include: ► Aileron roll. ► Wingover. ► Barrel roll. ► Loop. ► One-half Cuban eight. ► Immelmann. ► Split-S. ► Squirrel cage.	• Directs and confirms target entry parameters (±5 knots, ±100 feet) prior to beginning the maneuver. • Verbalizes altitude and airspeed during maneuvers and provides altitude above the deck calls when within 5,000 feet of the airspace floor. • Directs maneuver entries to remain within area boundaries. • Maintains awareness of energy management by scanning required G and AOA and informing pilot of deviations ±1 G and ±2 units AOA.

Chapter X

Master Materials List

Individually Issued Materials

NOMENCLATURE	IDENTIFICATION	QTY PER STUDENT
Flight Training Instructions		
1. All applicable T-45C Flight Training Instructions	CNATRA P-816, P-819, P-820, P-821, P-825, P-1216	1 each

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