

NAVAL AIR TRAINING COMMAND



NAS CORPUS CHRISTI, TEXAS  
CIN Q-2D-2174; Q-2D-3174

CNATRAINST 1542.174A  
14 DEC 2016

---

## CHIEF OF NAVAL AIR TRAINING



# ADVANCED STRIKE FIGHTER (S/F) NAVAL FLIGHT OFFICER TRAINING SYSTEM (NFOTS) INSTRUCTOR UNDER TRAINING (IUT) CURRICULUM

2016





DEPARTMENT OF THE NAVY  
CHIEF OF NAVAL AIR TRAINING  
250 LEXINGTON BLVD SUITE 102  
CORPUS CHRISTI TX 78419-5041

CNATRAINST 1542.174A  
N711  
14 Dec 2016

CNATRA INSTRUCTION 1542.174A

Subj: ADVANCED STRIKE FIGHTER (S/F) NAVAL FLIGHT OFFICER  
TRAINING SYSTEM (NFOTS) INSTRUCTOR UNDER TRAINING (IUT)  
CURRICULUM

1. Purpose. To publish the curriculum for training Instructor NFOs and Pilots to qualify them for the purpose of instructing Student Naval Flight Officers (SNFOs) in the Advanced Strike Fighter phase of Naval Air Training Command (NATRACOM) flight training.

2. Cancellation. CNATRAINST 1542.174 will be cancelled when the last enrolled IUT completes the curriculum.

3. Action. This instruction is effective on receipt. No changes shall be made without written authorization by the Chief of Naval Air Training (CNATRA).

4. Forms. The CNATRA forms required by this instruction are automated in the Training Integration Management System (TIMS) computer program. Additional CNATRA forms are available on the CNATRA website <https://www.cnatra.navy.mil/pubs/forms.htm>.

  
D. M. EDGECOMB  
Chief of Staff

Distribution:  
CNATRA Website

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

LIST OF EFFECTIVE PAGES

Original

Total number of pages is 204 consisting of the following:

<u>Page Number</u>	<u>Issue</u>
Letter - 2	
3/(4 blank)	
i - ii	
iii/(iv blank)	
v/(vi blank)	
vii - xxiv	
xxv/(xxvi blank)	
xxvii - xxviii	
xxix/(xxx blank)	
I-1 - I-2	
I-3/(I-4 blank)	
I-5/(I-6 blank)	
I-7/(I-8 blank)	
I-9 - I-14	
I-15/(I-16 blank)	
II-1 - II-14	
III-1 - III-12	
III-13/(III-14 blank)	
IV-1 - IV-6	
IV-7/(IV-8 blank)	
V-1/(V-2 blank)	
VI-1/(VI-2 blank)	
VII-1/(VII-2 blank)	
VIII-1 - VIII-70	
IX-1 - IX-40	
X-1/(X-2 blank)	

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

TABLE OF CONTENTS

	<u>PAGE</u>
<u>SUMMARY OF CHANGES</u> .....	v
<u>COURSE DATA</u> .....	vii
<u>ABBREVIATIONS</u> .....	xxiii
<u>GLOSSARY</u> .....	xxvii
 <u>CHAPTER I. GENERAL INSTRUCTIONS</u>	
SYLLABUS MANAGEMENT .....	I-1
TRAINING MANAGEMENT .....	I-1
PILOT IUT INITIAL QUALIFICATION COURSE FLOW .....	I-3
NFO IUT INITIAL QUALIFICATION COURSE FLOW .....	I-5
PILOT ADVANCED QUALIFICATIONS COURSE FLOW .....	I-7
NFO ADVANCED QUALIFICATIONS COURSE FLOW .....	I-9
GROUND TRAINING AND BRIEFING REQUIREMENTS, MISSION PREPARATION, BRIEFINGS, AND DEBRIEFINGS .....	I-10
MISSION GRADING PROCEDURES AND EVALUATION POLICIES ..	I-11
SPECIAL INSTRUCTIONS AND RESTRICTIONS .....	I-15
 <u>CHAPTER II. GROUND TRAINING</u>	
GROUND TRAINING PHILOSOPHY .....	II-1
FLIGHT SUPPORT TRAINING PHILOSOPHY .....	II-1
ADMINISTRATION (G01) .....	II-2
NATOPS REFRESHER GROUND TRAINING (G02) .....	II-3
FLIGHT INSTRUCTOR GROUND TRAINING (G03) .....	II-4
NATOPS INSTRUMENT GROUND TRAINING (G04) .....	II-5
FAMILIARIZATION STAGE FLIGHT SUPPORT (FAM11) .....	II-6
STRIKE STAGE FLIGHT SUPPORT (STK11) .....	II-7
CAS STAGE FLIGHT SUPPORT (CAS11) .....	II-9
BFM STAGE FLIGHT SUPPORT (BFM11) .....	II-10
AWI STAGE FLIGHT SUPPORT (AWI11) .....	II-11
NFO AWI IGS TRAINING (AWI12) .....	II-13
 <u>CHAPTER III. NATOPS TRAINING</u>	
REFRESHER/ANNUAL FLIGHT TRAINING PHILOSOPHY .....	III-1
MATRICES .....	III-1
NATOPS STAGE MIF .....	III-1
OUT-OF-CONTROL FLIGHT (OCF) SIMULATOR (NA33) .....	III-4
NATOPS CHECK SIMULATOR (NA36) .....	III-7

NATOPS CHECK FLIGHT (NA46) .....III-10  
NATOPS INSTRUMENT CHECK FLIGHT (NA47) .....III-12

CHAPTER IV. CONTACT TRAINING

MATRICES .....IV-1  
FAMILIARIZATION STAGE MIF .....IV-1  
FAMILIARIZATION FLIGHT TRAINING (FAM41) .....IV-3  
FAMILIARIZATION CHECK FLIGHT (FAM42) .....IV-6

CHAPTER V. INSTRUMENT TRAINING

DOES NOT APPLY .....V-1

CHAPTER VI. NAVIGATION TRAINING

DOES NOT APPLY .....VI-1

CHAPTER VII. FORMATION TRAINING

DOES NOT APPLY .....VII-1

CHAPTER VIII. TACTICAL TRAINING

TRAINING PHILOSOPHY .....VIII-1  
MATRICES .....VIII-1  
PILOT STRIKE STAGE MIF .....VIII-1  
PILOT CLOSE AIR SUPPORT (CAS) STAGE MIF .....VIII-3  
PILOT BASIC FIGHTER MANEUVERS (BFM) STAGE MIF .....VIII-4  
PILOT ALL WEATHER INTERCEPTS (AWI) STAGE MIF .....VIII-6  
NFO STRIKE STAGE MIF .....VIII-8  
NFO CLOSE AIR SUPPORT (CAS) STAGE MIF .....VIII-10  
NFO ALL WEATHER INTERCEPTS (AWI) STAGE MIF .....VIII-12  
PILOT STRIKE SIMULATOR TRAINING (STK31) .....VIII-14  
PILOT STRIKE FLIGHT TRAINING (STK41) .....VIII-16  
PILOT STRIKE CHECK FLIGHT (STK42) .....VIII-20  
NFO STRIKE SIMULATOR TRAINING (STK32) .....VIII-22  
NFO STRIKE SIMULATOR CHECK (STK33) .....VIII-25  
NFO STRIKE FLIGHT TRAINING (STK43) .....VIII-27  
NFO STRIKE CHECK FLIGHT (STK44) .....VIII-30  
PILOT CAS SIMULATOR TRAINING (CAS31) .....VIII-32  
PILOT CAS FLIGHT TRAINING (CAS41) .....VIII-34  
PILOT CAS CHECK FLIGHT (CAS42) .....VIII-36  
NFO CAS SIMULATOR TRAINING (CAS32) .....VIII-38

NFO CAS SIMULATOR CHECK (CAS33) .....VIII-40  
NFO CAS FLIGHT TRAINING (CAS43) .....VIII-42  
NFO CAS CHECK FLIGHT (CAS44) .....VIII-44  
PILOT BFM FLIGHT TRAINING (BFM41) .....VIII-46  
PILOT BFM CHECK FLIGHT (BFM42) .....VIII-49  
PILOT AWI SIMULATOR TRAINING (AWI31) .....VIII-51  
PILOT AWI FLIGHT TRAINING (AWI41) .....VIII-53  
PILOT AWI CHECK FLIGHT (AWI42) .....VIII-57  
NFO AWI SIMULATOR TRAINING (AWI32) .....VIII-60  
NFO AWI SIMULATOR CHECK (AWI33) .....VIII-65  
NFO AWI FLIGHT TRAINING (AWI43) .....VIII-67  
NFO AWI CHECK FLIGHT (AWI44) .....VIII-69

CHAPTER IX. COURSE TRAINING STANDARDS

PURPOSE .....IX-1  
IUT DUTIES AND RESPONSIBILITIES .....IX-1  
GENERAL STANDARDS .....IX-1  
EXECUTION .....IX-1  
JOB TASKS .....IX-2  
COURSE TRAINING STANDARDS .....IX-2

CHAPTER X. MASTER MATERIALS LIST

INDIVIDUALLY ISSUED MATERIALS .....X-1

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE



CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

COURSE DATA

1. Course Title. Advanced Strike Fighter (S/F) Naval Flight Officer Training System (NFOTS) Instructor Under Training (IUT) Curriculum.

2. Course ID Number (CIN)

NFOTS T-45 Pilot IUT: Q-2D-2174  
NFOTS T-45 NFO IUT: Q-2D-3174

3. Location. Naval Air Station, Pensacola, FL.

4. Course Status. Active.

5. Course Mission. The Advanced S/F NFOTS IUT Curriculum is designed to provide Instructor Naval Flight Officers and Instructor Pilots instruction in the techniques and procedures required to administer the approved CNATRA Advanced S/F NFOTS curriculum. Successful completion of applicable curricula qualifies the graduate as an Advanced S/F NFOTS Instructor. This course will require:

a. Flight training to teach the principles and techniques used in air-to-air and air-to-ground training.

b. Ground training to supplement and reinforce flight training.

6. Prerequisite Training. Designated Naval Aviator or Naval Flight Officer as required by CNATRA and successful completion of the T-45C NATOPS Instructor Under Training (IUT) Curriculum (Q-2D-1169).

7. Security Clearance Required. None.

8. Follow-on Training. As required to maintain currency for instructor or upgrade qualifications if applicable.

9. Course Length. Overall time-to-train calculated in accordance with CNATRAINST 1550.6E. Training days account for factors including weather, personnel and equipment availability, briefing and preparation time, and historical delays. Calendar weeks further account for weekends, holidays, safety stand-downs, and other expected nonworking days.

	Training Days	Calendar Weeks
a. Pilot Familiarization (Initial Qualification)	14.1	3.1
b. NFO Initial Qualification	8.3	1.8
c. Pilot Strike (Advanced Qualification)	19.7	4.4
d. NFO Strike (Advanced Qualification)	21.6	4.8
e. Pilot CAS (Advanced Qualification)	6.6	1.5
f. NFO CAS (Advanced Qualification)	13.6	3.0
g. Pilot BFM (Advanced Qualification)	10.9	2.4
h. Pilot AWI (Advanced Qualification)	34.0	7.5
i. NFO AWI (Advanced Qualification)	36.9	8.2

10. Class Capacity. Variable.

11. Instructor Requirements. As determined by Chief of Naval Operations (CNO) planning factors. Instructor pilots may gain instructor qualifications in simulator and/or ground events listed as "NFO" titles in this publication under extenuating circumstances (i.e., long term med down, INFO qualifications deficiency, etc.). The Commanding Officer shall receive written permission from Commander Training Wing SIX (TW-6) for authorization to conduct such qualifications. Similarly, INFOS may receive a simulator or ground-training-only Instructor qualification due to extenuating circumstances. Again, written authorization from the Commander of TW-6 is required. The instructor qualification letter shall explicitly list the qualification and its limits.

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

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

14. Quota Control. Chief of Naval Operations.

15. Course Training Subjects

a. Ground Training

<b>ADMINISTRATION (PILOT AND NFO INITIAL IUT)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
Administration/Check-In	G0101	4.0
Qualification/Designation Administration	G0102	2.0
<b>Total</b>		<b>6.0</b>

<b>GROUND TRAINING (PILOT AND NFO INITIAL IUT)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
Refresher Swim and Physiology (Class 1)*	G0201	16.0
Crew Resource Management (CRM)*	G0202	2.0
NACES Flight Physiology*	G0203	1.0
Ejection Seat Lecture/NACES Preflight*	G0204	1.0
FITC	G0301	26.0
Instrument Ground School (IGS)*	G0401	1.5
Meteorology (METRO) Review*	G0402	0.5
IGS Open-Book Exam*	G0403	1.0
Course Rules*	G0404	0.5
Course Rules Exam*	G0405	1.0
<b>Total</b>		<b>50.5</b>

\* Optional events accomplished only if required by NATOPS.

<b>PILOT AND NFO INSTRUCTOR (ANNUALLY)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
Crew Resource Management (CRM)	G0202	2.0
NACES Flight Physiology	G0203	1.0
Ejection Seat Lecture/NACES Preflight	G0204	1.0
NATOPS Open-Book Exam	G0205	2.0
NATOPS Closed-Book and SOP Exam	G0206	2.0
Immediate Action Emergency Procedures (EP) / Limitations Exam	G0207	1.0
Instrument Ground School (IGS)	G0401	1.5
Meteorology (METRO) Review	G0402	0.5
IGS Open-Book Exam	G0403	1.0
<b>Total</b>		<b>12.0</b>

b. Flight Support

<b>FAMILIARIZATION FLIGHT SUPPORT (PILOT IUT ONLY)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
Familiarization Flight Procedures	FAM1101	3.0
Familiarization Crew Coordination Stan	FAM1102	1.0
T-45C VMTS Operation	FAM1103	1.0
Familiarization Stage Exam	FAM1104	1.0
<b>Pilot Total</b>		<b>6.0</b>

<b>STRIKE FLIGHT SUPPORT (PILOT AND NFO IUT)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
RDR Principles and Operation I	STK1101	3.0
RDR Principles and Operation II	STK1102	1.5
A/G Radar Procedures	STK1103	2.5
Weapons Data Entry Procedures	STK1104	0.7
Section Flight Procedures	STK1105	1.5
Low-Level Planning	STK1106	3.0
Joint Mission Planning System Lab	STK1107	8.0
Low-Level Procedures	STK1108	2.5
Low Altitude Awareness Training	STK1109	2.0
Carrier Operations (NFO Only)	STK1110	3.0
Electronic Warfare Fundamentals	STK1111	1.5
A/G Targeting Procedures	STK1112	3.2
Strike Stage Exam	STK1113	1.0
<b>Pilot Total</b>		<b>30.4</b>
<b>NFO Total</b>		<b>33.4</b>

<b>CAS FLIGHT SUPPORT (PILOT AND NFO IUT)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
CAS Flight Procedures	CAS1101	2.0
CAS Crew Coordination Stan	CAS1102	1.0
CAS Stage Exam	CAS1103	1.0
<b>Total</b>		<b>4.0</b>

<b>BFM FLIGHT SUPPORT (PILOT IUT ONLY)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
HUD/Data Entry Procedures	BFM1101	0.7
BFM Theory	BFM1102	3.0
BFM Flight Procedures	BFM1103	3.0
BFM Crew Coordination Stan	BFM1104	1.0
BFM Stage Exam	BFM1105	1.0
<b>Pilot Total</b>		<b>8.7</b>

<b>AWI FLIGHT SUPPORT (PILOT AND NFO IUT)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
Air-to-Air Radar Modes II	AWI1101	1.3
Air Intercept Control	AWI1102	1.0
Intercept Visualization and Geometry	AWI1103	1.5
Managing Intercept Geometry II	AWI1104	3.0
Stern Conversion Intercepts II	AWI1105	1.5
Intercept Progression II	AWI1106	3.2
BVR Weapons Employment II	AWI1107	1.5
AWI Crew Coordination Stan	AWI1108	1.0
1 V 1 AWI Procedures II	AWI1109	3.5
Intercept Progression IV	AWI1110	1.0
Introduction to Section Radar Attacks	AWI1111	2.0
Introduction to 2 V X	AWI1112	3.5
Self-Escort Strike Route	AWI1113	2.0
AWI Stage Exam	AWI1114	1.0
NFO AWI IGS Training (NFO Only)	AWI1201-8	29.6
<b>Pilot Total</b>		<b>27.0</b>
<b>NFO Total</b>		<b>56.6</b>

<b>PILOT AND NFO INSTRUCTOR FLIGHT SUPPORT (ANNUALLY)</b>		
<b>Stage</b>	<b>Symbol</b>	<b>Hours</b>
Familiarization Stage Exam (Pilot Only)	FAM1104	1.0
BFM Stage Exam (Pilot Only)	BFM1105	1.0
CAS Stage Exam	CAS1103	1.0
Strike Stage Exam	STK1113	1.0
AWI Stage Exam	AWI1114	1.0
<b>Pilot Total</b>		<b>5.0</b>
<b>NFO Total</b>		<b>3.0</b>

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

<b>PILOT INITIAL IUT FLIGHT TRAINING</b>						
<b>Flight/Events</b>	<b>IGS</b>		<b>OFT</b>		<b>T-45C Dual</b>	
	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>
NATOPS Instrument Check Flight*					1	1.2
Familiarization Flight Training					3	4.5
Familiarization Check Flight					1	1.5
<b>Totals</b>					<b>5</b>	<b>7.2</b>

\*Optional events accomplished only if required by NATOPS.

<b>NFO INITIAL IUT FLIGHT TRAINING</b>						
<b>Flight/Events</b>	<b>IGS</b>		<b>OFT</b>		<b>T-45C Dual</b>	
	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>
NATOPS Instrument Check Flight*					1	1.2
<b>Totals</b>					<b>1</b>	<b>1.2</b>

\*Optional events accomplished only if required by NATOPS.

<b>PILOT INSTRUCTOR FLIGHT TRAINING (ANNUALLY)</b>						
<b>Flight/Events</b>	<b>IGS</b>		<b>OFT</b>		<b>T-45C Dual</b>	
	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>
NATOPS Check Simulator			1	1.5		
NATOPS Check Flight					1	1.2
NATOPS Instrument Check Flight					1	1.2
Familiarization Check Flight					1	1.5
Out-of-Control Flight (OCF) Simulator			1	1.5		
Pilot AWI Check Flight					1	1.2
Pilot BFM Check Flight					1	1.2
Pilot CAS Check Flight					1	1.2
Pilot Strike Check Flight					1	1.2
<b>Totals</b>			<b>2</b>	<b>3.0</b>	<b>7</b>	<b>8.7</b>

PILOT STRIKE ADVANCED QUALIFICATION						
Flight/Events	IGS		OFT		T-45C Dual	
	Flts	Hrs	Flts	Hrs	Flts	Hrs
Pilot Strike Simulator Training			2*	3.0*		
Pilot Strike Flight Training					10	12.0
Pilot Strike Check Flight					1	1.2
<b>Totals</b>			<b>2*</b>	<b>3.0*</b>	<b>11</b>	<b>13.2</b>

\* One of these events (1.5 hrs) is scheduled in conjunction with a normal SNFO training event. The other is a stand-alone event executed solely for IUT training.

PILOT CAS ADVANCED QUALIFICATION						
Flight/Events	IGS		OFT		T-45C Dual	
	Flts	Hrs	Flts	Hrs	Flts	Hrs
Pilot CAS Simulator Training			1	1.5		
Pilot CAS Flight Training					3	3.6
Pilot CAS Check Flight					1	1.2
<b>Totals</b>			<b>1</b>	<b>1.5</b>	<b>4</b>	<b>4.8</b>

<b>PILOT BFM ADVANCED QUALIFICATION</b>						
<b>Flight/Events</b>	<b>IGS</b>		<b>OFT</b>		<b>T-45C Dual</b>	
	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>
OCF Simulator			1	1.5		
Pilot BFM Flight Training					6	7.2
Pilot BFM Check Flight					1	1.2
<b>Total</b>			<b>1</b>	<b>1.5</b>	<b>7</b>	<b>8.4</b>

<b>PILOT AWI ADVANCED QUALIFICATION</b>						
<b>Flight/Events</b>	<b>IGS</b>		<b>OFT</b>		<b>T-45C Dual</b>	
	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>
Pilot AWI Simulator Training			3	4.5		
Pilot AWI Flight Training					11	13.2
Pilot AWI Check Flight					1	1.2
AWI Training	12	14.4				
<b>Totals</b>	<b>12</b>	<b>14.4</b>	<b>3</b>	<b>4.5</b>	<b>12</b>	<b>14.4</b>

<b>NFO INSTRUCTOR FLIGHT TRAINING (ANNUALLY)</b>						
<b>Flight/Events</b>	<b>IGS</b>		<b>OFT</b>		<b>T-45C Dual</b>	
	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>	<b>Flts</b>	<b>Hrs</b>
NATOPS Check Simulator*			1	1.5		
NATOPS Check Flight					1	1.2
NFO AWI Simulator Check			1	2.0		
NFO AWI Check Flight					1	1.2
NFO CAS Simulator Check			1	2.0		
NFO CAS Check Flight					1	1.2
NFO Strike Simulator Check			1	2.0		
NFO Strike Check Flight					1	1.2
<b>Totals</b>			<b>4</b>	<b>7.5</b>	<b>4</b>	<b>4.8</b>

\*Annual NFO Instructor NATOPS Check may be accomplished in the Rear Cockpit OFT at the discretion of the TW-6 Commander.

NFO STRIKE ADVANCED QUALIFICATION						
Flight/Events	IGS		OFT		T-45C Dual	
	Flts	Hrs	Flts	Hrs	Flts	Hrs
NFO Strike Simulator Training			11	20.5		
NFO Strike Simulator Check			1	2.0		
NFO Strike Flight Training					3	3.6
NFO Strike Check Flight					1	1.2
<b>Totals</b>			<b>12*</b>	<b>22.5*</b>	<b>4</b>	<b>4.8</b>

\*Eight of these events (16.0 hrs) are scheduled in conjunction with normal SNFO training events as an Observe or Instruct event, while the remainder are stand-alone events executed solely for IUT training.

NFO CAS ADVANCED QUALIFICATION						
Flight/Events	IGS		OFT		T-45C Dual	
	Flts	Hrs	Flts	Hrs	Flts	Hrs
NFO CAS Simulator Training			8	15.5		
NFO CAS Simulator Check			1	2.0		
NFO CAS Flight Training					2	2.4
NFO CAS Check Flight					1	1.2
<b>Totals</b>			<b>9*</b>	<b>17.5*</b>	<b>3</b>	<b>3.6</b>

\*Eight of these events (16.0 hrs) are scheduled in conjunction with normal SNFO training events as an Observe or Instruct event, while the remainder are stand-alone events executed solely for IUT training.

NFO AWI ADVANCED QUALIFICATION						
Flight/Events	IGS		OFT		T-45C Dual	
	Flts	Hrs	Flts	Hrs	Flts	Hrs
NFO AWI Simulator Training			15	27.5		
NFO AWI Simulator Check			1	2.0		
NFO AWI Flight Training					3	3.6
NFO AWI Check Flight					1	1.2
AWI IGS Training	8*	29.6*				
<b>Totals</b>	<b>8*</b>	<b>29.6*</b>	<b>16**</b>	<b>29.5**</b>	<b>4</b>	<b>4.8</b>

\*The IGS is used as part of all AWI flight events if available.  
\*\*11 of these events (22.0 hrs) are scheduled in conjunction with normal SNFO training events as an Observe or Instruct, while the remainder are stand-alone events executed solely for IUT training.

16. Training Preparation Time. 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 FORMAL TRAINING TIME PER CURRICULUM HOUR/EVENT			
Training Area	Brief/Preflight/ Taxi	Taxi/ Debrief	Total
Simulator - STK, CAS, AWI (IP/INFO)	0.50	0.50	1.00
Flight (IP/INFO)	1.75	1.00	2.75
AWI flights (IGS INFO*)	1.00	1.00	2.00

\*Note that IGS INFO is in addition to the Standardization Instructor (SI) who flies the event with the IUT.

17. Physical Requirements. As specified in Chapter 15 of 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, computer-assisted instruction (CAI), self- and group-paced study, simulator, and in-flight instruction.

20. Preceding Curriculum Data. This curriculum replaces CNATRAINST 1542.174.

21. 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 flight maneuver rests with the SI. Refer to CNATRAINST 1500.4H, Chapter VII, for further guidance.

22. Summary of Lead Overhead. The Summary of the Instructor Lead planning factor hours for the Advanced S/F NFOTS IUT is tabulated below. The tables are a compilation of events requiring Instructor Lead that can be found in Chapter VIII of this publication. IUT events in STK41, STK42, STK43, STK44, AWI41, AWI42, AWI43, and AWI44 may be combined with student NFO events of similar flight profile if required.

<b>ADVANCED PILOT T-45 IUT</b>				
<b>Flight/Event</b>	<b># Events</b>	<b>Lead Hrs/Event</b>	<b># IUT per Lead</b>	<b>Total Lead Hrs/IUT (# events x hrs/event)</b>
STK41	10	1.2	1	12.0
STK42	1	1.2	1	1.2
BFM41	6	1.2	1	7.2
BFM42	1	1.2	1	1.2
AWI41	11	1.2	1	13.2
AWI42	1	1.2	1	1.2
<b>Totals</b>	<b>30</b>	<b>7.2</b>	<b>6</b>	<b>36.0</b>

<b>ADVANCED NFO T-45 IUT</b>				
<b>Flight/Event</b>	<b># Events</b>	<b>Lead Hrs/Event</b>	<b># IUT per Lead</b>	<b>Hrs/IUT</b>
STK43	3	1.2	1	3.6
STK44	1	1.2	1	1.2
AWI43	3	1.2	1	3.6
AWI44	1	1.2	1	1.2
<b>Totals</b>	<b>8</b>	<b>4.8</b>	<b>4</b>	<b>9.6</b>

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.

<b>ADDITIONAL CSI RESOURCE REQUIREMENTS (OFT)</b>				
<b>Flight/Event</b>	<b>Pilot</b>		<b>NFO</b>	
	<b>#Events</b>	<b>Hrs</b>	<b>#Events</b>	<b>Hrs</b>
STK	1	1.5	3	4.5
CAS	1	1.5	1	1.5
AWI	3	4.5	5	7.5
<b>Totals</b>	<b>5</b>	<b>7.5</b>	<b>9</b>	<b>13.5</b>

Note: This table accounts for dedicated OFTs where the IUT executes the event from the cockpit. Other events in the syllabus are designed for the IUT to observe or instruct SNFO events that are accounted for in the SNFO training syllabus.

ABBREVIATIONS

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

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

GCA - Ground-Controlled Approach  
GLOC - G-Induced Loss of Consciousness  
HATA - High-Altitude Target Acquisition  
HOTAS - Hands-On Throttle and Stick  
IAW - In Accordance With  
IFR - Instrument Flight Rules  
IGS - Instrument Ground School or Instructor Ground Station  
INAV - Instrument Navigation  
INFO - Instructor Naval Flight Officer  
INST - Instrument Training  
IP - Instructor Pilot/Intercept Procedures  
IPC - Initial Progress Check  
ITF - Instructor Training Form  
ITU - Instructor Training Unit  
IUT - Instructor Under Training  
MC - Mission Commander  
MCG - Master Curriculum Guide  
MIF - Maneuver Item File  
MIL - Mediated Interactive Lecture  
MNTS - Multi-Service NFO Training System  
MOA - Military Operations Area  
MRT - Military-Rated Thrust  
NATOPS - Naval Air Training and Operating Procedures  
Standardization  
NFL - No-Flap Landing  
NFO - Naval Flight Officer  
NFOTS - Naval Flight Officer Training System  
NOTAMS - Notices to Airmen  
OCF - Out-of-Control Flight  
OCFFP - Out-of-Control Flight, Flight Procedures  
OFT - Operational Flight Trainer

OPNAV - Office of the Chief of Naval Operations  
OSC - On-Scene Commander  
PAR - Precision Approach Radar  
PP - Partial Panel  
PPEL - Practice Precautionary Emergency Landing  
RDR - Radar  
RHC - Radar Hand Controller  
RRU - Ready Room Unsatisfactory  
SI - Standardization Instructor  
SINFO - Standardization Instructor Naval Flight Officer  
SMS - Student Monitoring Status  
SNFO - Student Naval Flight Officer  
SOP - Standard Operating Procedure  
SRA - Section Radar Attack  
SRT - Standard Rate Turn  
SSR - Special Syllabus Requirement  
SUA - Special Use Airspace  
SYS - Systems  
TAC - Tactical  
TAC(A) - Tactical Air Coordinator Airborne  
TACAN - Tactical Air Navigation  
TRB - Training Review Board  
UHF - Ultra High Frequency  
UNSAT - Unsatisfactory  
VFR - Visual Flight Rules  
VHF - Very High Frequency  
VMC - Visual Meteorological Conditions  
VR - Visual Route

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

GLOSSARY

1. Advancing X. Completed event within the normal syllabus flow. Excludes events with last characters in the range 86-89.
2. Aviation Training Summary. A tabular sheet listing the MIF and maneuver grades within a training stage.
3. 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.
4. Check Flight (SXX90). A check in any stage of training.
5. Contact. The chapter of training that combines flight familiarization and visual navigation procedures.
6. Course of Training. The entire program of preflight, flight, simulation, academics, and officer development conducted in all media during the programmed training days.
7. Course Training Standard (CTS). A description of required behaviors and standards of performance for a specific maneuver. These standards are in Chapter IX.
8. Courseware. The technical data, flight training instructions, audio, video, film, CAI, instructor guides, student study guides, and other training material developed to support and implement the syllabus of instruction.
9. 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.
10. Emergency Procedure. Any degradation of aircraft systems or flight conditions requiring crew action or intervention.
11. End of Block. Last event in block. In order to progress past EOB, the IUT must meet or exceed MIF on all critical items, and all optional items attempted, in the block.

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

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

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

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

Char	Meaning	Remarks
1st	Stage	AWI-All Weather Intercepts BFM-Basic Fighter Maneuvers FAM-Familiarization G-Ground CAS-Close Air Support NA-NATOPS STK-Strike
2 <sup>nd</sup>	Media	0-Ground Training 1-Academics/Flt Support 2-Not Used 3-OFT Trainer 4-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 Sim 86-Warmup 87-Extra Training 88-Initial Progress Check 89-Final Progress Check 90-Check Flight/Exam

Note: 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 2<sup>nd</sup>-5<sup>th</sup> characters in a five-character lesson designator.

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

17. Master Syllabus. Chapters I-VIII list all training syllabus activities, prerequisites, and desired training flow for Advanced MNTS.
18. Special Syllabus Requirement. One-time, ungraded demonstration item.
19. Stage of Training. All training of a particular type (Ground, Familiarization, etc.) within a phase. The alphanumeric letter(s) in the lesson designator identifies the stage of each lesson (For example: FAM4101 is in the Familiarization Stage; AWI3101 is in the AWI Stage).
20. Standardization Instructor. The squadron commander will designate SIs for each stage.
21. Training Media. The media for this syllabus include aircraft, OFT trainers, ground training, and CAI. The first numerical character in the lesson identifier designates the training media. (Example: FAM1101 and STK1101 are academic events.)
22. Training Review Board. A fact-finding board appointed to conduct an administrative review of circumstances and procedures relative to an FPC recommendation for an IUT's elimination.

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

xxx

## Chapter I

### General Instructions

#### 1. Syllabus Management

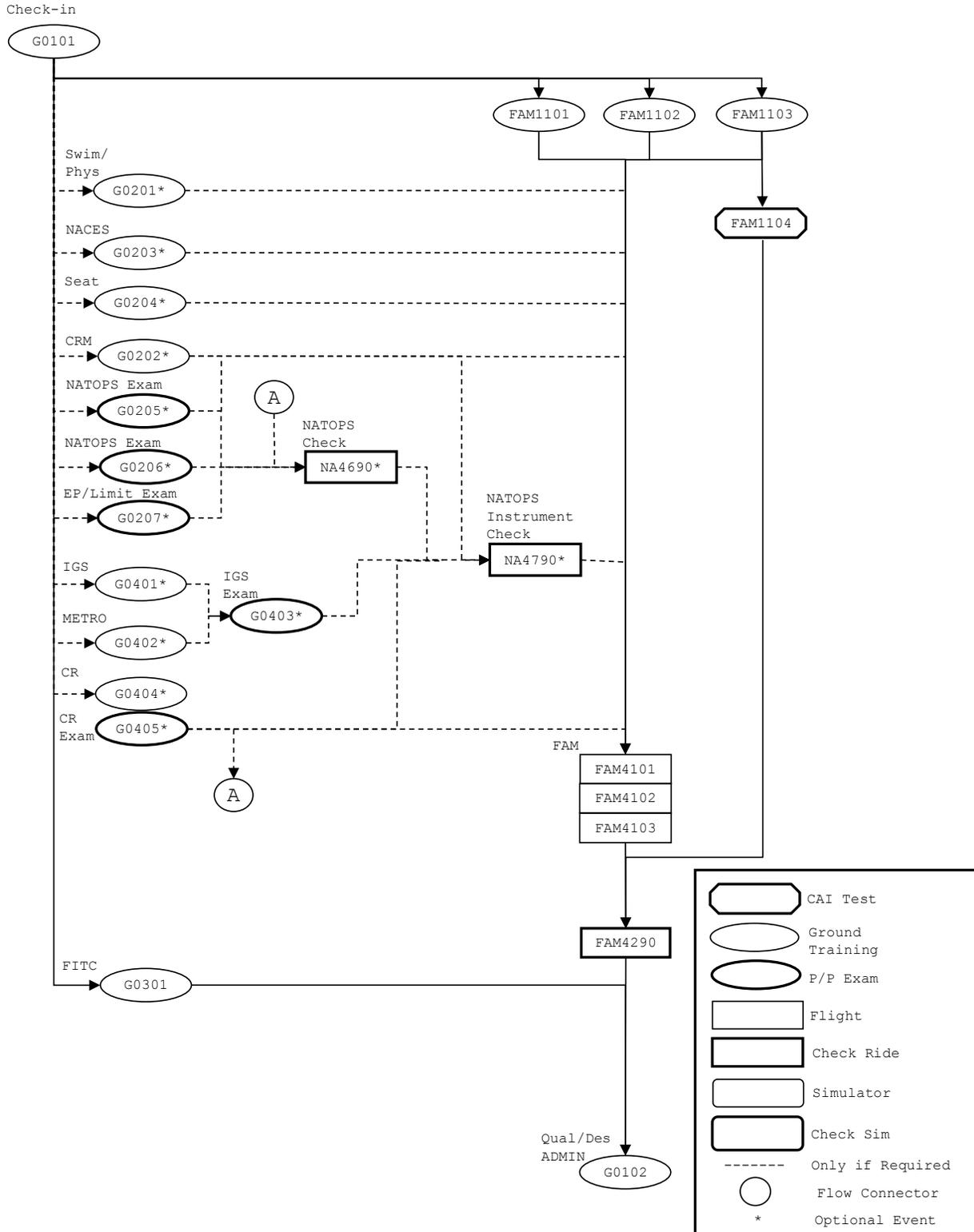
- a. Distribution. Participating squadron personnel.
- b. Interpretation. The syllabus is directive. Should circumstances create situations not covered within the scope of this syllabus, or course of action appears to conflict with other directives, consult CNATRA (N71).
- c. Deviations. Document all deviations on the event's ATF.
- d. Changes. Recommended changes shall be submitted IAW CNATRAINST 1550.6E.
- e. Syllabus Description. The syllabus is divided into stages; the stages are grouped by like-flight training regimes, such as Familiarization, Close Air Support, and Strike. Each stage is subdivided into training blocks. The training blocks consist of a specified number of events. Course Training Standards are modified by the MIFs to identify the acceptable level of performance that must be achieved at the completion of each training block.

#### 2. Training Management

- a. Syllabus Progression. Fly events within each stage sequentially, except as noted. Do not start a block without all prerequisites. IUTs must complete all events, unless approved for acceleration. The flowcharts on pages I-3 through I-9 delineate the sequence of flying events and their ground training prerequisites. System training management is designed to facilitate two graded events (flight, simulator, or exam) per IUT per day.
- b. Maneuver Continuity. IUTs must accomplish previously introduced maneuvers frequently enough to ensure maintaining required proficiency.

c. H/X. Standardization instructors shall plan and execute missions to meet H/X as closely as practical. If actual event length varies from H/X by more than 0.3 hours, annotate reason(s) in ITF's general comments section.

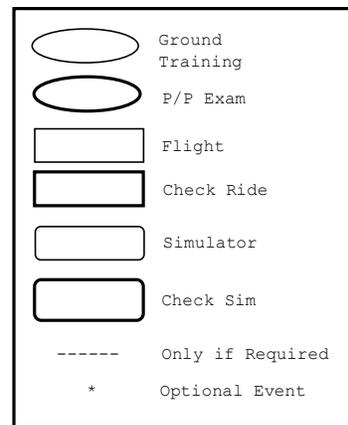
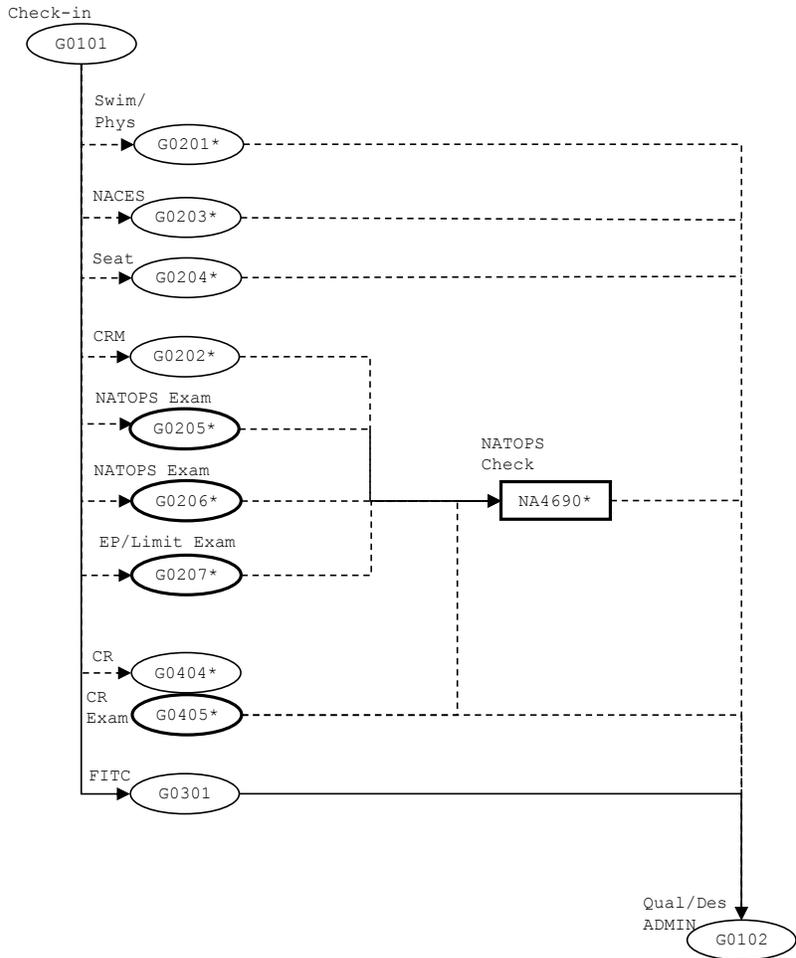
**PILOT IUT INITIAL QUALIFICATION COURSE FLOW**



CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

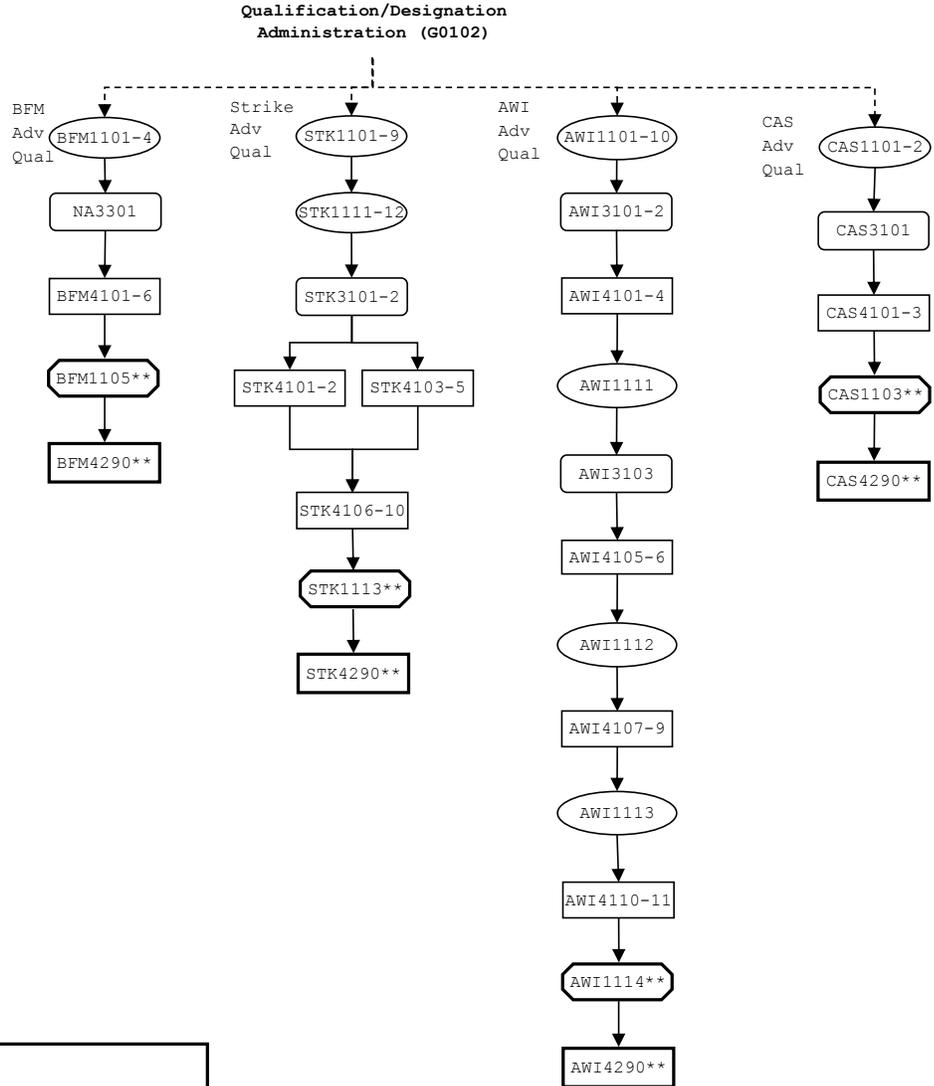
**NFO IUT INITIAL QUALIFICATION COURSE FLOW**



CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

**PILOT ADVANCED QUALIFICATIONS COURSE FLOW**



	Ground Training
	CAI Test
	Simulator
	Simulator Check
	Check Ride
** Taken annually to maintain currency.	
-----> Alternate path	

NOTE: The following events are completed as needed annually to maintain required currencies.

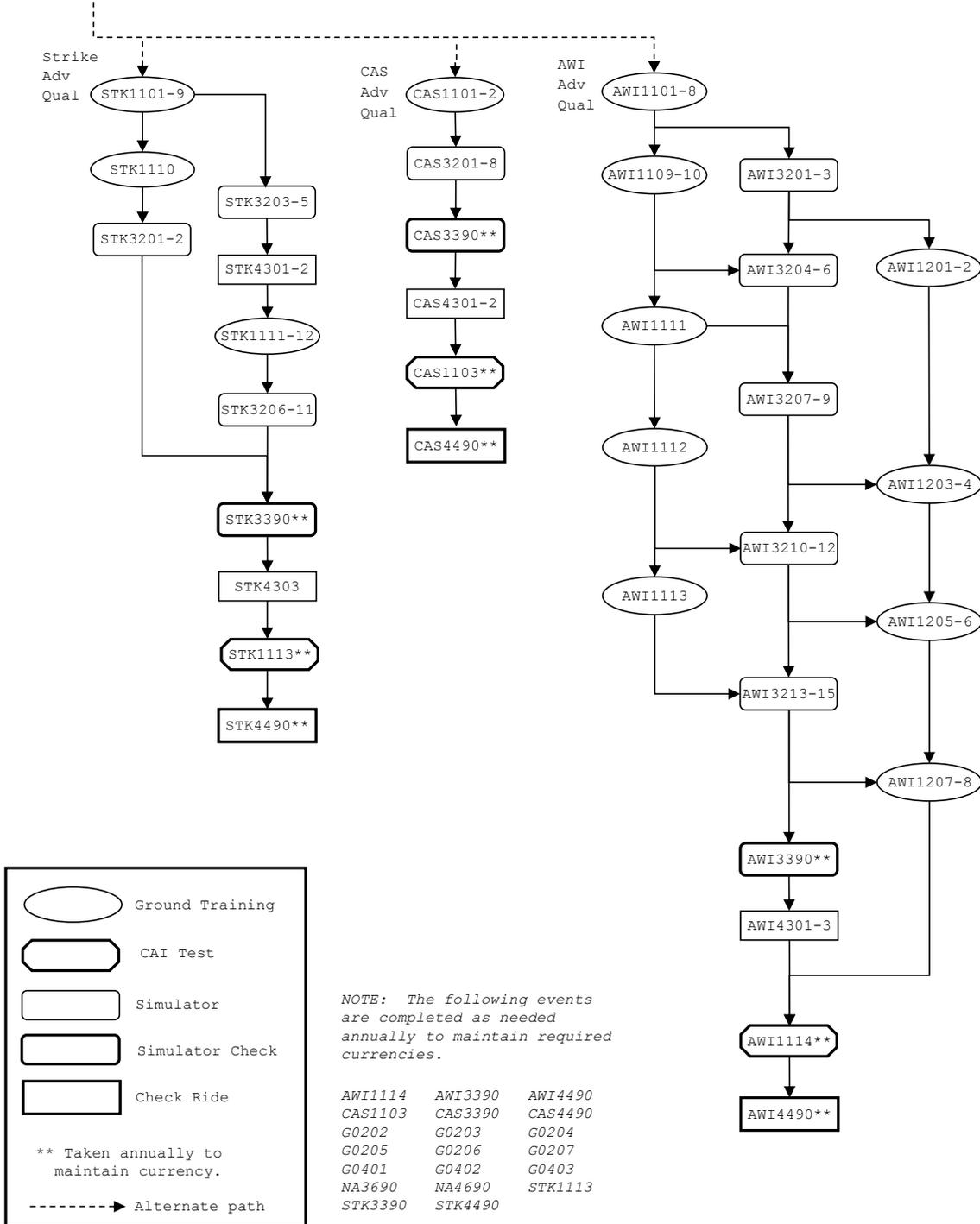
AWI1114	AWI4290	BFM1105
BFM4290	CAS1103	CAS4290
STK1113	STK4290	FAM1104
FAM4290	G0202	G0203
G0204	G0205	G0206
G0207	G0401	G0402
G0403	NA3301	NA3690
NA4690	NA4790	

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

**NFO ADVANCED QUALIFICATIONS COURSE FLOW**

Qualification/Designation  
Administration (G0102)



3. Ground Training and Briefing Requirements, Mission Preparation, Briefings, and Debriefings

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

b. Preparation. The IUT shall arrive for each flight with:

(1) Thorough knowledge of:

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

(b) Procedural knowledge of the critical and optional items for the event's training block.

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

c. Briefing. Thoroughly cover the mission's:

(1) Discuss items, as listed in Chapters III-VIII.

(2) Specific objectives.

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

(4) Planned profile, contingencies, and ORM considerations.

d. Debriefing

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

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

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

4. Mission Grading Procedures and Evaluation Policies

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

b. Grading Procedures (Aircraft and Training Devices)

(1) Overall Grading

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

(b) The overall grade for the NATOPS Check Flight (NA4690) will be UQ, CQ, or Q as described below:

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

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

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

(2) NATOPS Maneuver Grading. During the NATOPS phase of training, grading will be IAW NATOPS standards. This criteria applies to the following blocks of training, regardless of syllabus:

NA33      NA36      NA46      NA47

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

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

(3) Absolute Maneuver Grading. Use the following grading scale to document the IUT's characteristic performance on maneuvers attempted during each event, with the exception of maneuvers done during the NATOPS phase of training. This is an absolute grading scale. Judge the IUT's proficiency **only** against the item's course training standard. Maneuver grades shall be consistent with ATF comments.

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

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

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

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

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

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

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

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

(5) Maneuver Requirements. For each block:

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

(b) Optional Items. Items with a number, but without a plus (+), are optional; however, if flown, they must meet the required EOB proficiency the last time the maneuver is graded in the block.

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

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

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

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

(d) Otherwise, assess the event incomplete.

(7) Completion Events. Time permitting, an event may both complete a previously incomplete event and count as the next advancing X.

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

c. Policies for Evaluation Flights and Ground Evaluations

(1) Check Flights (SXX90). Check flights amount to single-event training blocks; therefore, all rules regarding progressing out of a block apply, except as noted below:

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

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

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

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

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

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

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

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

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

1. Any critical item is below MIF, or

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

3. Any maneuver is U/2.

5. Special Instructions and Restrictions

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

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

c. Minimum IUT/Student Turn-Times. One hour is required between debriefing of a flight event and the brief for a follow-on flight or simulator event. This requirement does not apply to out-and-in and cross-country profiles; however, the ITU instructor shall ensure adequate debrief and brief time is allocated.

d. Crew Day. Crew day and flight hour limitations are established by OPNAVINST 3710.7U and applicable NATOPS.

e. Crew Rest. Crew rest limitations are established by OPNAVINST 3710.7U and applicable NATOPS.

f. NATOPS Qualification Requirements. A current NATOPS qualification in the T-45C is required prior to syllabus flights in this curriculum.

g. Previous Experience or Demonstrated Ability. Reasonable accelerations and decelerations in the curriculum are authorized when warranted by previous experience or demonstrated ability. During the accelerated period, the IUT may progress to the next block of training once MIF is met within the current block of training. Accelerations of the curriculum require Commanding Officer approval and shall be annotated in writing in the Instructor Training Jacket.

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

Chapter II

Ground Training

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

Blk #	Media	Title	Events	Hrs	Blk Name
G01	Class	Administration	2	6.0	ADMIN

1. Prerequisites

- a. FAM4290 prior to G0102 (Pilot).
- b. G0301 prior to G0102.
- c. Optional blocks G02, G04, and optional event NA4790 as required for NATOPS qualification/currency prior to G0102 (NFO).

2. Events

G0101	Sqdn	Administration/Check-In. IUTs will check in with the Wing, Ground School, and Squadron. This event includes Publications Issue and Curriculum Introduction.		4.0	
G0102	Sqdn	Qualification/Designation Administration		2.0	

- 3. Syllabus Notes. None.
- 4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G02	Class	NATOPS Refresher Ground Training	7	25.0	NATOPS

1. Prerequisite. G0101 prior to G0201-7 (any order).

2. Events

G0201	Lect/ Pool	Refresher Swim and Physiology (Class 1)		16.0	
G0202	Offline MIL	Crew Resource Management (CRM)		2.0	
G0203	Offline MIL	NACES Flight Physiology		1.0	
G0204	Offline MIL	Ejection Seat Lecture/ NACES Preflight		1.0	
G0205	P/P Exam	NATOPS Open-Book Exam		2.0	
G0206	P/P Exam	NATOPS Closed-Book and SOP Exam		2.0	
G0207	P/P Exam	Immediate Action Emergency Procedures (EP)/Limitations Exam		1.0	

3. Syllabus Note. This block of training consists of optional events required for annual or NATOPS currency.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G03	Class	Flight Instructor Ground Training	1	26.0	ASI
1.	<u>Prerequisite.</u>	G0101.			
2.	<u>Events</u>				
	G0301	Offline FITC MIL		26.0	
3.	<u>Syllabus Notes.</u>	None.			
4.	<u>Discuss Items.</u>	None.			

Blk #	Media	Title	Events	Hrs	Blk Name
G04	Class	NATOPS Instrument Ground Training	5	4.5	IGS

1. Prerequisites

- a. G0101 prior to G0401-2 (any order).
- b. G0401-2 prior to G0403.
- c. G0101 prior to G0404-5 (in order).

2. Events

G0401	Offline MIL	Instrument Ground School (IGS)		1.5
G0402	Offline MIL	Meteorology (METRO) Review		0.5
G0403	P/P Exam	IGS Open-Book Exam		1.0
G0404	Offline MIL	Course Rules		0.5
G0405	P/P Exam	Course Rules Exam		1.0

3. Syllabus Note. This block of training consists of optional events required for annual or NATOPS currency.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
FAM11	Class	Familiarization Stage Flight Support	4	6.0	FAM1

1. Prerequisites

- a. G0101 prior to FAM1101-3 (any order).
- b. FAM1103 prior to FAM1104.

2. Events

FAM1101	MIL	Familiarization Flight Procedures		3.0
FAM1102	Lect	Familiarization Crew Coordination Stan		1.0
FAM1103	MIL	T-45C VMTS Operation		1.0
FAM1104	CAI Test	Familiarization Stage Exam		1.0

3. Syllabus Notes

- a. Pilot IUTs complete all events in this block.
- b. NFO IUTs complete this training in the T-45C NATOPS IUT Curriculum.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
STK11	Sqdn/ Class	Strike Stage	12 (Pilot)	30.4	STKFP
		Flight Support	13 (NFO)	33.4	

1. Prerequisites

- a. G0102 prior to STK1101-9 (in order) (Pilot).
- b. STK1109 prior to STK1111-12 (in order) (Pilot).
- c. G0102 prior to STK1101-10 (in order) (NFO).
- d. STK4302 prior to STK1111-12 (in order) (NFO).
- e. STK4110 prior to STK1113 (Pilot).
- f. STK4303 prior to STK1113 (NFO).

2. Events

STK1101	CAI	RDR Principles and Operation I		3.0	
STK1102	MIL	RDR Principles and Operation II		1.5	
STK1103	MIL	A/G Radar Procedures		2.5	
STK1104	CAI	Weapons Data Entry Procedures		0.7	
STK1105	MIL	Section Flight Procedures		1.5	
STK1106	MIL	Low-Level Planning		3.0	
STK1107	LAB	Joint Mission Planning System Lab		8.0	
STK1108	MIL	Low-Level Procedures		2.5	
STK1109	MIL	Low Altitude Awareness Training		2.0	
STK1110	MIL	Carrier Operations (NFO ONLY)		3.0	

2. Events (Cont)

STK1111	MIL	Electronic Warfare Fundamentals	1.5
STK1112	MIL	A/G Targeting Procedures	3.2
STK1113	CAI	Strike Stage Exam Test	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
CAS11	Sqdn/ Class	CAS Stage Flight Support	3 (Pilot) 3 (NFO)	4.0 4.0	CASFP

1. Prerequisites

- a. G0102 prior to CAS1101-2 (in order).
- b. CAS4103 prior to CAS1103 (Pilot).
- c. CAS4302 prior to CAS1103 (NFO).

2. Events

CAS1101	MIL	CAS Flight Procedures		2.0	
CAS1102	Lect	CAS Crew Coordination Stan		1.0	
CAS1103	CAI	CAS Stage Exam Test		1.0	

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
BFM11	Sqdn/ Class	BFM Stage Flight Support	5	8.7	BFMFP

1. Prerequisites

- a. G0102 prior to BFM1101-4 (in order).
- b. BFM4106 prior to BFM1105.

2. Events

BFM1101	CAI	HUD/Data Entry Procedures		0.7
BFM1102	MIL	BFM Theory		3.0
BFM1103	MIL	BFM Flight Procedures		3.0
BFM1104	Lect	BFM Crew Coordination Stan		1.0
BFM1105	CAI Test	BFM Stage Exam		1.0

3. Syllabus Note. Instructor NFOs do not qualify in the BFM Stage.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
AWI11	Sqdn/	AWI Stage	14 (Pilot)	27.0	AWIFP
	Class	Flight Support	14 (NFO)	27.0	

1. Prerequisites

- a. G0102 prior to AWI1101-10 (in order) (Pilot).
- b. G0102 prior to AWI1101-13 (in order) (NFO).
- c. AWI4104 prior to AWI1111 (Pilot).
- d. AWI4106 prior to AWI1112 (Pilot).
- e. AWI4109 prior to AWI1113 (Pilot).
- f. AWI4111 prior to AWI1114 (Pilot).
- g. AWI4303 prior to AWI1114 (NFO).
- h. AWI1208 prior to AWI1114 (NFO).

2. Events

AWI1101	MIL	Air-to-Air Radar Modes II		1.3
AWI1102	CAI	Air Intercept Control		1.0
AWI1103	MIL	Intercept Visualization and Geometry		1.5
AWI1104	MIL	Managing Intercept Geometry II		3.0
AWI1105	MIL	Stern Conversion Intercepts II		1.5
AWI1106	MIL	Intercept Progression II		3.2

2. Events (Cont)

AWI1107	MIL	BVR Weapons Employment II	1.5
AWI1108	Lect	AWI Crew Coordination Stan	1.0
AWI1109	MIL	1 V 1 AWI Procedures II	3.5
AWI1110	MIL	Intercept Progression IV	1.0
AWI1111	MIL	Introduction to Section Radar Attacks (SRA)	2.0
AWI1112	MIL	Introduction to 2 V X	3.5
AWI1113	MIL	Self-Escort Strike Route	2.0
AWI1114	CAI	AWI Stage Exam Test	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
AWI12	Class	NFO AWI IGS Training	8	29.6	AWIFP

1. Prerequisites

- a. AWI3203 prior to AWI1201-8 (in order).
- b. AWI3209 prior to AWI1203.
- c. AWI3212 prior to AWI1205.
- d. AWI3215 prior to AWI1207.

2. Events

AWI1201	Lab	AWI IGS Training 1		3.7
AWI1202	Lab	AWI IGS Training 2		3.7
AWI1203	Lab	AWI IGS Training 3		3.7
AWI1204	Lab	AWI IGS Training 4		3.7
AWI1205	Lab	AWI IGS Training 5		3.7
AWI1206	Lab	AWI IGS Training 6		3.7
AWI1207	Lab	AWI IGS Training 7		3.7
AWI1208	Lab	AWI IGS Training 8		3.7

3. Syllabus Notes

- a. AWI1201-8 shall be conducted at the VMTS Instructor Ground Station in conjunction with SNFO or IUT flight events.
- b. AWI1201: Observe Forward Quarter to Stern Conversion or High Aspect Merge 1 V 1 Intercepts at the IGS.
- c. AWI1202: Instruct Forward Quarter to Stern Conversion or High Aspect Merge 1 V 1 Intercepts at the IGS.
- d. AWI1203: Observe Section A/A Tactics 2 V 2 Intercepts at the IGS.

e. AWI1204: Instruct Section A/A Tactics 2 V 2 Intercepts at the IGS.

f. AWI1205: Observe Section A/A Tactics 2 V X Intercepts at the IGS.

g. AWI1206: Instruct Section A/A Tactics 2 V X Intercepts at the IGS.

h. AWI1207: Observe Section Self-Escort Strike Intercepts at the IGS.

i. AWI1208: Instruct Section Self-Escort Strike Intercepts at the IGS.

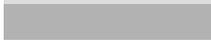
j. IUT may not instruct a XX90 event.

4. Discuss Items. None.

Chapter III

NATOPS Training

1. Refresher/Annual Flight Training Philosophy. Comply with annual T-45C NATOPS requirements.
2. Matrices. The following matrix is an overview of the NATOPS Stage. The purpose of this matrix is to provide the IUT and SI the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.
3. NATOPS Stage MIF

 Simulator Event  
 Check Event

<b>NATOPS STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>NA3301</b>	<b>NA3690</b>	<b>NA4690</b>	<b>NA4790</b>
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+	4+	4+
4	Partial Panel Airwork				4+
5	Mission Planning/Briefing/Debriefing	4+	4+	4+	4+
7	Flight Admin	4+	4+	4+	4+
7	Course Rules		4+	4	
8	Ground Operations	4+	4+	4+	4+
9	Communications	4+	4+	4+	4+

MIF continued on next page.

<b>NATOPS STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>NA3301</b>	<b>NA3690</b>	<b>NA4690</b>	<b>NA4790</b>
10	Takeoff/Departure Procedure	4+	4+	4+	4+
11	Navigation Procedures				4+
11	Non-System Point-to-Point Navigation				4+
11	System Point-to-Point Navigation				4+
11	Intercept/Maintain Course				4+
12	Holding				4+
13	No-Gyro GCA				4
13	Precision Approach				4+
13	Partial Panel Approach				4+
13	Non-Precision Approach				4+
13	Circling Approach				4
13	Instrument-to-Visual Scan				4+
13	Missed Approach				4+
14	VFR Landing Pattern	4+	4	4	
14	Landing/Touch-and-Go		4+	4+	4+
14	Field Carrier Landing	4+	4	4+	
14	FF Roll-and-Go		4	4+	
14	NF Roll-and-Go		4	4+	
14	NF Touch-and-Go	4+			
14	Crosswind Landings		4	4	
14	Full-Stop Landing	4+	4+	4+	

MIF continued on next page.

<b>NATOPS STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>NA3301</b>	<b>NA3690</b>	<b>NA4690</b>	<b>NA4790</b>
14	No-HUD Landings	4+	4	4+	
14	Waveoff	4+	4	4+	
2	Engine EPs	4+			
2	Flight Control EPs	4+			
2	Gear EPs	4+			
2	Stuck Throttle Approach	4+			
15	Stall Series		4	4+	
15	Pattern Stall and Recovery	4+			
15	High AOA/Deep Stall Investigation/ Rudder-Induced Departure	4+			
15	70-Degree Nose-High Departure	4+			
15	90-Degree Nose-High Departure	4+			
15	110-Degree Nose-High Departure	4+			
15	Lateral Stick Adverse Yaw Departure	4+			
15	Spin/Spin Recovery	4+			
16	Min Radius Turn		4	4+	
16	Aerobatics		4	4+	
17	Unusual Attitude Recovery		4	4+	
17	Vertical Recovery	4+	4	4+	
18	Emergency Instrument Approach				4+
18	Precautionary Approach(es)	4+	4+	4+	
18	PA to Full Stop		4+	4	

Blk #	Media	Title	Events	Hrs	H/X
NA33	OFT	Out-of-Control Flight (OCF) Simulator	1	1.5	1.5

1. Prerequisites. BFM1104 (BFM Crew Coordination Stan).

2. Syllabus Notes

a. Only BFM qualified IPs complete this event annually.

b. Pilot IPs shall execute all checklists and procedures IAW "single seat" mindset.

c. The IP will perform the following procedures IAW FTI, NATOPS, and SOP on this event: all normal checklists, VFR Landing Pattern, NF Touch-and-Go, Vertical Recovery, departure maneuvers, PA to Full Stop. Two stuck throttle approaches are required (high and low).

***Malfunctions/EPs:*** Engine stalls, Engine Vibration, Engine Seizure, Engine Flameout, Straight-In Stuck Throttle, Stuck Throttle Approach, Overhead Stuck Throttle, brake failure after touchdown, brake accumulator failure, Long Field Arrestment, Short Field Arrestment, Trim malfunctions (Trim Failure, Trim Runaway rudder/elevator/stabilator, Rudder Trim Hardover), Uncommanded Roll/Yaw, CONTR AUG failure, Jammed or Binding Flight Controls, Departure/Spin Procedure, Flaps/Slats Failure, speedbrake fails to retract, Controllability Check, landing with no NWS, Minimum speed rotation on roll-and-go, minimum rollout landing, Ground ejection scenario.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, locked-in compressor stall, spin and spin recovery characteristics and indications, SLATS Caution, MISCOMPARE Advisory.

5. Block MIF

CTS REF	MANEUVER	NA3301
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
14	VFR Landing Pattern	4+
14	Field Carrier Landing	4+
14	NF Touch-and-Go	4+
14	Full-Stop Landing	4+
14	No-HUD Landings	4+
14	Waveoff	4+
2	Engine EPs	4+
2	Flight Control EPs	4+
2	Gear EPs	4+
2	Stuck Throttle Approach	4+
15	Pattern Stall and Recovery	4+
15	High AOA/Deep Stall Investigation/Rudder-Induced Departure	4+
15	70-Degree Nose-High Departure	4+
15	90-Degree Nose-High Departure	4+
15	110-Degree Nose-High Departure	4+

MIF continued on next page.

CTS REF	MANEUVER	NA3301
15	Lateral Stick Adverse Yaw Departure	4+
15	Spin/Spin Recovery	4+
17	Vertical Recovery	4+
18	Precautionary Approach(es)	4+

Blk #	Media	Title	Events	Hrs	H/X
NA36	OFT	NATOPS Check Simulator	1	1.5	1.5

1. Prerequisites

a. G0205-6 (NATOPS Exams) and G0405 (Course Rules Exam) are required if this event is used as annual NATOPS Check in the simulator.

b. G0207 (Immediate Action Emergency Procedures and Limitations Exam) is required if this event is used as Semi-Annual EP Simulator.

2. Syllabus Notes

a. This event is for annual NATOPS Check (no aircraft available) or Semi-Annual EP Simulator.

b. Pilots shall execute all checklists and procedures IAW "single seat" mindset.

c. NFO IUTs shall occupy the rear cockpit and execute NFO crew coordination checklists and procedures.

**Malfunctions/EPs:** Abnormal start (Hot/Hung/Wet), abort situation, bird strike/pattern PA, locked-in compressor stall/immediate airstart, 2 stuck throttle (90-94% and flight idle), oil pressure failure (No seizure) to a PA, blown tire on takeoff, blown tire on landing, swerve after landing with NWS AUG low rate failure (NWS AUG Caution light), Brake failure after landing, HYD 1 failure followed by HYD 2 failure with RAT working, ejection scenario, generator failure no reset, fire in flight (With or W/O secondary indications).

3. Special Syllabus Requirements. None.

4. Discuss Items. Any aircraft system, any emergency procedure or limitation, takeoff and landing data calculation check, and publication review.

5. Block MIF

CTS REF	MANEUVER	NA3690
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
7	Flight Admin	4+
7	Course Rules	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
14	VFR Landing Pattern	4
14	Landing/Touch-and-Go	4+
14	Field Carrier Landing	4
14	FF Roll-and-Go	4
14	NF Roll-and-Go	4
14	Crosswind Landings	4
14	Full-Stop Landing	4+
14	No-HUD Landings	4
14	Waveoff	4
15	Stall Series	4
16	Min Radius Turn	4
16	Aerobatics	4

MIF continued on next page.

CTS REF	MANEUVER	NA3690
17	Unusual Attitude Recovery	4
17	Vertical Recovery	4
18	Precautionary Approach(es)	4+
18	PA to Full Stop	4+

Blk #	Media	Title	Events	Hrs	H/X
NA46	T-45C	NATOPS Check Flight	1	1.2	1.2

1. Prerequisites

- a. G0205 (NATOPS Open-Book Exam).
- b. G0206 (NATOPS Closed-Book and SOP Exam).
- c. G0207 (Immediate Action EP/Limitations Exam).
- d. G0405 (Course Rules Exam).
- e. G0202 (CRM) is required if annual CRM flight evaluation is conducted in conjunction with this event.

2. Syllabus Notes

- a. Pilot IUTs shall execute all checklists and procedures IAW "single seat" mindset.
- b. NFO IUTs shall occupy the rear cockpit and execute NFO crew coordination checklists and procedures.
- c. If annual CRM flight evaluation is conducted in conjunction with the NATOPS Check Flight, it shall be noted in the remarks section of the OPNAVINST 3710/7 NATOPS Rating Request Form.
- d. Weather minimums of 3000/3 required to complete event.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any aircraft system, any emergency procedure or limitation, takeoff and landing data calculation check, and publication review.

5. Block MIF

CTS REF	MANEUVER	NA4690
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
7	Flight Admin	4+
7	Course Rules	4
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
14	VFR Landing Pattern	4
14	Landing/Touch-and-Go	4+
14	Field Carrier Landing	4+
14	FF Roll-and-Go	4+
14	NF Roll-and-Go	4+
14	Crosswind Landings	4
14	Full-Stop Landing	4+
14	No-HUD Landings	4+
14	Waveoff	4+
15	Stall Series	4+
16	Min Radius Turn	4+
16	Aerobatics	4+
17	Unusual Attitude Recovery	4+
17	Vertical Recovery	4+
18	Precautionary Approach(es)	4+
18	PA to Full Stop	4

Blk #	Media	Title	Events	Hrs	H/X
NA47	T-45C	NATOPS Instrument Check Flight	1	1.2	1.2

1. Prerequisites

a. G0401 (IGS), G0402 (METRO Review), and G0403 (IGS Open-Book Exam) are required for initial and annual re-qualification.

b. G0404 (CR) and G0405 (CR Exam) may be required for annual qualification (refer to local FIST).

c. G0202 (CRM) is required if annual CRM flight evaluation is conducted in conjunction with this event.

d. NA4690 if required.

2. Syllabus Notes

a. This event is for annual NATOPS Instrument Check, or if needed for non-IUT pilots. Initial NATOPS Instrument Check will be part of the IUT syllabus for IUT Pilots.

b. Pilot IUTs shall occupy the front cockpit and execute all checklists and procedures IAW "single seat" mindset.

c. If annual CRM flight evaluation is conducted in conjunction with the NATOPS Instrument Ratings Check Flight, it shall be noted in the remarks section of the OPNAVINST 3710/2 NATOPS Instrument Rating Request Form.

3. Special Syllabus Requirements. None.

4. Discuss Items. OPNAVINST 3710.7U instrument planning requirements and restrictions, and local IFR NORDO approach procedures.

5. Block MIF

CTS REF	MANEUVER	NA4790
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
4	Partial Panel Airwork	4+
5	Mission Planning/Briefing/Debriefing	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
11	Non-System Point-to-Point Navigation	4+
11	System Point-to-Point Navigation	4+
11	Intercept/Maintain Course	4+
12	Holding	4+
13	No-Gyro GCA	4
13	Precision Approach	4+
13	Partial Panel Approach	4+
13	Non-Precision Approach	4+
13	Circling Approach	4
13	Instrument-to-Visual Scan	4+
13	Missed Approach	4+
14	Landing/Touch-and-Go	4+
18	Emergency Instrument Approach	4+

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

Chapter IV

Contact Training

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

2. Familiarization Stage MIF

 Check Event

<b>FAMILIARIZATION STAGE MANEUVER ITEM FILE</b>			
<b>CTS REF</b>	<b>MANEUVER</b>	<b>FAM4103</b>	<b>FAM4290</b>
1	General Knowledge/Procedures	4+	4+
2	Emergency Procedures	4+	4+
3	Headwork/Situational Awareness	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+
5	Mission Planning/Briefing/ Debriefing	4+	4+
6	CRM/Crew Coordination	4+	4+
7	Flight Admin	4+	4+
7	Course Rules	4+	4+
8	Ground Operations	4+	4+
9	Communications	4+	4+
10	Takeoff/Departure Procedure	4+	4+
11	Navigation Procedures	4+	4+
13	Approach	4+	4+
14	VFR Landing Pattern	4+	4+

MIF continued on next page.

<b>FAMILIARIZATION STAGE MANEUVER ITEM FILE</b>			
<b>CTS REF</b>	<b>MANEUVER</b>	<b>FAM4103</b>	<b>FAM4290</b>
14	NF Touch-and-Go	4+	4
14	FF Roll-and-Go	4+	4
14	NF Roll-and-Go	4	4
14	Full-Stop Landing	4+	4+
15	Accelerated Stall	4+	
15	Break Turn Stall	4+	
15	Power-Off Stall	4+	
15	Landing Attitude Maneuver	4+	
15	Landing Attitude Stall	4+	
15	Approach Turn Stall	4+	
15	Stall Series		4+
16	Aileron Roll	4+	
16	Wingover	4+	
16	Barrel Roll	4+	
16	Aerobatics	4+	4+
16	Squirrel Cage	4+	
17	Unusual Attitude Recovery	4+	4+
17	Vertical Recovery	4+	4+
18	Precautionary Approach(es)	4+	4+
18	Emergency Instrument Approach	4+	4

Blk #	Media	Title	Events	Hrs	H/X
FAM41	T-45C	Familiarization Flight Training	3	4.5	1.5

1. Prerequisites

- a. FAM1101 (Familiarization Flight Procedures).
- b. FAM1102 (Familiarization Crew Coordination Stan).
- c. FAM1103 (T-45C VMTS Operation).
- d. Optional blocks G02, G04, and optional event NA4790 as required for NATOPS qualification/currency.

2. Syllabus Notes

- a. Only Pilot IUTs complete this block.
- b. Pilot IUTs shall occupy the front cockpit and execute IP crew coordination checklists and SNFO familiarization procedures.
- c. SI will occupy the rear cockpit and execute NFO crew coordination checklists and procedures, providing examples of performance deviations from curriculum standards.

3. Special Syllabus Requirements. None.

4. Discuss Items

FAM4101

QOD, NFO crew coordination checklists.

FAM4102

QOD, SNFO performance deviation recognition and grading, standardized FAM flight profiles, local area airfield operations.

FAM4103

QOD, SNFO brief and debrief requirements and critique.

5. Block MIF

CTS REF	MANEUVER	FAM4103
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
7	Course Rules	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
13	Approach	4+
14	VFR Landing Pattern	4+
14	NF Touch-and-Go	4+
14	FF Roll-and-Go	4+
14	NF Roll-and-Go	4
14	Full-Stop Landing	4+
15	Accelerated Stall	4+
15	Break Turn Stall	4+
15	Power Off Stall	4+
15	Landing Attitude Maneuver	4+
15	Landing Attitude Stall	4+
15	Approach Turn Stall	4+

MIF continued on next page.

CTS REF	MANEUVER	FAM4103
16	Aileron Roll	4+
16	Wingover	4+
16	Barrel Roll	4+
16	Aerobatics	4+
16	Squirrel Cage	4+
17	Unusual Attitude Recovery	4+
17	Vertical Recovery	4+
18	Precautionary Approach(es)	4+
18	Emergency Instrument Approach	4+

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

1. Prerequisites

- a. FAM1104 (Familiarization Stage Exam).
- b. FAM4103.

2. Syllabus Notes

- a. Only Pilot IUTs complete this event.
- b. Pilot IUTs shall occupy the front cockpit on this event and execute IP crew coordination checklists and procedures.
- c. The SI shall occupy the rear cockpit and execute SNFO crew coordination checklists and procedures, evaluating the IUT's knowledge and instruction of SNFO FAM procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items. Complete versus incomplete events, hours per X, overall grading criteria, IPC/FPC triggers and process, event cloning, warmup criteria.

5. Block MIF

CTS REF	MANEUVER	FAM4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
7	Course Rules	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
13	Approach	4+
14	VFR Landing Pattern	4
14	NF Touch-and-Go	4
14	FF Roll-and-Go	4
14	NF Roll-and-Go	4
14	Full-Stop Landing	4+
15	Stall Series	4+
16	Aerobatics	4
17	Unusual Attitude Recovery	4+
17	Vertical Recovery	4+
18	Precautionary Approach(es)	4+
18	Emergency Instrument Approach	4

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

Chapter V

Instrument Training

This chapter does not apply to the Advanced Naval Aviator/NFO  
IUT curriculum.

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

Chapter VI

Navigation Training

This chapter does not apply to the Advanced Naval Aviator/NFO  
IUT curriculum.

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

Chapter VII

Formation Training

This chapter does not apply to the Advanced Naval Aviator/NFO IUT curriculum.

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE

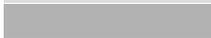
Chapter VIII

Tactical Training

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

2. Matrices. The following matrices are an overview of the entire Tactical Stage (Strike, CAS, AWI and BFM training) separated into Pilot and NFO training. A majority of the T-45 IUT Pilot training is conducted in the aircraft, while IUT NFO training is primarily conducted in the OFT. Both IUT Pilots and IUT NFOs use the OFT to learn procedures. The purpose of these matrices is to provide the IUT and SI the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.

3. Pilot Strike Stage MIF

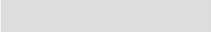
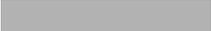
 Simulator Event  
 Check Event

<b>PILOT STRIKE STAGE MANEUVER ITEM FILE</b>				
<b>CTS REF</b>	<b>MANEUVER</b>	<b>STK3102</b>	<b>STK4110</b>	<b>STK4290</b>
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	4+	4+	4+
6	CRM/Crew Coordination	4+	4+	4+
7	Flight Admin	4+	4+	4+
8	Ground Operations	4+	4+	4+

MIF continued on next page.

<b>PILOT STRIKE STAGE MANEUVER ITEM FILE</b>				
<b>CTS REF</b>	<b>MANEUVER</b>	<b>STK3102</b>	<b>STK4110</b>	<b>STK4290</b>
9	Communications	4+	4+	4+
10	Takeoff/Departure Procedure		4+	4+
11	Navigation Procedures		4+	4+
14	Full-Stop Landing		4+	4+
18	Precautionary Approach(es)		4+	4
19	Tactical Formation		4+	4+
20	Low-Level Navigation/Procedures		4+	4+
25	Section Target Attack	4+	4+	4+
26	Training Rules		4+	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+	4+	4+
28	Turnpoint Procedures	4+	4+	4+
29	A/G Radar Operation and Interpretation	4+	4+	4+
30	Timing	4+	4+	4+
31	Directive/Descriptive Comm	4+	4+	4+
32	Checkpoint Utilization and Chart/Terrain Correlation	4+	4+	4+
33	Course Analysis/Corrections	4+	4+	4+
34	Speed Control	4+	4+	4+
35	Target Acquisition	4+	4+	4+
36	A/G Timeline Awareness	4+	4+	4+
37	RWR Recognition/Consideration	4+	4+	4+
38	Formation Coordination, Communication, and Hand Signals		4+	4+
45	Tactical Situational Awareness	4+	4+	4+
47	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+

4. Pilot Close Air Support (CAS) Stage MIF

 Simulator Event  
 Check Event

<b>PILOT CAS STAGE MANEUVER ITEM FILE</b>				
<b>CTS REF</b>	<b>MANEUVER</b>	<b>CAS3101</b>	<b>CAS4103</b>	<b>CAS4290</b>
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	4+	4+	4+
6	CRM/Crew Coordination	4+	4+	4+
7	Flight Admin	4+	4+	4+
8	Ground Operations	4+	4+	4+
9	Communications	4+	4+	4+
10	Takeoff/Departure Procedure		4+	4+
11	Navigation Procedures		4+	4+
14	Full-Stop Landing		4+	4+
18	Precautionary Approach(es)	4	4	4
25	Section Target Attack	4+	4+	
26	Training Rules		4+	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+	4+	4+
30	Timing	4+	4+	4+
31	Directive/Descriptive Comm	4+	4+	4+
32	Checkpoint Utilization and Chart/Terrain Correlation	4+	4+	4+

MIF continued on next page.

<b>PILOT CAS STAGE MANEUVER ITEM FILE</b>				
<b>CTS REF</b>	<b>MANEUVER</b>	<b>CAS3101</b>	<b>CAS4103</b>	<b>CAS4290</b>
33	Course Analysis/Corrections	4+	4+	4+
34	Speed Control	4+	4+	4+
36	A/G Timeline Awareness	4+	4+	4+
38	Formation Coordination, Communication, and Hand Signals		4+	4+
45	Tactical Situational Awareness	4+	4+	4+
47	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+

5. Pilot Basic Fighter Maneuvers (BFM) Stage MIF

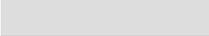
Check Event

<b>PILOT BFM STAGE MANEUVER ITEM FILE</b>			
<b>CTS REF</b>	<b>MANEUVER</b>	<b>BFM4106</b>	<b>BFM4290</b>
1	General Knowledge/Procedures	4+	4+
2	Emergency Procedures	4+	4+
3	Headwork/Situational Awareness	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+
5	Mission Planning/Briefing/Debriefing	4+	4+
6	CRM/Crew Coordination	4+	4+
7	Flight Admin	4+	4+
8	Ground Operations	4+	4+

MIF continued on next page.

<b>PILOT BFM STAGE MANEUVER ITEM FILE</b>			
<b>CTS REF</b>	<b>MANEUVER</b>	<b>BFM4106</b>	<b>BFM4290</b>
9	Communications	4+	4+
10	Takeoff/Departure Procedure	4+	4+
11	Navigation Procedures	4+	4+
14	Full-Stop Landing	4+	4+
18	Precautionary Approach(es)	4	4
19	Tactical Formation	4+	4+
21	BFM - General	4+	4+
22	BFM - Offensive	4+	4+
23	BFM - Defensive	4+	4+
24	BFM - Neutral/High Aspect	4+	4+
26	Training Rules	4+	4+
31	Directive/Descriptive Comm	4+	4+
45	Tactical Situational Awareness	4+	4+
46	Bandit Maneuver Recognition/Reaction	4+	4+
47	Flight Instruction/Detect and Correct Student Errors	4+	4+

6. Pilot All Weather Intercepts (AWI) Stage MIF

 Simulator Event  
 Check Event

<b>PILOT AWI STAGE MANEUVER ITEM FILE</b>				
<b>CTS REF</b>	<b>MANEUVER</b>	<b>AWI3103</b>	<b>AWI4111</b>	<b>AWI4290</b>
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	4+	4+	4+
6	CRM/Crew Coordination	4+	4+	4+
7	Flight Admin	4+	4+	4+
8	Ground Operations	4+	4+	4+
9	Communications	4+	4+	4+
10	Takeoff/Departure Procedure		4+	4+
11	Navigation Procedures		4+	4+
14	Full-Stop Landing		4+	4+
18	Precautionary Approach(es)		4+	4
19	Tactical Formation		4+	4+
25	Section Target Attack			4+
26	Training Rules		4+	4+
28	Turnpoint Procedures		4	4
29	A/G Radar Operation and Interpretation		4+	4+
30	Timing		4+	4+
31	Directive/Descriptive Comm	4+	4+	4+
34	Speed Control	4+	4+	4+

MIF continued on next page.

<b>PILOT AWI STAGE MANEUVER ITEM FILE</b>				
<b>CTS REF</b>	<b>MANEUVER</b>	<b>AWI3103</b>	<b>AWI4111</b>	<b>AWI4290</b>
35	Target Acquisition		4+	4+
36	A/G Timeline Awareness		4+	4+
37	RWR Recognition/Consideration	4	4+	4+
38	Formation Coordination, Communication, and Hand Signals		4+	4+
39	Target Aspect Awareness and Control	4+	4+	4+
40	Target Altitude Recognition/Correction	4+	4+	4+
41	A/A Radar Operation	4+	4+	4+
42	A/A Timeline Awareness	4+	4+	4+
43	Counterturn Fundamentals	4+	4+	4+
44	Merge/SRM Employment	4+	4+	4+
45	Tactical Situational Awareness	4+	4+	4+
46	Bandit Maneuver Recognition/Reaction	4+	4+	4+
47	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+

7. NFO Strike Stage MIF

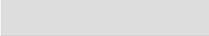
Simulator Event  
 Check Event

<b>NFO STRIKE STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>STK3211</b>	<b>STK3390</b>	<b>STK4303</b>	<b>STK4490</b>
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	4+	4+	4+	4+
6	CRM/Crew Coordination	4+	4+	4+	4+
7	Flight Admin	4+	4+	4+	4+
8	Ground Operations	4	4	4+	4+
9	Communications	4+	4+	4+	4+
10	Takeoff/Departure Procedure	4	4	4+	4+
11	Navigation Procedures	4+	4+	4+	4+
14	Full-Stop Landing			4+	4+
18	Precautionary Approach(es)	4+		4+	
20	Low-Level Navigation/Procedures	4+	4+	4+	4+
25	Section Target Attack	4+	4+	4+	4+
26	Training Rules			4+	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+	4+	4+	4+
28	Turnpoint Procedures	4+	4+	4+	4+
29	A/G Radar Operation and Interpretation	4+	4+	4+	4+

MIF continued on next page.

<b>NFO STRIKE STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>STK3211</b>	<b>STK3390</b>	<b>STK4303</b>	<b>STK4490</b>
30	Timing	4+	4+	4+	4+
31	Directive/Descriptive Comm	4+	4+	4+	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+	4+	4+	4+
33	Course Analysis/Corrections	4+	4+	4+	4+
34	Speed Control	4+	4+	4+	4+
35	Target Acquisition	4+	4+	4+	4+
36	A/G Timeline Awareness	4+	4+	4+	4+
37	RWR Recognition/Considerations	4+	4+	4+	4+
38	Formation Coordination, Communication, and Hand Signals			4+	4+
45	Tactical Situational Awareness	4+	4+	4+	4+
47	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+	4+

8. NFO Close Air Support (CAS) Stage MIF

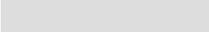
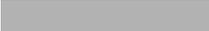
 Simulator Event  
 Check Event

<b>NFO CAS STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>CAS3208</b>	<b>CAS3390</b>	<b>CAS4302</b>	<b>CAS4490</b>
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	4+	4+	4+	4+
6	CRM/Crew Coordination	4+	4+	4+	4+
7	Flight Admin	4+	4+	4+	4+
8	Ground Operations	4	4	4+	4+
9	Communications	4+	4+	4+	4+
10	Takeoff/Departure Procedure	4	4	4+	4+
11	Navigation Procedures	4+	4+	4+	4+
14	Full-Stop Landing			4+	4+
18	Precautionary Approach(es)	4+		4	4
26	Training Rules	4	4	4+	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+	4+	4+	4+
30	Timing	4+	4+	4+	4+
31	Directive/Descriptive Comm	4+	4+	4+	4+
32	Checkpoint Utilization and Chart/Terrain Correlation	4+	4+	4+	4+
33	Course Analysis/Corrections	4+	4+	4+	4+

MIF continued on next page.

<b>NFO CAS STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>CAS3208</b>	<b>CAS3390</b>	<b>CAS4302</b>	<b>CAS4490</b>
34	Speed Control	4+	4+	4+	4+
35	Target Acquisition	4+	4+	4+	4+
36	A/G Timeline Awareness	4+	4+	4+	4+
38	Formation Coordination, Communication, and Hand Signals			4+	4+
45	Tactical Situational Awareness	4+	4+	4+	4+
46	Bandit Maneuver Recognition/Reaction			4+	4+
47	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+	4+

9. NFO All Weather Intercepts (AWI) Stage MIF

 Simulator Event  
 Check Event

<b>NFO AWI STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>AWI3215</b>	<b>AWI3390</b>	<b>AWI4303</b>	<b>AWI4490</b>
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+	4+	4+	4+
5	Mission Planning/Briefing/Debriefing	4+	4+	4+	4+
6	CRM/Crew Coordination	4+	4+	4+	4+
7	Flight Admin	4+	4+	4+	4+
8	Ground Operations	4	4	4+	4+
9	Communications	4+	4+	4+	4+
10	Takeoff/Departure Procedure	4	4	4+	4+
11	Navigation Procedures	4+	4+	4+	4+
14	Full-Stop Landing	4	4	4+	4+
18	Precautionary Approach(es)	4+	4	4+	4
25	Section Target Attack	4+	4	4	4+
26	Training Rules	4+	4+	4+	4+
29	A/G Radar Operation and Interpretation	4+	4	4	4+
30	Timing	4+	4	4	4+
31	Directive/Descriptive Comm	4+	4+	4+	4+
34	Speed Control	4+	4+	4+	4+
35	Target Acquisition	4+	4	4	4+

MIF continued on next page.

<b>NFO AWI STAGE MANEUVER ITEM FILE</b>					
<b>CTS REF</b>	<b>MANEUVER</b>	<b>AWI3215</b>	<b>AWI3390</b>	<b>AWI4303</b>	<b>AWI4490</b>
36	A/G Timeline Awareness	4+	4	4	4+
37	RWR Recognition/Considerations	4+	4+	4+	4+
38	Formation Coordination, Communication, and Hand Signals	4+	4+	4+	4+
39	Target Aspect Awareness and Control	4+	4+	4+	4+
40	Target Altitude Recognition/Correction	4+	4+	4+	4+
41	A/A Radar Operation	4+	4+	4+	4+
42	A/A Timeline Awareness	4+	4+	4+	4+
43	Counterturn Fundamentals	4+	4	4+	4
44	Merge/SRM Employment	4+	4+	4+	4+
45	Tactical Situational Awareness	4+	4+	4+	4+
46	Bandit Maneuver Recognition/Reaction	4+	4+	4+	4+
47	Flight Instruction/Detect and Correct Student Errors	4+	4+	4+	4+

Blk #	Media	Title	Events	Hrs	H/X
STK31	OFT	Pilot Strike Simulator Training	2	3.0	1.5

1. Prerequisite. STK1112 (A/G Targeting Procedures).

2. Syllabus Notes

a. The IUT will utilize stick, throttle, and RHC HOTAS during STK3102.

b. Events to be instructed by Strike-qualified SI. CSI will operate the OFT, but will not attend the brief or debrief.

STK3101

Observe a SNFO STK3201-05 event.

STK3102

Introduce VMTS A/G systems and strike procedures. Emphasis on OFT versus VMTS and SNFO turnpoint procedures. Introduce RWR page usage and interpretation in conjunction with target acquisition event. Event shall be conducted with emphasis on A/G timeline, surface threats, target acquisition, target attack, and target egress procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK3101

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

STK3102

QOD, surface-air-threat indications and countertactics.

5. Block MIF

CTS REF	MANEUVER	STK3102
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
25	Section Target Attack	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
28	Turnpoint Procedures	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Consideration	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
STK41	T-45C	Pilot Strike Flight Training	10	12.0	1.2

1. Prerequisites

a. STK3102 prior to STK4101-2 (in order) and STK4103-5 (in order).

b. STK4102 and STK4105 prior to STK4106-10 (in order).

2. Syllabus Notes

a. The IUT will occupy the front cockpit and fly as Dash 2 to the maximum extent practical. After STK4105 the IUT may fly as Dash 1 with a qualified section lead in the flight or if the IUT is already a designated section lead.

b. The SI will assume the role of the SNFO.

c. STK4101 and STK4103-4 may be flown in either order to start this block. STK4102 and STK4105 may be flown in any order after the completion of STK4101 and STK4104 respectively.

d. Section IUT events may be combined with student or other IUT (IP and INFO) events with a similar profile, as required.

e. The following will be performed by the IUT on the indicated event:

STK4101

Execute medium-altitude route as a single aircraft. Introduce VMTS initialization procedures; VMTS air-to-ground setup, modes, and functionality.

STK4102

Execute medium-altitude route as a section. Practice VMTS initialization procedures; VMTS air-to-ground setup, modes, and functionality. Introduce section strike procedures.

STK4103-4

Execute low-altitude route as a single aircraft. Practice VMTS initialization procedures; VMTS air-to-ground setup, modes, and functionality. Introduce low-level procedures.

STK4105

Execute low-altitude route as a section. Practice VMTS initialization procedures; VMTS air-to-ground setup, modes, and functionality. Introduce section low-level procedures.

STK4106

Execute roll-in and low pop pattern as a section. A minimum of three roll-ins and three pop attacks are required for completion.

STK4107

Execute medium-altitude strike as a single. Introduce A/G timeline and threat reactions.

STK4108-9

Execute medium-altitude strike as a section. Introduce section target attacks and section threat defense.

STK4110

Execute low-altitude strike as a single. Emphasis on A/G timeline, surface threats, target acquisition, target attack, and egress procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK4101

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

STK4102

QOD and section approach procedures.

STK4103

QOD and low-level terrain clearance crew coordination procedures.

STK4104

QOD and VMC weather requirements.

STK4105  
 QOD and low-oil approach procedures.

STK4106  
 QOD and section emergency procedure considerations.

STK4107  
 QOD and any emergency procedure.

STK4108  
 QOD and "Z" diagrams.

STK4109  
 QOD and dive delivery abort parameters.

STK4110  
 QOD, surface-to-air threat indications, and countertactics.

5. Block MIF

CTS REF	MANEUVER	STK4110
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4110
19	Tactical Formation	4+
20	Low-Level Navigation/Procedures	4+
25	Section Target Attack	4+
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
28	Turnpoint Procedures	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Consideration	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
STK42	T-45C	Pilot Strike Check Flight	1	1.2	1.2

1. Prerequisites. STK1113 (Strike Stage Exam).

2. Syllabus Notes

a. The IUT will occupy the front cockpit.

b. The SI will assume the role of the SNFO and the IUT will assess performance during STK4290.

c. Event may be flown as a low-level or medium altitude strike. Event shall be conducted as a section and may be combined with SNFO or other IUT events with a similar profile, as required.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, common student errors, CTS review.

5. Block MIF

CTS REF	MANEUVER	STK4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4290
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
19	Tactical Formation	4+
20	Low-Level Navigation/Procedures	4+
25	Section Target Attack	4+
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
28	Turnpoint Procedures	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Consideration	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
STK32	OFT	NFO Strike Simulator Training	Execute/3	4.5	1.5
			Observe/4	8.0	2.0
			Instruct/4	8.0	2.0

1. Prerequisites

a. STK1110 (Carrier Operations) prior to STK3201-2 (in order).

b. STK1109 (Low Altitude Awareness Training) prior to STK3203-5 (in order).

c. STK1112 (A/G Targeting Procedures) prior to STK3206-11 (in order).

2. Syllabus Notes

a. The IUT will occupy the cockpit during execute events. All events will be instructed by a SI. A CSI will operate the OFT, but will not attend the brief or debrief.

b. The SI shall complete the IUT gradesheet for all events. For "instruct" events, the IUT shall complete the majority of the SNFO gradesheet, which shall then be edited as needed, submitted, and signed by the SI.

c. For "observe" and "instruct" events, the SI will grade each maneuver based on the IUT's ability to recognize student errors, perform adequate training and remediation and accurately grade IAW CTS.

d. An IUT may not instruct an XX90 event.

e. The IUT will complete events as follows:

IUT Event	IUT Role	Corresponding SNFO Event	Description
STK3201	Observe	STK3101	Carrier Operations
STK3202	Instruct	STK3101	Carrier Operations
STK3203	Observe	STK3102-6	Med-Altitude Route
STK3204	Execute	N/A	Med-Altitude Route
STK3205	Instruct	STK3102-6	Med-Altitude Route
STK3206	Execute	N/A	Weapons Pattern*

STK3207	Observe	STK3201-5	Med-Altitude STK
STK3208	Execute	N/A	Med-Altitude STK
STK3209	Instruct	STK3201-5	Med-Altitude STK
STK3210	Observe	STK3201-5	Low-Altitude STK
STK3211	Instruct	STK3201-5	Low-Altitude STK

\*PGM, roll-in, and low altitude pop attacks will be introduced on this event.

3. Special Syllabus Requirements. None.
4. Discuss Items. Review the Discuss Items for the associated SNFO event.

STK3204  
QOD, VMTS differences, display management, and section approach procedures.

STK3206  
QOD, "Z" diagrams, dive delivery abort parameters, and low-level terrain clearance crew coordination procedures.

STK3208  
QOD, section emergency procedure considerations, surface-to-air threat indications and countertactics.

5. Block MIF

CTS REF	MANEUVER	STK3211
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4

MIF continued on next page.

CTS REF	MANEUVER	STK3211
9	Communications	4+
10	Takeoff/Departure Procedure	4
11	Navigation Procedures	4+
18	Precautionary Approach(es)	4+
20	Low-Level Navigation/Procedures	4+
25	Section Target Attack	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
28	Turnpoint Procedures	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Considerations	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
STK33	OFT	NFO Strike Simulator Check	Instruct/1	2.0	2.0

1. Prerequisites

- a. STK3202.
- b. STK3211.

2. Syllabus Notes

a. Instruct any SNFO Strike Simulator event, except an XX90 event, and be observed by a qualified SI.

b. SI shall complete IUT gradesheet for the event. The IUT should complete the majority of the SNFO gradesheet, which shall then be edited, submitted and signed by the SI.

c. The SI will grade each maneuver based on the IUT's ability to recognize student errors, perform adequate training and remediation and accurately grade IAW CTS.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, CTS review.

5. Block MIF

CTS REF	MANEUVER	STK3390
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4
9	Communications	4+
10	Takeoff/Departure Procedure	4
11	Navigation Procedures	4+
20	Low-Level Navigation/Procedures	4+
25	Section Target Attack	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
28	Turnpoint Procedures	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Considerations	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
STK43	T-45C	NFO Strike Flight Training	3	3.6	1.2

1. Prerequisites

- a. STK3205 prior to STK4301-2 (in order).
- b. STK3390 prior to STK4303.

2. Syllabus Notes

a. IUT will occupy the aft cockpit of the lead aircraft to the max extent practical. May be flown as Dash 2 in conjunction with a student or IUT event of the same profile.

b. All flights in this block will be flown as a section.

c. The following will be performed by the IUT on the indicated event (STK4301 and STK4302 profiles may be flown in either order):

STK4301

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

STK4302

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

STK4303

Execute a medium-altitude strike with surface-to-air threats to a prebriefed TOT.

3. Special Syllabus Requirements. None.

4. Discuss Items

STK4301

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

STK4302

QOD and low-level weather requirements.

STK4303

QOD and section approach procedures.

5. Block MIF

CTS REF	MANEUVER	STK4303
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4+
20	Low-Level Navigation/Procedures	4+
25	Section Target Attack	4+
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
28	Turnpoint Procedures	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4303
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Considerations	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
STK44	T-45C	NFO Strike Check Flight	1	1.2	1.2

1. Prerequisite. STK1113 (Strike Stage Exam).

2. Syllabus Notes

a. IUT will occupy the aft cockpit of the lead aircraft to the max extent practical. May be flown as Dash 2 in conjunction with a student or IUT event of the same profile.

b. Execute a section low-level or medium altitude strike route.

c. Event may be flown with a dedicated wingman or combined with a Pilot IUT event with a similar profile as required.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, CTS review.

5. Block MIF

CTS REF	MANEUVER	STK4490
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+

MIF continued on next page.

CTS REF	MANEUVER	STK4490
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
20	Low-Level Navigation/Procedures	4+
25	Section Target Attack	4+
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
28	Turnpoint Procedures	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Considerations	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
CAS31	OFT	Pilot CAS Simulator Training	1	1.5	1.5

1. Prerequisite. CAS1102 (CAS Crew Coordination Stan).

2. Syllabus Notes

a. The IUT will occupy the OFT during CAS3101. A CSI will operate the OFT, but will not attend the brief or debrief.

b. Execute high-, medium-, and low-threat CAS in any order. Procedures shall include keyhole and CP/IP procedures, PGM, pop attacks, roll-in deliveries, nine-line procedures, and visual talk-on procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, CAS procedures.

5. Block MIF

CTS REF	MANEUVER	CAS3101
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
18	Precautionary Approach(es)	4
25	Section Target Attack	4+

MIF continued on next page.

CTS REF	MANEUVER	CAS3101
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
36	A/G Timeline Awareness	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

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

1. Prerequisite. CAS3101.

2. Syllabus Notes

a. The IUT will occupy the front cockpit and fly as a wingman during CAS4101-3.

b. These events will be flown with a minimum of three planes and may be combined with SNFO events.

c. The SI will assume the role of the SNFO and the IUT will assess performance during CAS4101-3.

d. CAS4101-3 may be executed by using any of the three CAS scenarios (High-threat, Medium/Low-threat, or keyhole procedures) interchangeably. IUT shall see each type of CAS over the three events.

3. Special Syllabus Requirements. None.

4. Discuss Items

CAS4101

QOD and JCAS procedures.

CAS4102

QOD and JCAS communication.

CAS4103

QOD and keyhole CAS procedures.

5. Block MIF

CTS REF	MANEUVER	CAS4103
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
25	Section Target Attack	4+
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
36	A/G Timeline Awareness	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

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

1. Prerequisite. CAS1103 (CAS Stage Exam).

2. Syllabus Notes

a. The IUT will occupy the front cockpit during CAS4290 and fly as a wingman.

b. These events will be flown with a minimum of three planes and may be combined with SNFO events.

c. The IUT will execute SNFO CAS procedures without assistance and the SI will evaluate.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, CAS procedures, CTS review.

5. Block MIF

CTS REF	MANEUVER	CAS4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
36	A/G Timeline Awareness	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
CAS32	OFT	NFO CAS	Execute/1	1.5	1.5
		Simulator Training	Observe/3	6.0	2.0
			Instruct/4	8.0	2.0

1. Prerequisite. CAS1102 (CAS Crew Coordination Stan).

2. Syllabus Notes

a. The IUT will occupy the cockpit during execute events. All events will be instructed by a SI. A CSI will operate the OFT, but will not attend the brief or debrief.

b. The IUT will complete events as follows:

IUT Event	IUT Role	Corresponding SNFO Event	Description
CAS3201	Execute	N/A	N/A
CAS3202	Observe	CAS3101	Medium-Threat CAS
CAS3203	Instruct	CAS3101	Medium-Threat CAS
CAS3204	Observe	CAS3102	High-Threat CAS
CAS3205	Instruct	CAS3102	High-Threat CAS
CAS3206	Observe	CAS3103	PGM CAS
CAS3207	Instruct	CAS3103	PGM CAS
CAS3208	Instruct	CAS3104	CAS Scenario

c. The SI shall complete the IUT gradesheet for all events. For "instruct" events, the IUT shall complete the majority of the SNFO gradesheet, which shall then be edited as needed, submitted, and signed by the SI.

d. For "observe" and "instruct" events, the SI will grade each maneuver based on the IUT's ability to recognize student errors, perform adequate training and remediation and accurately grade IAW CTS.

e. An IUT may not instruct an XX90 event.

3. Special Syllabus Requirements. None.

4. Discuss Items. Review the Discuss Items for the associated SNFO event.

CAS3201

QOD, JCAS procedures and communication, and keyhole CAS procedures.

5. Block MIF

CTS REF	MANEUVER	CAS3208
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4
9	Communications	4+
10	Takeoff/Departure Procedure	4
11	Navigation Procedures	4+
18	Precautionary Approach(es)	4+
26	Training Rules	4
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
CAS33	OFT	NFO CAS Simulator Check	Instruct/1	2.0	2.0

1. Prerequisite. CAS3208.

2. Syllabus Notes

a. Instruct any SNFO CAS simulator event, except an XX90; event will be evaluated by a qualified SI.

b. The SI shall complete the IUT gradesheet for this event. The IUT shall complete the majority of the SNFO gradesheet, which shall then be edited as needed, submitted, and signed by the SI.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, CTS review, common errors.

5. Block MIF

CTS REF	MANEUVER	CAS3390
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4
9	Communications	4+
10	Takeoff/Departure Procedure	4
11	Navigation Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	CAS3390
26	Training Rules	4
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
45	Tactical Situational Awareness	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
CAS43	T-45C	NFO CAS Flight Training	2	2.4	1.2

1. Prerequisite. CAS3390.
2. Syllabus Notes
  - a. IUT will occupy the aft cockpit.
  - b. These events will be flown with a minimum of three planes and may be combined with SNFO events.
  - c. CAS4301 - Execute medium-threat CAS and division procedures.
  - d. CAS4302 - Execute high-threat CAS and division procedures.
3. Special Syllabus Requirements. None.
4. Discuss Items. QOD, CAS procedures.
5. Block MIF

CTS REF	MANEUVER	CAS4302
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+

MIF continued on next page.

CTS REF	MANEUVER	CAS4302
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/ Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
CAS44	T-45C	NFO CAS Check Flight	1	1.2	1.2

1. Prerequisite. CAS1103 (CAS Stage Exam).

2. Syllabus Notes

a. IUT will occupy the aft cockpit.

b. These events will be flown with a minimum of three planes and may be combined with SNFO events.

c. Execute variable-threat CAS with PGM and division procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, CTS review.

5. Block MIF

CTS REF	MANEUVER	CAS4490
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+

MIF continued on next page.

CTS REF	MANEUVER	CAS4490
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
26	Training Rules	4+
27	Weapons Patterns (30-, 20-, 10-degree bombs, pop)	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
32	Checkpoint Utilization and Chart/ Terrain Correlation	4+
33	Course Analysis/Corrections	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
38	Formation Coordination, Communication, and Hand Signals	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/ Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
BFM41	T-45C	Pilot BFM Flight Training	6	7.2	1.2

1. Prerequisite. NA3301.

2. Syllabus Notes

a. The IUT will occupy the front cockpit and fly as Dash 2 during BFM4101-05. BFM4104-5 may be flown as Dash 1, with a designated section lead in the flight, or if the IUT is a designated section lead.

b. The IUT will occupy the front cockpit and lead BFM4106.

c. The SI Pilot will assume the role of the SNFO and perform all student functions during BFM4101-3 and BFM4106.

d. The SI Pilot will observe IUT BFM maneuvers during BFM4104 and BFM4105.

3. Special Syllabus Requirements. None.

4. Discuss Items

BFM4101

QOD, HUD air-to-air mode setup, unusual attitude recovery, recovery procedures, departure recovery, spin recovery procedures, and training rules.

BFM4102

QOD, deck awareness, departure recovery procedures and training rules.

BFM4103

QOD, BFM concepts and definitions, departure recovery indications/procedures, training rules, deck awareness, and KIO procedures.

BFM4104

QOD, BFM concepts and definitions, deck transition timing, deck transition mechanics, on-deck maneuvering, and training rules.

BFM4105

QOD, BFM concepts and definitions and training rules.

BFM4106

QOD, concepts and definitions, training rules, high-aspect BFM, one-circle engagement, two-circle engagement, energy management, controlling the merge, lost sight procedures, gameplan development, unique merges, and maintaining/regaining sight.

5. Block MIF

CTS REF	MANEUVER	BFM4106
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
19	Tactical Formation	4+
21	BFM - General	4+

MIF continued on next page.

CTS REF	MANEUVER	BFM4106
22	BFM - Offensive	4+
23	BFM - Defensive	4+
24	BFM - Neutral/High Aspect	4+
26	Training Rules	4+
31	Directive/Descriptive Comm	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/ Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
BFM42	T-45C	Pilot BFM Check Flight	1	1.2	1.2

1. Prerequisite. BFM1105 (BFM Stage Exam).
2. Syllabus Notes
  - a. The IUT will occupy the front cockpit and lead BFM4290.
  - b. The SI Pilot will assume the role of the SNFO and perform all student functions. The IUT will assess performance during BFM4290.
3. Special Syllabus Requirements. None.
4. Discuss Items. QOD, BFM concepts and definitions and training rules.

5. Block MIF

CTS REF	MANEUVER	BFM4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
19	Tactical Formation	4+
21	BFM - General	4+
22	BFM - Offensive	4+
23	BFM - Defensive	4+
24	BFM - Neutral/High Aspect	4+
26	Training Rules	4+
31	Directive/Descriptive Comm	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI31	OFT	Pilot AWI Simulator Training	3	4.5	1.5

1. Prerequisites

a. AWI1110 (Intercept Progression IV) prior to AWI3101-2 (in order).

b. AWI1111 (Introduction to SRA) prior to AWI3103.

2. Syllabus Notes

a. The IUT will occupy the cockpit and will utilize stick, throttle, and RHC HOTAS during these events. All events will be instructed by a SI. A CSI will operate the OFT, but will not attend the brief or debrief.

b. AWI3101 - Introduce air-to-air radar modes and functionality. Execute stern conversion intercepts.

c. AWI3102 - Execute 1 V 1 intercepts.

d. AWI3103 - Execute section radar attack intercepts against a single bandit group (2 V 2).

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI3101

QOD, stern conversion timeline, and target aspect control.

AWI3102

QOD and VID procedures.

AWI3103

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

5. Block MIF

CTS REF	MANEUVER	AWI3103
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
31	Directive/Descriptive Comm	4+
34	Speed Control	4+
37	RWR Recognition/Consideration	4
39	Target Aspect Awareness and Control	4+
40	Target Altitude Recognition/Correction	4+
41	A/A Radar Operation	4+
42	A/A Timeline Awareness	4+
43	Counterturn Fundamentals	4+
44	Merge/SRM Employment	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI41	T-45C	Pilot AWI Flight Training	11	13.2	1.2

1. Prerequisites

- a. AWI3102 prior to AWI4101-4 (in order).
- b. AWI3103 prior to AWI4105-6 (in order).
- c. AWI1112 (Introduction to 2 V X) prior to AWI4107-9 (in order).
- d. AWI1113 (Self-Escort Strike Route) prior to AWI4110-11 (in order).

2. Syllabus Notes

- a. All events should be flown in section but lvl1 events may be flown as a single ship utilizing virtual bandits as required.
- b. The IUT will occupy the front cockpit and fly as Dash 2 to the maximum extent practical. The IUT may fly as Dash 1 with a designated section lead in the flight or if the IUT is a designated lead. Section IUT events may be combined with student or NFO IUT events with a similar profile as required.
- c. The SI will assume the role of the SNFO on at least 50 percent of the IUT intercepts.

AWI4101-2

Introduce VMTS air-to-air setup, modes, and functionality, instructor page utilization and execution. Execute stern conversion intercepts.

AWI4103-4

Execute VMTS air-to-air setup. Utilize VMTS modes and functionality. Execute 1 V 1 intercepts.

AWI4105-6

Execute section radar attack intercepts against a single bandit group (2 V 2).

AWI4107-9

Execute section radar attack intercepts against multiple bandit groups (2 V X).

AWI4110-11

Execute section self-escort strike to include strike route procedures and section radar attack intercepts against multiple bandit groups (2 V X).

3. Special Syllabus Requirements. None.

4. Discuss Items

AWI4101

QOD and stern conversion timeline.

AWI4102

QOD, target aspect control, and VID procedures.

AWI4103

QOD, MRM employment, and SRM employment.

AWI4104

QOD.

AWI4105

QOD, merge tally crew coordination communications, post-merge radar mechanics.

AWI4106

QOD and 1 V 1 timeline.

AWI4107

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

AWI4108

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

AWI4109

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

AWI4110-11

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

5. Block MIF

CTS REF	MANEUVER	AWI4111
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4+
19	Tactical Formation	4+
26	Training Rules	4+
28	Turnpoint Procedures	4
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4111
37	RWR Recognition/Consideration	4+
38	Formation Coordination, Communication, and Hand Signals	4+
39	Target Aspect Awareness and Control	4+
40	Target Altitude Recognition/ Correction	4+
41	A/A Radar Operation	4+
42	A/A Timeline Awareness	4+
43	Counterturn Fundamentals	4+
44	Merge/SRM Employment	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/ Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI42	T-45C	Pilot AWI Check Flight	1	1.2	1.2

1. Prerequisite. AWI1114 (AWI Stage Exam).

2. Syllabus Notes

a. The IUT will occupy the front cockpit and fly as Dash 2 to the maximum extent practical. The IUT may fly as Dash 1 with a designated section lead in the flight or if the IUT is a designated lead. Section IUT events may be combined with student or NFO IUT events with a similar profile as required.

b. The SI will assume the role of the SNFO in the execution of this event.

c. Execute section self-escort strike to include strike route procedures and section radar attack intercepts against multiple bandit groups (2 V X).

3. Special Syllabus Requirements. None.

4. Discuss Items. QOD, CTS review.

5. Block MIF

CTS REF	MANEUVER	AWI4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
19	Tactical Formation	4+
25	Section Target Attack	4+
26	Training Rules	4+
28	Turnpoint Procedures	4
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Consideration	4+
38	Formation Coordination, Communication, and Hand Signals	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4290
39	Target Aspect Awareness and Control	4+
40	Target Altitude Recognition/Correction	4+
41	A/A Radar Operation	4+
42	A/A Timeline Awareness	4+
43	Counterturn Fundamentals	4+
44	Merge/SRM Employment	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI32	OFT	NFO AWI Simulator Training	Execute/5	7.5	1.5
			Observe/5	10.0	2.0
			Instruct/5	10.0	2.0

1. Prerequisites

- a. AWI1108 (AWI Crew Coordination Stan) prior to AWI3201-15 (in order).
- b. AWI1110 (Intercept Progression IV) prior to AWI3204.
- c. AWI1111 (Introduction to Section Radar Attacks (SRA)) prior to AWI3207.
- d. AWI1112 (Introduction to 2 V X) prior to AWI3210.
- e. AWI1113 (Self-Escort Strike Route) prior to AWI3213.

2. Syllabus Notes

a. The IUT will occupy the cockpit and will utilize stick, throttle, and RHC HOTAS during Execute events. All events will be instructed by a SI. A CSI will operate the OFT, but will not attend the brief or debrief.

b. The IUT will complete events as follows:

IUT Event	IUT Role	Corresponding SNFO Event	Description
AWI3201	Execute	N/A	See following notes.
AWI3202	Observe	AWI3102-4	Stern Conversion intercepts
AWI3203	Instruct	AWI3102-4	Stern Conversion intercepts
AWI3204	Execute	N/A	See following notes.
AWI3205	Observe	AWI3105-7	1 V 1 Intercepts
AWI3206	Instruct	AWI3105-7	1 V 1 Intercepts
AWI3207	Execute	N/A	See following notes.
AWI3208	Observe	AWI3201-3	SRA
AWI3209	Instruct	AWI3201-3	SRA
AWI3210	Execute	N/A	See following notes.
AWI3211	Observe	AWI3204-6	2 V X

AWI3212	Instruct	AWI3204-6	2 V X
AWI3213	Execute	N/A	See following notes.
AWI3214	Observe	AWI3301 or AWI3302	Self-Escort Strike
AWI3215	Instruct	AWI3301 or AWI3302	Self-Escort Strike

c. AWI3201 - Introduce air-to-air radar modes and functionality. Execute stern conversion intercepts.

d. AWI3202 - Observe forward quarter-to-stern conversion intercepts sim.

e. AWI3203 - Instruct forward quarter-to-stern conversion intercepts sim.

f. AWI3204 - Execute 1 V 1 intercepts.

g. AWI3205 - Observe forward quarter to high-aspect merge 1 V 1 intercepts sim.

h. AWI3206 - Instruct forward quarter to high-aspect merge 1 V 1 intercepts sim.

i. AWI3207 - Execute section radar attack intercepts against a single bandit group (2 V 2).

j. AWI3208 - Observe section A/A tactics (2 V 2) sim.

k. AWI3209 - Instruct section A/A tactics (2 V 2) sim.

l. AWI3210 - Execute section radar attack intercepts against multiple bandit groups (2 V X).

m. AWI3211 - Observe section A/A tactics (2 V X) sim.

n. AWI3212 - Instruct section A/A tactics (2 V X) sim.

o. AWI3213 - Execute section self-escort strike to include strike route procedures and section radar attack intercepts against multiple bandit groups (2 V X).

p. AWI3214 - Observe self-escort strike sim.

q. AWI3215 - Instruct self-escort strike sim.

r. The SI shall complete IUT gradesheet for all events. For "instruct" events, the IUT shall complete the majority of the SNFO gradesheet, which shall then be edited as needed, submitted, and signed by the SI.

s. For "observe" and "instruct" events, the SI will grade each maneuver based on the IUT's ability to recognize student errors, perform adequate training and remediation and accurately grade IAW CTS.

t. An IUT may not instruct an XX90 event.

3. Special Syllabus Requirements. None.

4. Discuss Items. Review the Discuss Items for the associated SNFO event.

AWI3201

QOD, air-to-air radar modes and switchology, stern conversion procedures.

AWI3204

QOD, 1v1 timeline, and high-aspect merge mechanics.

AWI3207

QOD, 2v2 timeline, section sort gameplan, and section merge mechanics.

AWI3213

QOD, SES gameplan, A/G timeline, target attack, and multiple bandit gameplan.

5. Block MIF

CTS REF	MANEUVER	AWI3215
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4
9	Communications	4+
10	Takeoff/Departure Procedure	4
11	Navigation Procedures	4+
14	Full-Stop Landing	4
18	Precautionary Approach(es)	4+
25	Section Target Attack	4+
26	Training Rules	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Considerations	4+
38	Formation Coordination, Communication, and Hand Signals	4+
39	Target Aspect Awareness and Control	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI3215
40	Target Altitude Recognition/ Correction	4+
41	A/A Radar Operation	4+
42	A/A Timeline Awareness	4+
43	Counterturn Fundamentals	4+
44	Merge/SRM Employment	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/ Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI33	OFT	NFO AWI Simulator Check	Instruct/1	2.0	2.0

1. Prerequisite. AWI3215.

2. Syllabus Notes

a. Instruct any SNFO AWI Simulator event, except XX90; event evaluated by qualified SI.

b. The SI shall complete the IUT gradesheet for all events. For "instruct" events, the IUT shall complete the majority of the SNFO gradesheet, which shall then be edited as needed, submitted, and signed by the SI.

c. The SI will grade each maneuver based on the IUT's ability to recognize student errors, perform adequate training and remediation and accurately grade IAW CTS.

3. Special Syllabus Requirements. None.

4. Discuss Items. Review the Discuss Items for the associated SNFO event.

5. Block MIF

CTS REF	MANEUVER	AWI3390
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI3390
8	Ground Operations	4
9	Communications	4+
10	Takeoff/Departure Procedure	4
11	Navigation Procedures	4+
14	Full-Stop Landing	4
18	Precautionary Approach(es)	4
25	Section Target Attack	4
26	Training Rules	4+
29	A/G Radar Operation and Interpretation	4
30	Timing	4
31	Directive/Descriptive Comm	4+
34	Speed Control	4+
35	Target Acquisition	4
36	A/G Timeline Awareness	4
37	RWR Recognition/Considerations	4+
38	Formation Coordination, Communication, and Hand Signals	4+
39	Target Aspect Awareness and Control	4+
40	Target Altitude Recognition/Correction	4+
41	A/A Radar Operation	4+
42	A/A Timeline Awareness	4+
43	Counterturn Fundamentals	4
44	Merge/SRM Employment	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

Blk #	Media	Title	Events	Hrs	H/X
AWI43	T-45C	NFO AWI Flight Training	3	3.6	1.2

1. Prerequisite. AWI3390.

2. Syllabus Notes

a. The IUT will occupy the aft cockpit. Section IUT events may be flown with a dedicated wingman, or combined with SNFO or Pilot IUT events with a similar profile, as required.

b. All events should be flown in section but 1 V 1 event may be flown as a single ship utilizing virtual bandits as required.

c. AWI4301 - Execute 1 V 1 intercepts. Introduce VMTS operation and A/A radar.

d. AWI4302 - Execute SRA intercepts versus a single group.

e. AWI4303 - Execute 2 V X intercepts versus multiple groups.

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	AWI4303
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4303
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4+
25	Section Target Attack	4
26	Training Rules	4+
29	A/G Radar Operation and Interpretation	4
30	Timing	4
31	Directive/Descriptive Comm	4+
34	Speed Control	4+
35	Target Acquisition	4
36	A/G Timeline Awareness	4
37	RWR Recognition/Considerations	4+
38	Formation Coordination, Communication, and Hand Signals	4+
39	Target Aspect Awareness and Control	4+
40	Target Altitude Recognition/Correction	4+
41	A/A Radar Operation	4+
42	A/A Timeline Awareness	4+
43	Counterturn Fundamentals	4+
44	Merge/SRM Employment	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

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

1. Prerequisite. AWI1114 (AWI Stage Exam).

2. Syllabus Notes

a. The IUT will occupy the aft cockpit and lead the event. Event may be flown with a dedicated wingman, or combined with a Pilot IUT event with a similar profile, as required.

b. Execute section self-escort strike to include strike route procedures and section radar attack intercepts against multiple bandit groups (2 V X).

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	AWI4490
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	4+
5	Mission Planning/Briefing/Debriefing	4+
6	CRM/Crew Coordination	4+
7	Flight Admin	4+
8	Ground Operations	4+
9	Communications	4+

MIF continued on next page.

CTS REF	MANEUVER	AWI4490
10	Takeoff/Departure Procedure	4+
11	Navigation Procedures	4+
14	Full-Stop Landing	4+
18	Precautionary Approach(es)	4
25	Section Target Attack	4+
26	Training Rules	4+
29	A/G Radar Operation and Interpretation	4+
30	Timing	4+
31	Directive/Descriptive Comm	4+
34	Speed Control	4+
35	Target Acquisition	4+
36	A/G Timeline Awareness	4+
37	RWR Recognition/Considerations	4+
38	Formation Coordination, Communication, and Hand Signals	4+
39	Target Aspect Awareness and Control	4+
40	Target Altitude Recognition/Correction	4+
41	A/A Radar Operation	4+
42	A/A Timeline Awareness	4+
43	Counterturn Fundamentals	4
44	Merge/SRM Employment	4+
45	Tactical Situational Awareness	4+
46	Bandit Maneuver Recognition/Reaction	4+
47	Flight Instruction/Detect and Correct Student Errors	4+

## Chapter IX

### Course Training Standards (CTS)

1. Purpose. These standards outline the tasks and proficiency required of IUTs in Advanced Strike/Fighter UMFO IUT training.
2. IUT Duties and Responsibilities
  - a. Plan or manage the overall mission as appropriate.
  - b. Ensure proper aircraft preflight inspection is completed and aircraft is properly equipped for the assigned mission.
  - c. Operate the aircraft or aircraft systems, as applicable, to accomplish the mission using sound judgment and airmanship.
3. General Standards
  - a. Achieve training standards to be qualified as a T-45C Instructor.
  - b. Unless otherwise specified, use **Basic Airwork/Basic Airwork Recognition (BAW/BAR)** standards for all items with altitude, airspeed, or heading parameters.
  - c. "Standard" equates to **Good** (G/4).
  - d. Momentary deviations outside CTS that do not compromise flight safety are acceptable if subsequent corrections are timely.
  - e. Procedural knowledge and application must comply with applicable directives and allow efficient mission accomplishment. If individual tasks require pre-mission planning, the standards from **Mission Planning** apply.
4. Execution. The MIF regulates IUT progression to meet required standards prior to phase completion. SIs shall evaluate IUT performance against standards.

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

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

6. Course Training Standards

BEHAVIOR STATEMENT	STANDARDS
1. General Knowledge/Procedures	
<ul style="list-style-type: none"> <li>● Demonstrate knowledge of aircraft systems, procedures, and associated directives and instructions.</li> </ul>	<ul style="list-style-type: none"> <li>● Demonstrates a thorough knowledge and understanding of FTI procedures for all critical and optional maneuvers in block.</li> <li>● Demonstrates a thorough understanding of aircraft systems capabilities, aircraft directives, and local procedures.</li> <li>● Knowledgeable of local working area WRT boundaries, altitudes, and significant landmarks without reference to in-flight guide or charts.</li> <li>● Demonstrates ability to apply procedures from all applicable source guidance.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
2. Emergency Procedures	
<ul style="list-style-type: none"> <li>● Recognize system malfunction and/or emergency situation.</li>   <li>● Perform NATOPS immediate action emergency procedures.</li>   <li>● Perform NATOPS non-critical action emergency procedures to include: <ul style="list-style-type: none"> <li>▶ Analysis of hypothetical aircraft malfunctions.</li> <li>▶ Simulated precautionary approaches and actual no-flap landings performed in the aircraft.</li> <li>▶ Life support training, survival, and physiological training IAW NATOPS.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Expeditiously analyzes situation and systems and recognizes malfunction or emergency situation.</li> <li>● Maintains control of aircraft while responding appropriately to malfunction/emergency.</li> <li>● Maneuvers aircraft smartly to prevent degradation of situation with respect to external factors such as weather, traffic, etc.</li> <li>● Verbally states emergency NATOPS immediate action items in sequence, from memory, without error.</li> <li>● Performs proper steps of emergency NATOPS immediate action items in sequence, from memory, without error.</li> <li>● Performs proper steps to a satisfactory conclusion, effectively using NATOPS PCL to troubleshoot or complete NATOPS procedures.</li> <li>● Incorporates effective CRM to secure additional assistance where applicable.</li> <li>● Maintains situational awareness WRT local area and airfields while troubleshooting systems/ responding appropriately to situation.</li> <li>● Successfully recovers aircraft to suitable airfield or recognizes extremis situation and initiates ejection within safe parameters.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
3. Headwork/Situational Awareness	
<ul style="list-style-type: none"> <li>● Assess self and aircraft in relation to the dynamic environment of flight, threats, and mission forecast; then execute tasks based on this assessment.</li>   <li>● Utilize CRM.</li> </ul>	<ul style="list-style-type: none"> <li>● Understands instructions, demonstrations, and explanations.</li> <li>● Remains alert and spatially oriented.</li> <li>● Correctly interprets in-flight events and applies strategies to proactively address them.</li> <li>● Recognizes and avoids channelized attention.</li> <li>● Effectively utilizes seven key skills of CRM throughout all portions of flight training.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
4. Basic Airwork (BAW)/Basic Airwork Recognition (BAR)	
<ul style="list-style-type: none"> <li>● Perform general aircraft control and composite/instrument cross-check as appropriate.</li>   <li>● Perform general aircraft control and composite/instrument cross-check in a partial panel situation.</li>   <li>● Partial Panel.</li> </ul>	<ul style="list-style-type: none"> <li>● Maintains smooth positive aircraft control at all times.</li> <li>● Ensures momentary deviations, ±5 seconds, do not exceed:           <ul style="list-style-type: none"> <li>▶ Airspeed: ±5 percent.</li> <li>▶ Altitude: ±100 feet.</li> <li>▶ Heading: ±5 degrees.</li> <li>▶ Course: ±1 dot/½ scale.</li> <li>▶ AOA: ±1 unit.</li> </ul> </li> <li>● Avoids hazards (ground obstructions, terrain, other aircraft, and severe weather).</li> <li>● Smoothly transitions to/from partial panel instrument scan as situation dictates.</li> <li>● Maintains course, altitude, and glideslope with minor deviations and appropriate error corrections for entirety of approach.</li> <li>● Deviations do not jeopardize safety of flight.</li> <li>● Maintains positive control of the aircraft at all times with a smooth transition from full panel to partial panel scan.</li> <li>● Ensures momentary deviations ±5 seconds, do not exceed:           <ul style="list-style-type: none"> <li>▶ Airspeed: ±15 knots.</li> <li>▶ Altitude: ±150 feet.</li> <li>▶ Heading: ±10 degrees.</li> <li>▶ Course: ±2 NM.</li> <li>▶ AOA: ±1 unit.</li> </ul> </li> <li>● Deviations do not jeopardize safety of flight.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
5. Mission Planning/Briefing/Debriefing	
<ul style="list-style-type: none"> <li>● Perform appropriate mission planning to include route selection, weather, NOTAMS, fuel optimization, computing takeoff, climb, enroute, descent, approach, and landing data: planning mission profile and alternate course of action where appropriate.</li> <li>● Attend/conduct pre- and post-mission briefing/debriefing for simulator or aircraft event.</li> </ul>	<ul style="list-style-type: none"> <li>● Plans mission in a timely manner to meet training objectives, complete all applicable Navy and command forms correctly, and complies with all directives.</li> <li>● Applies OPNAV3710 filing and approach criterion to planning and execution of flight.</li> <li>● Aware of alternatives available, if flight cannot be completed as planned.</li> <li>● Briefs IAW NATOPS and command directives.</li> <li>● Asks questions, if necessary, to fully understand the mission overview and mission objectives, including ORM.</li> <li>● Clearly presents all information requested during briefing/debriefing.</li> <li>● Understands all CRM objectives and expectations for the mission.</li> <li>● Understands contingencies and plans to contend with them.</li> <li>● Effectively compares mission results with briefed objectives.</li> <li>● Displays professional attitude and ability to accept instruction.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
6. Crew Resource Management (CRM)/Crew Coordination	
<ul style="list-style-type: none"> <li>● Use available crew and cockpit resources to minimize workload and enhance situational awareness.</li> <li>● Effective communication of mission essential information, and interaction between crew members.</li> </ul>	<ul style="list-style-type: none"> <li>● Effectively utilizes seven key skills of CRM throughout all portions of flight training.</li> <li>● Delegates cockpit tasks as appropriate.</li> <li>● Uses appropriate interaction between crewmembers with regard to normal aircraft procedures.</li> <li>● Uses SA building communication.</li> </ul>
7. Flight Admin	
<ul style="list-style-type: none"> <li>● Perform in-flight planning and administrative functions, to include: <ul style="list-style-type: none"> <li>▶ General.</li> <li>▶ Local course rules.</li> <li>▶ Area management.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Adjusts mission profile to comply with time/fuel limitations, as well as weather and area limits.</li> <li>● Complies with established routes, altitudes, and procedures for operating in local airspace environment.</li> <li>● Uses assigned airspace in an efficient manner with minimum delay between maneuvers.</li> <li>● Remains within area boundaries with or without ground references.</li> </ul>





BEHAVIOR STATEMENT	STANDARDS
10. Takeoff/Departure Procedure	
<ul style="list-style-type: none"> <li>● Perform individual takeoff to include:               <ul style="list-style-type: none"> <li>▶ Run-up check.</li> <li>▶ Line speed check.</li> <li>▶ Retracting gear/flaps.</li> <li>▶ Accelerating to climb airspeed.</li> </ul> </li>   <li>● Transition to instruments as required.</li>   <li>● Departure Procedures: Safely maneuver aircraft out of airfield environment.               <ul style="list-style-type: none"> <li>▶ IFR.</li> <li>▶ VFR.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Maintains position during engine run-up for static takeoff.</li> <li>● Maintains runway centerline ±5 feet during takeoff.</li> <li>● Rotates within -0 to +10 knots of computed rotation speed and maintains desired pitch attitude ±2 degrees.</li> <li>● Establishes and maintains proper takeoff attitude at appropriate airspeed for existing conditions.</li> <li>● Initiates gear and flap retraction when safely airborne and ensures fully retracted prior to exceeding 200 KIAS.</li> <li>● Properly transitions to flight instruments as required for actual or simulated weather conditions.</li> <li>● Performs departure as published or directed.</li> <li>● Complies with all restrictions.</li> <li>● Achieves and maintains target climb schedule airspeeds ±10 KIAS or 0.02 Mach at target altitudes ±1,000 feet.</li> <li>● Initiates level-off at desired altitude using the 10-percent rule.</li> <li>● Promptly establishes cruise airspeed.</li> </ul>



BEHAVIOR STATEMENT	STANDARDS
11. Navigation Procedures (continued)	
	<ul style="list-style-type: none"> <li>● Establishes valid arc/radial intercepts.</li> <li>● Maintains arcs <math>\pm 0.3</math> NM.</li> </ul>
12. Holding	
<ul style="list-style-type: none"> <li>● Perform high- and low-altitude VOR/TACAN holding as described by controller or IAW FLIP document.</li> </ul>	<ul style="list-style-type: none"> <li>● Performs published/standard entry procedures and maintains designated pattern IAW Instrument NATOPS and FTI.</li> <li>● Complies with holding pattern limits: <ul style="list-style-type: none"> <li>▶ Uses proper voice procedures.</li> <li>▶ Maintains holding airspeed <math>\pm 5</math> KIAS.</li> </ul> </li> </ul>
13. Approach	
<ul style="list-style-type: none"> <li>● Perform precision approaches as published in FLIP document or local procedures, to include: <ul style="list-style-type: none"> <li>▶ ILS approach.</li> <li>▶ PAR approach. <ul style="list-style-type: none"> <li>▪ Normal PAR.</li> <li>▪ No-Gyro PAR.</li> <li>▪ Partial panel.</li> </ul> </li> </ul> </li> <li>● Perform non-precision approaches as published in FLIP document or local procedures, to include:</li> </ul>	<ul style="list-style-type: none"> <li>● Complies with published approach and NATOPS procedures.</li> <li>● Maintains target AOA or final approach airspeed <math>\pm 1</math> unit AOA or <math>\pm 5</math> KIAS during final descent.</li> <li>● Arrives at DA in position to maintain a normal visual glide path to the runway and land safely.</li> <li>● Maintains CDI and GSI within 1 dot/<math>\frac{1}{2}</math> scale deflection.</li> <li>● Maintains <math>\pm 3</math> degrees of assigned heading (except gyro out) and does not achieve multiple "well above" or "well below" glide path calls.</li> <li>● Complies with published approach and NATOPS procedures.</li> <li>● Arrives at and maintains MDA - 0/+100 feet at or prior to VDP.</li> <li>● Arrives in position to maintain a normal visual glide path to the runway and land safely.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
13. Approach (continued)	
<ul style="list-style-type: none"> <li>▶ Localizer approach or BC localizer.</li> <li>▶ TACAN or VOR/DME approach.</li> <li>▶ ASR approach.</li>   <li>● Perform a circling approach and maneuver as published in FLIP document or local procedures.</li> <li>● Perform a missed approach and partial panel missed approach.</li> </ul>	<ul style="list-style-type: none"> <li>● Begins timing within 5 seconds, if appropriate.</li> <li>● Maintains target AOA or final approach airspeed ±1 unit AOA or ±5 KIAS after FAF.</li> <li>● Maintains CDI within 1 dot/½ scale deflection.</li> <li>● Maintains target AOA or final approach airspeed ±1 unit AOA or ±5 KIAS after FAF.</li> <li>● Maintains final approach course ±1 dot/½ scale/5 degrees.</li> <li>● Maintains target AOA or final approach airspeed ±1 unit AOA or ±5 KIAS during and after descent to MDA.</li> <li>● Maintains ±3 degrees of assigned heading (except No-Gyro).</li> <li>● Does not exceed 1 call of "well left/right of course" and complies with controller's instructions in a timely manner.</li> <li>● Observes "minute to live" rule during descent to MDA.</li> <li>● Accomplishes IAW Instrument FTI and Instrument NATOPS.</li> <li>● Prior to circling maneuver, maintains course and altitude IAW non-precision approach standards.</li> <li>● During maneuver, maintains circling MDA -0 feet, and maintains visual reference to the airport until acquiring visual glide path.</li> <li>● Positions aircraft for a safe landing.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
13. Approach (continued)	
<ul style="list-style-type: none"> <li>● Perform climb out for additional approaches.</li> </ul>	<ul style="list-style-type: none"> <li>● Complies with FLIP document and ATC instructions for missed approach or climb out instructions.</li> <li>● Completes IAW Instrument FTI and Instrument NATOPS.</li> </ul>
14. Landing	
<ul style="list-style-type: none"> <li>● Pattern entry to the start.</li> <li>● Perform entry into visual landing pattern to include:               <ul style="list-style-type: none"> <li>▶ Visual straight-in.</li> <li>▶ Downwind entry.</li> <li>▶ Overhead pattern (Left-hand FCLP-type).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Configures in adequate time to perform landing and AOA/airspeed checks prior to glideslope acquisition and/or final descent.</li> <li>● Makes timely corrections for glideslope, AOA and lineup deviations.</li> <li>● Applies crosswind corrections adequately to maintain centerline both on final and during/after touchdown.</li> <li>● Configures in adequate time to perform landing and AOA/airspeed checks prior to 180 position.</li> <li>● Applies crosswind corrections adequately to maintain centerline both on final and during/after touchdown.</li> <li>● Maintains pattern altitude ±50 feet on downwind.</li> <li>● Makes appropriate crosswind corrections on downwind to arrive at proper abeam distance.</li> <li>● Initiates approach turn with appropriate extension off of abeam to achieve proper groove length (15-18 sec).</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
14. Landing (continued)	
<ul style="list-style-type: none"> <li>● Start to touch down.</li> <li>● Perform touch-and-go or full-stop landing to include the following: <ul style="list-style-type: none"> <li>▶ Touch-and-go. <ul style="list-style-type: none"> <li>▪ Full-flap.</li> <li>▪ Half-flap.</li> <li>▪ No-flap.</li> <li>▪ Crosswind.</li> </ul> </li> </ul> </li> <li>● Perform waveoff procedures.</li> </ul>	<ul style="list-style-type: none"> <li>● Manages energy state and AOB while making timely corrections to deviations throughout approach turn to arrive at the start within ±5 degrees of center line, on-speed, with appropriate VSI, and with the ball centered to mid-high on the lens.</li> <li>● References optical landing system, if available, to achieve safe approach glideslope.</li> <li>● Touches down at proper pitch attitude, maintains proper ground track, uses crosswind controls as required.</li> <li>● Touches down in prescribed landing zone IAW NATOPS and local procedures.</li> <li>● Touches down with no greater than -600 fpm rate of descent for flap configurations other than full.</li> <li>● Immediately executes waveoff procedures when required or directed, maintaining landing attitude/AOA until safe climb established.</li> <li>● Maintains safe lateral separation from interval aircraft in VFR pattern.</li> </ul>



BEHAVIOR STATEMENT	STANDARDS
15. Stall/OCF Recognition and Recovery	
<ul style="list-style-type: none"> <li>● Perform approaches to stall, full stalls, and recoveries IAW FTI, to include the following:               <ul style="list-style-type: none"> <li>▶ Power-off stall.</li> <li>▶ Break turn stall.</li> <li>▶ Landing attitude maneuver.</li> <li>▶ Landing attitude stall.</li> <li>▶ Approach turn stall.</li> <li>▶ Accelerated stall.</li> </ul> </li>   <li>● Performs OCF maneuvers IAW FTI, to include:               <ul style="list-style-type: none"> <li>▶ High-AOA/deep-stall investigation.</li> <li>▶ 70-/90-/110-degree departures.</li> <li>▶ Lateral stick adverse yaw departure.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Effectively trims aircraft for level flight/on-speed prior to commencing maneuver.</li> <li>● Maintains altitude <math>\pm 100</math> feet and VSI <math>0 \pm 200</math> fpm prior to stall.</li> <li>● Recognizes approach to stall indications and recovers IAW NATOPS and FTI procedures, with minimum loss of altitude (recovery complete when two positive rates of climb established).</li> <li>● Recognizes full stall indications and recovers IAW NATOPS and FTI procedures with minimum loss of altitude (recovery complete when two positive rates of climb established).</li> <li>● Recognizes secondary stall, if entered, and recovers properly.</li> <li>● Does not exceed gear/flap limitation airspeeds.</li> <li>● Demonstrates in-depth knowledge of NATOPS OCF procedures and prohibited maneuvers.</li> <li>● Correctly enters prescribed syllabus maneuvers per OCF FTI.</li> <li>● Correctly applies recovery control inputs and procedures per OCF FTI.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
16. Aerobatics	
<ul style="list-style-type: none"> <li>● Perform instrument aerobatic maneuvers IAW Instrument FTI, to include: <ul style="list-style-type: none"> <li>▶ Aileron roll.</li> <li>▶ Wingover.</li> <li>▶ Barrel roll.</li> <li>▶ Loop.</li> <li>▶ One-half Cuban eight.</li> <li>▶ Immelmann.</li> <li>▶ Split-S.</li> </ul> </li> <li>● Perform maneuvers listed above in visual environment IAW Familiarization FTI. In addition, perform squirrel cage.</li> <li>● Min radius turn.</li> </ul>	<ul style="list-style-type: none"> <li>● Verbalizes and attains target entry parameters (<math>\pm 5</math> knots, <math>\pm 100</math> feet) prior to beginning the maneuver.</li> <li>● Flies in a smooth, positive, and coordinated manner.</li> <li>● Achieves and maintains target g load <math>\pm 1</math> g and AOA <math>\pm 2</math> units during overhead maneuvers.</li> <li>● Executes rolling maneuvers at target attitude <math>\pm 5</math> degrees.</li> <li>● Exits maneuver at original entry parameters <math>\pm 500</math> feet, <math>\pm 20</math> knots, <math>\pm 10</math> degrees.</li> <li>● Plans maneuver entries to remain within area boundaries.</li> <li>● Ensures primary emphasis during aerobatic maneuvers is on use of outside references.</li> <li>● Efficiently links series of maneuvers.</li> <li>● Executes IAW FAM FTI descriptions, to include: <ul style="list-style-type: none"> <li>▶ Attains stabilized target entry airspeed <math>\pm 10</math> knots.</li> <li>▶ Smoothly applies back stick to achieve AOA at <math>17 \pm 1</math> unit.</li> <li>▶ Maintains <math>\pm 10</math> knots throughout maneuver.</li> <li>▶ Prevents excessive nose "ballooning" during reversals (100-ft maximum).</li> <li>▶ Completes reversal and final rollout <math>\pm 5</math> degrees of target heading.</li> <li>▶ Begins maneuver with sufficient altitude to complete maneuver.</li> </ul> </li> </ul>

BEHAVIOR STATEMENT	STANDARDS
17. Unusual Attitude Recoveries	
<ul style="list-style-type: none"> <li>● Perform recoveries IAW appropriate FTI for:               <ul style="list-style-type: none"> <li>▶ Nose-high recovery.</li> <li>▶ Nose-low recovery.</li> <li>▶ Vertical recovery.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Uses correct instrument flight references throughout recoveries.</li> <li>● Recovers to level flight expeditiously without stalling or exceeding aircraft limitations.</li> <li>● Recovers to level flight without excessive altitude loss, stall, or exceeding aircraft limitations.</li> <li>● Recovery is complete when the descent is stopped.</li> <li>● Executes IAW FAM FTI descriptions, to include:               <ul style="list-style-type: none"> <li>▶ Attains stabilized target entry airspeed <math>\pm 10</math> knots.</li> <li>▶ Smoothly applies back stick to achieve 17 units without entering pitch buck.</li> <li>▶ Elevates nose to and maintains attitude at 60 degrees (<math>\pm 3</math> degrees) until recovery.</li> <li>▶ Initiates recovery at target airspeed <math>\pm 5</math> knots.</li> <li>▶ Begins maneuver with sufficient altitude to complete maneuver.</li> </ul> </li> </ul>

BEHAVIOR STATEMENT	STANDARDS
18. Precautionary Approach(es)	
<ul style="list-style-type: none"> <li>● Perform precautionary approach IAW NATOPS, FTI and local SOP/course rules, to include: <ul style="list-style-type: none"> <li>▶ Overhead.</li> <li>▶ Abeam.</li> <li>▶ Straight-in.</li> </ul> </li>   <li>● Perform precautionary instrument approach IAW NATOPS, FTI and local SOP/course rules, to include: <ul style="list-style-type: none"> <li>▶ Low oil approach.</li> <li>▶ Min/emer fuel approach.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Properly coordinates maneuver with ATC.</li> <li>● Effectively manages airspace for entry, including appropriate voice reports.</li> <li>● Effectively manages energy state via configuration and maintains profile without manipulation of throttle.</li> <li>● Utilizes target airspeed and altitude checkpoints (<math>\pm 15</math> knots, <math>+300/-200</math> feet) to effectively maintain profile.</li> <li>● Manages flare adequately to touch down in first third of runway.</li> <li>● Safely achieves flight with flying airspeed, mil power, and speedbrakes retracted during touch-and-go.</li> <li>● Properly coordinates maneuver with ATC.</li> <li>● Effectively manages energy state via configuration to maintain adequate approach profile.</li> </ul>
19. Tactical Formation	
<ul style="list-style-type: none"> <li>● Perform two-ship tactical maneuvering, to include the following:</li> </ul>	<ul style="list-style-type: none"> <li>● Maintains position IAW FTI or as briefed.</li> <li>● Accomplishes responsibilities, including clearing, as briefed.</li> <li>● Recognizes and complies with visual signals as briefed/published.</li> <li>● Executes turns IAW FTI to roll out in combat spread; if not in proper position, make timely positive corrections.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
19. Tactical Formation (continued)	
<ul style="list-style-type: none"> <li>▶ Defensive combat spread.</li>   <li>▶ Offensive combat spread.</li>   <li>▶ Tactical maneuvering to include:               <ul style="list-style-type: none"> <li>▪ Check turns.</li> <li>▪ Cruise turns.</li> <li>▪ Shackles.</li> <li>▪ Tac turns.</li> <li>▪ In-place turns.</li> <li>▪ Cross turns.</li> <li>▪ Comm-out turns.</li> </ul> </li> <li>● Perform two-ship lead tactical maneuvering.</li> </ul>	<ul style="list-style-type: none"> <li>● Maintains or quickly regains visual contact and mutual support.</li> <li>● Utilizes appropriate altitude/airspeed excursions to maintain/regain bearing line <math>\pm 10</math> degrees, abeam distance 0.8 to 1.0 NM, with 1,000 feet of step-up from lead.</li> <li>● Regains position within 20 seconds out of turns.</li> <li>● Utilizes appropriate altitude/airspeed excursions to maintain/regain bearing line <math>\pm 10</math> degrees, abeam distance 1.2 to 1.5 NM, 3,000 feet above or below lead.</li> <li>● Regains position within 20 seconds out of turns.</li> <li>● Maintains target AOA <math>\pm 1</math> unit AOA and airspeed <math>\pm 10</math> knots in turns, utilizing appropriate deviations to correct for known position errors.</li>   <li>● Ensures formation remains within assigned airspace.</li> <li>● Executes turns IAW FTI, maintaining or regaining visual contact and mutual support with wingman.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
19. Tactical Formation (continued)	
<ul style="list-style-type: none"> <li>● Perform tactical rejoins.</li> </ul>	<ul style="list-style-type: none"> <li>● Performs target attacks IAW FTI.</li> <li>● Maintains appropriate flight deconfliction.</li> <li>● Expeditiously maneuvers to an appropriate rejoin.</li> <li>● Maintains positive separation from other flight members throughout the rejoin.</li> </ul>
20. Low-Level Navigation/Procedures	
<ul style="list-style-type: none"> <li>● Perform low-level procedures, to include: <ul style="list-style-type: none"> <li>▶ Route entry.</li> <li>▶ Altitude control.</li> <li>▶ Time control.</li> <li>▶ Course control.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Accomplishes required ATC coordination; visually identifies route entry; complies with all entry time requirements; effectively maneuvers into route structure.</li> <li>● Maintains target altitude - 0/+200 feet AGL per FLIP AP/1B, unless obstacles or safety dictate otherwise. Avoids abrupt altitude changes. Ensures altitude and obstacle clearance IAW regulatory guidance.</li> <li>● Maintains awareness of time, using appropriate adjustments to arrive at final checkpoint <math>\pm 10</math> seconds of preplanned or amended ETA computed at route entry.</li> <li>● Maintains planned course <math>\pm 2</math> NM. Reaches each checkpoint within a <math>\pm 2</math> NM radius. Ensures flight remains within route borders.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
20. Low-Level Navigation/Procedures (continued)	
<ul style="list-style-type: none"> <li>▶ In-flight computation.</li> <li>▶ Chart interpretation.</li> <li>▶ Turns.</li> </ul>	<ul style="list-style-type: none"> <li>● Computes appropriate adjustments to ensure course, time, and altitude standards are achieved.</li> <li>● Identifies chart symbols with prominent landmarks along route. Navigates via dead reckoning or waypoint navigation, as applicable.</li> <li>● Turns to maintain or achieve course control standards; maintains level to slightly climbing; turns IAW briefing/contract, ensures deconfliction with wingman/lead.</li> </ul>
21. BFM - General	
<ul style="list-style-type: none"> <li>● BFM - General. <ul style="list-style-type: none"> <li>▶ PADS.</li> </ul> </li> <li>▶ Demonstrates CNATRA training rules knowledge and adherence.</li> <li>▶ Reversal mechanics.</li> <li>● Rolling Scissors. <ul style="list-style-type: none"> <li>▶ Lift vector placement.</li> <li>▶ AOA/airspeed control.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Attains briefed engagement start parameters within the following tolerances: <ul style="list-style-type: none"> <li>▶ Airspeed: ±10 KIAS</li> <li>▶ Range: ±0.1 NM</li> <li>▶ Altitude: ±100 feet</li> </ul> </li> <li>● Recognizes and acknowledges pending or current deviations from training rules.</li> <li>● Properly recognizes reversal criteria.</li> <li>● Reverses utilizing proper mechanics and maximizes positional advantage.</li> <li>● Places lift vector appropriately to maintain/improve position.</li> <li>● Applies longitudinal stick and throttle to achieve appropriate AOA/airspeed control.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
21. BFM - General (continued)	
<ul style="list-style-type: none"> <li>▶ Flight path projection.</li> <li>▶ Fight redefinition.</li> <li>● Training rules.</li> <li>● TAC wing.</li> <li>● TAC admin.</li> </ul>	<ul style="list-style-type: none"> <li>● Recognizes flight path projection to aid in left vector placement and airspeed selection.</li> <li>● Recognizes the requirement to redefine fight and selects appropriated redefinition maneuver.</li> <li>● Complies with CNATRA training rules for the entire flight with minimal error.</li> <li>● Maintains proper positioning before and after a set. Quickly and efficiently arrives at next PADS in a timely manner without help from instructor.</li> <li>● Quickly and efficiently arrives in proper position for all desired PADS. Able to maintain <math>\pm 10</math>-degree position, <math>\pm 100</math>-feet altitude, <math>\pm 0.1</math> NM distance and <math>\pm 10</math> knots for PADS.</li> </ul>
22. BFM - Offensive	
<ul style="list-style-type: none"> <li>● AW entry recognition/timing.</li> <li>● Offensive break turn (OBT).</li> <li>● Energy management.</li> </ul>	<ul style="list-style-type: none"> <li>● Recognizes AW and performs OBT upon AW entry.</li> <li>● OBT mechanics: <ul style="list-style-type: none"> <li>▶ Rolls to place lift vector onto slightly below bandit.</li> <li>▶ Performs maximum performance pull.</li> </ul> </li> <li>● Utilizes G to maintain airspeed.</li> <li>● Performs energy excursion when appropriate.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
22. BFM - Offensive (continued)	
<ul style="list-style-type: none"> <li>● Fight redefinition recognition and follow.</li>   <li>● LAR/shot opportunity recognition.</li> <li>● Valid shots.</li>   <li>● SSD.</li>   <li>● Rolling scissors.</li> </ul>	<ul style="list-style-type: none"> <li>● Recognizes that the fight has been redefined.</li> <li>● Flies to bandit's point of departure.</li> <li>● Timely rolls to align fuselages and performs appropriate performance pull to deny bandit angles.</li> <li>● Recognizes LAR and performs energy excursion to take a shot.</li> <li>● Performs valid shots according to criteria.</li> <li>● Begins on PADS, adheres to training rules, quickly and smoothly solves for POM, range, and lead with valid shots, executes timely reversals, and maintains proper geometry.</li> <li>● Utilizes clear and concise comm during shots and able to recognize and solve for maneuvers.</li> <li>● Begins on PADS, executes proper throttle mechanics on start, and aggressively maneuvers to gain proper pirouette altitude.</li> <li>● Executes timely pirouette with proper mechanics, minimal altitude loss, and maximum airspeed gain.</li> <li>● Recognizes winning or losing and employs weapons in LAR.</li> <li>● Applies constant pressure to adversary, recognizes the bug, aggressively follows, and transitions appropriately.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
22. BFM - Offensive (continued)	
<ul style="list-style-type: none"> <li>● 3.000/6,000/9,000 perch.</li>   <li>● LAR recognition.</li>   <li>● Deck awareness.</li>   <li>● KIO.</li>   <li>● Tactical rejoin.</li>   <li>● Sight/lookout doctrine.</li> </ul>	<ul style="list-style-type: none"> <li>● Proper start and entry per FTI, timely comm and Fox-2 taken to begin set.</li> <li>● Recognition of attack window, and proper offensive break turn execution.</li> <li>● Captures proper airspeed and works to employ weapons without sacrificing positional advantage.</li> <li>● Recognizes employment opportunities and continues to apply pressure to adversary throughout set, remaining offensive.</li> <li>● Knows and is able to execute valid shots from the CNATRA Sidewinder and Gun envelopes.</li> <li>● References the 10-degree rule to execute a proper deck transition and arrives slightly above the hard deck with appropriate energy.</li> <li>● Recognizes a deck bust and calls "KIO deck" over SOF freq.</li> <li>● Has minimal deck busts during the flight.</li> <li>● Follows CNATRA training rules and comm. Calls KIO if any unsafe situation develops. Maintains SA during the KIO and maneuvers to the PADS.</li> <li>● Maneuvers the jet to achieve an expeditious, yet controlled, rejoin without overshoots or major deviations.</li> <li>● Able to keep sight of the bandit with minimal "blind" calls.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
23. BFM - Defensive	
<ul style="list-style-type: none"> <li>● Defensive break turn (DBT).</li>   <li>● AWE timing recognition.</li>   <li>● Energy management.</li>   <li>● Fight redefinition recognition and selection.</li>   <li>● WEZ recognition.</li>   <li>● Deck awareness.</li> </ul>	<ul style="list-style-type: none"> <li>● DBT mechanics:           <ul style="list-style-type: none"> <li>▶ Rolls to place lift vector onto or slightly below bandit.</li> <li>▶ Performs maximum performance break turn.</li> </ul> </li>   <li>● Recognizes AW entry timing and performs appropriate countermaneuver for early, late, or timely bandit entry.</li>   <li>● Utilizes G to maintain airspeed.</li> <li>● Performs energy excursion when appropriate.</li>   <li>● Recognizes the requirement to redefine fight.</li> <li>● Selects appropriate redefinition maneuver for the situation.</li> <li>● Performs redefinition applying appropriate mechanics.</li>   <li>● Recognizes a pending WEZ and applies appropriate DBFM mechanics to deny shot.</li>   <li>● Able to assess the bandit's nose or DME. Makes a timely "C/F" call and executes a defensive break turn into the bandit.</li>   <li>● References the 10-degree rule to execute a proper deck transition and arrives slightly above the hard deck with appropriate energy and sight of the bandit.</li>   <li>● Recognizes a deck bust and calls "KIO deck" over SOF frequency.</li>   <li>● Has minimal deck busts during the flight.</li> </ul>



BEHAVIOR STATEMENT	STANDARDS
24. BFM - Neutral/High Aspect	
<ul style="list-style-type: none"> <li>● Recognize flow.</li> <li>● Fight appropriate fight.</li> <li>● Butterfly set.</li> </ul>	<ul style="list-style-type: none"> <li>● Recognizes type of flow: <ul style="list-style-type: none"> <li>▶ One-circle.</li> <li>▶ Two-circle.</li> <li>▶ Roller.</li> <li>▶ Flats.</li> </ul> </li> <li>● Applies HA BFM basics (tools) to achieve HA BFM objectives.</li> <li>● Proper start and entry per FTI and utilizes appropriate comm.</li> <li>● Denies enemy weapons employment.</li> <li>● Achieves first shot.</li> <li>● Gains positional advantage.</li> <li>● Employs follow-on shots.</li> <li>● Transitions to OBFM/DBFM at the appropriate time.</li> <li>● Demonstrates proper LV placement, energy management, timely airspeed excursions, controls merges, and initiates the flow in an aggressive fashion.</li> </ul>
25. Section Target Attack	
<ul style="list-style-type: none"> <li>● Perform section target attack IAW FTI, briefing, and local standards.</li> </ul>	<ul style="list-style-type: none"> <li>● Executes section target attack IAW A/G timeline.</li> <li>● Lead directs attack for section <math>\pm 1</math> NM.</li> <li>● Lead directs section to achieve proper attack formation prior to RIP/PUP/BRP.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
26. Training Rules	
<ul style="list-style-type: none"> <li>● All environments.               <ul style="list-style-type: none"> <li>▶ BFM and A/G.</li> <li>▶ Minimum altitude awareness.</li> </ul> </li> <li>● BFM training rules.</li> </ul>	<ul style="list-style-type: none"> <li>● Demonstrates a thorough knowledge of training rules.</li> <li>● Correctly applies training rules to varying scenarios.</li> <li>● Maintains briefed altitude deconfliction game plan.</li> <li>● Initiates/responds to knock-it-off procedures correctly and when appropriate.</li> <li>● Following a knock-it-off transmission, ceases maneuvering and properly maneuvers the aircraft to maintain safety of flight and SA.</li> <li>● Maintains proper separation from aircraft.</li> <li>● Recognizes flight below the hard deck/floor/minimum altitude and responds correctly IAW training rules.</li> <li>● Adheres to BFM training rules.</li> <li>● Recognizes soft deck parameters and responds IAW training rules.</li> <li>● Responds to deconfliction radio calls in a timely and appropriate manner.</li> <li>● Deconflicts correctly when radio transmissions are not made.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
27. Weapons Patterns (30-, 20-, 10-degree bombs, pop)	
<ul style="list-style-type: none"> <li>● Interval.</li>   <li>● Pattern.</li>   <li>● Roll-in.</li>   <li>● Tracking/error corrections.</li>   <li>● Dive recovery.</li>   <li>● Communications.</li> </ul>	<ul style="list-style-type: none"> <li>● Maintains pattern altitude with visual contact with interval, or remains at sanctuary pattern altitude until visual contact is regained. Maintains proper position in pattern and elevates to target pattern altitude once sight is regained. If required, maintains interval and rejoins at the prebriefed position.</li> <li>● Airspeed: ±10 KCAS. Abeam distance: ±.2 DME. Pattern altitude: ±100 feet.</li> <li>● Utilizes appropriate AOB, application of G, and AOA to arrive at preplanned dive angle for a specified delivery pattern. ±0.1 DME, adjusted for wind if necessary.</li> <li>● Maintains within ±15 degrees of planned run-in heading. Maintains within ±5 degrees of target dive angle. Executes error sensitivity techniques for deviations from the planned release parameters.</li> <li>● Executes proper off-target procedures IAW FTI to arrive within parameters of the abeam position following a delivery profile. Promptly recognizes recovery altitude and smoothly maneuvers to avoid low/rolling pullout or overstress.</li> <li>● Makes the appropriate pattern calls in a timely manner without being told by IP or having proceeding aircraft make additional "Off Safe" calls.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
28. Turnpoint Procedures	
<ul style="list-style-type: none"> <li>● Procedures that help the IUT assess the SNFO's aviation, navigation, and communication priorities during a mission.</li> </ul>	<ul style="list-style-type: none"> <li>● Ensures SNFO gives 2-minute-prior, on-top, and wings-level calls IAW FTI to an accuracy of 80 percent.</li> <li>● Gives an outbound course, accurate within <math>\pm 5^\circ</math>.</li> <li>● Updates TACAN appropriately and selects proper waypoint as required.</li> <li>● When wings level after passing each preplanned turnpoint, analyzes fuel and updates ETA to next preplanned turnpoint to an accuracy of 80 percent.</li> </ul>
29. A/G Radar Operation and Interpretation	
<ul style="list-style-type: none"> <li>● Identify returns on a ground mapping radar display.</li> <li>● Correlate radar mode information to refine designation.</li> <li>● Manipulate the radar to obtain usable radar information for targeting.</li> </ul>	<ul style="list-style-type: none"> <li>● Differentiates between terrain features, cultural returns, far shore brightening, shadowing, and lines of communications.</li> <li>● Allows picture to build to sufficient detail to minimize required updates to cursor position.</li> <li>● Correlates turnpoint with BRA information from HSI or use of dead reckoning within <math>\pm 5</math> degrees and <math>\pm 2</math> miles.</li> <li>● Steps through Expand modes and updates designation to proper DMPI at 80-percent accuracy.</li> <li>● Troubleshoots radar effectively.</li> <li>● Correctly executes radar initialization and identifies/analyzes any radar faults or degradations.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
29. A/G Radar Operation and Interpretation (continued)	
	<ul style="list-style-type: none"> <li>● Optimizes radar presentation to acquire the best display and information 80 percent of the time.</li> </ul>
30. Timing	
<ul style="list-style-type: none"> <li>● Directs aircraft speed and course to arrive at the target on time.</li> </ul>	<ul style="list-style-type: none"> <li>● Arrives at the target within ±30 seconds from preflight/ROLEX as applicable in AWI.</li> <li>● Arrives at the target within ±15 seconds from preflight/ROLEX as applicable in Strike.</li> <li>● Arrives at the target within ±10 seconds from TOT, as applicable in CAS.</li> <li>● Gives an accurate time hack during brief.</li> <li>● Analyzes total distance and total time left to formulate desired groundspeed to an accuracy of 80 percent.</li> </ul>
31. Directive/Descriptive Comm	
<ul style="list-style-type: none"> <li>● Maneuver the jet as required with timely and effective directive comm.</li> <li>● Build crew situational awareness with timely and concise descriptive comm.</li> </ul>	<ul style="list-style-type: none"> <li>● Effectively maneuvers aircraft utilizing directive comm.</li> <li>● Prioritizes directive over descriptive comm.</li> <li>● Communicates to the flight the location of upcoming checkpoints (towers, roads, etc.).</li> <li>● Provides a brief description of upcoming checkpoints and turnpoints/target.</li> <li>● Alerts flight of the location and elevation of upcoming terrain in a timely manner IAW the FTI, SOP, and sound judgment.</li> <li>● Gives accurate angle-off, range, elevation, overtake (AREO) and other descriptive comm when appropriate.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
31. Directive/Descriptive Comm (continued)	
	<ul style="list-style-type: none"> <li>● Utilizes clear, concise, properly formatted standardized communication when applicable when under broadcast or tactical control.</li> <li>● Accurately describes flow and changes to picture to build tactical situational awareness.</li> <li>● Communicates effectively with AIC to build intercept picture.</li> </ul>
32. Checkpoint Utilization and Chart/Terrain Correlation	
<ul style="list-style-type: none"> <li>● Use visual checkpoints to determine aircraft position.</li> <li>● Maintain SA and position on flight planned route as required.</li> <li>● Use visually distinct terrain features as aids to navigation.</li> </ul>	<ul style="list-style-type: none"> <li>● Determines geographic position from visual references.</li> <li>● Maintains positional awareness during route of flight using HSI, chart, and ground.</li> <li>● Uses terrain and selected cultural and noncultural features for visual navigation to maintain position accuracy within 1 NM.</li> </ul>
33. Course Analysis/Corrections	
<ul style="list-style-type: none"> <li>● Determine aircraft position in relation to intended course.</li> </ul>	<ul style="list-style-type: none"> <li>● Directs course using visual references and the HSI to maintain flight within route corridor or SUA/MOA.</li> <li>● Updates ETA to next turnpoint as appropriate.</li> <li>● Uses checkpoints to backup position within 1 NM.</li> <li>● Navigates with wind-corrected heading cue.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
34. Speed Control	
<ul style="list-style-type: none"> <li>● Use standard speed corrections IAW FTI.</li> <li>● Maintain awareness of fighter speed and its tactical use.</li> </ul>	<ul style="list-style-type: none"> <li>● Applies procedures IAW FTI for speed corrections to an accuracy of 80 percent.</li> <li>● As lead or single ship, makes appropriate airspeed adjustments based on distance to go to next point or target.</li> <li>● As wing, backs up lead to the same standard.</li> <li>● Applies timely speed correction IAW FTI.</li> <li>● Maintains speed awareness and directs throttle corrections IAW FTI.</li> <li>● Directs speed to match bandit speed (if fast) or maintains speed advantage on the majority of intercepts.</li> </ul>
35. Target Acquisition	
<ul style="list-style-type: none"> <li>● Effective radar interpretation, visual scan, and correlation to identify/acquire target.</li> </ul>	<ul style="list-style-type: none"> <li>● Uses target environment's visual/radar cues to correctly correlate and identify target, placing designation on target, or directs overflight to an accuracy of <math>\pm 1/2</math> NM.</li> <li>● Acquires targets NLT 3 NM prior to target overflight for PGM attacks.</li> </ul>
36. A/G Timeline Awareness	
<ul style="list-style-type: none"> <li>● Performs mission critical tasks required to conduct an A/G target attack.</li> </ul>	<ul style="list-style-type: none"> <li>● Initiates A/G timeline within <math>\pm 1</math> NM of briefed range.</li> <li>● Directs aircraft-to-target capture, terminal attack maneuver, and weapons release.</li> <li>● Releases weapon within parameters for PGM and recognizes IN LAR within 1 NM.</li> <li>● Accomplishes 80 percent of all required timeline actions.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
37. RWR Recognition/Considerations	
<ul style="list-style-type: none"> <li>● Determine own ship targeted status through RWR and bandit TA.</li> <li>● Execute missile defense when targeted.</li> </ul>	<ul style="list-style-type: none"> <li>● Recognizes and interprets RWR indications on EW, SA, or Radar display within 10 seconds.</li> <li>● Directs a defensive maneuver to put S/A threats at 90 ±10 degrees off the nose in the shortest direction.</li> <li>● Uses chaff in defensive maneuver.</li> <li>● Directs a defensive maneuver to the beam ±5 degrees when targeted by an A/A threat.</li> <li>● Adheres to NLT defend range when targeted by an A/A threat at 100 percent accuracy.</li> </ul>
38. Formation Coordination, Communication, and Hand Signals	
<ul style="list-style-type: none"> <li>● Use radio in multijet formation.</li> <li>● Communicate using hand signals.</li> <li>● Perform appropriate coordination items within the section.</li> </ul>	<ul style="list-style-type: none"> <li>● Uses clear, concise, standardized comm to affect formation activities.</li> <li>● Demonstrates proper frequency change procedures.</li> <li>● Utilizes hand signals to direct frequency changes and communicate within the section.</li> <li>● Maintains SA on appropriate coordination requirements for the formation.</li> <li>● Executes timely and accurate radio calls, formation changes, or briefed items as required.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
39. Target Aspect Awareness and Control	
<ul style="list-style-type: none"> <li>● Perform all weather intercepts using AIC information and airborne radar information in search and track modes.</li> <li>● Manage maneuvering target's target aspect to preserve tactical advantage and BVR weapon employment opportunity.</li> <li>● Direct displacement turn to create or preserve 40,000 feet of lateral separation.</li> </ul>	<ul style="list-style-type: none"> <li>● Determines necessary change in TA and LS.</li> <li>● Determines TA to within <math>\pm 10</math> degrees.</li> <li>● Makes course corrections to capture or prevent the uncontrolled growth of TA.</li> <li>● Contact TA never exceeds 60 degrees at any point outside 10 NM.</li> <li>● Maintains tactical advantage through proper intercept geometry implementation on a majority of runs.</li> <li>● Commands crank IAW briefed game plan on a majority of the intercepts.</li> </ul>
40. Target Altitude Recognition/Correction	
<ul style="list-style-type: none"> <li>● Determine contact using radar and AIC information.</li> </ul>	<ul style="list-style-type: none"> <li>● Accurately interprets altitude delta.</li> <li>● Maneuvers to achieve 1,000 feet of lookup prior to merge on a majority of intercepts.</li> </ul>
41. A/A Radar Operation	
<ul style="list-style-type: none"> <li>● Select appropriate radar mode and antenna sector scan to enhance earliest target detection.</li> <li>● Manipulate the radar to obtain usable radar information as an aid to navigation and targeting.</li> </ul>	<ul style="list-style-type: none"> <li>● Uses briefed modes/sets while searching for contacts in assigned AOR.</li> <li>● Correlates AIC target information with displayed radar information within <math>\pm 3</math> degrees and <math>\pm 2</math> NM.</li> <li>● Commands STT IAW briefed timeline.</li> <li>● Executes appropriate meld mechanics IAW with briefed timeline on a majority of intercepts.</li> <li>● Selects proper sort IAW briefed timeline on a majority of intercepts.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
41. A/A Radar Operation (continued)	
	<ul style="list-style-type: none"> <li>● Executes short-range radar IAW game plan on a majority of intercepts.</li> <li>● Troubleshoots radar effectively.</li> <li>● Optimizes radar presentation to acquire the best display and information in a majority of runs.</li> <li>● Selects appropriate radar mode (TWS or STT) IAW briefed game plan.</li> <li>● Executes appropriate maneuvering target radar procedures.</li> </ul>
42. A/A Timeline Awareness	
<ul style="list-style-type: none"> <li>● Performs A/A timeline.</li> </ul>	<ul style="list-style-type: none"> <li>● Recognizes commit criteria on a majority of intercepts.</li> <li>● Assigns correct targeting NLT meld IAW game plan on a majority of intercepts.</li> <li>● Employs valid MRM on briefed timeline <math>\pm 1</math> NM on a majority of intercepts.</li> <li>● Recognizes targeted status and defends prior to NLT defense to 100 percent accuracy.</li> <li>● Recognizes untargeted status and executes stern conversion.</li> <li>● Executes abort prior to NLT abort IAW briefed game plan.</li> <li>● Maintains awareness of untargeted groups.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
43. Counterturn Fundamentals	
<ul style="list-style-type: none"> <li>● Direct counterturn to arrive in bandit's RQ.</li> </ul>	<ul style="list-style-type: none"> <li>● Initiates counterturn at appropriate range IAW timeline.</li> <li>● Compensates for hot or cold stern conversions by using geometry and speed.</li> <li>● Arrives at 0.5-1.5 NM in RQ in the majority of stern conversion intercepts.</li> <li>● Manages all aspects of the CT appropriately while spending the necessary time looking outside to gain tally.</li> <li>● Directs appropriate AOB to maintain required drift curve.</li> </ul>
44. Merge/SRM Employment	
<ul style="list-style-type: none"> <li>● Recognize merge.</li> <li>● Establish SRM firing position.</li> <li>● Control drift in the rear quarter through aircraft maneuvers.</li> <li>● Maneuver to maintain/regain radar contact.</li> </ul>	<ul style="list-style-type: none"> <li>● Directs merge geometry.</li> <li>● Makes appropriate decision to bug out or continue to engage bandits.</li> <li>● Gains/maintains tally and maneuvers appropriately.</li> <li>● Uses ACM modes to acquire bandits inside 5 NM.</li> <li>● Employs valid SRM from IN LAR position.</li> <li>● Determines and retains kill/VID status.</li> <li>● Visually identifies aircraft as friendly/hostile type on a majority of intercepts.</li> </ul>

BEHAVIOR STATEMENT	STANDARDS
45. Tactical Situational Awareness	
<ul style="list-style-type: none"> <li>● Visualize fighter's position relative to the bandit.</li> <li>● Properly assess the situation, prioritize, and take the proper course of action.</li> <li>● Use all available information to recognize and direct the jet to a point of advantage.</li> </ul>	<ul style="list-style-type: none"> <li>● Manages geometry, speed, and altitude to gain and keep tactical advantage.</li> <li>● Accurately targets intercept IAW briefed game plan.</li> <li>● Recognizes multigroup flow range and makes proper flow decisions on a majority of intercepts.</li> <li>● Recognizes abort criteria.</li> <li>● Maintains SA to wingman.</li> <li>● Exercises missile constraint IAW bandit declaration.</li> <li>● Uses intercockpit comm to enhance pilot/crew SA.</li> </ul>
46. Bandit Maneuver Recognition/Reaction	
<ul style="list-style-type: none"> <li>● Recognize and compensate for bandit maneuvers in heading and altitude.</li> </ul>	<ul style="list-style-type: none"> <li>● 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.</li> </ul>
47. Flight Instruction/Detect and Correct Student Errors	
<ul style="list-style-type: none"> <li>● Maintain vigilance in order to recognize student errors and correct them effectively.</li> <li>● Help student improve individual performance.</li> </ul>	<ul style="list-style-type: none"> <li>● Detects when student has deviated from CTS.</li> <li>● Using FTI procedures, correctly verbalizes the student deviation and provides instruction to correct the student's ability to perform the maneuver IAW the CTS.</li> </ul>

Chapter X

Master Materials List

Individually Issued Materials

<u>NOMENCLATURE</u>	<u>IDENTIFICATION</u>	<u>QTY PER STUDENT</u>
<u>Flight Training Instructions</u>		
1. CV Procedures (UMFO) T-45C	CNATRA P-816	1
2. Advanced Strike Procedures T-45C	CNATRA P-819	1
3. Advanced UMFO Familiarization T-45C/VMTS	CNATRA P-821	1
4. Basic Fighter Maneuvering (BFM) and All Weather Intercept (AWI)	CNATRA P-825	1
5. Out-of-Control Flight (OCF) T-45 Strike	CNATRA P-1216	1
6. Radar Theory T-45C	CNATRA P-820	1
7. Basic Fighter Maneuvering (BFM) Advanced NFO-T-45C/VMTS 2016	CNATRA P-826	1

CNATRAINST 1542.174A  
14 Dec 2016

BLANK PAGE