NAVAL AIR TRAINING COMMAND

NAS CORPUS CHRISTI, TEXAS **CNATRAINST 1542.164**
CIN Q-2D-0164 **27 SEP 13**

CHIEF OF NAVAL AIR TRAINING

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

2013

DEPARTMENT OF THE NAVY
CHIEF OF NAVAL AIR TRAINING
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CNATRAINST 1542.164
N712
27 Sep 13

CNATRA INSTRUCTION 1542.164

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 1542.158F 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.

C. HOLLINGSWORTH
Chief of Staff

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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-0164.

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 Military 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, 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 standdowns, and other expected nonworking days.

	Training Days	Calendar Weeks
Advanced UMFO:	127.8	28.4

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**
Contact 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**
Contact Stage	G1101-45	61.1
Total		**61.1**

b. Flight Support

FLIGHT SUPPORT		
Stage	**Symbol**	**Hours**
Contact Stage	C1101-2	4.0
Strike Stage	STK1101-16	37.9
CAS Stage	CAS1101-3	5.0
BFM Stage	BFM1101-5	8.7
AWI Stage	AWI1101-32	49.8
Total		**105.4**

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

FLIGHT TRAINING						
Flight/Events	**IGS**		**2F205A**		**T-45C Dual**	
	Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Contact			9	13.5	4	5.6
Strike			11	22.0	12	14.4
Close Air Support (CAS)			4	8.0	5	6.0
Basic Fighter Maneuvers (BFM)			1	2.0	5	5.5
All Weather Intercepts (AWI)	12*	14.0*	15	30.0	14	17.0
Totals	12	14.0	40	75.5	40	48.5

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

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 BFM (IP)	1.00	1.00	2.00
Simulator STK, CAS, AWI (INFO)	1.00	1.00	2.00
Simulator Contact (CSI)	1.00	1.00	2.00
Flight (IP)	2.00	1.50	3.50
AWI 41-44 (IGS INFO*)	1.00	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 1542.158F.

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**	**Hrs/Student**
CAS40 (FAC)	4	1.2	2	2.4
CAS41 (FAC)	1	1.2	2	0.6
Totals	**5**	**2.4**	**4.0**	**3.0**

23. Additional CSI Resource Requirements. Some events require a CSI to operate the OFT in addition to the IP or INFO scheduled to instruct the event. These requirements are tabulated below. These CSIs do not attend the brief or debrief.

ADDITIONAL CSI RESOURCE REQUIREMENTS		
Flight/Event	**CSI**	
	2F205A	**Hrs**
STK	11	22.0
CAS	4	8.0
AWI	15	30.0
BFM	1	2.0
Totals	**31**	**62.0**

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 1500.4G, Chapter VII, for further guidance.

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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
CONFP	-	Contact Flight Procedures
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
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
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	-	Instrument Ground School or 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
LLNAVFP	-	Low-Level Navigation Flight Procedures
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
OLQ	-	Officer-Like Qualities
ORM	-	Operational Risk Management
PAR	-	Precision Approach Radar
PAS	-	Phase Aggregate Score
PGM	-	Precision-Guided Munitions
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
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 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
WEPFP	-	Weapons Flight Procedures
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 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 stage 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 1542.164.

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

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). 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 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 the OPSO or his representative 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 C—Contact 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. There are only two basic outcomes:

a. Pass – Return to training.

b. Fail – 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: C4001 is in the Contact stage; AWI4001 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, 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 1500.4G.

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 Contact, 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

SNFO_PAS – 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 maintaining required proficiency.

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. Completed SSRs shall be annotated in the ATF's Comments section and the TIMS SSR tab. Assign NG/1 as the SSR maneuver grade.

f. Aviation Training Jacket Reviews. Class Advisors or Personal Advisors will conduct jacket reviews at least monthly. SMS students require weekly ATJ reviews.

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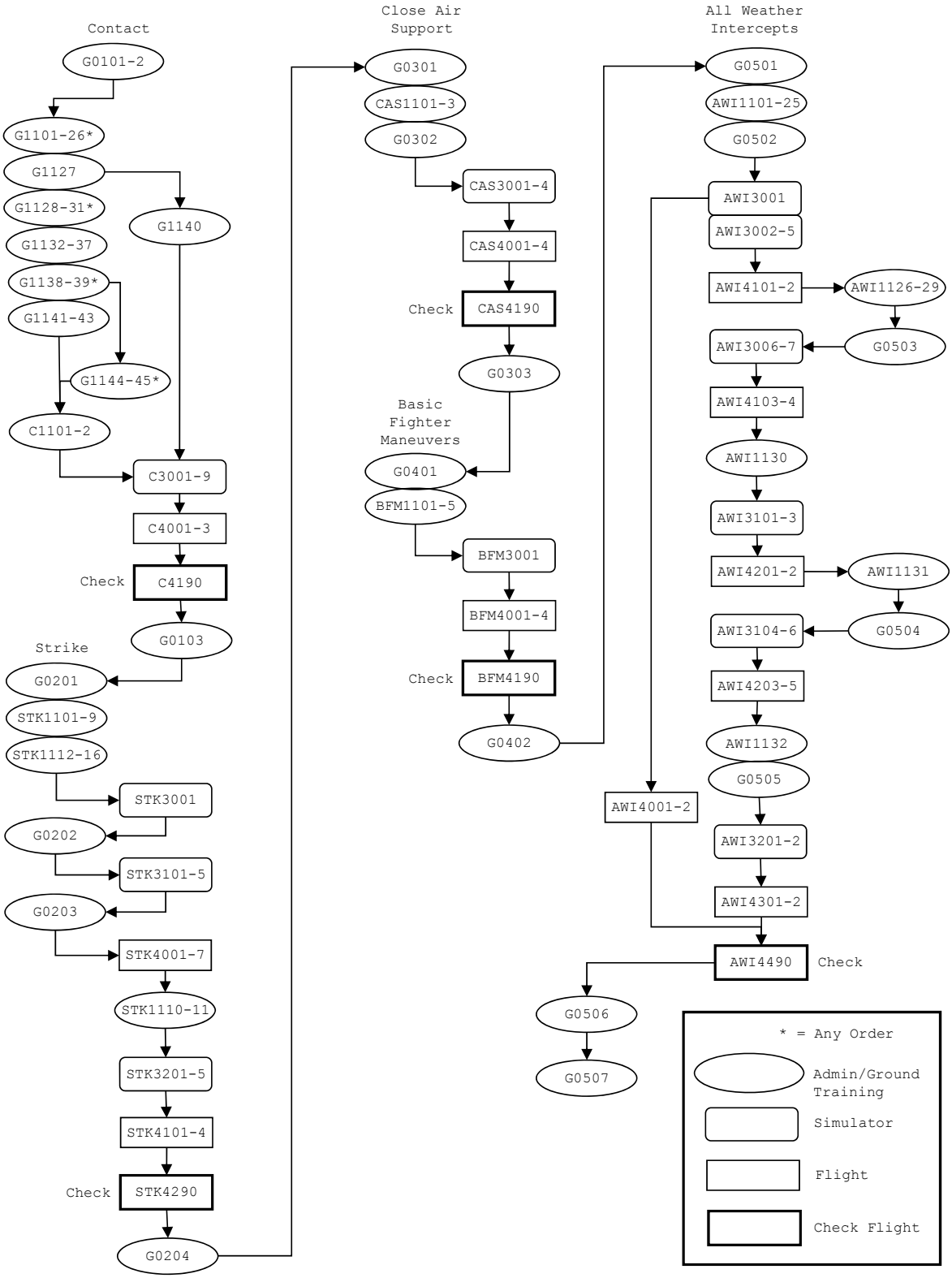
ADVANCED STRIKE FIGHTER UMFO COURSE FLOW



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, or until 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 ride (SXX90), two consecutive UNSATs, or three cumulative UNSATs (in the same block) result in an IPC. Document the failed check ride or second consecutive/third (in block) cumulative UNSAT on a pink ATF for that syllabus event.

(5) A subsequent check ride failure, two further consecutive UNSATs, or three more cumulative UNSATs (in block) result in an FPC. Document the failed check ride or second consecutive/third (in block) cumulative UNSAT on a pink ATF generating the progress check.

(6) Failing an FPC results in a TRB.

b. Ready Room UNSAT (RRU)

(1) An initial RRU on any syllabus event will result in an IPC. Document the RRU on a pink ATF for that event. The event will be marked as incomplete and at least one item on the ATF shall be graded Unable. A missed brief or OLQ issues do not constitute an RRU and should be dealt with using other disciplinary methods. Use a supplementary ATF to document a missed brief or OLQ issues and then administer counseling/ discipline as required by the CO.

(2) A second or subsequent RRU, failed IPC, or triggering UNSAT flight event will result in an FPC.

(3) Failing an FPC will result in a TRB.

c. Academic. Failing two exams triggers an IPC or FPC as appropriate.

d. Remediation. A dual 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

a. Scope. Consider the circumstances relevant to the student's training, for example:

(1) Quality of training provided in accordance with (IAW) applicable FTI.

(2) Continuity of training provided.

(3) Outside influences/extenuating circumstances.

(4) The TRB ***shall not*** make attrition/retention recommendations based on perceived student potential or aspects unrelated to the administrative application of training IAW this directive.

b. Composition

(1) Voting Members. The board consists of three voting members, one of which is the Senior Member. The TRAWING Commodore designates the Senior Member in writing.

(2) Other Members/Observers. At least one member will be from the student's parent service. For an IMS, where possible, include the country liaison officer and the TRAWING IMSO as observers.

(3) Academic Failures. TRBs convened due to academic failures may include one qualified civilian instructor as a voting member.

(4) Exclusion. The following persons are prohibited from serving as a voting member on a student's TRB:

(a) Any instructor who has sat on a previous TRB for the student.

(b) Any instructor who has awarded an UNSAT to the student in the relevant training stage.

(c) The squadron IMSO, in the case of an international student.

c. Deliverables

(1) A report assessing the student's training quality, highlighting any deficiencies of training received. If it is determined that there was a deficiency in training, the board shall recommend remediation of the student for subsequent return to training.

(2) A CNATRA 1542/1827, TRB Summary Form, shall be used to document the proceedings.

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 dual and 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. Warmups Between Stages. Warmup events shall not be given prior to the first flight or device event in a stage unless 30 days have elapsed since any syllabus flight or simulator event.

b. Optional Warmup Event Criteria. Optional warmup criteria are defined in CNATRAINST 1500.4G. Optional warmup events are based on the student's performance. If the student is in the optional warmup window and his/her performance meets MIF (is sufficient to meet MIF by the end of block), the event shall count as the next syllabus event. If a student's performance is Marginal or UNSAT, the flight will be coded as a warmup.

c. Additional Warmup Events. The squadron CO may direct additional warmup aircraft or simulator/CPT events for extended breaks in training (greater than 30 days).

CRITERIA FOR AWARDING WARMUP EVENTS		
Break* (Days)	**Warmup Events**	**Remarks**
7-13 Sim to A/C	1 Mandatory Simulator	• Mandatory warmup is not an advancing "X."
7-13 All Others	1 Optional	• Based on performance. • Required if overall event grade is Marginal or UNSAT. • Prohibited if: ▶ Performance meets MIF/standard or is adequate to meet MIF by EOB. ▶ Break occurs between stages (see paragraph 5a).
14-30 Sim to A/C	2 Mandatory Simulators	• Mandatory warmups are not advancing "X's."
14-30 All others	1 Mandatory 1 Optional	• Mandatory warm-up is not an advancing "X." • Optional warmup based on performance ▶ Required if overall event grade is Marginal or UNSAT.

*Break = Current Julian Date – Julian Date last flown, regardless of stage.

6. Additional Flights/Trainers

a. Extra Training (ET) Events (SXX87). All ETs shall be coded as SXX87, e.g., C3087. ET events include, but are not limited to IPC/FPC ET events. Normally, award these events to compensate for training inadequacies, e.g., poor event/maneuver continuity or improper instruction.

(1) Preceding an IPC. The Operations Officer may authorize one ET prior to an IPC.

(2) Preceding an FPC. The CO may authorize as many as two ETs prior to an FPC.

(3) IPC/FPC 87 events ***shall not*** be awarded to remediate UNSAT student performance unrelated to unit/instructional training inadequacies.

(4) Document the awarding of IPC/FPC 87 events on supplemental ATFs.

b. Adaptation Events (SXX84). The OPSO may grant events required for adaptation to the flying environment when requested by the flight surgeon, e.g., airsickness, eyeglasses, etc.

7. Student Monitoring Status

a. Any student who is designated Marginal shall be placed on SMS. The objective of SMS is to focus supervisory attention to a student's progress in training, specific deficiencies, and potential to complete the program. SMS may also be applied to students who require supervisory attention while trying to resolve personal issues.

b. The operations department will place the student on SMS to address substandard performance in a specific area.

c. SMS is intended as a short-term program. SMS requires the setting of specific goals. SMS should include, but is not limited to, training tailored to correct deficiencies as determined by the OPSO or to address personal issues as determined by the Class Advisor or Personal Advisor. The goals and the required period on SMS must be annotated on a supplemental ATF in the student's ATJ.

d. A student who receives two UNSATS in a block of training or three UNSATs within a single stage of training shall be considered Marginal and placed on SMS.

e. If the student achieves the goals within the SMS period or when personal issues are resolved, the student returns to normal training flow. If the student is unable to meet the specific goals of SMS or performance does not improve, the student shall progress to an FPC.

8. Ground Training and Briefing Requirements

a. Mission Preparation, Briefings, and Debriefings

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

(2) Preparation. 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. Thoroughly cover the mission's:

(a) Event 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 the CTS.

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

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 stage/phase 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. A MIF is designed to allow for minimum performance in a specific area with the understanding that performance 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 event. Specify completed SSRs in the ATF's comments section and the TIMS SSR tab.

(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. Instructors may not award a Marginal on an EOB event or check ride.

(c) UNSAT. Student exhibits dangerous tendencies or progress toward meeting EOB standards is insufficient.

(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. STK41XX 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 STK41XX 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. The exception is when MIF on a subsequent block is below the preceding block MIF. In these cases, the lower MIF applies.

(4) Regression Rules. Regression rules address uneven progress through training. Regression rules do not apply to the first simulator or flight block in each stage. 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:

1. The student has previously demonstrated G/4 proficiency when a G/4 was required on previous block MIF.

2. The maneuver was not a check ride critical (+) item.

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

(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.

(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 incompleted solely to provide unwarranted extra training.

(a) Assessment. Assess the event complete if:

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

2. Sufficient events remain in the block to redress the imbalance, and

3. Individual maneuvers can still be accomplished within the block.

4. 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 PAS, except where the grade assigned for the repeated item is lower than the lowest grade previously assigned on that item across all previous attempts at that event.

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

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) Single-Event Training Blocks. Check rides amount to single-event training blocks; therefore, all rules regarding progressing out of a block apply, except as noted below:

1. 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 entire event should be devoted to assessing the student's ability and readiness to progress to the next stage of training. All maneuvers indicated with a plus (+) are check ride critical and must be accomplished to MIF. ***Regression rules do not apply.***

4. The student should be able to demonstrate required levels of proficiency without instructor assistance; however, instruction is allowed on check rides and students may reaccomplish maneuvers at the check ride instructor's discretion.

(b) Incomplete Check Ride. The check ride shall be incomplete when:

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

2. The check ride instructor was unable to sample sufficient examples of a given maneuver to assess the student's overall performance.

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

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

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

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

c. Any maneuver is 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) The progress check instructor shall consider the student's proficiency, judgment, situational awareness, and overall ability to complete the mission. The student must also demonstrate the potential to successfully complete Advanced and follow-on training. All progress checks must meet MIF for the most recently completed block of training. Progress checks shall be full mission profiles emphasizing the student's weak areas and a representative cross section of area and pattern maneuvers. All critical items do not need to be accomplished.

Document failed progress checks on a pink ATF for the failed event generating the progress check.

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

1. Criteria for an IPC are:

a. Failed check ride.

b. Two consecutive or three cumulative UNSAT events in the same block, not including XX87 events.

c. Following an RRU.

d. Following two academic test failures.

e. OPSO or above may direct an IPC when the student's potential to complete the syllabus is in doubt.

2. Outcomes are:

a. Passing returns the student to normal syllabus flow.

b. Failing results in an FPC.

3. IPC instructors. The OPSO or his representative designated by the CO in writing, usually a designated standardization instructor, shall administer the IPC. The instructor that generated the UNSAT grade resulting in the IPC shall not administer the IPC. The IPC instructor is required to make a "return to training" or "continue the attrition process" recommendation to the Squadron CO.

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

1. Criteria for an FPC are:

a. Following a failed IPC.

b. If the conditions requiring an IPC exist and the student has already accomplished an IPC in phase.

c. The CO may direct an FPC when the student's potential to complete the syllabus is in doubt.

2. Outcomes are:

a. Passing returns the student to normal syllabus flow.

b. Failing results in a TRB.

3. FPC Instructors. The CO, XO, or a CO-designated representative administers the FPC. It is the intent of CNATRA that wherever possible, the CO or, in his/her absence, the XO conducts FPCs. In the event that neither the CO nor XO is qualified or available to instruct in the required stage, the CO may designate in writing a senior officer (O-4 or above) to conduct the FPC by direction. The instructor that generated the UNSAT grade resulting in the FPC shall not administer the FPC. The FPC instructor is responsible for a return-to-training decision or an attrition recommendation to the Commander, Training Air Wing SIX.

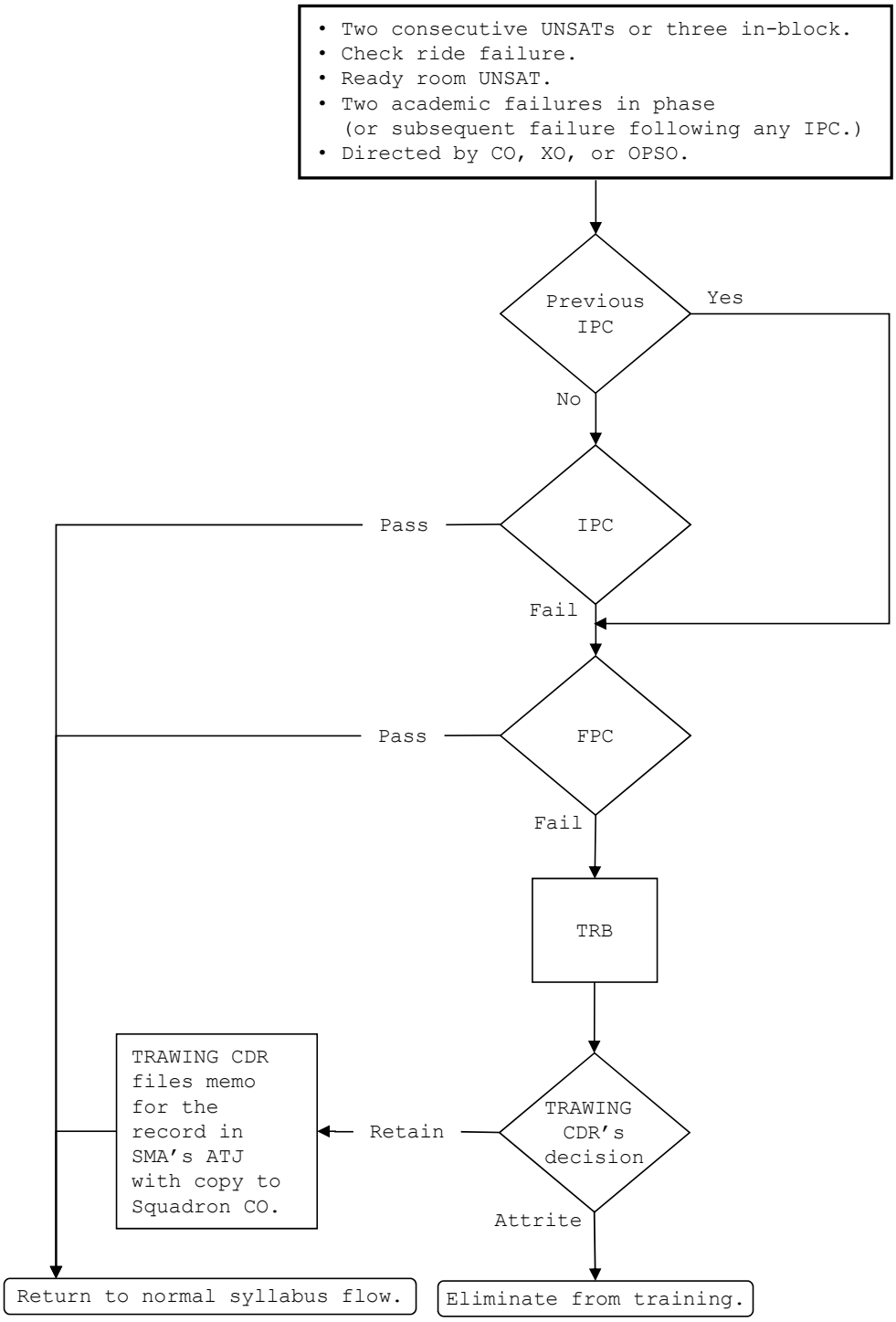
(d) Progress Check Counseling

1. Prior to an IPC. The operations department shall counsel the student on the progress check training review process and document counseling on a supplemental ATF.

2. On Completion of an IPC. The IPC instructor or OPSO shall counsel the student on the progress check training review process. When conducted by the IPC instructor, document counseling on the IPC ATF. When conducted by the OPSO (and the OPSO was not the IPC instructor), document counseling on a supplemental ATF.

3. On Satisfactory Completion of an FPC. The CO or his designated representative will counsel the student. Counseling should consist of the progress check training review process, attrition/retention recommendations, and future courses of action. The CO shall document counseling on the FPC ATF. If conducted by a designated representative, document counseling on a supplemental ATF.

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. N/A.

(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 instructional event 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 contact events in designated areas. These events may be 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.

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Chapter II

Ground Training

1. Contact Training Philosophy. Advanced Strike Fighter UMFO Contact 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 on improving professional development by emphasizing mission ownership and building situational awareness in a dynamic flight environment.

2. Strike Training Philosophy. The primary focus will be on improving professional development by 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	Contact Stage Administration	3	8.0	See Below

1. Prerequisites

   a. G0101 prior to G0102.

   b. C4190 prior to G0103.

2. Events

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

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	Contact Stage Ground Training	45	61.1	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 G1144-45 (any order).

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	CAI	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	CAI	Engine and Hydraulic Emergency Procedures II	1.5	EMFP1
G1127	P/P	Emergency Flight Procedures Exam I	1.0	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	CAI	Electrical and Indicator Emergency Procedures II	1.7	EMFP2
G1131	MIL	Operational and Landing Emergency Procedures	1.5	EMFP2
G1132	P/P	Emergency Flight Procedures Exam II	1.0	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	2.0	NATOPS
G1136	MIL	Out-of-Control Flight Procedures	1.0	OCFFP
G1137	P/P	Out-of-Control Flight Exam	1.0	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 Preflight	1.1	EJECT
G1141	Lect	Instrument Ground School (IGS) Lecture	3.0	IGS
G1142	P/P	IGS Open-Book Exam	2.0	IGS
G1143	P/P	IGS Closed-Book Exam	1.5	IGS
G1144	MIL	CRM	1.0	CRM
G1145	Lect	CRM Seminar	2.0	CRM

3. Syllabus Notes. 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
C11	Class	Contact Stage Flight Support	2	4.0	CONFP

1. Prerequisites

   a. G1143 (IGS Closed-Book Exam).

   b. G1144-45 (CRM).

2. Events

C1101	MIL	Contact Flight Procedures/Prep and Course Rules	3.0
C1102	Lect	Contact Crew Coordination Stan	1.0

3. Syllabus Notes. Accomplish the following during C1101: flight gear check, FOD inspection, ADB review, aircraft manup and pre/postflight.

4. Discuss Items. Discuss the following during C1101: FOD prevention, flight gear inspection, aircraft manup techniques, ADB, MAF, briefing room setup, NAVFLIR, pre/postflight inspection, aircraft discrepancies, flightline hazards, and local course rules.

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

1. Prerequisites

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

   b. STK3001 prior to G0202.

   c. STK3105 prior to G0203.

   d. STK4290 prior to G0204.

`2. Events

G0201	Lect	Introduction to Strike	0.5	ASI
G0202	SS	Strike Self-Study I	8.0	IP
G0203	SS	Strike Self-Study II	8.0	IP
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	16	37.9	See Below

1. Prerequisite

a. G0201 (Introduction to Strike) prior to STK1101-9 and STK1112-16 (in order).

b. STK4007 prior to STK1110-11 (in order).

2. Events

STK1101	CAI	RDR Principles and Operation I	3.0	WEPFP
STK1102	MIL	RDR Principles and Operation II	1.5	WEPFP
STK1103	MIL	A/G Radar Procedures	2.5	WEPFP
STK1104	CAI	Weapons Data Entry Procedures (STRS versus SMS)	0.7	WEPFP
STK1105	MIL	Section Flight Procedures	1.5	WEPFP
STK1106	MIL	Low-Level Planning	3.0	LLNAVFP
STK1107	Lab	Joint Mission Planning System Lab	8.0	LLNAVFP
STK1108	MIL	Low-Level Procedures	2.5	LLNAVFP
STK1109	MIL	Low Altitude Awareness Training	2.0	LLNAVFP
STK1110	MIL	A/G Targeting Procedures	3.2	WEPFP
STK1111	MIL	Electronic Warfare Fundamentals	1.5	WEPFP
STK1112	MIL	Carrier Operations	3.0	CVNP
STK1113	P/P	EP/Limits Exam I	0.5	EMFP3
STK1114	Lect	Midphase Review	2.0	ASI
STK1115	CAI Test	Midphase Exam	2.0	ASI
STK1116	Lect	Strike Crew Coordination Stan	1.0	STKFP

3. Syllabus Notes. STK1103 and STK1110 require use of the RHC.

4. Discuss Items. None.

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

1. Prerequisites

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

   b. CAS1103(CAS Crew Coordination Stan) prior to G0302.

   c. CAS4190 prior to G0303.

2. Events

G0301	Lect	Introduction to CAS	1.0	ASI
G0302	SS	CAS Self-Study	8.0	IP
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	3	5.0	CASFP

1. Prerequisite. G0301 (Introduction to CAS) prior to CAS1101-3 (in order).

2. Events

CAS1101	CAI	CAS Fundamentals	2.0
CAS1102	MIL	CAS Flight Procedures	2.0
CAS1103	Lect	CAS Crew Coordination Stan	1.0

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. BFM4190 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	5	8.7	BFMFP

1. Prerequisite. G0401 (Introduction to BFM) prior to BFM1101-5 (in order).

2. Events

BFM1101	CAI	HUD/Data Entry Procedures	0.7
BFM1102	MIL	BFM Theory	3.0
BFM1103	CAI	BFM Weps	1.0
BFM1104	MIL	Basic Fighter Maneuvers Flight Procedures	3.0
BFM1105	Lect	BFM Crew Coordination Stan	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

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

1. Prerequisites

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

   b. AWI1125 (AWI Crew Coordination Stan) prior to G0502.

   c. AWI1129 (Intercept Progression IV) prior to G0503.

   d. AWI1131 (Introduction to 2 V X) prior to G0504.

   e. AWI1132 (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	SS	AWI Self-Study I	8.0	IP
G0503	SS	AWI Self-Study II	8.0	IP
G0504	SS	AWI Self-Study III	8.0	IP
G0505	SS	AWI Self-Study IV	8.0	IP
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	32	49.8	See Below

1. Prerequisites

a. G0501 (Introduction to AWI) prior to AWI1101-25 (in order).

b. AWI4102 prior to AWI1126-29 (in order).

c. AWI4104 prior to AWI1130.

d. AWI4202 prior to AWI1131.

e. AWI4205 prior to AWI1132.

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	2.0	AWIFP1
AWI1123	MIL	Flight Preparation Lecture	1.0	AWIFP2
AWI1124	P/P	EP/Limits Exam II	0.5	EMFP4
AWI1125	Lect	AWI Crew Coordination Stan	1.0	AWIFP2
AWI1126	CAI	1 V 1 AWI Procedures I	3.5	AWIFP2
AWI1127	MIL	1 V 1 AWI Procedures II	3.5	AWIFP2
AWI1128	CAI	Intercept Progression III	1.0	AWIFP2
AWI1129	MIL	Intercept Progression IV	1.0	AWIFP2
AWI1130	MIL	Introduction to Section Radar Attacks (SRA)	2.0	AWIFP2
AWI1131	MIL	Introduction to 2 V X	3.5	AWIFP2
AWI1132	MIL	Self-Escort Strike Route	2.0	AWIFP2

3. Syllabus Notes. AWI1102, AWI1118, and AWI1126 require the use of the RHC.

4. Discuss Items. None.

Chapter III

NATOPS Training

This chapter does not apply to Advanced UMFO training.

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Chapter IV

Contact Training

1. Contact Stage Training Objectives. The Contact UMFO curriculum is designed to develop and prepare the SNFO for service in tactical fleet aircraft. The SNFO will accomplish the following objectives during the contact phase:

a. Be familiar with the T-45C to conduct flight training operations IAW local and unit directives.

b. Be able to conduct T-45C emergency procedures.

2. Seating. The student shall occupy the rear cockpit for all events in the C40 and C41 blocks.

3. Matrices. The following matrices are an overview of the Contact Stage for the T-45C. The purpose of these matrices is to provide the SNFO and IP 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.

4. Contact Stage MIF

Simulator Event
Check Ride Event

CONTACT STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**C3009**	**C4003**	**C4190**
1	General Knowledge/Procedures	3+	4+	4+
2	Emergency Procedures/NATOPS Knowledge	3+	4+	4+
3	Headwork/Situational Awareness	3+	3+	3+
4	BAR	3+	4+	4+
5	Brief/Debrief	3+	3+	3+
6	Mission Planning/Preparation	3+	3+	3+
7	Mission Ownership/Assertiveness	3+	3+	3+
8	CRM/Crew Coordination	3+	3+	3+
9	Ground Operations	3+	3+	3+
10	Radio/ICS Procedures	3+	3+	3+
11	Takeoff/Departure	3+	3+	3+
12	Publications and Chart Use	3+	4+	4+
13	Enroute Procedures	3+	4+	4+
14	Visual Scan/Lookout Doctrine	3+	3+	3+
15	Instrument Scan	3+	3+	3+
16	In-Flight Checks/Briefs/Planning	3+	3+	3+
17	SUA/MTR Procedures and Airspace Management	3+	3+	3+
18	Fuel Management	3+	3+	3+
19	Unusual Attitudes	3+	3+	3
30	Approach/Landing	3+	4+	4+

Blk #	Media	Title	Events	Hrs	H/X
C30	2F205A	Contact Procedures Simulator Training	9	13.5	1.5

1. Prerequisites

a. C1102 (Contact Crew Coordination Stan).

b. G1140 (Ejection Seat Preflight).

2. Syllabus Notes

a. All EPs shall be completed in the simulator prior to end of block.

b. For C3001-4, student shall operate the flight controls to the maximum extent possible.

c. For C3005-9, students shall simulate rear cockpit occupation to the maximum extent possible.

3. Special Syllabus Requirements. None.

4. Discuss Items

C3001
Conduct of flight, preflight inspection, interior inspection, cockpit setup, checklists, ground operations, 15-minute reports, approach brief, engine shutdown, SUA/MOA entry/exit procedures, VOR approach, and TACAN approach.

C3002
Conduct of flight, radio procedures, instrument takeoff, instrument scan, unusual attitudes, departure/spin procedures, TACAN point-to-point, holding procedures, missed approach procedures, publication and chart use, ASR approach, and PAR approach.

C3003
Conduct of flight, abnormal start, clear engine procedures, GTS fire warning light, emergency shutdown/egress, canopy caution light, NWS failure, fuel management, CRM, lost COMM procedures, radial intercepts, localizer approach, and ILS approach.

C3004
Conduct of flight, abort criteria, abort, performance data calculations, brake failure, blown tire during takeoff, loss of directional control, seat caution light, long-field arrestment, engine failure, airstart procedures, assisted airstart, and landing gear unsafe/fail to retract.

C3005
Conduct of flight, EGT/RPM warning light or compressor stall, FIRE warning light, OIL PRESS warning light, uncommanded engine response, excessive fuel flow, stuck throttle, FUEL caution light, ECA 2 caution light, precautionary approach, short-field arrestment, BINGO profile, and NPA course rules.

C3006
Conduct of flight, uncommanded roll/yaw, SLATS caution light, landing gear unsafe/fail to extend, pitot static malfunction, binding flight controls, cabin temperature failure, HYD caution light, RAT caution light, NWS caution light, NWS AUG caution light, and SKID caution light.

C3007
Conduct of flight, ACCEL caution light, TP HOT caution light, tailpipe fire after shutdown, DEU degrade, AC INV caution light, AV HOT caution light, BRK PRESS caution light, HYD FAIL warning light, PK BRK caution light, DD-175, change of flight plan, and divert.

C3008
Conduct of flight, electrical fire, smoke or fumes in cockpit, hypoxia/OBOGS contamination, total electrical failure, controllability check, controlled ejection, and C AUG caution light.

C3009
Conduct of flight, CABIN ALT warning light, GENERATOR warning light, HOOK warning light, LP PUMP caution light, F PRESS caution light, OXYGEN warning light, and GINA failure.

5. Block MIF

CTS REF	MANEUVER	C3009
1	General Knowledge/Procedures	3+
2	Emergency Procedures/NATOPS Knowledge	3+
3	Headwork/Situational Awareness	3+
4	BAR	3+
5	Brief/Debrief	3+
6	Mission Planning/Preparation	3+
7	Mission Ownership/Assertiveness	3+
8	CRM/Crew Coordination	3+
9	Ground Operations	3+
10	Radio/ICS Procedures	3+
11	Takeoff/Departure	3+
12	Publications and Chart Use	3+
13	Enroute Procedures	3+
14	Visual Scan/Lookout Doctrine	3+
15	Instrument Scan	3+
16	In-Flight Checks/Briefs/Planning	3+
17	SUA/MTR Procedures and Airspace Management	3+
18	Fuel Management	3+
19	Unusual Attitudes	3+
30	Approach/Landing	3+

Blk #	Media	Title	Events	Hrs	H/X
C40	T-45C	Contact Flight Training	3	4.2	1.4

1. Prerequisite. C3009.

2. Syllabus Notes

C4001
Student will be prepared to brief/debrief the flight IAW FTI and squadron directives. Instructor will observe student's preflight inspection and manup procedures on this event.

C4002-3
Event(s) may be flown at night. Student will brief/debrief the flight.

3. Special Syllabus Requirements. None.

4. Discuss Items

C4001
Basic T-45C single-ship flight procedures and flight conduct, unusual attitudes, crew coordination, mission commander responsibilities, alternate planning, ORM review, and single-ship emergency procedures.

C4002
Conduct of flight, previously introduced maneuvers, night operations, and communication brevity.

C4003
Conduct of flight, previously introduced maneuvers, selected emergency procedures, and crew coordination.

5. Block MIF

CTS REF	MANEUVER	C4003
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	3+
4	BAR	4+
5	Brief/Debrief	3+
6	Mission Planning/Preparation	3+
7	Mission Ownership/Assertiveness	3+
8	CRM/Crew Coordination	3+
9	Ground Operations	3+
10	Radio/ICS Procedures	3+
11	Takeoff/Departure	3+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	3+
15	Instrument Scan	3+
16	In-Flight Checks/Briefs/Planning	3+
17	SUA/MTR Procedures and Airspace Management	3+
18	Fuel Management	3+
19	Unusual Attitudes	3+
30	Approach/Landing	4+

Blk #	Media	Title	Events	Hrs	H/X
C41	T-45C	Contact Flight Training Check Ride	1	1.4	1.4

1. Prerequisite. C4003.

2. Syllabus Note. 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.

3. Special Syllabus Requirements. None.

4. Discuss Items. Conduct of flight, IP-selected emergency procedures, ORM review, crew coordination, and mission commander responsibilities.

5. Block MIF

CTS REF	MANEUVER	C4190
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	3+
4	BAR	4+
5	Brief/Debrief	3+
6	Mission Planning/Preparation	3+
7	Mission Ownership/Assertiveness	3+
8	CRM/Crew Coordination	3+
9	Ground Operations	3+
10	Radio/ICS Procedures	3+
11	Takeoff/Departure	3+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	3+
15	Instrument Scan	3+
16	In-Flight Checks/Briefs/Planning	3+
17	SUA/MTR Procedures and Airspace Management	3+
18	Fuel Management	3+
19	Unusual Attitudes	3
30	Approach/Landing	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 strike stage of training is designed to familiarize and build on navigational mission planning and procedures, fuel analysis and management, and mission ownership/awareness during airways, radar, aircraft carrier, and visual navigation 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 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. Seating. The student shall occupy the rear cockpit for all events in Strike, CAS, BFM, and AWI stages of training.

6. 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 instructor 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 all of the stage MIFs shown first, followed by the individual block pages.

7. Strike Stage MIF

Simulator Event
Check Ride

STRIKE STAGE MANEUVER ITEM FILE							
CTS REF	**MANEUVER**	**STK3001**	**STK3105**	**STK4007**	**STK3205**	**STK4104**	**STK4290**
1	General Knowledge/ Procedures	3+	4+	3+	4+	4+	4+
2	Emergency Procedures/ NATOPS Knowledge	3+	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	3+	3+	4+	4+	4+	4+
4	BAR	3+	4+	4+	4+	4+	4+
5	Brief/Debrief	3+	3+	4+	4+	4+	4+
6	Mission Planning/ Preparation	3+	4+	4+	4+	4+	4+
7	Mission Ownership/ Assertiveness	3+	3+	3+	4+	4+	4+
8	CRM/Crew Coordination	3+	3+	3+	4+	4+	4+
9	Ground Operations	3+	4+	4+	4+	4+	4+
10	Radio/ICS Procedures	3+	4+	3+	4+	4+	4+
11	Takeoff/Departure	3+	4+	4+	4+	4+	4+
12	Publications and Chart Use	3+	4+	4+	4+	4+	4+
13	Enroute Procedures	3+	4+	4+	4+	4+	4+
14	Visual Scan/Lookout Doctrine	3+	4+	4+	4+	4+	4+
15	Instrument Scan	3+	4+	4+	4+	4+	4+
16	In-Flight Checks/ Briefs/Planning	3+	4+	4+	4+	4+	4+

MIF continued on next page.

STRIKE STAGE MANEUVER ITEM FILE							
CTS REF	**MANEUVER**	**STK3001**	**STK3105**	**STK4007**	**STK3205**	**STK4104**	**STK4290**
17	SUA/MTR Procedures and Airspace Management	3+	3+	4	4	4	4
18	Fuel Management	3+	4+	4+	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		3+	3+	4	4	4
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	Approach/Landing	4+	4+	4+	4+	4+	4+
31	Formation Coordination, Communication, and Hand Signals		3+	3+	4+	4+	4+
32	Engaging Turns		3	4	4+	4+	4+
33	Section Target Attack				3+	4+	4+
34	Rendezvous		3	4	4+	4+	4+

8. Close Air Support (CAS) Stage MIF

Simulator Event
Check Ride Event

CAS STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**CAS3004**	**CAS4004**	**CAS4190**
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures/NATOPS Knowledge	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	BAR	4+	4+	4+
5	Brief/Debrief	4+	4+	4+
6	Mission Planning/Preparation	4+	4+	4+
7	Mission Ownership/Assertiveness	4+	4+	4+
8	CRM/Crew Coordination	3+	3+	3+
9	Ground Operations	4+	4+	4+
10	Radio/ICS Procedures	4+	4+	4+
11	Takeoff/Departure	4+	4+	4+
12	Publications and Chart Use	4+	4+	4+
13	Enroute Procedures	4+	4+	4+
14	Visual Scan/Lookout Doctrine	4+	4+	4+
15	Instrument Scan	4+	4+	4+
16	In-Flight Checks/Briefs/Planning	4+	4+	4+
17	SUA/MTR Procedures and Airspace Management	4+	4+	4+
18	Fuel Management	4+	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+

MIF continued on next page.

CAS STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**CAS3004**	**CAS4004**	**CAS4190**
27	Target Acquisition	3+	4+	4+
30	Approach/Landing	4+	4+	4+
31	Formation Coordination, Communication, and Hand Signals	4+	4+	4+
34	Rendezvous	3+	3+	3+
35	Weapons Pattern Attacks	3+	3+	3+
36	Division Recovery	3	3	3

9. Basic Fighter Maneuvers (BFM) Stage MIF

Simulator Event
Check Ride Event

BFM STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**BFM3001**	**BFM4004**	**BFM4190**
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures/NATOPS Knowledge	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	BAR	4+	4+	4+
5	Brief/Debrief	4+	4+	4+
6	Mission Planning/Preparation	4+	4+	4+
7	Mission Ownership/Assertiveness	4+	4+	4+
8	CRM/Crew Coordination	3+	3+	3+
9	Ground Operations	4+	4+	4+
10	Radio/ICS Procedures	4+	4+	4+
11	Takeoff/Departure	4+	4+	4+

MIF continued on next page.

BFM STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**BFM3001**	**BFM4004**	**BFM4190**
12	Publications and Chart Use	4+	4+	4+
13	Enroute Procedures	4+	4+	4+
14	Visual Scan/Lookout Doctrine	4+	4+	4+
15	Instrument Scan	4+	4+	4+
16	In-Flight Checks/Briefs/Planning	4+	4+	4+
17	SUA/MTR Procedures and Airspace Management	4+	4+	4+
18	Fuel Management	3+	4+	4+
23	Directive/Descriptive Comm	3+	3+	3+
30	Approach/Landing	4+	4+	4+
31	Formation Coordination, Communication, and Hand Signals	4+	4+	4+
32	Engaging Turns	3+	4+	4+
34	Rendezvous	3+	4+	4+
37	Deck and Performance Awareness	3+	4+	4+
38	Pursuit Curves (Lag, Pure, Lead)	3+	3+	3+
39	Offensive Maneuvering	3+	3+	3+
40	Defensive Maneuvering	3+	3+	3+
41	1 V 1 Neutral Engagements	3+	3+	3+
44	A/A Radar Operation	3	3	3

10. All Weather Intercepts (AWI) Stage MIF

Simulator Event
Check Ride Event

AWI STAGE MANEUVER ITEM FILE									
CTS REF	**MANEUVER**	**AWI3007**	**AWI4002**	**AWI4104**	**AWI3106**	**AWI4205**	**AWI3202**	**AWI4302**	**AWI4490**
1	General Knowledge/ Procedures	4+	4+	4+	4+	4+	4+	4+	4+
2	Emergency Procedures/ NATOPS Knowledge	4+	4+	4+	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+	4+	4+	4+	4+
4	BAR	4+	4+	4+	4+	4+	4+	4+	4+
5	Brief/Debrief	4+	4+	4+	4+	4+	4+	4+	4+
6	Mission Planning/ Preparation	4+	4+	4+	4+	4+	4+	4+	4+
7	Mission Ownership/ Assertiveness	4+	4+	4+	4+	4+	4+	4+	4+
8	CRM/Crew Coordination	4+	4+	4+	4+	4+	4+	4+	4+
9	Ground Operations	4+	4+	4+	4+	4+	4+	4+	4+
10	Radio/ICS Procedures	4+	4+	4+	4+	4+	4+	4+	4+
11	Takeoff/Departure	4+	4+	4+	4+	4+	4+	4+	4+
12	Publications and Chart Use	4+	4+	4+	4+	4+	4+	4+	4+
13	Enroute Procedures	4+	4+	4+	4+	4+	4+	4+	4+
14	Visual Scan/Lookout Doctrine	4+	4+	4+	4+	4+	4+	4+	4+
15	Instrument Scan	4+	4+	4+	4+	4+	4+	4+	4+
16	In-Flight Checks/Briefs/ Planning	4+	4+	4+	4+	4+	4+	4+	4+
17	SUA/MTR Procedures and Airspace Management	4+	4+	4+	4+	4+	4+	4+	4+
18	Fuel Management	4+	4+	4+	4+	4+	4+	4+	4+

MIF continued on next page.

AWI STAGE MANEUVER ITEM FILE									
CTS REF	**MANEUVER**	**AWI3007**	**AWI4002**	**AWI4104**	**AWI3106**	**AWI4205**	**AWI3202**	**AWI4302**	**AWI4490**
21	A/G Radar Operation and Interpretation						4+	4+	4+
22	Timing						4+	4+	4+
23	Directive/Descriptive Comm	4+		4+	4+	4+	4+	4+	4+
25	Course Analysis/ Corrections		4				4	4	4
26	Speed Control	3+		4+	4+	4+	4+	4+	4+
27	Target Acquisition						4+	4+	4+
28	A/G Timeline Awareness						4+	4+	4+
29	EW Recognition/ Considerations			4	4	4	4	4	4
30	Approach/Landing	4+	4+	4+	4+	4+	4+	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+	4+	4+	4+
41	1 V 1 Neutral Engagements	3		3					
42	Target Aspect Awareness and Control	4+		4+	4+	4+	4+	4+	4+
43	Target Altitude Recognition/Correction	4+		4+	4+	4+	4+	4+	4+
44	A/A Radar Operation	4+		4+	4+	4+	4+	4+	4+
45	A/A Timeline Awareness	3+		3+	3+	4+	4+	4+	4+
46	Counterturn Fundamentals	4+		4+	4+	4+	4+	4+	4+
47	Merge/SRM Employment	4+		4+	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
STK30	2F205A	Aircraft Carrier (CV) Procedures Simulator Training	1	2.0	2.0

1. Prerequisite. STK1116 (Strike Crew Coordination Stan).

2. Syllabus Notes. None.

3. Special Syllabus Requirements. None.

4. Discuss Items. Case I, II, and III departure and recovery procedures, carrier pattern and communications, CV-1 approach, and ship-to-shore and shore-to-ship procedures.

5. Block MIF

CTS REF	MANEUVER	STK3001
1	General Knowledge/Procedures	3+
2	Emergency Procedures/NATOPS Knowledge	3+
3	Headwork/Situational Awareness	3+
4	BAR	3+
5	Brief/Debrief	3+
6	Mission Planning/Preparation	3+
7	Mission Ownership/Assertiveness	3+
8	CRM/Crew Coordination	3+
9	Ground Operations	3+
10	Radio/ICS Procedures	3+
11	Takeoff/Departure	3+
12	Publications and Chart Use	3+
13	Enroute Procedures	3+
14	Visual Scan/Lookout Doctrine	3+
15	Instrument Scan	3+
16	In-Flight Checks/Briefs/Planning	3+

MIF continued on next page.

CTS REF	MANEUVER	STK3001
17	SUA/MTR Procedures and Airspace Management	3+
18	Fuel Management	3+
30	Approach/Landing	4+

Blk #	Media	Title	Events	Hrs	H/X
STK31	2F205A	Strike Simulator Training	5	10.0	2.0

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

2. Syllabus Note. SNFO will fly all section events as the lead.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK3101
OFT operation, display management and SMS setup, timing and course analysis, and radar target acquisition procedures.

STK3102
Conduct of flight, real-world timing, turnpoint procedures, entry point acquisition, turnpoint/target acquisition, fuel analysis, course corrections, and timing corrections.

STK3103
Conduct of flight, section procedures, and degraded system operation.

STK3104
Conduct of flight, low-level procedures and hazards, visual turnpoint/target acquisition, and low-altitude training rules.

STK3105
Conduct of flight and OFT/VMTS differences.

5. Block MIF

CTS REF	MANEUVER	STK3105
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	3+

MIF continued on next page.

CTS REF	MANEUVER	STK3105
4	BAR	4+
5	Brief/Debrief	3+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	3+
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	3+
18	Fuel Management	4+
20	Turnpoint Procedures	3+
21	A/G Radar Operation and Interpretation	3+
22	Timing	3+
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	Approach/Landing	4+
31	Formation Coordination, Communication, and Hand Signals	3+
32	Engaging Turns	3
34	Rendezvous	3

Blk #	Media	Title	Events	Hrs	H/X
STK40	T-45C	Strike Flight Training	7	8.4	1.2

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

2. Syllabus Notes

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. Student must lead at least one section instrument approach in this block of training.

c. Lead student will brief/debrief flight TAC ADMIN, section emergency procedures, flight safety, and flight conduct to include sequence of events and tactical administration. Lead student will utilize student wingman for flight planning and brief preparation.

d. STK4001 and STK4002 may be flown at night.

e. Wing SNFO should expect to take the lead at any point on the route.

f. SNFO will assume lead during section flights if not paired up with another SNFO.

g. STK4001, STK4002, and STK4005 will be flown as single-ship and the remaining flights will be flown as a section.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK4001
OFT and VMTS differences, display management and SMS setup, MOA/MTR entry and enroute comm procedures, selected emergency procedures, crew coordination, mission commander responsibilities, and radar target acquisition procedures with RBGM.

STK4002
Degraded system operation, real-world timing, course corrections, and timing corrections.

STK4003
Conduct of flight, NFO responsibilities during section flight and section approach procedures as both lead and wing.

STK4004
Conduct of flight.

STK4005
Conduct of flight, low-level procedures and hazards, and low-altitude training rules.

STK4006
Conduct of flight, section low-level scan and responsibilities.

STK4007
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	STK4007
1	General Knowledge/Procedures	3+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	3+
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	3+
11	Takeoff/Departure	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4007
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4
18	Fuel Management	4+
20	Turnpoint Procedures	4+
21	A/G Radar Operation and Interpretation	4+
22	Timing	3+
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	Approach/Landing	4+
31	Formation Coordination, Communication, and Hand Signals	3+
32	Engaging Turns	4
34	Rendezvous	4

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

1. Prerequisite. STK1111 (Electronic Warfare Fundamentals).

2. Syllabus Notes. SNFO will fly all events as the lead.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK3201
Mission planning factors, surface-to-air threat recognition and missile defense, low-level timing procedures and hazards in a target area, and A/G targeting procedures.

STK3202
Real-world timing, weapons delivery methods, and PGM planning and execution.

STK3203
Conduct of flight, GP bombs and fuses, radar-to-visual hand-off procedures, and dive and pop attacks.

STK3204
Conduct of flight and strike route considerations.

STK3205
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	STK3205
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+

MIF continued on next page.

CTS REF	MANEUVER	STK3205
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4
18	Fuel Management	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+
29	EW Recognition/Considerations	3+
30	Approach/Landing	4+
31	Formation Coordination, Communication, and Hand Signals	4+
32	Engaging Turns	4+
33	Section Target Attack	3+
34	Rendezvous	4+

Blk #	Media	Title	Events	Hrs	H/X
STK41	T-45C	Strike Flight Training	4	4.8	1.2

1. Prerequisite. STK3205.

2. Syllabus Notes

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. Wing SNFO should expect to take the lead at any point on the route. Always assume lead if not paired up with another SNFO.

c. All events will be flown as a section.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK4101
Conduct of flight, "Z" diagrams, and visual bombing pattern.

STK4102
Conduct of flight, A/G timeline, section PGM attack, and section pop attack.

STK4103
Conduct of flight.

STK4104
Conduct of flight and strike route considerations.

5. Block MIF

CTS REF	MANEUVER	STK4104
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4104
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4
18	Fuel Management	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	Approach/Landing	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
STK42	T-45C	Strike Flight Training Check Ride	1	1.2	1.2

1. Prerequisite. STK4104.

2. Syllabus Notes

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. 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 STK4104.

c. Section interdiction check ride.

3. Special Syllabus Requirements. None.

4. Discuss Items. Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	STK4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4290
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4
18	Fuel Management	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	Approach/Landing	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
CAS30	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.

3. Special Syllabus Requirements. None.

4. Discuss Items

CAS3001
Battlespace management, friendly order of battle, fire support coordination measures, medium-threat CAS, keyhole CAS, DASC/FAC procedures, JCAS communication procedures, and low-threat overhead visual talk-on procedures.

CAS3002
Conduct of flight and high-threat CAS.

CAS3003
Conduct of flight, variable-threat CAS, visual talk-on procedures/mechanics, and PGM deliveries.

CAS3004
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	CAS3004
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+

MIF continued on next page.

CTS REF	MANEUVER	CAS3004
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
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	Approach/Landing	4+
31	Formation Coordination, Communication, and Hand Signals	4+
34	Rendezvous	3+
35	Weapons Pattern Attacks	3+
36	Division Recovery	3

Blk #	Media	Title	Events	Hrs	H/X
CAS40	T-45C	CAS Flight Training	4	4.8	1.2

1. Prerequisite. CAS3004.

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 permitted.

b. FAC(A) experienced instructor will perform FAC-to-striker brief and will fly support aircraft to perform FAC role for event. This instructor may be a qualified IP or INFO who will fly in the "Dash Last" position, without an SNFO.

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

3. Special Syllabus Requirements. None.

4. Discuss Items

CAS4001
Battlespace management, friendly order of battle, fire support coordination measures, medium-threat CAS, keyhole CAS, DASC/FAC procedures, JCAS communication procedures, low-threat overhead talk-on procedures.

CAS4002
Conduct of flight and high-threat CAS.

CAS4003
Conduct of flight, variable-threat CAS, visual talk-on procedures/mechanics, and PGM deliveries.

CAS4004
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	CAS4004
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	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	Approach/Landing	4+
31	Formation Coordination, Communication, and Hand Signals	4+
34	Rendezvous	3+
35	Weapons Pattern Attacks	3+
36	Division Recovery	3

Blk #	Media	Title	Events	Hrs	H/X
CAS41	T-45C	CAS Flight Training Check Ride	1	1.2	1.2

1. Prerequisite. CAS4004.

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 permitted.

b. FAC(A) experienced instructor will perform FAC-to-striker brief and will fly support aircraft to perform FAC role for event. This instructor may be a qualified IP or INFO who will fly in the "Dash Last" position, without an SNFO.

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

3. Special Syllabus Requirements. None.

4. Discuss Item. Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	CAS4190
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+

MIF continued on next page.

CTS REF	MANEUVER	CAS4190
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	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	Approach/Landing	4+
31	Formation Coordination, Communication, and Hand Signals	4+
34	Rendezvous	3+
35	Weapons Pattern Attacks	3+
36	Division Recovery	3

Blk #	Media	Title	Events	Hrs	H/X
BFM30	2F205A	BFM Procedures Simulator Training	1	2.0	2.0

1. Prerequisite. BFM1105 (BFM Crew Coordination Stan).

2. Syllabus Notes. This block of training is designed to introduce and practice the admin and tac admin associated with a BFM mission. Student will assume the role of mission commander in the complete execution of the flight from preflight planning to postflight debrief IAW FTI, squadron directives, and instructor recommendations.

3. Special Syllabus Requirements. None.

4. Discuss Items. BFM fence-in/out procedures, BFM training rules, PADS, note taking, fuel management, deck and performance awareness, and mission reconstruction.

5. Block MIF

CTS REF	MANEUVER	BFM3001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	BFM3001
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	3+
23	Directive/Descriptive Comm	3+
30	Approach/Landing	4+
31	Formation Coordination, Communication, and Hand Signals	4+
32	Engaging Turns	3+
34	Rendezvous	3+
37	Deck and Performance Awareness	3+
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
BFM40	T-45C	BFM Flight Training	4	4.4	1.1

1. Prerequisite. BFM3001.

2. Syllabus Notes

a. This block of training is designed to introduce and practice 1 V 1 offensive, defensive, and neutral engagement BFM. Student will assume the 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. All events flown as section with SNFO in each jet.

3. Special Syllabus Requirements. None.

4. Discuss Items

BFM4001
BFM fence-in/out procedures, E-M Diagram, performance characteristics, weapons engagement zones, recognition of the concept of sensor nose, snapshot drill, and PADS.

BFM4002
1-circle flow, 2-circle flow, offensive/defensive perch, deck awareness, and fuel management.

BFM4003
Conduct of flight.

BFM4004
HABFM, game plan development, out-of-plane maneuvering, and crew coordination.

5. Block MIF

CTS REF	MANEUVER	BFM4004
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+

MIF continued on next page.

CTS REF	MANEUVER	BFM4004
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
23	Directive/Descriptive Comm	3+
30	Approach/Landing	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
BFM41	T-45C	BFM Flight Training Check Ride	1	1.1	1.1

1. Prerequisite. BFM4004.

2. Syllabus Notes

a. This flight is designed to evaluate proficiency in section admin and tac admin while practicing HABFM against a specific threat. Student will assume the 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. Flight will be flown as section with SNFO in each jet.

c. SNFO leads this event if he/she did not lead BFM4004.

3. Special Syllabus Requirements. None.

4. Discuss Items. Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	BFM4190
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	3+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	BFM4190
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
23	Directive/Descriptive Comm	3+
30	Approach/Landing	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
AWI30	2F205A	AWI Procedures Simulator Training	7	14.0	2.0

1. Prerequisites

a. G0502 (AWI Self-Study I) prior to AWI3001-5 in order.

b. AWI3005 and G0503 (AWI Self-Study II) prior to AWI3006-7 in order.

2. Syllabus Notes. None.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI3001
A/A radar procedures, stern conversion timeline, AWI comm procedures, stores management, and target aspect analysis.

AWI3002
Conduct of flight, area entry procedures, alpha check procedures, stern conversion procedures, radar-to-visual handoff procedures, and tally comm.

AWI3003
Conduct of flight.

AWI3004
Conduct of flight.

AWI3005
Conduct of flight.

AWI3006
Advanced AWI timeline, A/A radar procedures, missile defense procedures, tactical formations, shooter-controlled kill removal, weapon status comm, post-defense radar mechanics, short-range radar mechanics, and defensive countermeasures.

AWI3007
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	AWI3007
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
23	Directive/Descriptive Comm	4+
26	Speed Control	3+
30	Approach/Landing	4+
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+

MIF continued on next page.

CTS REF	MANEUVER	AWI3007
43	Target Altitude Recognition/Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	3+
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
AWI40	T-45C	AWI Instruction Approach Flight Training	2	3.0	1.5

1. Prerequisites. AWI3001.

2. Syllabus Notes

   a. Both events flown as section with SNFO in each jet.

   b. Each SNFO shall lead at least one event in this block.

3. Special Syllabus Requirements. None.

4. Discuss Items

   AWI4001
   GPS navigation, EP (in flight), and CNO's GPS policy.

   AWI4002
   GPS navigation (practiced) and minimum fuel scenario (discussed or practiced in flight).

5. Block MIF

CTS REF	MANEUVER	AWI4002
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
25	Course Analysis/Corrections	4
30	Approach/Landing	4+

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

1. Prerequisites

a. AWI3005 prior to AWI4101.

b. AWI3007 prior to AWI4103.

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 flown as section with SNFO in each jet.

d. SNFOs should alternate leading events in this block.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI4101
Conduct of flight, A/A radar procedures, stern conversion timeline, AWI comm procedures, stores management, target aspect analysis, area entry procedures, alpha check procedures, stern conversion procedures, radar-to-visual handoff procedures, and tally comm.

AWI4102
Conduct of flight.

AWI4103
Advanced AWI timeline, A/A radar procedures, missile defense procedures, tactical formations, shooter-controlled kill removal, weapon status comm, postdefense radar mechanics, short-range radar mechanics, and defensive countermeasures.

AWI4104
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	AWI4104
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
23	Directive/Descriptive Comm	4+
26	Speed Control	4+
29	EW Recognition/Considerations	4
30	Approach/Landing	4+
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+

MIF continued on next page.

CTS REF	MANEUVER	AWI4104
43	Target Altitude Recognition/ Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	3+
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
AWI31	2F205A	AWI SRA/2 V X Procedures Simulator Training	6	12.0	2.0

1. Prerequisites

a. AWI1130 (Introduction to Section Radar Attacks (SRA)) prior to AWI3101-3 in order.

b. G0504 (AWI Self-Study III) prior to AWI3104-6 in order.

2. Syllabus Notes. 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.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI3101
SRA timeline, SRA radar procedures, missile defense procedures, and section mutual support in the A/A environment.

AWI3102
Conduct of flight.

AWI3103
Conduct of flight.

AWI3104
2 V X timeline, 2 V X radar procedures, section employment with multiple groups, missile conservation mindset and section mutual support in the A/A environment.

AWI3105
Conduct of flight.

AWI3106
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	AWI3106
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
23	Directive/Descriptive Comm	4+
26	Speed Control	4+
29	EW Recognition/Considerations	4
30	Approach/Landing	4+
31	Formation Coordination, Communication and Hand Signals	4+
34	Rendezvous	4+
42	Target Aspect Awareness and Control	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI3106
43	Target Altitude Recognition/Correction	4+
44	A/A Radar Operation	4+
45	A/A Timeline Awareness	3+
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. AWI3103 prior to AWI4201.

b. AWI3106 and AWI4202 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 AWI4203-5.

d. SNFOs should alternate leading events in this block.

e. All events flown as a section with SNFO in each jet.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI4201
SRA timeline, SRA radar procedures, missile defense procedures, and section mutual support in the A/A environment.

AWI4202
Conduct of flight.

AWI4203
2 V X timeline, 2 V X radar procedures, section employment with multiple groups, missile conservation mindset, and section mutual support in the A/A environment.

AWI4204
Conduct of flight.

AWI4205
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	AWI4205
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	4+
23	Directive/Descriptive Comm	4+
26	Speed Control	4+
29	EW Recognition/Considerations	4
30	Approach/Landing	4+
31	Formation Coordination, Communication and Hand Signals	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4205
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
AWI32	2F205A	AWI SES Procedures Simulator Training	2	4.0	2.0

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

2. Syllabus Notes

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

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

c. All events flown as a section.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI3201
2 V X timeline, 2 V X radar procedures, section employment with multiple groups, section mutual support in the A/A environment, section A/G timeline, section S/A missile defense, and weapons delivery profile.

AWI3202
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	AWI3202
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	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	Approach/Landing	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI3202
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+

Blk #	Media	Title	Events	Hrs	H/X
AWI43	T-45C	AWI SES Flight Training	2	2.4	1.2

1. Prerequisite. AWI3202.

2. Syllabus Notes

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

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

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

d. All events flown as a section with SNFO in each jet.

e. SNFOs should alternate leading events in this block.

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI4301
2 V X timeline, 2 V X radar procedures, section employment with multiple groups, section mutual support in the A/A environment, section A/G timeline, section S/A missile defense, and weapons delivery profile.

AWI4302
Conduct of flight.

5. Block MIF

CTS REF	MANEUVER	AWI4302
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	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

MIF continued on next page.

CTS REF	MANEUVER	AWI4302
30	Approach/Landing	4+
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+

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

1. Prerequisites

a. AWI4002.

b. AWI4302.

2. Syllabus Notes

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

c. This event will be flown as a section with SNFOs in each jet.

3. Special Syllabus Requirements. None.

4. Discuss Items. 2 V X timeline, 2 V X radar procedures, section employment with multiple groups, section mutual support in the A/A environment, section A/G timeline, section S/A missile defense, and weapons delivery profile.

5. Block MIF

CTS REF	MANEUVER	AWI4490
1	General Knowledge/Procedures	4+
2	Emergency Procedures/NATOPS Knowledge	4+
3	Headwork/Situational Awareness	4+
4	BAR	4+
5	Brief/Debrief	4+
6	Mission Planning/Preparation	4+
7	Mission Ownership/Assertiveness	4+
8	CRM/Crew Coordination	4+
9	Ground Operations	4+
10	Radio/ICS Procedures	4+
11	Takeoff/Departure	4+
12	Publications and Chart Use	4+
13	Enroute Procedures	4+
14	Visual Scan/Lookout Doctrine	4+
15	Instrument Scan	4+
16	In-Flight Checks/Briefs/Planning	4+
17	SUA/MTR Procedures and Airspace Management	4+
18	Fuel Management	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

MIF continued on next page.

CTS REF	MANEUVER	AWI4490
30	Approach/Landing	4+
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+

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	
• Maintain working knowledge of all appropriate flight training instructions and directives.	• Recites, discusses, and/or performs all applicable items essential to the operation of the aircraft and the completion of the mission to an accuracy of 85 percent.
2. Emergency Procedures/NATOPS Knowledge	
• Maintain an in-depth knowledge of NATOPS, SOP, and appropriate directives.	• Correctly analyzes situation. • Uses checklists when appropriate and conditions permit. • Completes procedures in a timely manner. • Performs/recites critical action steps from memory with 100 percent accuracy. • Recalls noncritical/general NATOPS knowledge to an accuracy of 85 percent. • Correctly prioritizes tasks to include checklists, navigation, and communication.

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.	• 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. • Appropriately directs use of power and attitude. • 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.

BEHAVIOR STATEMENT	STANDARDS
4. Basic Airwork Recognition (BAR) (Cont)	
	• Accurately considers/compensates for wind's effects on determined headings.
5. Brief/Debrief	
• Brief the flight in preparation for the mission. • Recall the conduct of the flight and provide learning points.	• 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. • Adequately recalls the conduct of the flight and provides learning points relevant to the mission.
6. Mission Planning/Preparation	
• Perform mission planning to include takeoff, climb, enroute, descent, approach, and landing data. • Plan alternate course of action. • Prepare flight log/ DD-175. • Accomplish appropriate planning for particular mission. • Adjust mission's tactical admin based on real-world/weather concerns.	• Uses required directives and forms. • Uses JMPS to mission plan fuel, route, and timing. • Accurately completes DD-175 with minimal error. • Maintains mission planning accuracy: ▶ Fuels ±100 pounds. ▶ Time ±1 minute. ▶ Course within 2°. • Ensures compliance with directives in regard to weather, NOTAMs, TFRs, and BASH. • 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). • Ensures warning area scheduled.

BEHAVIOR STATEMENT	STANDARDS
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.
8. Crew Resource Management (CRM)/Crew Coordination	
• Use available crew and cockpit resources to minimize workload and enhance situational awareness. • Effective communication of mission essential information, and interaction between crewmembers.	• Incorporates all aspects of CRM. • Delegates cockpit tasks as appropriate. • Makes timely recommendations to maintain aircraft flight parameters through all regimes of flight. • Uses appropriate interaction between crewmembers with regard to normal aircraft procedures. • Uses SA-building communications.

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. • Perform formation ground procedures. • Perform formation taxi and marshal flight. • Perform engine shutdown and postflight.	• 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. • Performs appropriate formation ground procedures as lead or wingman as applicable. • Properly executes formation line and taxi procedures IAW FTI and local directives as applicable. • Shuts down engine and performs postflight checks IAW NATOPS and local standardization.
10. Radio/ICS Procedures	
• 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. Radio/ICS Procedures (Cont)	
	• 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.
11. Takeoff/Departure	
• 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% 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.
12. Publications and Chart Use	
• Effectively utilize in-flight publications and charts.	• Accurately locates and utilizes flight information from appropriate flight publications. • Navigates using appropriate high/low charts and approach plates.
13. Enroute Procedures	
• Perform procedures while flying between departure transition point and destination.	• Complies with applicable aircraft procedures enroute. • Directs compliance with ATC instructions while enroute.

BEHAVIOR STATEMENT	STANDARDS
14. Visual Scan/Lookout Doctrine	
• Maintain lookout doctrine essential for safe ground/airborne operations. • Maintain aircraft control and effective visual navigation, relying primarily on outside references. • Keep visual scan outside the cockpit to the extent practicable for proper traffic, terrain, and hazard/weather avoidance. • Keep visual on all formation members as applicable. • Keep tally on all bandits in the engagement as applicable. • Keep visual scan for any traffic or obstacles that are potential conflicts.	• Utilizes appropriate visual cross checks for applicable aircraft configurations. • Continuously clears the aircraft's taxi route visually for other aircraft, hazards, and obstacles. • 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. • Maintains visual and/or SA on all members of the formation flight. • Maintains tally and/or SA on all bandits in the engagements. • Understands and appropriately executes lost sight procedures. • Keeps an active visual scan for any traffic/obstacles that are potential conflicts.
15. Instrument Scan	
• 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
16. In-Flight Checks/Briefs/Planning	
• 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. • Compute IAW with FTI: ► Ground speed. ► ETE (to turnpoints/entry and exit points). ► Fuel at destination IAF. • Plan and execute a sequence of maneuvers or actions. • Understand current and required position.	• Completes the following checklists without error or omission IAW NATOPS, FTI, and SOP. ► Landing Checklist at required configuration points. ► Stall/Pre-aerobatic Checklist when required. • Completes the following checklists with minimal error or omission IAW NATOPS, FTI, and SOP. ► Instrument, fuel, position reports as required. ► Performs Fence checks (in/out) IAW FTI. • 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 IAW OPNAVINST 3710.7U. • Adjusts mission profile for external factors (weather, traffic, etc.). • Maintains positional awareness using ground references, navigational aids, VFR charts, or FLIPs. • Computes: ► ETA ±1 minute. ► Fuel at destination IAF within ±50 pounds of instructor calculations based on actual burn/fuel flow rate.

BEHAVIOR STATEMENT	STANDARDS
17. SUA/MTR Entry/Exit Procedures	
• Perform entry/exit procedures for SUA/MTR IAW FTI, briefing, and local standards. • Properly direct climb, descent, and level off with proper altitude selection. • Properly use radar, visual cues and navigational aids to identify the route or SUA entry/exit point. • Use descent procedures (planned or unplanned) to control timing to the entry point. • Remain in the confines of designated MTR, MOA, or working area/SUA. • Remain within the MTR vertical/lateral confines as prescribed in the AP/1B.	• Ensures SUA/MTR is properly scheduled as applicable. • Performs assigned duties during entry and exit to/from SUA or MTR. • Contacts airspace control authority and uses appropriate comms to gain clearance to enter/exit controlled airspace. • For MTR, contacts Flight Service Station and uses standard comms to enter and exit the route. • Acquires and flies to the entry point, using offsets as necessary to start the route on the desired outbound heading. • For restricted area operations, contacts Range Authority for entry/exit clearance and uses appropriate comms IAW FTI, SOP, 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. • Remains aware of aircraft position in designated working area. • Directs headings and plans maneuvers to keep aircraft/ formation in the confines of the designated working area.

BEHAVIOR STATEMENT	STANDARDS
17. SUA/MTR Entry/Exit Procedures (Cont)	
	• Orders appropriate separation vectors to accommodate area borders. • Directs IP to maintain low-level route altitude and route width corridor restrictions.
18. Fuel Management	
• Maintain fuel awareness throughout flight. • Determine fuel state and analyze fuel consumption trends. • During the course of the event, compare actual to preflight planned fuel at the IAF assessing mission feasibility. • Keep track of fuel for all formation members. • Direct flight course and destination deviation as appropriate for fuel, weather, or emergencies.	• Monitors fuel status on deck at intended point of landing. • Adjusts course or destination in order to satisfy applicable directives. • 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. • Contacts appropriate controller and requests deviations IAW OPNAVINST 3710.7U without error. • Recommends Joker/Bingo in-flight as weather or area conditions dictate. • Informs flight/IP upon reaching Joker/Bingo fuel and updates bingo bug.

BEHAVIOR STATEMENT	STANDARDS
19. Unusual Attitudes	
• Directs pilot to perform unusual attitude recovery.	• Directs applicable procedures IAW the FTI. • Nose high – recovery minimizes airspeed loss. • Nose low – recovery minimizes altitude loss and airspeed buildup. • Detects an overstress or stall condition. • Does not enter subsequent unusual attitude.
20. Turnpoint Procedures	
• Procedures that help the SNFO aviate, navigate, and communicate effectively during a mission.	• Gives 2-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. • 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 radarscope. • 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 target with BRA information from HSI within ±5 degrees and ±2 miles. • Steps through Expand modes and updates designation to proper DMPI at 80 percent accuracy.

BEHAVIOR STATEMENT	STANDARDS
21. A/G Radar Operation and Interpretation (Cont)	
	• Troubleshoots radar effectively. • Correctly executes radar initialization and identifies/ analyzes any radar faults or degradations. • Optimizes radar presentation to acquire the best display and information 80 percent of the time.
22. Timing	
• Plan and execute the mission to hit the route entry point on briefed real-world time. • Culmination of course and speed corrections to arrive at the target on time.	• Arrives at the target within ±30 seconds from preflight elapsed/real-world time, as applicable in Strike and AWI. • Arrives at the target within ±10 seconds from TOT, as applicable in CAS. • Gives a time hack during brief. • Analyzes total distance and total time left to formulate desired groundspeed to an accuracy of 80 percent. • Uses the descent portion of flight to arrive at the entry point ±2 minutes of briefed time.
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.

BEHAVIOR STATEMENT	STANDARDS
23. Directive/Descriptive Comm (Cont)	
	• 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.
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. • Use standard course corrections IAW FTI to maintain the specified course line.	• Directs course corrections using visual references and the HSI to an accuracy of 1 NM. • Updates ETA to next turnpoint as appropriate. • Uses checkpoints to backup position within 1 NM. • Navigates with wind-corrected heading cue.

BEHAVIOR STATEMENT	STANDARDS
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, makes appropriate airspeed adjustments based on distance to go to next point or target. • As wing, backs up lead to the same standard. • Hits briefed or backup TOT within 15 seconds. • 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.
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 simulated weapons on target to an accuracy of ±1/2 NM in RBGM and on DMPI when using Expand. • Acquires targets NLT 5 NM prior to target overflight with an accuracy of 80 percent. • Accurately designates the target via radar prior to weapons release.

BEHAVIOR STATEMENT	STANDARDS
28. A/G Timeline Awareness	
• Perform an A/G target attack.	• Initiates A/G attack within ±1 NM of briefed range. • Directs geometry to avoid Doppler notch for Expand modes when applicable at 80 percent accuracy. • 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. Approach/Landing	
Holding • Perform holding procedures. • Perform CV holding IAW CV NATOPS and FTI.	Holding • Correctly calculates initial heading on entry into the holding pattern. • Maintains BAR standards throughout 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.
Approach • 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. • Perform a section approach as applicable. • Perform CV-1, Case I, II, and III carrier recovery procedures.	Approach • 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. • 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.

BEHAVIOR STATEMENT	STANDARDS
30. Approach/Landing (Cont)	
Approach (Cont)	• Adheres to all altitude restrictions without deviation. "At or above" tolerance is 100 feet above and 0 feet below. • Performs maneuver safely from a lead or wing position IAW FTI, briefing, and local standards.
Landing • Perform responsibilities associated with landing.	Landing • Directs safe landing procedures IAW NATOPS, SOP, and local procedures. • Verbally confirms completion of applicable aircraft checklist and gear down and locked.
Missed Approach • Perform missed approach procedures.	Missed Approach • Executes missed approach instructions upon reaching the missed approach point or determining that conditions exist that warrant a missed approach. • Executes missed approach procedures.
31. Formation Coordination, Communication, and Hand Signals	
• Use radio in multijet formation. • Communicate using hand signals. • Perform appropriate coordination items within the section.	• When appropriate, 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.

BEHAVIOR STATEMENT	STANDARDS
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.
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.
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. ► 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.

BEHAVIOR STATEMENT	STANDARDS
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.
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.

BEHAVIOR STATEMENT	STANDARDS
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.
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.

BEHAVIOR STATEMENT	STANDARDS
41. 1 V 1 Neutral Engagements (Cont)	
	• 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 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. • 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.

BEHAVIOR STATEMENT	STANDARDS
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.
45. A/A Timeline Awareness	
• Performs A/A timeline.	• Recognizes commit criteria on a majority of intercepts. • Assigns correct targeting NLT meld IAW game plan on a majority of intercepts. • Employs valid MRM on briefed timeline ±1 NM on a majority of intercepts. • Recognizes targeted status and defends prior to NLT defense to 100 percent accuracy.

BEHAVIOR STATEMENT	STANDARDS
45. A/A Timeline Awareness (Cont)	
	• Recognizes untargeted status and executes stern conversion. • Executes abort prior to NLT abort IAW briefed game plan. • Maintains awareness of untargeted groups.
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.
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.

BEHAVIOR STATEMENT	STANDARDS
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.

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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-819A, P-820, P-821, P-825	1 each

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