NAVAL AIR TRAINING COMMAND

NAS CORPUS CHRISTI, TEXAS
(CORPS) Q-2C-1561, Q-2C-1562
(COPT-R) Q-2C-1563, Q-2C-1564

TH-57 COPT-R/CORPS (SGTO)
16 Feb 2024

CHIEF OF NAVAL AIR TRAINING

COPTER-ONLY REPLACEMENT PILOT SYLLABUS & CONTRACTOR OPERATED PRIMARY TRAINING-ROTARY

2024

DEPARTMENT OF THE NAVY
CHIEF OF NAVAL AIR TRAINING
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From: Chief of Naval Air Training

Subj: COPTER-ONLY REPLACEMENT PILOT SYLLABUS AND CONTRACTOR OPERATED PRIMARY TRAINING – ROTARY

1. Purpose. To publish the curriculum for training Student Naval Aviators (SNA) in a Helicopter-Only syllabus of Naval Air Training Command (NATRACOM) flight training.

This syllabus outlines the training required to achieve the proficiency specified in the course training standards. It prescribes the course content, instructions to conduct the training, and the approximate time required to successfully complete all requirements. For purpose of this prototype syllabus, the TW-5 Model Manager will be the approving official. Approved revisions include waiver of events in the prototype syllabus, and addition of events from formal CNATRA syllabi, i.e. primary or advance rotary syllabi. Revisions must still be communicated to CNATRA N7 for inclusion in T-SHARP and correct version control on the Share Point Instructions web site. This syllabus may undergo multiple revisions during the prototype period.

2. Cancellation. N/A.

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

4. Records Management. Records created as a result of this instruction, regardless of media and format, must be managed per Secretary of the Navy Manual 5210.1 of September 2019.

5. Review and Effective Date. Per this instruction, OPNAVINST 5215.17A, CNATRA N7 will review this instruction annually around the anniversary of its effective date to ensure applicability, currency, and consistency with Federal, DoD, SECNAV, and Navy policy and statutory authority using OPNAV 5215/40 Review of Instruction. This instruction will be in effect for 10 years, unless revised or cancelled in the interim, and will be reissued by the 10-year anniversary date if it is still required, unless it meets one of the exceptions in OPNAVINST 5215.17A paragraph 9. Otherwise, if the instruction is no longer required, it will be processed for cancellation as soon as the need for cancellation is known following the guidance in OPNAV Manual 5215.1 of May 2016.

6. Forms. The CNATRA forms required by this instruction are automated in the Training Learning Management System (T/LMS) computer program. Additional copies of CNATRA forms are available on the CNATRA website https://www.cnatra.navy.mil/pubs/forms.htm.

A. G. KROCKEL
Commodore, Training Air Wing FIVE

Releasability and distribution: This instruction is cleared for public release and is available electronically only via Chief of Naval Air Training Issuances Website, https://www.cnatra.navy.mil/pubs-instructions.asp.

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SUMMARY OF CHANGES

CHANGE NUMBER	DATE OF CHANGE	CHANGE DESCRIPTION	PAGES AFFECTED/ INITIALS

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COURSE DATA

1. Course Title. Copter-Only Replacement Pilot Syllabus & Contractor Operated Primary Training-Rotary.

2. Course ID Numbers (CIN)

a. CORPS: USN, Q-2C-1561, and Coast Guard, Q-2C-1562.

b. COPT-R: USN, Q-2C-1563, and Coast Guard, Q-2C-1564.

3. Location. Naval Air Station, Whiting Field, Milton, Florida 32570.

4. Course Status. Active.

5. Course Mission. The mission of this training is to teach the skills necessary for flying rotary-wing aircraft and to qualify Student Naval Aviators for rotary-wing and Naval Aviator designations, as well as a standard instrument rating.

6. Prerequisite Training

a. Successful completion of Initial Flight Screening (IFS) NIFE 1, Q-9B-0178 and NIFE 2, Q-9B-1178 or the United States Naval Academy's Powered Flight Program (USNA PFP).

b. Successful completion of Naval Aviation Survival Training Program (NASTP) Supplemental Emergency Breathing Device (SEBD) training.

7. Security Clearance Requirements. None.

8. Follow-on Training. As required by each service for each specific assignment.

9. Course Length. For time-to-train calculations for this MCG please refer to Chief of Naval Air Training (CNATRA) N3 Annual Time-to-Train Entitlement Notice for active 1542 series instructions on the CNATRA web site: https://cnatra.navy.mil under Resources, Publications, CNATRA OPS Documents.

10. Class Capacity. Variable.

11. Instructor Requirements. As established by CNATRA planning factors.

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

13. Quota Management Authority. CNATRA.

14. Quota Control. Chief of Naval Operations (CNO).

15. Course Training Subjects

a. Ground Training

GROUND TRAINING		
Subject	**Symbol**	**Hours**
Indoctrination	GND01	7.5
Safety	GND02	1.0
Global Positioning System	GND03	7.0
Mission Planning System	GND04	4.5
Checkout	GND05	1.0
Total		**22.0**

b. Flight Support

FLIGHT SUPPORT		
Subject	**Symbol**	**Hours**
Systems 'B'	SYS01	9.5
Basic Helicopter Aerodynamics	AER01	14.4
Crew Resource Management - Familiarization Stage	CRM01	2.0
Course Rules Flight Procedures	CR01	4.0
NATOPS Examinations	NAT01	5.0
Preflight and Cockpit Procedures 'B'	FAM01	8.0
Autorotation Aerodynamics	AER02	2.5
Emergency Procedures	EP01	1.5
Tail-Rotor Aerodynamics	AER03	3.0
Course Rules Flight Procedures	CR02	.75
Advanced Aerodynamics	AER04	3.0
Logistics Flight Procedures	LOG01	0.5
Systems 'C'	SYS02	3.0
Basic Instrument Flight Procedures	INS01	14.9
IFR Instrument Flight Procedures	INS02	17.5
IFR Instrument Flight Procedures	INS03	19.6

FLIGHT SUPPORT (CONT.)		
Subject	**Symbol**	**Hours**
Basic Instrument Flight Procedures	INS04	3.2
Visual Navigation Flight Procedures	NAV01	7.8
Visual Navigation Flight Procedures	NAV02	2.5
Instrument Navigation	INS05	24.5
Radio Instruments	RI01	3.3
Crew Resource Management – Instrument Stage	CRM02	2.0
TERF Navigation	TRF01	2.5
Shipboard Operations	**SHP01	0.5
Search and Rescue	**SAR01	0.5
Formation Procedures	FRM01	3.0
Advanced Aerodynamics	AER05	1.0
NITE Lab	NVG01	8.0
Total		**167.95**

**SAR01/SHP01 blocks are waived for U.S. Coast Guard Advanced Helicopter Students. Blocks or events that have been waived for these students are also waived as prerequisites for follow-on events, where applicable.

c. Flight Training

FLIGHT TRAINING									
Block	**Flight/Events**	**LVL 6 FTD**		**LVL 7 FTD**		**TH-57B/C**			
						Dual		**Solo**	
		Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
FAM20	Cockpit Procedures	2	2.6						
FAM21	Flight Line and Course Rules Introduction	2	2.6						
*FAM30	Cockpit Procedures and Flight Introduction	*3	*3.9						
FAM40	Familiarization 'B'					4	6.0		
EM30	Introduction to Autorotation			1	1.3				
***FAM41	Familiarization 'B'					6	12.0		
EM31	Introduction to Tail-Rotor Maneuvers			1	1.3				
FAM42	Familiarization 'B'					3	6.0		

FLIGHT TRAINING (CONT.)									
Block	Flight/Events	LVL 6 FTD		LVL 7 FTD		TH-57B/C			
						Dual		Solo	
		Flts	Hrs	Flts	Hrs	Flts	Hrs	Flts	Hrs
FAM43	Familiarization 'B' Safe-for-Solo Check Flight					1	1.5		
FAM44	Familiarization 'B' Solo							1	1.0
FAM45	Familiarization 'B'					2	4.0		
EM32	Aircraft Handling			1	1.3				
LOG40	Logistics					2	4.0		
*FAM31	Familiarization Simulator 'C' Model Transition			*1	*1.3				
EP30	Emergency Procedures			1	1.3				
FAM46	Familiarization 'C'					2	3.0		
BI30	Basic Instruments	3	3.9	2	2.6				
BI40	Basic Instruments					3	5.1		
FAM47	Night Familiarization 'C'					1	1.5		
BI41	Basic Instruments					3	5.1		
***NAV40	Day Navigation					5	8.5		
NAV41	Night Navigation					1	1.7		
*EP31	Emergency Procedures	*2	*2.6						
*RI30	Radio Instruments			*4	*5.2				
*CPI30	Co-Pilot Instruments	*2	*2.6						
RI31	Radio Instruments			5	6.5				
CPI31	Co-Pilot Radio Instruments			3	3.9				
***RI40	Radio Instruments					8	14.4		
FAM48	Familiarization 'C'					2	3.0		
RI32	Airways Navigation			1	1.3				
***INS40	Instrument Navigation					6	12.0		
RI41	Radio Instruments					4	8.0		
FAM49	Familiarization 'C' Check Flight					1	1.5		
RI42	Instrument Safe-for-Solo Check Flight					1	1.8		

FLIGHT TRAINING (CONT.)									
Block	**Flight/Events**	**LVL 6 FTD**		**LVL 7 FTD**		**TH-57B/C**			
						Dual		**Solo**	
		Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
RI43	Instrument Navigation Solo							1	1.7
NAV42	Day Navigation Solo							1	1.5
**SAR30	Shipboard Search and Rescue Fundamentals			1	1.3				
**SAR40	SAR/Low Level Basic Instruments					1	2.0		
TRF40	TERF Navigation					3	6.0		
**FRM30	Formation			1	1.3				
***FRM40	Formation					4	8.0		
**FRM41	Formation Capstone					2	4.0		
NVG30	Night Vision Device Simulator			1	1.3				
NVG40	Night Vision Device Familiarization Flight					3	5.4		
NVG41	Night Vision Device Navigation and Tactics					2	4.0		
NVG42	Night Vision Device Capstone					1	2.3		
Totals		**16**	**19.5**	**22**	**28.6**	**71**	**130.8**	**3**	**4.2**

Note 1: SNA should leave with at least 135 hours total flight time regardless of any proficiency advanced or under flown events. ET or Proficiency Reallocation may be used in order to meet this flight hour requirement. USCG SNAs are excluded from this flight hour requirement due to the waived SAR events.

Note 2: ET flights should be used without hesitation to identify and correct deficiencies in this prototype syllabus in order to maintain standardization and quality, and to inform building future versions of this syllabus.

*FAM30/*FAM31/*EP31/*RI30/*CPI30 blocks may be conducted in a LVL 6 **OR** LVL 7 Simulator.

**SHP01, SAR01/30/40 blocks are waived for U.S. Coast Guard Advanced Helicopter Students. Blocks or events that have been waived for these students are also waived as prerequisites for follow-on events, where applicable.

FAM41/NAV40/***RI40/***INS40/***FRM40 blocks: **COPT-R SNAs will only conduct the events specified on the block pages. Events that have been waived for COPT-R SNAs are also waived as prerequisites for follow-on events, where applicable.**

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 T-SHARP and accounted for on the flight schedule, per the following table unless specifically stated in the syllabus notes for the event:

ADDITIONAL FORMAL TRAINING TIME PER EVENT			
Training Area	**Brief/Preflight/Taxi**	**Taxi/Debrief**	**Total**
Flight	2.25	0.5	2.75
Simulator/CPT	0.5	0.5	1.0

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

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

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

20. Preceding Curriculum Data. N/A.

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

GLOSSARY

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

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

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

4. Aviation Training Summary (ATS). A tabular sheet listing the Maneuver Item File (MIF) and maneuver grades within a training stage.

5. Block of Training. A sequential series of lessons within a training stage sharing an identical MIF.

6. Check Flight (SXX90). A flight check in any stage of training, which is conducted by a standardization instructor qualified in that stage.

7. Class Advisor (CA). An Instructor Pilot assigned by Student Control to provide counseling and guidance to a specific student pilot throughout the applicable syllabus.

8. Commanding Officer Progress Check (CO-PC) (SXX89). A special check normally given by the Commanding Officer (CO) or Executive Officer (XO). The CO may designate, in writing, CO-PC duty to a qualified O-4 or above. This is only done if the CO or XO is unqualified or unavailable to instruct in the required stage. A satisfactory CO-PC returns the student to normal syllabus flow. An UNSAT CO-PC results in a TRB.

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

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

11. Courseware. The technical data, Flight Training Instructions (FTIs), audio, video, film, Computer-Aided Instruction (CAI), instructor guides, student study guides, and other training material developed to support and implement the syllabus of instruction.

12. Required Item. Any maneuver coded with a plus sign (+). This symbol indicates the maneuver is required and must be accomplished to the specified standard in that block of training.

13. Deliverables. A CNATRA 1542/1827 (Rev 4-04) Training Review Board (TRB) Summary Form, generated by the TRB that summarizes a specific student's progress in a given syllabus and provides detailed information on the application of MPTS training for that student. Deliverables indicate whether the quality and continuity of training provided is per CNATRAINST 1500.4L

14. End of Block (EOB). Last event in block.

15. Emergency Procedure (EP). Any degradation of aircraft systems or flight conditions requiring pilot action or intervention.

16. Extra Training (ET) (SXX87). Additional student training flights ordered by the Operations Officer, or higher, in order to make up for documented instructional deficiencies.

17. Familiarization. The stage of training that combines both day and night familiarization.

18. Flight Training Instruction (FTI). A CNATRA-approved manual describing flight procedures and techniques for each training stage.

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

20. Initial Progress Check (IPC) (SXX88). A special check performed by the most experienced instructors that have a complete understanding of NATRACOM and PC processes, and understand the gravity of their responsibility in helping maintain the standards of Naval Aviation. An UNSAT IPC results in a CO-PC.

21. Lesson Designator. All syllabus events have a lesson designator in the following format:

Char	Meaning	**Remarks**	
Beginning Letters (May be 1 to 3 letters)	Block Subject/Stage	GND - Ground SYS - Systems FAM - Familiarization AER - Aerodynamics CRM - Crew Resource Management CR - Course Rules NAT - NATOPS EM - Energy Management EP - Emergency Procedures LOG - Logistics	INS - Instruments BI - Basic Instruments NAV - Navigation RI - Radio Instruments CPI - Copilot Instruments TRF - Terrain Flight SHP - Shipboard Operations SAR - Search and Rescue FRM - Formation NVG - Night Vision Goggle
2nd	Media	0 or 1 - Ground Training 2 or 3 - Simulator 4 - Aircraft	
3rd	Block	Sequential, indicating block within Subject/Stage.	
4th & 5th	Event/Check Identifier	Sequential, indicating event within block, or other event types as shown below: 84 - Adaptation Flight 85 - Practice Simulator 86 - Warmup	87 - Extra Training 88 - Initial Progress Check 89 - CO-Progress Check 90 - Check Flight/Exam
Last Letter	Type of Student	A-Advanced Helicopter T-Tilt-Rotor	I-IUT X-Transition M-AMS

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

23. Master Syllabus. All training syllabus activities, prerequisites, and desired training flow for MPTS.

24. Off-Wing Flight. A Familiarization flight not flown with the student's on-wing.

25. On-Wing. The student's assigned instructor through completion of the FAM42 block of training and per CNATRAINST 1500.4L.

26. Outcomes. Potential courses of action following a Progress Check:

a. Pass - Return to training.

b. Fail - An UNSAT IPC results in a CO-PC.

27. Phase of Training. A major division in the course of training. Helicopter MPTS consists of two phases: Primary and Advanced.

28. Pink ATF. A standard ATF that is printed on pink paper, used to denote an UNSAT event.

29. Progress Check Pilot. An Instructor Pilot authorized to administer initial or Commanding Officer's progress checks.

30. Ready Room UNSAT (RRU). An UNSAT grade given for inadequate knowledge of flight procedures, systems, discuss items, emergency procedures, or deficient preflight planning during the brief. A missed brief does not constitute a "Ready Room UNSAT" and should be dealt with using other disciplinary methods.

31. Special Syllabus Requirement (SSR). One-time, ungraded demonstration items. While SSRs are recommended for certain events in block, they may be accomplished at any time during the block.

32. Stage of Training. All training involved within a particular focus of training (Ground, Familiarization, Logistics, Instrument, Navigation, Formation, Shipboard/SAR, and NVD) within a phase.

33. Supplemental ATF. A form inserted into a student's ATJ that contains syllabus and non-syllabus information. Also referred to as a "write-up" in T-SHARP.

34. Training Media. MPTS media include aircraft, simulator, Cockpit Procedures Trainers (CPTs), ground training, and CAI.

35. Training Review Board (TRB). A fact-finding board appointed to conduct an administrative review of circumstances and procedures relative to a failed CO-PC.

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

ABBREVIATIONS

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

ADF	-	Automatic Direction Finder
AERO	-	Aerodynamics
AGL	-	Above Ground Level
AIM	-	Aeronautical Information Manual
AIRMET	-	Airman's Meteorological Information (In-Flight Weather Advisory)
APU	-	Auxiliary Power Unit
ASI	-	Aviation Student Indoctrination
ASR	-	Airport Surveillance Radar
ATC	-	Air Traffic Control
ATF	-	Aviation Training Form
ATJ	-	Aviation Training Jacket
ATIS	-	Automatic Terminal Information Service
ATS	-	Aviation Training Summary
BAW	-	Basic Air Work
BIFP	-	Basic Instrument Flight Procedures
CAI	-	Computer-Aided Instruction
CDO	-	Command Duty Officer
CNAF	-	Commander, Naval Air Forces
CO	-	Commanding Officer
COCO	-	Commercially Owned Commercially Operated
CPT	-	Cockpit Procedures Trainer
CR	-	Course Rules
CRM	-	Crew Resource Management

CTS	-	Course Training Standard
DFAMFP	-	Day Familiarization Flight Procedures
DH	-	Decision Height
DLA	-	Dynamic Landing Approach
DME	-	Distance Measuring Equipment
DP	-	Departure Procedures
EMFP	-	Emergency Flight Procedures
EOB	-	End of Block
EP	-	Emergency Procedure
ET	-	Extra Training
FAA	-	Federal Aviation Administration
FAC	-	Final Approach Course
FAR	-	Federal Aviation Regulation
FIH	-	Flight Information Handbook
FLIP	-	Flight Information Publication
FORMFP	-	Formation Flight Procedures
FP	-	Full Panel
FSS	-	Flight Service Station
FTI	-	Flight Training Instructions
GCA	-	Ground-Controlled Approach
GPS	-	Global Positioning System
GPSFP	-	Global Positioning System Flight Procedures
GPU	-	Ground Power Unit
HOSTAC	-	Helicopter Operations from Ships Other Than Aircraft Carriers
HSI	-	Horizontal Situation Indicator
IAF	-	Initial Approach Fix

ICAO	-	International Civil Aviation Organization
IFM	-	Instrument Flight Manual
IFR	-	Instrument Flight Rules
IIMC	-	Inadvertent Instrument Meteorological Conditions
ILS	-	Instrument Landing System
IMC	-	Instrument Meteorological Conditions
INAV	-	Instrument Navigation
IP	-	Instructor Pilot
JOG	-	Joint Operations Graphic (Chart)
KNDZ	-	NAS South Whiting Field
LDI	-	Lunar Daily Illumination
LEAA	-	Lunar Elevation Angle and Azimuth
LECT	-	Lecture
LHD/CVN	-	Amphibious Assault Ship (General Purpose)/Multi-Purpose Aircraft Carrier(Nuclear Powered)
LOA	-	Letter of Agreement
LOC	-	Localizer
LOGFP	-	Logistics Flight Procedures
LSE	-	Landing Signalman Enlisted
MAP	-	Missed Approach Point
MCA	-	Minimum Crossing Altitude
MDA	-	Minimum Descent Altitude
MIF	-	Maneuver Item File
MIL	-	Mediated Interactive Lecture
MOCA	-	Minimum Obstruction Clearance Altitude
MPS	-	Mission Planning System
MPTS	-	Multi-Service Pilot Training System

MRA	-	Minimum Reception Altitude
NATOPS	-	Naval Air Training and Operating Procedures Standardization
NAVAID	-	Navigational Aid
NDB	-	Non-Directional Beacon
NFS	-	Naval Flight Student
NG	-	No Grade
NITE Lab	-	Night Image Threat Evaluation Lab
N_R	-	Rotor Speed
NOTAM	-	Notice to Air Missions
NVD	-	Night Vision Device
NVG	-	Night Vision Goggle
ODO	-	Operations Duty Officer
OLQ	-	Officer-Like Quality
OPNAV	-	Office of the Chief of Naval Operations
OPSO	-	Operations Officer
ORM	-	Operational Risk Management
OSC	-	On-Scene Commander
PAR	-	Precision Approach Radar
PAS	-	Phase Aggregate Score
PMSV	-	Pilot to Metro Service
PNAC	-	Pilot Not at the Controls
PP	-	Partial Panel
PT	-	Procedure Turn
RI	-	Radio Instruments
RIFP	-	Radio Instruments Flight Procedures
RNAV	-	Area Navigation System

RON	-	Remain Overnight
RPM	-	Revolutions Per Minute
RRU	-	Ready Room UNSAT
RV	-	Radar Vectors
RWOP	-	Rotary Wing Operating Procedures
SAR	-	Search and Rescue
SEA	-	Supplementary Egress Air
SIGMET	-	Significant Meteorological Information
Sim	-	Simulator
SLAP	-	Solar/Lunar Almanac Prediction (software)
SMS	-	Student Monitoring Status
SNA	-	Student Naval Aviator
SOP	-	Standard Operating Procedure
SS	-	Self-Study
SSR	-	Special Syllabus Requirement
STARS	-	Standard Terminal Arrivals
SYS	-	Systems
TACAID	-	Tactical Aid
TACAN	-	Tactical Air Navigation System
TERF	-	Terrain Flight
TRFNAV	-	TERF Navigation
TRB	-	Training Review Board
UNSAT	-	Unsatisfactory
VFR	-	Visual Flight Rules
VFRNAV	-	Visual Flight Rules Navigation
VMC	-	Visual Meteorological Conditions

VNAVFP	-	Visual Navigation Flight Procedures
VOR	-	Very High Frequency (VHF) Omnidirectional Range
VSI	-	Vertical Speed Indicator
WU	-	Warmup

Chapter I

General Instructions

1. Syllabus Management

a. Distribution. Participating squadron personnel.

b. Interpretation. The syllabus is directive. Should circumstances create situations not covered within the scope of this syllabus, or specific course of action appears to conflict with other directives, consult CNATRA (N71).

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

d. Changes. Recommended changes shall be submitted following CNATRAINST 1550.6G.

e. Execution. Students will execute all curriculum events unless waived by the Commanding Officer via Proficiency Advance or as indicated in this MCG for USCG.

f. Syllabus Description. Combined Primary and Advanced Helicopter MPTS consists of undergraduate helicopter training for USN and USCG students who will go on to fly helicopters. This phase of training is flown in both the TH-57B and the TH-57C aircraft. The syllabus is divided into the following stages: Ground, Familiarization, Logistics, Instrument, Navigation, Formation, Energy Management, Emergency Procedures, Co-Pilot Instrument, Shipboard Operations, Search and Rescue Operations, and Night Vision Goggle Training. Each stage is subdivided into blocks of training. The blocks consist of a specified number of events. Maneuver Item Files (MIFs) for flight and simulator events identify the required maneuvers and the acceptable level of proficiency that must be achieved by the completion of each block of training.

2. Training Management. CNATRAINST 1500.4L is the Naval Flight Student Training Administration Manual (TA Manual). It serves as the governing instruction for all pipeline training. MCGs are subordinate to the TA Manual, but may provide additional guidance and restrictions to training. If there is a conflict between the MCG and the TA manual, contact CNATRA (N71) for additional guidance.

3. CNATRAINST 1500.4L MCG Specific Guidance. The following information is the additional guidance provided by this MCG. Each item is referenced using the relative 1500.4L guidance. All users should first read the 1500.4L guidance on the subject, and then see the MCG specific guidance.

a. 1500.4L Paragraph 501. Scheduling

(1) Syllabus Progression. Syllabus events shall be scheduled as depicted in the course flow diagrams and per individual event guidance. Students may be enrolled in blocks as depicted in the course flow diagram. Students must complete all events unless proficiency advanced or as indicated for USCG. The flowcharts on pages I-7 through I-17 delineate the sequence of events for each student. System training management is designed to facilitate two graded events (flight, simulator, or exam) per student per day unless individual event guidance directs otherwise. Deviations from the syllabus flow require approval from CNATRA via the model manager unless specifically authorized in this document's event guidance.

(2) Scheduling Efficiency. Students may be scheduled for multiple events in the same day, including events that serve as prerequisites for follow-on events in the same day. Events shall be conducted per the syllabus flow and event requirements. The scheduling of events shall adhere to paragraph f. Paragraph f does not preclude the scheduling of multiple events that are not graded on the same day as graded events, as long as crew day and quality of training are not adversely impacted.

(3) Instructor Continuity. A Stan IP for the same stage may substitute as on-wing if the student's on-wing is not available, and an on-wing change is not prudent.

(4) Adaptation Events. The squadron Operations Officer (OPSO) may also provide adaptation events.

(5) Programmed Hours and Events. Syllabus-programmed flight hours are listed on pages ix through xi.

(6) Minimum Night Hours. 12.0 Hours.

(7) Maximum Daily Student Activities (Aircraft, Simulator, or Academic). Students shall not exceed two graded activities during one duty day. An exception is made for students completing cross-country navigation flights. For instrument navigation, and day and night navigation events, students may complete three graded activities not to exceed 6.5 flight hours. These events may be completed in a round robin cross-country event that originates and terminates after three legs at the same field, but should be conducted as a sequence of flights outside the local training area to the maximum extent practical. For student solo navigation events, each student is limited to two graded events and two observer events allowing a total of four legs, not to exceed 6.5 hours of total flight time.

(8) Minimum Student Turn-Times. A student must have at least 30 minutes between debriefing a dual event and briefing a follow-on solo event.

(a) NAV4001A-5A & NAV4101A. When flown as part of a cross country or when flown as a multi-event out-and-in profile, the minimum turn time shall be at the discretion of the instructor pilot. The instructor pilot shall ensure the event brief is conducted prior to flying the event, and that all events are debriefed upon completion of day's flight events.

(b) INS4001A-6A. When flown as part of a cross country or when flown as a multi-event out and in profile, the minimum turn time shall be at the discretion of the instructor pilot. The instructor pilot shall ensure the event brief is conducted prior to flying the event, and that all events are debriefed upon completion of day's flight events.

(9) Solo Events

(a) Brief. The Flight/Operations Duty Officer shall brief the solo student. The flight briefing must cover mission profile, objectives, and contingencies.

(b) Prohibited Maneuvers. Any maneuver not associated with the current block of training. For familiarization solos, the following maneuvers are prohibited: sliding landings, simulated engine failures, boost-off flight, simulated tail-rotor malfunctions, practice autorotations, steep approaches, no-hover landings, simulated emergency procedures, and max load takeoffs.

(10) Aircraft and Simulator Interchangeability

(a) Simulator events may be conducted in the aircraft when the simulator is unavailable for extended periods of time. Substitutions shall be approved by COMTRAWING FIVE.

(b) Device assignments for all events can be found in the "Media" section and in the syllabus notes for the block. Any motion device may be used as a substitute for a non-motion device when a non-motion device is unavailable, as long as appropriate motion simulator guidance is followed.

(11) Linked Simulator Availability. In the event linked simulation is required but unavailable due to device maintenance issues, unlinked simulation of an event using recordings may be authorized by COMTRAWING FIVE.

(12) Military Instructor Pilot Availability. Squadron Commanding Officers may request to use Contract Instructors (CI) for events that require a Military Instructor Pilot when syllabus events are unsupportable due to limited instructor availability. Approval authority resides with Training Air Wing Five Commodore, Deputy Commodore, or Training Officer in that order.

(a) Blanket approvals to substitute a CI in lieu of a Military Instructor Pilot: The CI must have appropriate training for the assigned event and be qualified by CNATRA and CIS contract requirements.

(b) TRAWING FIVE shall provide training to ensure CIs are available to conduct events that require Military Instructor Pilots in the event that it becomes necessary.

b. 1500.4L Paragraph 503. Training Delays and Warmup Events Within Stage

(1) Unsafe for Solo during a warmup event.

(a) Count the flight as a warmup due to the student's loss of proficiency.

(b) The next flight shall be another safe-for-solo check and should be flown within the next six calendar days.

(c) A subsequent unsafe for solo shall trigger a progress check per the 1500.4L.

c. 1500.4L Paragraph 504. Training Delays and Warmups Between Stages

(1) A warmup is not warranted as long as the student is progressing per Course Flow diagram. Warmups shall be awarded when progression through the course flow has stalled and resulted in exceeding 1500.4L guidance.

(2) Award a warmup event if more than five calendar days have elapsed without flying in the aircraft between a check flight and the follow-on solo event, or more than one calendar day has elapsed between FAM4390A and FAM4401A. For NAV4201A and RI4301A, a warmup event is warranted only if the delay falls between RI4290A and the solo event.

(3) In-Stage warmup rules apply for delays between FAM4802A and FAM4990A.

d. 1500.4L Paragraph 505. Extended Training Delays

(1) An SNA executing a warmup training plan due to an extended training delay may execute the Training Acceleration Program (TAP) as a part of the warmup training plan at the Commanding Officer's discretion. Documentation shall be per CNATRAINST 1500.4L.

e. 1500.4L Paragraph 508. Brief

(1) Preparation. Students shall arrive for each flight with:

(a) Thorough knowledge of:

1. The flight's discuss items.

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

(b) A flight profile tailored to SNA training requirements that ensures SNA's own progression through training.

(c) The latest ATF for the stage.

(2) Briefing. In addition to the TA Manual requirements, the brief shall thoroughly cover the mission's:

(a) Event discuss items.

(b) Specific objectives.

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

(d) Planned profile and contingencies.

f. 1500.4L Paragraph 509. Debrief

(1) Debriefing. In addition to the TA Manual requirements, the following shall apply:

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

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

g. 1500.4L Paragraph 701. Unsatisfactory Performance

(1) Remediation. End of block UNSAT syllabus events in the Instrument stage may be cleared in the simulator if these conditions are met:

(a) The cause of the UNSAT is specific to a graded item.

(b) The simulator is suited to the failed graded item.

h. 1500.4L Paragraph 704. Initial Progress Check

(1) Two consecutive UNSATs or three cumulative UNSATs in NATRACOM (starting with NIFE academics) shall trigger an IPC. If an IPC has already been conducted, then a CO-PC shall be conducted per CNATRAINST 1500.4L.

(2) If an IPC is the result of an UNSAT check flight, and the UNSAT was due solely to ground operations, the squadron OPSO or squadron Standardization Officer may determine the appropriate media (Ground Evaluation, Simulator, or Aircraft) for the conduct of the IPC.

(3) The squadron Standardization Officer, squadron OPSO, or their representative designated in writing, shall administer the IPC. The IPC instructor should be a Standardization Instructor Pilot.

4. CORPS Attrition Policy. The following outlines the process of attrition via unsatisfactory performance, voluntary disenrollment, or elimination from training due to other factors (e. g. officer-like qualities, drop on request (DOR), or medical disqualification) during the CORPS small group try-out (SGTO) and advanced rotary training programs.

a. SNAs executing the CORPS SGTO shall be held to the course completion standards set by Chapter III: Course Training Standards. If a student fails to meet course completion standards, an academic and performance review will be conducted by the Helicopter Training Squadron TWENTY-EIGHT (HT-28) Commanding Officer (CO) per CNATRAINST 1500.4L.

b. Due to the nature of the SGTO and a “do no harm” policy, if an SNA desires to disenroll from the CORPS SGTO prior to completion of LOG4002A flight (about 34.1 flight hours and 13 simulator hours), then the SNA will be enrolled into T-6B Primary training. Upon successful completion of T-6B Primary, SNAs will have the opportunity to request assignment to any advanced pipeline, including Rotary. Attrition due to other causes (e.g. officer-like qualities, medical, DOR from flight training completely, etc.) will be handled on a case-by-case basis. A final determination whether the student is returned or removed from training will be made by CNATRA, with recommendations from the HT-28 CO and Training Air Wing FIVE (TW5) Commodore.

c. Failure to meet training standards may result in attrition. If an SNA's performance is below standards in the CORPS or Advanced Rotary Training syllabus, that SNA may be awarded Extra Training (ET) flights (up to 50 hours) to successfully complete training. ET flights will be awarded and conducted per reference (b). A final determination whether the student is returned or removed from training will be made by CNATRA, with recommendations from the HT-28 CO and TW-5 Commodore.

5. Course Flow Diagrams. Course flow diagrams are listed on pages I-9 through I-19.

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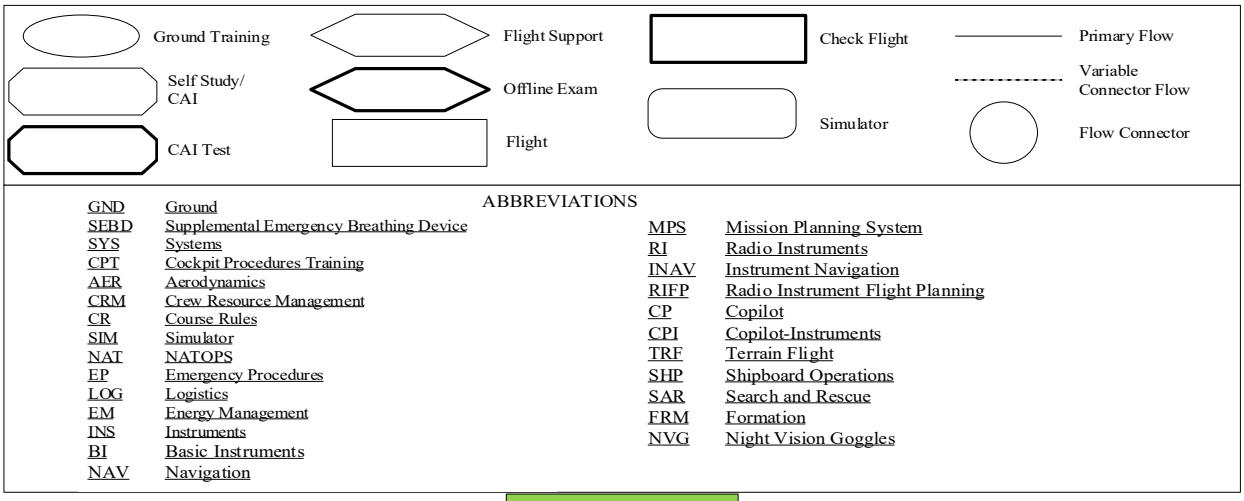

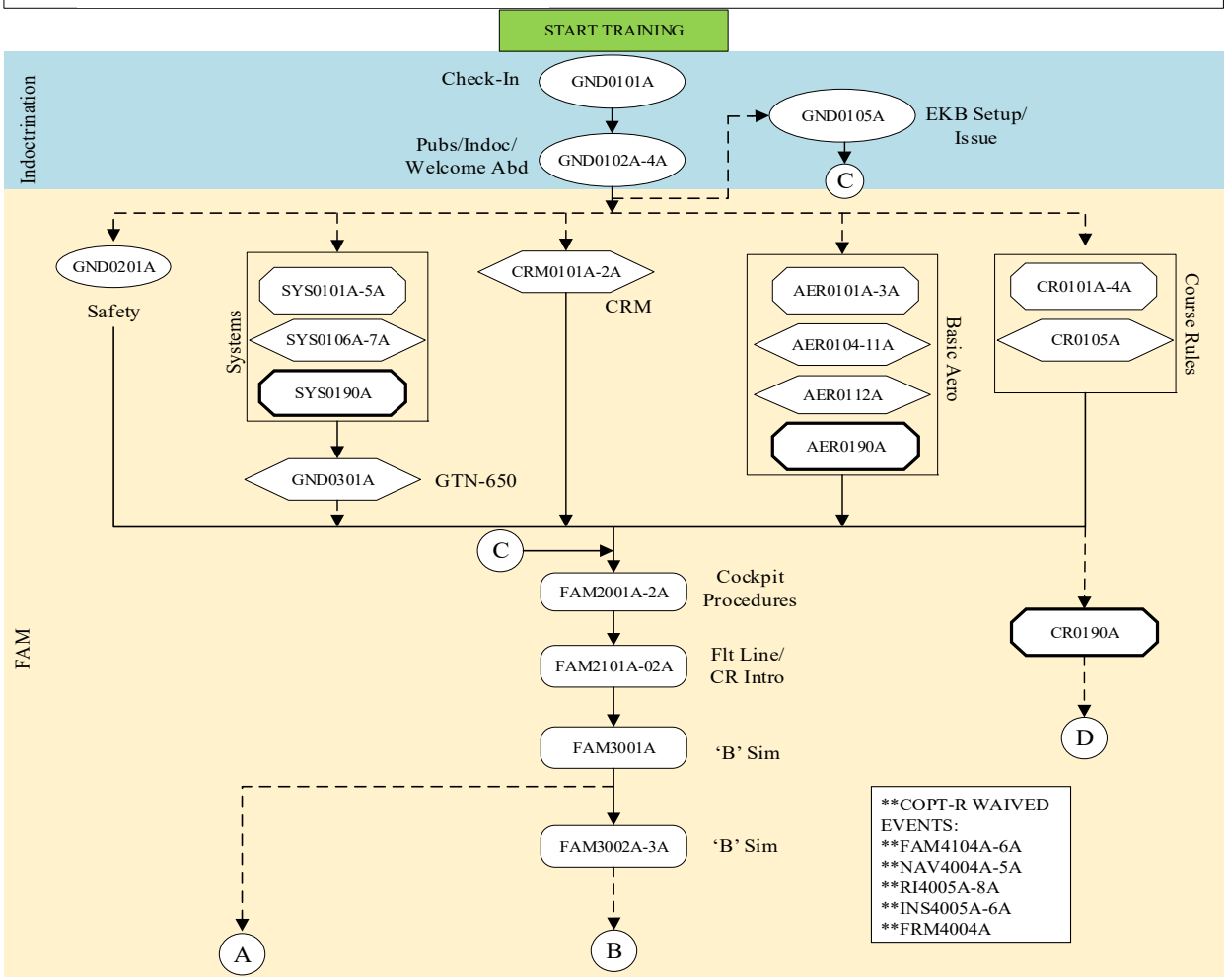

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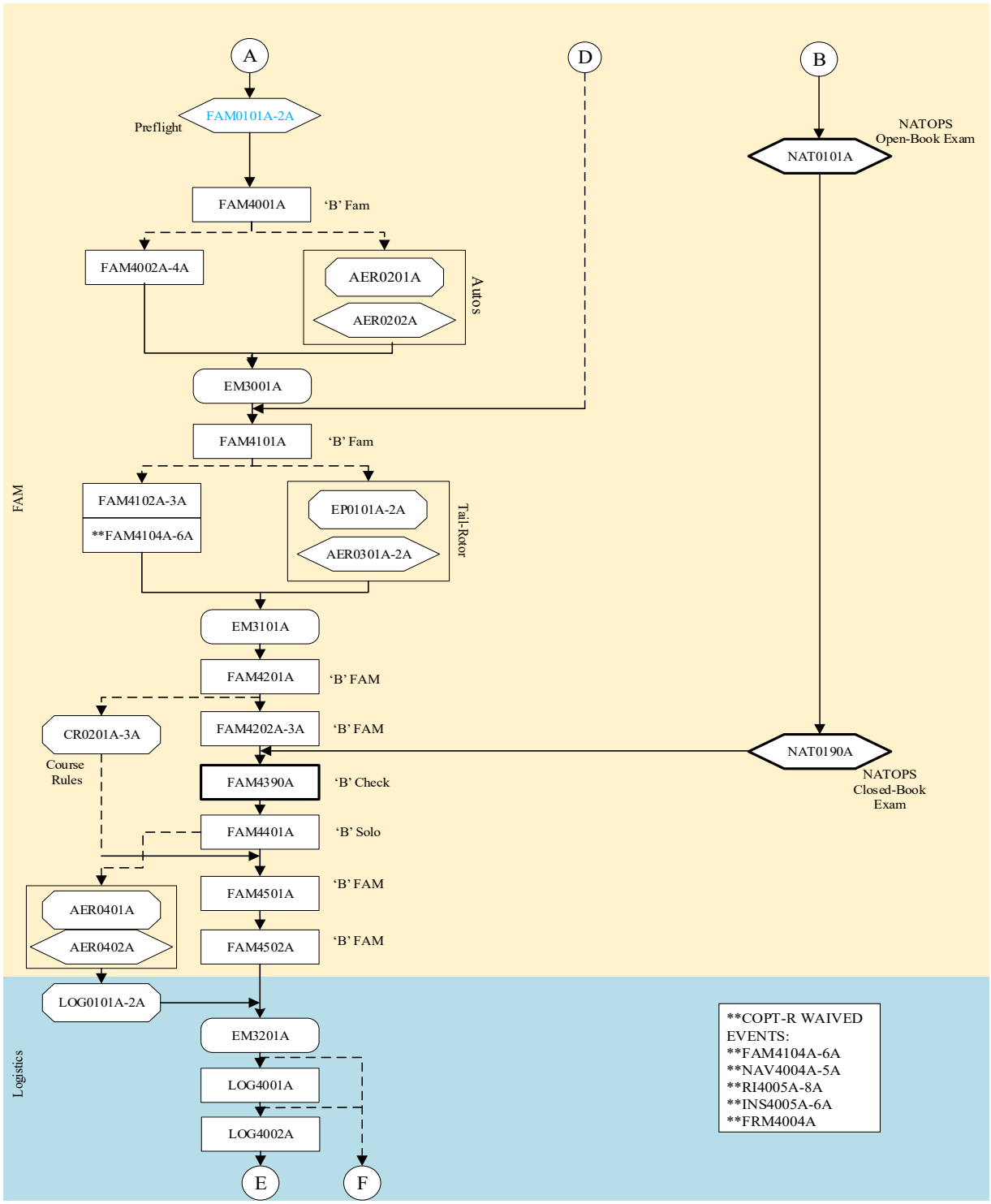

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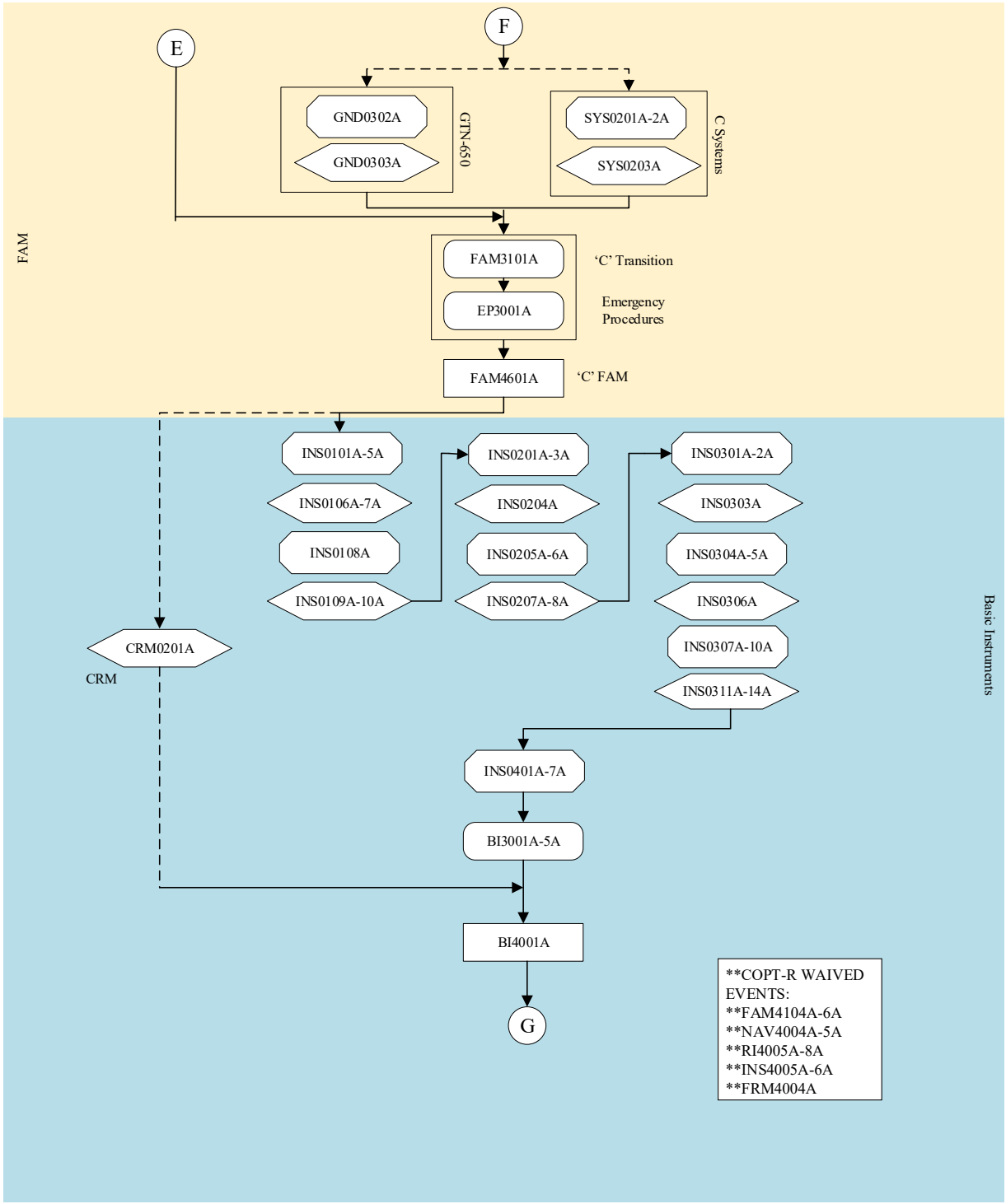

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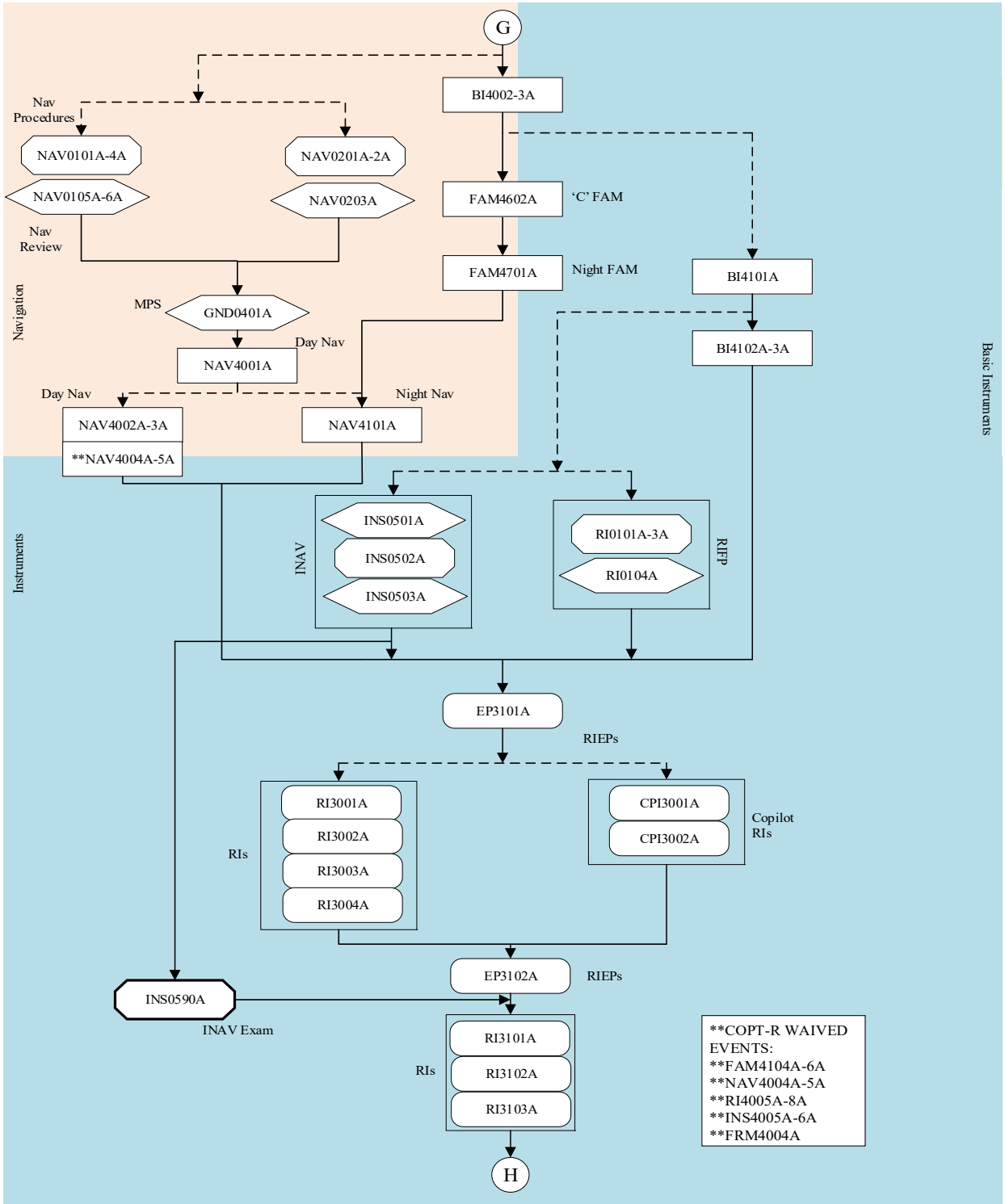

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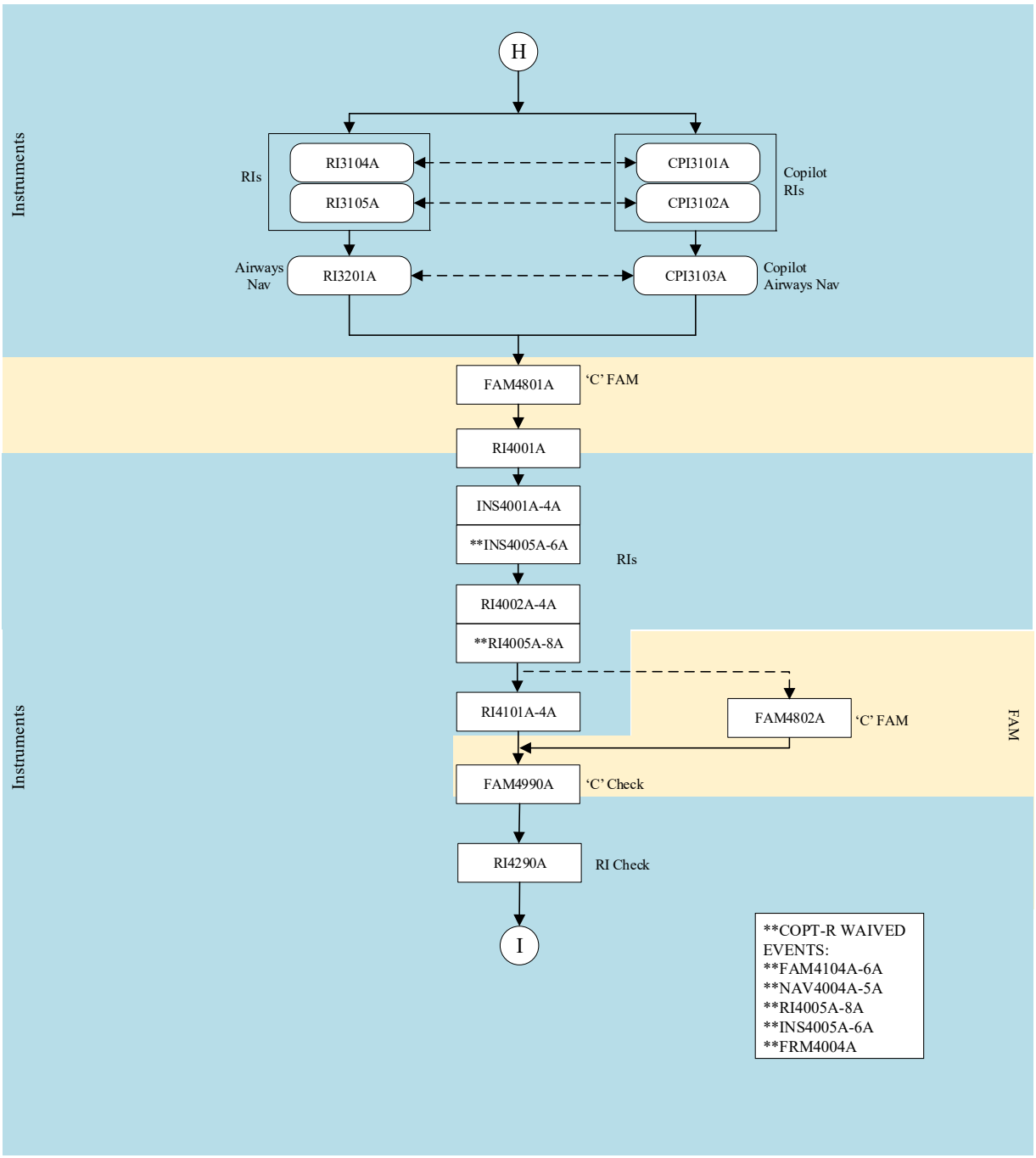

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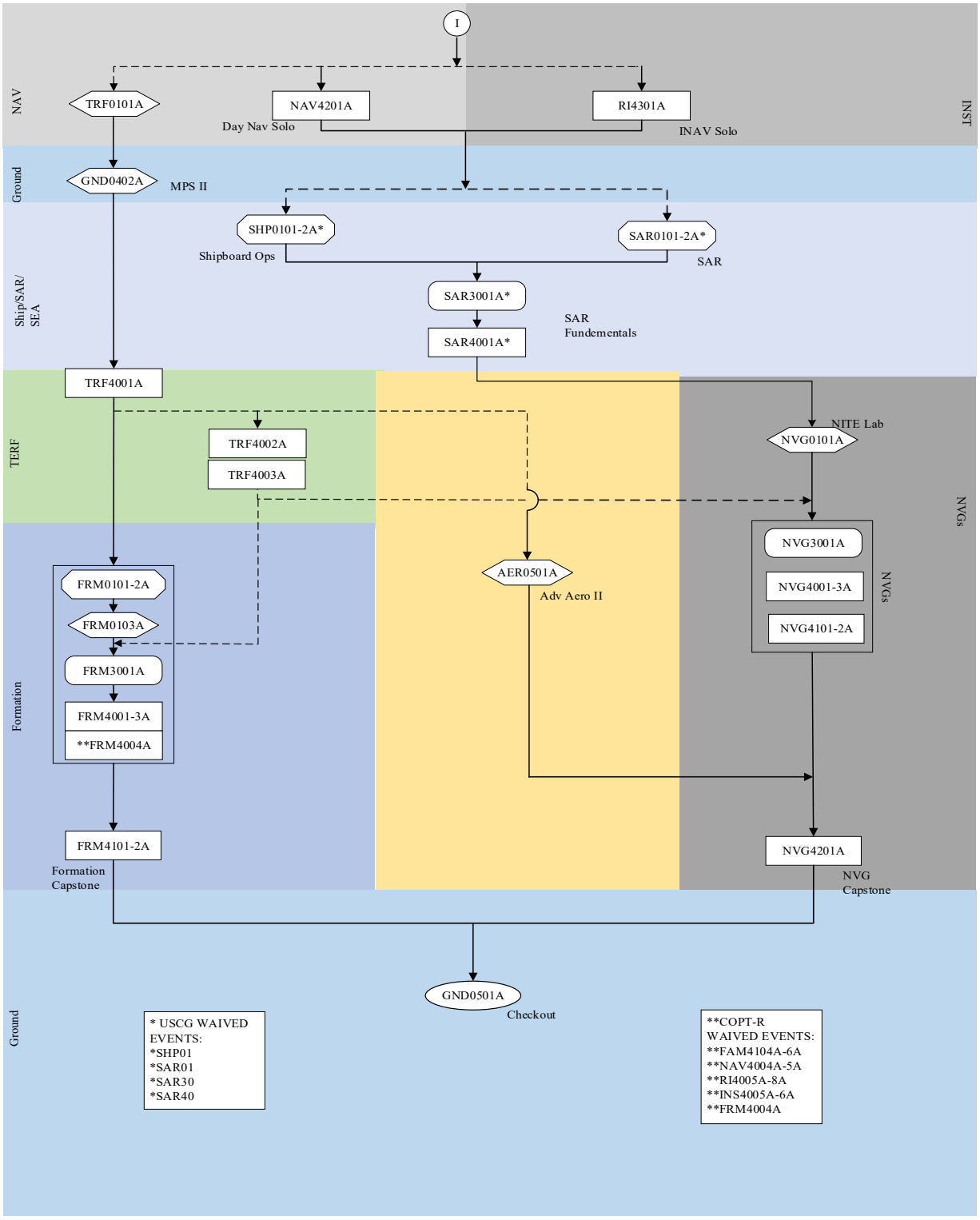

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Chapter II

Student Training

Blk #	Media	Title	Events	Hrs	Blk Name
GND01	Sqdn/ Issue	Indoctrination	5	8.5	INDOC

1. Prerequisites. None.

2. Events

GND0101A	Sqdn	Check-In	2.0
GND0102A	Issue	Training Publications	0.5
GND0103A	Sqdn	Curriculum Indoctrination and Flight Leader's Brief	2.0
GND0104A	Sqdn	Welcome Aboard	3.0
GND0105A	Lect	EKB Issue/Setup	1.0

3. Syllabus Notes

   a. GND0101A prior to GND0102A-4A.

   b. GND0102A-4A may be conducted in any order.

   c. GND0105A must be complete prior to FAM2001A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
GND02	MIL	Safety	1	1.0	ASI

1. Prerequisites. GND0102A-4A.

2. Events

GND0201A	MIL	Aviation Training		1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
SYS01	CAI/MIL/Test	Systems 'B'	8	9.5	BSYS

1. Prerequisites. GND0102A-04A.

2. Events

SYS0101A	CAI	Power Plant	0.5
SYS0102A	CAI	Fuel Supply System	0.5
SYS0103A	CAI	Transmission and Drive Train	0.5
SYS0104A	CAI	Rotor and Flight Control Systems	0.5
SYS0105A	CAI	Hydraulic System	0.5
SYS0106A	MIL	Allison 250 Turboshaft Engine Fuel Supply System Power Train System	3.0
SYS0107A	MIL	Rotor System Hydraulic System 'B' Electrical System	3.0
SYS0190A	CAI Test	Systems Exam	1.0

3. Syllabus Notes

   a. SYS0101A-5A shall be completed prior to SYS0106A-7A.

   b. SYS0106A-7A shall be completed prior to SYS0190A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
GND03	CAI/MIL	Global Positioning System	3	7.0	GPSFP

1. Prerequisites

   a. SYS0190A prior to GND0301A.

   b. EM3201A prior to GND0302A or GND0303A.

2. Events

GND0301A	SS	GTN-650 Aircraft Systems Interaction (TH-57B)	1.0
GND0302A	CAI OFFLINE	GTN-650 Computer Based Training	4.0
GND0303A	MIL	GTN-650 Aircraft Systems Interaction (TH-57C)	2.0

3. Syllabus Notes

   a. GND0301A shall be completed prior to FAM2001A.

   b. GND0302A and GND0303A may be completed in any order.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
FAM20	2F302B6	Cockpit Procedures	2	2.6	1.3

1. Prerequisites

a. GND0301A.

b. CRM0102A.

c. AER0190A.

d. CR0105A.

e. GND0201A.

f. GND0105A.

2. Syllabus Notes. The student shall perform the following procedures on the indicated event.

a. FAM2001A. Familiarization stage checklists and voice reports, RPM beep control, normal start procedures, abnormal starts, anti-ice operation, post shutdown fire/internal, emergency shutdown.

b. FAM2002A. Blindfold cockpit check, Familiarization stage checklists and voice reports, normal start procedures, abnormal starts, emergency engine shutdown, anti-ice operation, engine oil system malfunctions, transmission oil system malfunctions, imminent transmission failure, tach/gen malfunction, turbine outlet temperature (TOT) malfunction, over-torque/over-temp/ over-speed, torque malfunction, smoke and fume elimination, suspected fuel leakage, post shutdown fire/internal.

3. Special Syllabus Requirements. FAM2001A: Location, function, and operation of cockpit gauges, radios, switches, and engine/rotor controls.

4. Discuss Items

FAM2001A
Student responsibilities for FAM20 block; 2F302B6/2F302B7/2C67 scheduling; curriculum introduction and general information; use of limits; starter limits; use of checklists/voice reports; location, function, and operation of cockpit gauges, radios, switches, and engine/rotor controls; GPU start; RPM beep control; abnormal starts; post-shutdown fire/internal; CRM (aircraft start and shutdown, flight control check, ground emergencies).

FAM2002A
Limitations, cold weather limitations, power source for cockpit gauges, single instrument indications, in-flight emergencies and procedures, CRM (in-flight emergencies), NATOPS landing criteria.

5. Block MIF

CTS REF	MANEUVER	FAM2002A
1	General Knowledge/Procedures	3+
2	Headwork/Situational Awareness	2+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	3+
8	NATOPS Procedures and Limits	4+
8	Familiarization Stage Checklists	3+
8	Normal Start Procedures	3+
8	Normal Shutdown Procedures	4+
9	Emergency Procedures/System Failures	3+
9	Abnormal Starts	3+
9	Post-shutdown Fire/Internal	3+
9	Emergency Engine Shutdown	3+
9	Engine Oil System Malfunctions	3+
9	Transmission Oil System	3+
9	Tac/Gen Malfunction	3+
9	TOT Malfunction	3+
9	Over-torque/Over-temp/Over-speed	3+
9	Torque Malfunction	3+
9	Smoke and Fume Elimination	3+
20	Blindfold Cockpit Check	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	Blk Name
AER01	CAI/MIL/ Test	Basic Helicopter Aerodynamics	13	14.4	BSCAERO

1. Prerequisites. GND0102A-04A.

2. Events

AER0101A	CAI	The Atmosphere	0.7
AER0102A	CAI	Rotor Blade Aerodynamics	0.7
AER0103A	CAI	Powered Flight Analysis	1.0
AER0104A	MIL	Atmospherics/Overview	1.0
AER0105A	MIL	Aerodynamic Theories	1.0
AER0106A	MIL	Rotor System Design	0.5
AER0107A	MIL	Rotor System Dynamics	1.0
AER0108A	MIL	Stability and Control	1.5
AER0109A	MIL	Power and Performance	1.5
AER0110A	MIL	Hovering Flight	1.0
AER0111A	MIL	Forward and Climbing Flight	1.5
AER0112A	MIL	Aerodynamics Review	2.0
AER0190A	CAI Test	Aerodynamics Exam	1.0

3. Syllabus Notes

   a. AER0101A-3A shall be completed prior to AER0104A-11A.

   b. AER0104A-11A shall be completed prior to AER0112A.

   c. AER0112A shall be completed prior to AER0190A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
CRM01	Offline MIL	Crew Resource Management – Familiarization Stage	2	2.0	CRMF

1. Prerequisites. GND0102A-4A.

2. Events

CRM0101A	Offline MIL	Crew Resource Management	1.0
CRM0102A	Lab	Check List Lab	1.0

3. Syllabus Notes. CRM0102A.

a. An IP or CIP shall go through the familiarization stage checklists and voice reports in order to teach students proper studying techniques. A simulator, static aircraft, or other approved trainer should be scheduled and used to the max extent practical.

b. Student shall contact the instructor the night prior to the event for guidance.

c. IP shall discuss IP expectations (customs and courtesies, military appearance), scope of helicopter advanced syllabus, multi-pilot mindset, twist grip manipulation, ditties and chair flying, technique vs. procedures and race track pattern.

d. SNAs shall conduct emergency procedures requiring checklist use and non-memory items.

4. Discuss Items. CRM skills (assertiveness, mission analysis, communication, leadership, adaptability/flexibility, situational awareness, and decision making).

Blk #	Media	Title	Events	Hrs	Blk Name
CR01	CAI/MIL/ Test	Course Rules Flight Procedures	6	4.0	CR

1. Prerequisites. GND0102A-04A.

2. Events

CR0101A	CAI	South Whiting Course Rules	0.25
CR0102A	CAI	Pace Course Rules	0.25
CR0103A	CAI	Spencer Course Rules	0.25
CR0104A	CAI	Santa Rosa Course Rules	0.25
CR0105A	MIL	Course Rules Flight Procedures I	2.0
CR0190A	CAI Test	Course Rules Exam	1.0

3. Syllabus Notes

   a. CR0101A-04A shall be completed prior to CR0105A.

   b. CR0105A shall be completed prior to CR0190A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
FAM21	2F302B6	Flight Line and Course Rules Introduction	2	2.6	1.3

1. Prerequisite. FAM2002A.

2. Syllabus Notes. The student shall perform the procedures listed.

a. FAM2101A. Checklists, normal start, abnormal starts, generator/electrical failure, hydraulic system malfunctions, chip lights, fuel system malfunctions, engine fire in flight, battery system malfunctions.

b. FAM2102A. Checklists, normal start, abnormal starts, over-speed, under-speed, compressor stall, engine failure, engine restart, electrical fire, main driveshaft failure, (MDS, engine failure and restart flown by CI with the NFS directing procedures).

c. The instructor shall be at the controls and fly during execution of a main driveshaft failure, engine failure, and an engine restart in flight, while the student directs the IP in the conduct of the NATOPS procedures (including the Critical Memory Items) and CRM. These emergencies should be conducted along course rules en route to or returning from solo OLFs.

3. Special Syllabus Requirements

a. FAM2101A. Instructor shall demonstrate the following:

(1) Taxi procedures.

(2) Course Rules to Spencer.

b. FAM2102A. Instructor shall demonstrate the following: Course Rules to Pace.

4. Discuss Items

FAM2101A
Caution warning light system, hydraulic system and emergency mayday reports.

FAM2102A
Main driveshaft failure, engine restart in flight, vibration identification, mast bumping, emergency egress/landing.

5. Block MIF

CTS REF	MANEUVER	FAM2102A
1	General Knowledge/Procedures	3+
2	Headwork/Situational Awareness	2+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	3+
8	NATOPS Procedures and Limits	3+
8	Familiarization Stage Checklists	3+
8	Normal Start Procedures	4+
8	Normal Shutdown Procedures	4+
9	Emergency Procedures/System Failures	3+
9	Abnormal Starts	3+
9	Post-shutdown Fire/Internal	3+
9	Emergency Engine Shutdown	3+
9	Smoke and Fume Elimination	3+
9	Suspected Fuel Leakage	3+
9	Generator/Electrical Failure	3+
9	Hydraulic System Malfunctions	3+
9	Chip Lights	3+
9	Fuel System Malfunctions	3+
9	Engine Fire in Flight	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM2102A
9	Battery System Malfunctions	3+
9	Engine Over-speed	3+
9	Engine Under-speed	3+
9	Compressor Stall	3+
9	Engine Failure	3+
9	Engine Restart	3+
9	Electrical Fire	3+
9	Main Driveshaft Failure	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
FAM30	2F302B6/ 2F302B7	Cockpit Procedures and Flight Introduction	3	3.9	1.3

1. Prerequisites. FAM2102A (Flight Line and Course Rules Introduction).

2. Syllabus Notes. Student shall conduct a complete prestart, start, hot refuel/hot-seat, and shutdown checklist on each flight in block.

a. Simulator in aircraft is not authorized for this block of training.

b. FAM3001A. Student shall conduct the event with military instructor pilot, and should conduct the event with the On-Wing.

c. FAM3001A. Student shall conduct a GPU start.

d. FAM3001A. Hover and Low work shall be the focus of the event.

e. FAM3002A. Student shall conduct a battery start.

f. FAM3002A. Student shall fly course rules to and from a primary 57B OLF.

g. FAM3002A. Student shall conduct a level speed change (FAM), turn pattern, pattern entry and hover/hover-taxi cut guns.

h. FAM3002A. FAM3002A prioritize level speed change (FAM), turn pattern (FAM), and normal approaches.

i. FAM3003A. Student shall taxi for a departure beginning in the flight line. Prioritize transition to forward flight, normal approaches, and cut guns.

j. FAM3003A. Student shall fly course rules to and from a different OLF than FAM3002A.

k. FAM3003A. Student shall conduct pattern entry, hover and low work, and normal approaches at the student's assigned OLF.

l. FAM3003A. Prioritize transition to forward flight, normal approaches, and cut guns.

3. Special Syllabus Requirements. None.

4. Discuss Items

FAM3001A
Student responsibilities, CRM, VFR integrated scan, trim techniques, hover, hover taxi, vertical takeoff, vertical landing, passing flight controls.

FAM3002A
Rotor blade stall, vortex ring state, power required exceeds power available, course rules for OLF Spencer, Spencer OLF operations, engine failures in hover/hover taxi, sprag clutch malfunctions, transverse flow effect, translating tendency, translational lift.

FAM3003A
Taxi signals, Course rules for OLF Pace, OLF Pace operations, transition to forward flight, normal approach, flight line operations, wind effect, mast bumping, blowback, blade element diagram.

5. Block MIF

CTS REF	MANEUVER	FAM3003A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
8	Normal Start Procedures	4+
8	Normal Shutdown Procedures	4+
9	Emergency Procedures/System Failures	3+
11	NATOPS/Mission Brief	2+
12	Ground Operations	3+
17	Wave-off (Power-On)	2+
21	Course Rules	3+
22	Vertical Takeoff	2+

MIF continued on next page.

CTS REF	MANEUVER	FAM3003A
24	Hover	2+
25	Clearing Turn	2+
26	Hover Taxi	2+
27	Transition to Forward Flight	3+
28	Level Speed Change (LSC) - FAM	3+
29	Turn Pattern - FAM	3+
30	Low Work	2+
31	Square Patterns	2+
32	Normal Approach	2+
34	Vertical Landing	2+
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	2+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	2+

Blk #	Media	Title	Events	Hrs	Blk Name
NAT01	Exam	NATOPS Examinations	2	5.0	NATOPS

1. Prerequisites

   a. FAM3003A completed prior to NAT0101A.

   b. FAM4106A completed prior to NAT0190A.

2. Events

NAT0101A	P/P Exam	NATOPS Open-Book Exam	3.0
NAT0190A	P/P Exam	NATOPS Closed-Book Exam	2.0

3. Syllabus Notes

   a. Obtain NAT0101A from squadron NATOPS office and complete within five working days of receipt.

   b. NAT0101A shall be completed prior to NAT0190A.

   c. Take NAT0190A in squadron spaces prior to FAM4390A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
FAM01	Sqdn	Preflight and Cockpit Procedures 'B'	2	8.0	BFAM

1. Prerequisite. FAM3001A.

2. Events

FAM0101A	Sqdn	FAM 0 – Part I	4.0
FAM0102A	Sqdn	FAM 0 – Part II	4.0

3. Syllabus Notes

a. FAM0101-2A should be conducted with on-wing.

b. SNA shall observe either a FAM40, FAM41, or FAM42 brief.

4. Discuss Items

FAM0101A
Flight schedule, weight and balance computation, performance charts, fuel requirements, NOTAMs weather briefing, CNAF M-3710.7, NATOPS, Rotary Wing Operating Procedures (RWOP), squadron SOP, go/no-go criteria, aircraft issue, aircraft discrepancy book, maintenance action forms (MAFs), aircraft interior/exterior inspection, carbon-lock/frozen turbine, emergency egress procedures, personal and emergency equipment, FTI/NATOPS manual use (verify changes posted), entering and exiting the rotor arc, local operations, safety/standardization programs, training time-out policy.

FAM0102A
Any previously briefed discuss items.

Blk #	Media	Title	Events	Hrs	H/X
FAM40	TH-57B	Familiarization 'B'	4	6.0	1.5

1. Prerequisite. FAM0102A.

2. Syllabus Notes

a. This block should concentrate on BAW, low work maneuvers, landing patterns, and checklist management.

b. All FAM40 flights will be flown with on-wing.

c. FAM40 block does not factor into PAS.

3. Special Syllabus Requirements

a. FAM4001A

(1) Normal and Emergency Egress drill shall be conducted.

(2) Conduct ALSS Training prior to flight with specific emphasis on survival radio preflight.

(3) Conduct ALDIS Lamp DEMO with tower.

b. FAM4004A. IP shall demo 1,000 foot straight in autorotation profile.

4. Discuss Items

FAM4001A
Basic traffic pattern, towered vs. non-towered procedures, flight line operations, taxi signals, South Whiting Field course rules, OLF course rules, VFR integrated scan, ground effect, HIGE/HOGE, power validation check, entering and exiting the rotor arc, trim techniques, ORM process/checklist.

FAM4002A
Flight control system, jammed flight controls, abort start for abnormal starts, engine fire in flight, emergency shutdown, post shutdown fire (internal), fire bottle use, dynamic rollover, tail-rotor LTE diagram (NATOPS), OLF procedures.

FAM4003A
'B' electrical system, generator failure, DC load meter and voltmeter, circuit breakers, electrical/avionics troubleshooting, BAT caution lights, electrical fire, smoke and fume elimination, fuselage fire, blowback, translational lift, pendulum effect, CRM-assertiveness.

FAM4004A
Landing criteria for emergencies, definitions, aircraft limitations (NATOPS), caution system and associated responses, single instrument indications, power req vs airspeed, max range airspeed, max endurance airspeed, home field aborted takeoff and wave-off, CRM-mission analysis.

5. Block MIF

CTS REF	MANEUVER	FAM4004A
1	General Knowledge/Procedures	3+
2	Headwork/Situational Awareness	2+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	3+
9	Emergency Procedures/System Failures	3+
10	Flight Planning	3+
11	NATOPS/Mission Brief	3+
12	Ground Operations	3+
17	Wave-off (Power-On)	3+
21	Course Rules	3+
22	Vertical Takeoff	3+
24	Hover	3+
25	Clearing Turn	3+
26	Hover Taxi	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM4004A
27	Transition to Forward Flight	3+
28	Level Speed Change (LSC) - FAM	1
29	Turn Pattern - FAM	1
31	Square Patterns	3+
32	Normal Approach	2+
34	Vertical Landing	3+
35	Sliding Landing	1
36	No-Hover Landing	1
37	Maximum Load Takeoff	1
41	Hydraulic Boost Off Approach	1
38	Level Speed Change From a Hover	1
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	2+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	2+
44	Power Recovery Autorotations	1
45	Full Autorotation	1
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	Blk Name
AER02	CAI/ MIL	Autorotation Aerodynamics	2	2.5	AERO

1. Prerequisite. FAM4001A.

2. Events

AER0201A	CAI	Autorotation	1.0
AER0202A	MIL	Descending Flight and Autorotations	1.5

3. Syllabus Notes. AER0201A shall be completed prior to AER0202A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
EM30	2F302B7	Introduction to Autorotation	1	1.3	1.3

1. Prerequisites

a. AER0202A.

b. FAM4004A.

2. Syllabus Notes

a. Event should be flown with a military instructor pilot.

b. EM3001 does not factor into PAS.

c. This event will focus on autorotation scan and profile management (e.g. entering and maintaining an autorotation profile). The SNA's ability to execute procedures below 200 feet and below are not the emphasis for this event.

d. This event shall include at least one 5000'AGL autorotation.

e. The instructor shall introduce the proper response at 200, 150, and 100 foot FTI identified checkpoints while the student verbalizes FTI procedures.

f. SNA shall check power available and shall conduct manageable and unmanageable under-speeds, and compressor stalls with emphasis on the set up for landings and the management of energy states and Nr.

g. EM3001A. Simulator in Aircraft is not authorized for this block.

3. Special Syllabus Requirements

a. IP shall demonstrate one engine failure on course rules en route to the OLF, with a landing to a field.

b. IP shall demonstrate one engine failure on course rules en route to the OLF, with a landing to the trees.

4. Discuss Items. Under-speed, compressor stall, “Check Power Available,” Autorotation procedures (NATOPS, FTI), energy management in autorotation, simulated engine failure at altitude, autorotation to the trees, Height-Velocity Diagram, vortex ring state, autorotation aerodynamics and blade element diagram.

5. Block MIF

CTS REF	MANEUVER	EM3001A
1	General Knowledge/Procedures	3+
2	Headwork/Situational Awareness	3+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	3+
9	"Check Power Available"	2+
9	Compressor Stall	2+
9	Under-speed	2+
17	Wave-off (Power-On)	2+
18	Wave-off (Power-Off)	2+
44	Power Recovery Autorotations	2+
45	Full Autorotation	2+
46	Simulated Engine Failure at Altitude	2+
	Special Syllabus Requirement	1

Blk #	Media	Title	Events	Hrs	H/X
FAM41	TH-57B	Familiarization 'B'	6	12.0	2.0

1. Prerequisites

   a. EM3001A.

   b. CR0190A.

2. Syllabus Notes

   a. **FAM4101A-3A : COPT-R SNAs will only conduct these three events. Events that have been waived for COPT-R SNAs are also waived as prerequisites for follow-on events, where applicable.**

   b. The purpose of this block is to continue BAW while introducing additional basic maneuvers, emergency procedures, and autorotation skills.

   c. Emphasize CRM during all flights, especially during simulated emergency procedures.

   d. SNA shall fly off-wing for at least one, but no more than two flights between FAM4102A-FAM4203A.

   e. CORPS SNAs may fly one additional off-wing flight between FAM4104A-FAM4106A.

   f. FAM4101A will be flown with on-wing pilot.

3. Special Syllabus Requirements

   FAM4102A
   Maximum glide autorotation demonstration.

   FAM4103A
   Simulated engine failure on takeoff demonstration.

4. Discuss Items

   FAM4101A
   Engine system, engine oil system, engine failures at altitude (NATOPS, FTI), height-velocity diagram, engine restart in flight, engine chip clearing, engine overspeed (N_F), rotor RPM (N_R), under-speeding N_F/N_R, compressor stall, rotor droop, ATC procedures for VFR, CRM-communications.

FAM4102A
Hydraulic system, hydraulic system failure, hydraulic power cylinder malfunction, mast bumping, autorotative aerodynamics, CRM-leadership.

FAM4103A
Transmission oil system and drivetrain system, sprag clutch slippage, main driveshaft failure, imminent transmission failure, over-torque, icing, simulated engine failure on takeoff, CRM-adaptability/flexibility.

FAM4104A
Fuel system, fuel boost pump failure, airframe fuel filter, fuel contamination, fuel control failure, fuel types/servicing, primary fuels, emergency fuels, suspected fuel leakage, engine fire in flight, CRM-situation awareness.

FAM4105A
Blade element diagram, retreating blade Stall, geometric twist, mast-bumping, departure from controlled flight, AOB vs. load factor.

FAM4106A
Levels of ORM, ORM principles, ORM process, lost communications, Aldis lamp signals, any previously discussed system, EP, or limit.

5. Block MIF

CTS REF	MANEUVER	FAM4106A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	3+
10	Flight Planning	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM4106A
11	NATOPS/Mission Brief	3+
12	Ground Operations	3+
17	Wave-off (Power-On)	3+
18	Wave-off (Power-Off)	3+
21	Course Rules	3+
22	Vertical Takeoff	3+
24	Hover	3+
25	Clearing Turn	3+
26	Hover Taxi	3+
27	Transition to Forward Flight	3+
30	Low Work	3+
32	Normal Approach	3+
34	Vertical Landing	3+
35	Sliding Landing	3+
36	No-Hover Landing	3+
37	Maximum Load Takeoff	3+
38	Level Speed Change From a Hover	3+
41	Hydraulic Boost Off Approach	3+
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	3+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	3+
44	Power Recovery Autorotations	3+
45	Full Autorotation	2+
46	Simulated Engine Failure at Altitude	3+
	Special Syllabus Requirement	1

Blk #	Media	Title	Events	Hrs	Blk Name
EP01	CAI	Emergency Procedures	2	1.5	EMFP

1. Prerequisite. FAM4101A.

2. Events

EP0101A	CAI	In-Flight Emergencies	.75
EP0102A	CAI	Tail-Rotor Emergencies	.75

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
AER03	MIL	Tail-Rotor Aerodynamics	2	3.0	TRAERO

1. Prerequisites. EP0101A-02A.

2. Events

AER0301A	MIL	Tail-Rotor Design and Performance	1.0
AER0302A	MIL	Hazards	2.0

3. Syllabus Notes. AER0301A shall be completed prior to AER0302A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
EM31	2F302B7	Introduction to Tail-Rotor Maneuvers	1	1.3	1.3

1. Prerequisites

a. AER0302A.

b. FAM4106A.

2. Syllabus Notes

a. Flight should be flown with a military instructor pilot.

b. EM3101A does not factor into PAS.

c. This event will focus on tail-rotor emergencies and maneuvers.

d. The Instructor shall introduce the proper responses for each NATOPS tail-rotor emergency condition.

e. The student shall be allowed to fly stuck pedal at altitude and evaluate break right/break left characteristics.

3. Special Syllabus Requirements. None.

4. Discuss Items. CRM during tail-rotor emergencies, wind effects, wind limits, tail-rotor emergencies, loss of tail-rotor authority, loss of tail-rotor effectiveness, complete loss of tail-rotor thrust, loss of tail-rotor control (fixed pitch), the effect of twist grip, collective, and cyclic on yaw, high frequency vibrations, tail-rotor chip.

5. Block MIF

CTS REF	MANEUVER	EM3101A
1	General Knowledge/Procedures	3+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	3+
9	High-Frequency Vibration	3+
9	Tail-Rotor Chip	3+
47	Tail-Rotor Fixed Pitch in a Hover	2+
48	Tail-Rotor Fixed Pitch at Altitude	2+
49	Loss of Tail-Rotor Effectiveness (LTE)	2+
50	Complete Loss of Tail-Rotor Thrust	2+

Blk #	Media	Title	Events	Hrs	H/X
FAM42	TH-57B	Familiarization 'B'	3	6.0	2.0

1. Prerequisite. EM3101A.

2. Syllabus Notes

a. The purpose of this block is to continue developing air work skills during basic maneuvers, emergency procedures, and autorotations.

b. Emphasize CRM during all flights, especially during simulated emergency procedures.

c. SNA shall fly off-wing for at least one, but no more than two flights between FAM4102A-FAM4203A.

3. Special Syllabus Requirements. FAM4202A: Demonstrate tail-rotor malfunctions: fixed pitch right pedal applied, in a hover and at altitude; fixed pitch left pedal applied, in a hover and at altitude; complete loss of tail-rotor thrust in a hover.

4. Discuss Items

FAM4201A
H-V diagram, vortex ring state, control feedback, power required exceeds power available, wind correction, tracking vs. homing, wind consideration in landing patterns, crosswind landings and takeoffs.

FAM4202A
Tail-rotor malfunctions and failures, weight and balance/power calculations, loss of tail-rotor effectiveness, and loss of tail-rotor authority, tail-rotor LTE (NATOPS).

FAM4203A
Vibration identification, ADB, any previously briefed emergency procedure or aircraft limitation, solo guidelines, RWOP/SOP.

5. Block MIF

CTS REF	MANEUVER	FAM4203A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
17	Wave-off (Power-On)	4+
18	Wave-off (Power-Off)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
24	Hover	4+
25	Clearing Turn	4+
26	Hover Taxi	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
34	Vertical Landing	4+
35	Sliding Landing	4+
36	No-Hover Landing	3+
37	Maximum Load Takeoff	3+
38	Level Speed Change From a Hover	4+

MIF continued on next page.

CTS REF	MANEUVER	FAM4203A
41	Hydraulic Boost Off Approach	4+
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	4+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	4+
44	Power Recovery Autorotations	4+
45	Full Autorotation	3+
46	Simulated Engine Failure at Altitude	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
FAM43	TH-57B	Familiarization 'B' Safe-for-Solo Check Flight	1	1.5	1.5

1. Prerequisites

a. NAT0190A.

b. FAM4203A.

2. Syllabus Notes

a. The purpose of this block is to evaluate the student's ability to safely conduct a solo flight. Emphasize the maneuvers that the student will fly on the solo flight, emergencies, course rules, RWOP, and autorotations.

b. Evaluate CRM for the student's ability to act as pilot in command.

c. Flight shall be flown with a Familiarization Standardization Instructor.

d. Flight should not be flown with on-wing.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any previously discussed system, limitation, and/or emergency procedure; special VFR course rules; prohibited maneuvers (RWOP/SOP); hot seat procedures; site watch procedures; solo observer requirements and responsibilities; lost plane procedures; and high wind recovery procedures.

5. Block MIF

CTS REF	MANEUVER	FAM4390A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+

MIF continued on next page.

CTS REF	MANEUVER	FAM4390A
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
17	Wave-off (Power-On)	4+
18	Wave-off (Power-Off)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
34	Vertical Landing	4+
35	Sliding Landing	1
36	No-Hover Landing	1
37	Maximum Load Takeoff	1
38	Level Speed Change From a Hover	4+
41	Hydraulic Boost Off Approach	1
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	4+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	4+
44	Power Recovery Autorotations	4+
45	Full Autorotation	3+
46	Simulated Engine Failure at Altitude	4+

Blk #	Media	Title	Events	Hrs	H/X
FAM44	TH-57B	Familiarization 'B' Solo	1	1.0	1.0

1. Prerequisite. FAM4390A.

2. Syllabus Notes

a. The purpose of this block is to further develop the student's BAW skills and flight leadership.

b. Crew resource management is essential while the student performs the duties as pilot in command.

c. Flight shall be flown with a student solo observer.

3. Special Syllabus Requirements. None.

4. Discuss Items. CRM, maneuver procedures and techniques, conduct of flight, specific crew duties.

5. Block MIF

CTS REF	MANEUVER	FAM4401A
1	General Knowledge/Procedures	1
2	Headwork/Situational Awareness	1
3	Crew Resource Management	1
4	Cockpit Management	1
5	Checklist Management	1
6	Radio Procedures	1
7	Basic Air Work, Scan, and Trim	1
8	NATOPS Procedures and Limits	1
9	Emergency Procedures/System Failures	1
10	Flight Planning	1

MIF continued on next page.

CTS REF	MANEUVER	FAM4401A
11	NATOPS/Mission Brief	1
12	Ground Operations	1
17	Wave-off (Power-On)	1
21	Course Rules	1
22	Vertical Takeoff	1
27	Transition to Forward Flight	1
30	Low Work	1
32	Normal Approach	1
38	Level Speed Change From a Hover	1

Blk #	Media	Title	Events	Hrs	Blk Name
CR02	CAI/MIL	Course Rules Flight Procedures	3	.75	CR

1. Prerequisite. FAM4201A.

2. Events

CR0201A	CAI	Site X Course Rules	.25
CR0202A	CAI	Harold Course Rules	.25
CR0203A	CAI	Night Operations	.25

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
FAM45	TH-57B	Familiarization 'B'	2	4.0	2.0

1. Prerequisites

   a. CR0203A.

   b. FAM4401A.

2. Syllabus Notes

   a. The purpose of this block is to continue developing air work skills during basic maneuvers, emergency procedures, and autorotation.

   b. Emphasize CRM during all flights, especially during simulated emergency procedures.

3. Special Syllabus Requirements. None.

4. Discuss Items

   FAM4501A
   Retreating blade stall, vibration identification/high frequency vibration, rotor RPM droop, Performance data from NATOPS, Part XI, power required exceeds power available.

   FAM4502A
   Mechanical versus virtual axis, phase lag, dissymmetry of lift, geometric imbalance, blowback, un-commanded right roll during flight below 1 G, tail-rotor malfunctions.

5. Block MIF

CTS REF	MANEUVER	FAM4502A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+

MIF continued on next page.

CTS REF	MANEUVER	FAM4502A
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
17	Wave-off (Power-On)	4+
18	Wave-off (Power-Off)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
23	No-Hover Takeoff	3+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	4+
34	Vertical Landing	4+
35	Sliding Landing	4+
36	No-Hover Landing	4+
37	Maximum Load Takeoff	4+
38	Level Speed Change From a Hover	1
39	Quick Stop	1
40	High-Speed Approach	1
41	Hydraulic Boost Off Approach	1
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	4+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	4+
44	Power Recovery Autorotations	1
45	Full Autorotation	1
46	Simulated Engine Failure at Altitude	4+

Blk #	Media	Title	Events	Hrs	Blk Name
AER04	CAI/MIL	Advanced Aerodynamics	2	3.0	ADVAERO

1. Prerequisite. FAM4401A.

2. Events

AER0401A	CAI	Flight Phenomena	1.0
AER0402A	MIL	Advanced Aero and Rotor System Dynamics	2.0

3. Syllabus Notes. AER0401A shall be completed prior to AER0402A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
LOG01	CAI	Logistics Flight Procedures	2	0.5	LOGFP

1. Prerequisite. AER0402A.

2. Events

LOG0101A	CAI	Confined Area Landing (CAL) and External Load Operations	0.25
LOG0102A	CAI	Dynamic Maneuvers	0.25

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
EM32	2F302B7	Aircraft Handling	1	1.3	1.3

1. Prerequisites

a. LOG0102A.

b. FAM4502A.

2. Syllabus Notes

a. The event will be executed at locations and in conditions that present high DA and high OATs using heavy aircraft configuration.

b. With the exception of CALs and dynamic approaches, all maneuvers shall be executed with some combination of high density altitude and gross weight conditions to highlight techniques in power-limited flight regimes.

c. SNA shall conduct one takeoff and landing with power available below HOGE torque.

d. SNA shall conduct one landing with power available below power required to HIGE.

e. Instructor shall manipulate winds on final for one approach to specifically demonstrate loss of wind effect.

3. Special Syllabus Requirements

a. Demonstrate effects of control movement on torque required.

b. Demonstrate loss of effective translational lift on final.

4. Discuss Items. Power required exceeding power available, vortex rings, mast bumping, NATOPS performance charts, power checks, control input effect on torque (power required), engine failure at high-speed low altitude, effects of temperature, weight, altitude and wind on aircraft performance, temperature, weight altitude and wind effect on aircraft performance, energy maneuverability diagram (performance envelope), retreating blade stall, HIGE/HOGE, turbulence.

5. Block MIF

CTS REF	MANEUVER	EM3201A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
17	Wave-off (Power-On)	3+
22	Vertical takeoff, heavy	3+
24	Hover	3+
25	Clearing Turn, heavy or high winds	2+
27	Transition to Forward Flight	3+
33	Steep Approach, at Altitude	3+
35	Sliding Landing, Power Limited	3+
36	No Hover Landing, Power Limited	3+
37	Maximum Load Takeoff	3+
40	High-Speed Approach	1
45	Full Autorotation	3+
51	Power Checks	2+
52	Landing Zone (LZ) Evaluation	2+
53	Confined Area Operations	2+
54	Pinnacle Operations	2+
55	Dynamic Landing Approaches (DLAs)	1
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
LOG40	TH-57B	Logistics	2	4.0	2.0

1. Prerequisite. EM3201A.

2. Syllabus Notes

a. Emphasize CRM during all flights.

b. LOG4002A shall be flown with an aircrewman.

c. IP shall demonstrate Dynamic Landing Approaches (DLA), and the SNA shall conduct a minimum of one of each type (360, 180, and 90 degree) of DLA.

3. Special Syllabus Requirements. LOG4001A: Demonstrate the high-speed, low-level autorotation.

4. Discuss Items

LOG4001A
Course rules for Harold/SITE X, low-level lookout doctrine, use of radar altimeter, dynamic rollover, engine failure at high-speed and low-level, mast bumping, vortex ring state, aircrew brief.

LOG4002A
CRM, power required exceeds power available, hover in-ground effect (HIGE)/hover out-of-ground effect (HOGE), power checks, wave-off during CALs/externals, engine failure with external load, weight and balance.

5. Block MIF

CTS REF	MANEUVER	LOG4002A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	3+
21	Course Rules	4+
23	No-Hover Takeoff	3+
27	Transition to Forward Flight	3+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	4+
34	Vertical Landing	4+
36	No-Hover Landing	4+
39	Quick Stop	3+
40	High-Speed Approach	3+
51	Power Checks	3+
52	Landing Zone (LZ) Evaluation	3+
53	Confined Area Operations	3+
54	Pinnacle Operations	3+
55	Dynamic Landing Approaches	3+
56	External Load Operations	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	Blk Name
SYS02	CAI/MIL	Systems 'C'	3	3.0	CSYS

1. Prerequisite. LOG4001A.

2. Events

SYS0201A	CAI	TH-57C Electrical System	0.5
SYS0202A	CAI	TH-57C Mini-stab System	0.5
SYS0203A	MIL	TH-57C Helicopter Systems TH-57C Electrical System TH-57C Mini-stab System TH-57C Avionics	2.0

3. Syllabus Notes

   a. SYS0201A and SYS0202A may completed in any order.

   b. SYS0201A-2A shall be completed prior to SYS0203A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
FAM31	2F302C6\ 2F302C7	Familiarization Simulator 'C' Model Transition	1	1.3	1.3

1. Prerequisites

a. GND0303A.

b. SYS0203A.

c. LOG4002A.

2. Syllabus Notes

a. The purpose of this block is to introduce the student aviator to the 'C' model aircraft and the differences in cockpit configuration.

b. All TH-57C ground checklists and voice reports will be accomplished with special emphasis on the Comm/Nav checklist. Student shall execute a blindfold cockpit check.

3. Special Syllabus Requirements. None.

4. Discuss Items. Basic Instrument syllabus, pubs carried on BI flights, checklists (prestart, start, instrument takeoff (ITO), shutdown, hot refuel, hot seat, shutdown), Comm/Nav checklist, cockpit crew coordination brief, angle of bank for standard-rate turns (SRTs).

5. Block MIF

CTS REF	MANEUVER	FAM3101A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	3+
8	NATOPS Procedures and Limits	4+
8	Comm/Nav Checklist	3+
8	Normal Start Procedures	4+
8	Normal Shutdown Procedures	4+
9	Emergency Procedures/System Failures	4+
20	Blindfold Cockpit Check	3+

Blk #	Media	Title	Events	Hrs	H/X
EP30	2F302C7	Emergency Procedures	1	1.3	1.3

1. Prerequisite. FAM3101A.

2. Syllabus Notes

a. EP3001A shall be conducted in a 2F302C7.

b. Requires execution of the following emergency procedures: abnormal starts, engine over-speed, sprag clutch slippage, main driveshaft failure, hydraulic system failure, hydraulic power cylinder malfunction, engine failure, engine restart, compressor stall, torque-meter malfunction, loss of Tail-Rotor thrust, vibration analysis, Fuel Control Malfunction, and autorotation.

3. Special Syllabus Requirements. None.

4. Discuss Items. Land as soon as possible, land as soon as practicable, land immediately, MAYDAY/Emergency report, landing site selection, single instrument indications, powered and unpowered flight decision making, in-flight malfunctions when VMC, and crew coordination during emergencies.

5. Block MIF

CTS REF	MANEUVER	EP3001A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	4+
5	Checklist Management	4+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Abnormal Starts	4+
9	Engine Over-speed	3+
9	Sprag Clutch Slippage	3+
9	Hydraulic System Failure	4+
9	Hydraulic Power Cylinder Malfunction	3+
9	Compressor Stall	3+
9	Engine Failure	3+
9	Engine Restart	3+
9	Main Driveshaft Failure	3+
9	Torque-meter Malfunction	4+
9	Vibration Analysis	3+
9	Fuel Control Malfunction	3+
18	Wave-off (Power Off)	4+
19	Spatial Disorientation Recognition and Recovery	4+
45	Full Autorotation	3+
50	Complete Loss of Tail-Rotor Thrust	3+

Blk #	Media	Title	Events	Hrs	H/X
FAM46	TH-57C	Familiarization 'C'	2	3.0	1.5

1. Prerequisites

   a. EP3001A before FAM4601A.

   b. BI4003A before FAM4602A.

2. Syllabus Notes

   a. The purpose of this block is to transition air work skills and leadership into the TH-57C model aircraft.

   b. Emphasis should be placed on checklists and new requirements during start, operation, emergencies, and shutdown.

3. Special Syllabus Requirements. None.

4. Discuss Items

   FAM4601A
   TH-57C electrical system, trim techniques in the TH-57C, weather brief requirements, course rules, torque limitations, preflight differences between 'C' and 'B' model aircraft, abnormal starts (igniter failure, hot start, hung start), fire on start, emergency shutdown, and engine failure in flight.

   FAM4602A
   AFCS failure, hydraulic system failure, hydraulic power cylinder malfunction, transmission chip light, sprag clutch slippage, and post-refuel/hot seat checklist.

5. Block MIF

CTS REF	MANEUVER	FAM4602A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	3+

MIF continued on next page.

CTS REF	MANEUVER	FAM4602A
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
8	Comm/Nav Checklist	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
12	Preflight Inspection	4+
16	Stab-Off Flight	3+
17	Wave-off (Power-On)	4+
18	Wave-off (Power-Off)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	3+
34	Vertical Landing	4+
35	Sliding Landing	3+
36	No-Hover Landing	4+
37	Maximum Load Takeoff	4+
41	Hydraulic Boost Off Approach	1
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	4+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	4+
44	Power Recovery Autorotations	3+
46	Simulated Engine Failure at Altitude	4+

Blk #	Media	Title	Events	Hrs	Blk Name
CRM02	Offline MIL	Crew Resource Management – Instrument Stage	1	2.0	CRM

1. Prerequisite. FAM4601A.

2. Events

CRM0201A	Offline MIL	Crew Resource Management - Instrument	2.0

3. Syllabus Notes. Event will be completed prior to BI4001I.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
INS01	CAI	Basic Instrument Flight Procedures	10	14.9	BIFP

1. Prerequisite. FAM4601A.

2. Events

INS0101A	CAI	Instrument Displays and Cross-Check	1.0
INS0102A	CAI	Turns, Climbs, Descents	0.7
INS0103A	CAI	Basic Instrument Flight Maneuvers	1.0
INS0104A	CAI	Basic Instruments Review	1.0
INS0105A	CAI	Basic Radio Instrument Maneuvers	1.7
INS0106A	MIL	Basic Radio Instruments Review	2.0
INS0107A	MIL/ Lab	Basic Radio Instruments Practice Lab	2.0
INS0108A	CAI	Basic Holding Concepts	1.5
INS0109A	MIL	Basic Holding Concepts Review	2.0
INS0110A	MIL/ Lab	Basic Holding Concepts Lab	2.0

3. Syllabus Notes. The INS01 block includes courseware and classes from Primary T-6B training (1542.166C). This block is intended to fill in knowledge gaps and SNAs are not expected to be familiar with T-6B publications to include FTIs, limitations, emergency procedures, etc.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
INS02	CAI/ MIL	IFR Instrument Flight Procedures	8	17.5	BIFP

1. Prerequisite. INS0110A.

2. Events

INS0201A	CAI	Flight Information Publications 1 (FLIP)	2.0
INS0202A	CAI	Flight Information Publications 2 (FLIP)	2.0
INS0203A	CAI	NOTAMs and Weather	2.0
INS0204A	MIL	FLIP, NOTAMs and Weather Review	2.0
INS0205A	CAI	Mission Planning Computations	1.5
INS0206A	CAI	IFR Mission Planning	3.0
INS0207A	MIL	IFR Mission Planning Lab 1	3.0
INS0208A	MIL	IFR Mission Planning Lab 2	2.0

3. Syllabus Notes. The INS02 block includes courseware and classes from Primary T-6B training (1542.166C). This block is intended to fill in knowledge gaps and SNAs are not expected to be familiar with T-6B publications to include FTIs, limitations, emergency procedures, etc.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
INS03	CAI/MIL/ Lab/Lect	IFR Instrument Flight Procedures	14	19.6	BIFP

1. Prerequisite. INS0208A.

2. Events

INS0301A	CAI	IFR Clearance, Taxi, Instrument Takeoff, and Departure	1.0
INS0302A	CAI	En route Procedures	1.0
INS0303A	MIL	IFR Navigation Review 1	1.5
INS0304A	CAI	Terminal Procedures	1.0
INS0305A	CAI	Low Altitude Approaches	1.0
INS0306A	MIL	IFR Navigation Review 2	1.0
INS0307A	CAI	Final Approach	1.2
INS0308A	CAI	Radar Approaches	1.4
INS0309A	CAI	High Altitude Approaches	0.5
INS0310A	CAI	Transition to Landing and Missed Approach	2.5
INS0311A	MIL	IFR Navigation Review 3	2.5
INS0312A	MIL	IFR Navigation Review 4	2.0
INS0313A	MIL/ Lab	Navigation Practice Lab	2.0
INS0314A	Lect	CRM Case Studies	1.0

3. Syllabus Notes. The INS03 block includes courseware and classes from Primary T-6B training (1542.166C). This block is intended to fill in knowledge gaps and SNAs are not expected to be familiar with T-6B publications to include FTIs, limitations, emergency procedures, etc.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
INS04	CAI	Basic Instrument Flight Procedures	7	3.2	BIFP

1. Prerequisite. INS0314A.

2. Events

INS0401A	CAI	Departure and Arrival Procedures	0.5
INS0402A	CAI	Basic Instrument Flight Maneuvers	0.5
INS0403A	CAI	Advanced Instrument Flight Procedures	0.5
INS0404A	CAI	Introduction to NAVAIDS & RI Flight Procedures	0.4
INS0405A	CAI	Fundamentals of RI Flight Procedures	0.5
INS0406A	CAI	TACAN & VOR Approaches	0.4
INS0407A	CAI	VOR/TACAN with Failed Gyro	0.4

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
BI30	2F302C6/ 2F302C7	Basic Instruments	5	6.5	1.3

1. Prerequisite. INS0407A.

2. Syllabus Notes

a. Students shall fly a minimum of four instrument takeoffs, three departures, and two approaches by end of block.

b. A normal aircraft start shall be conducted on each event, including the Comm/Nav and level-off checklist, except for BI3004A and BI3005A where the simulator instructor will have the aircraft already up and running, simulating a hot-seat crew-change event.

c. BI3005A shall be conducted in a Level 7 FTD on motion.

d. At least one additional event (total of 2 events) in block shall be conducted in a Level 7 FTD on motion.

3. Special Syllabus Requirements. None.

4. Discuss Items

BI3001A
Attitude instrument flight/trim/scan, trim technique in TH-57C, approximate power settings, communication procedures, level-off checklist, maneuver completion report, straight-and-level flight, level speed changes, standard-rate turns, vertical S-1 pattern, turn pattern, partial panel-directional gyro failure, virtual vs mechanical axis.

BI3002A
Instrument autorotation, main generator failure (IMC), standby generator failure (IMC).

BI3003A
Instrument takeoff, departure, preparing for an instrument approach, approach, missed approach, Oscar pattern, emergency descent, power required exceeds power available (at altitude).

BI3004A
Full panel unusual attitude recovery, pitot-static instrument failure, environmental control system (ECS) malfunctions, heater malfunction.

BI3005A
Partial panel straight-and-level, partial panel turns, partial panel climbs and descents, full panel unusual attitude recovery, electrical fire during IMC flight, engine fire during IMC, fuselage fire during IMC, failed attitude indicator, blade stall.

5. Block MIF

CTS REF	MANEUVER	BI3005A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	3+
7	Straight and Level	3+
7	Level Standard-Rate Turns	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	3+
13	Departure Procedures	3+
18	Wave-off (Power-Off)	3+
19	Spatial Disorientation Recognition and Recovery	2+
57	Instrument Takeoff	3+
58	Level Speed Change (LSC) – Instruments	3+
59	Vertical S-1 Pattern	3+

MIF continued on next page.

CTS REF	MANEUVER	BI3005A
60	Turn Pattern - Instruments	3+
61	Oscar Pattern	3+
62	Partial Panel, Directional Gyro Failure	3+
63	Partial Panel, Attitude Gyro Failure	3+
64	Unusual Attitude Recovery	3+
65	Unusual Attitude Recovery-Partial Panel	3+
69	Non-Precision Approach	3+
74	Instrument Autorotation	3+

Blk #	Media	Title	Events	Hrs	H/X
BI40	TH-57C	Basic Instruments	3	5.1	1.7

1. Prerequisites

   a. BI3005A.

   b. CRM0201A.

2. Syllabus Notes

   a. Students shall fly a minimum of three ITOs on BI4001A.

   b. Students should fly a TACAN or VOR approach for the Non-Precision approach.

3. Special Syllabus Requirements

   BI4001A
   IP will demonstrate a TACAN/VOR-DME approach with proper CRM.

   BI4002A
   IP will give a spatial disorientation demonstration as well as proper use of the two-challenge rule.

4. Discuss Items

   BI4001A
   Weather requirements for BI flights, attitude instrument flight/trim/scan, observer brief, approach brief, Instrument CRM (crew responsibilities), publications carried on instrument flights, cockpit management, and Ministab operation.

   BI4002A
   Types of spatial disorientation, inner ear illusions, visual illusions, spatial disorientation prevention/recognition, spatial disorientation recovery, NATOPS spatial disorientation, and NATOPS two-challenge rule.

   BI4003A
   Required equipment for IMC flight, NDZ “on top” weather briefing, and NDZ stereo-type flight plans, required voice reports, initial radio contact with ATC, modified normal approach.

5. Block MIF

CTS REF	MANEUVER	BI4003A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	3+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	3+
7	Straight and Level	4+
7	Level Standard-Rate Turns	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	3+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	3+
19	Spatial Disorientation Recognition and Recovery	3+
57	Instrument Takeoff	3+
58	Level Speed Change (LSC) – Instruments	3+
59	Vertical S-1 Pattern	3+
60	Turn Pattern - Instruments	3+
61	Oscar Pattern	3+
62	Partial Panel, Directional Gyro Failure	3+
63	Partial Panel, Attitude Gyro Failure	3+
64	Unusual Attitude Recovery	3+
65	Unusual Attitude Recovery-Partial Panel	3+
67	TACAN Point-to-Point Navigation	3+
69	Non-Precision Approach	3+
73	Modified Normal Approach	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
FAM47	TH-57C	Night Familiarization 'C'	1	1.5	1.5

1. Prerequisite. FAM4602A.

2. Syllabus Notes

a. The purpose of this block is to develop air work skills during basic maneuvers and autorotation in the TH-57C model aircraft at night.

b. Emphasize basic skills and night operations.

3. Special Syllabus Requirements. None.

4. Discuss Items. Dark adaptation, night hover scan, night visual scan techniques, spatial disorientation, use of lights, visual approach slope indicator (VASI)/precision approach path indicator (PAPI), helicopter procedures at night, night course rules (Whiting, Santa Rosa, Duke, Choctaw), emergency procedures at night, landing site evaluation at night, engine failures at night, landing zone lighting, use of lights, night vision, autorotations at night.

5. Block MIF

CTS REF	MANEUVER	FAM4701A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	3+
4	Cockpit Management	3+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	3+
11	NATOPS/Mission Brief	4+

MIF continued on next page.

CTS REF	MANEUVER	FAM4701A
12	Ground Operations	3+
21	Course Rules	3+
22	Vertical Takeoff	3+
24	Hover	3+
26	Hover Taxi	3+
27	Transition to Forward Flight	4+
30	Low Work	3+
32	Normal Approach	3+
33	Steep Approach	3+
34	Vertical Landing	3+
36	No-Hover Landing	3+

Blk #	Media	Title	Events	Hrs	H/X
BI41	TH-57C	Basic Instruments	3	5.1	1.7

1. Prerequisite. BI4003A.

2. Syllabus Notes. Students should fly a TACAN or VOR Approach for the Non-precision Approach.

3. Special Syllabus Requirements. None.

4. Discuss Items

BI4101A
Required equipment for IMC, battery relay light, types of NOTAMs, GPS NOTAMs, NOTAM codes, Flight Information Handbook (FIH), Temporary Flight Restriction (TFR), lost communications – NDZ stereotype flight plan.

BI4102A
Icing, weather watch (WW), convective SIGMET/SIGMET/AIRMET, sources of weather information.

BI4103A
Airspeed limits, standby generator minimum airspeed, altimeter error, attitude gyro malfunction (IMC), standby battery, turbulence penetration.

5. Block MIF

CTS REF	MANEUVER	BI4103A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	3+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
7	Straight and Level	4+

MIF continued on next page.

CTS REF	MANEUVER	BI4103A
7	Level Standard-Rate Turns	4+
8	NATOPS Procedures and Limits	4+
8	Instrument Flight Checklist	4+
8	Level-Off Checklist	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	4+
16	Stab-Off Flight	4+
19	Spatial Disorientation Recognition and Recovery	4+
57	Instrument Takeoff	4+
58	Level Speed Change (LSC) – Instruments	4+
59	Vertical S-1 Pattern	4+
60	Turn Pattern - Instruments	4+
61	Oscar Pattern	4+
62	Partial Panel, Directional Gyro Failure	4+
63	Partial Panel, Attitude Gyro Failure	4+
64	Unusual Attitude Recovery	4+
65	Unusual Attitude Recovery-Partial Panel	4+
67	TACAN Point-to-Point Navigation	4+
69	Non-Precision Approach	3+
73	Modified Normal Approach	4+

Blk #	Media	Title	Events	Hrs	Blk Name
NAV01	CAI/MIL	Visual Navigation Flight Procedures	6	7.8	VNAVFP

1. Prerequisite. BI4001A.

2. Events

NAV0101A	CAI	VFR Mission Planning	1.5
NAV0102A	CAI	Lost Procedures	0.5
NAV0103A	CAI	VFR Arrivals	1.5
NAV0104A	CAI	Strange Field Procedures	0.5
NAV0105A	MIL	VFR Navigation Review	1.8
NAV0106A	MIL	VFR Navigation Planning Lab	2.0

3. Syllabus Notes. The NAV01 block includes courseware and classes from Primary T-6B training (1542.166C). This block is intended to fill in knowledge gaps and SNAs are not expected to be familiar with T-6B publications to include FTIs, limitations, emergency procedures, etc.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
NAV02	CAI/MIL	Visual Navigation Flight Procedures	3	2.5	VNAVFP

1. Prerequisite. BI4001A.

2. Events

NAV0201A	CAI	Day Navigation Flight Procedures	1.0
NAV0202A	CAI	Night Navigation Flight Procedures	0.5
NAV0203A	MIL	VFR Navigation Review	1.0

3. Syllabus Notes

   a. NAV0201A and NAV0202A can be completed in any order.

   b. NAV0201A-2A shall be completed prior to NAV0203A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
GND04	Lect/ Lab	Mission Planning System	2	4.5	MSNPLN

1. Prerequisites

   a. NAV0106A and NAV0203A prior to GND0401A.

   b. TRF0101A prior to GND0402A.

2. Events

GND0401A	Lect/Lab	MPS Overview/Lab-Navigation	2.0
GND0402A	Lect/Lab	MPS Overview/Lab-Mission Planning	2.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
NAV40	TH-57C	Day Navigation	5	8.5	1.7

1. Prerequisite. GND0401A.

2. Syllabus Notes

a. **NAV4001A-3A : COPT-R SNAs will only conduct these three events. Events that have been waived for COPT-R SNAs are also waived as prerequisites for follow-on events, where applicable.**

b. SNA shall call the IP before the flight to obtain route for planning purposes.

c. SNA shall prepare VFR sectional chart for assigned route, including (at a minimum) course line, a minimum of 8 waypoints, and "doghouse" with heading, distance, and timing at 100 knots groundspeed. SNA shall also create a NavLog.

d. SNA shall bring a completed Flight Plan.

e. At least one flight shall be planned using MPS.

f. To the maximum extent possible, flights in this block should be conducted together as part of a multi-leg cross country event to and from a destination outside of the local flying area, including NAV41 event.

3. Special Syllabus Requirements. None.

4. Discuss Items

NAV4001A
VFR Airspace (dimensions, requirements, and weather minimums), VFR filing and flight procedures, special visual flight rules (SVFR), course rules, sectional/aeronautical charts, lost aircraft procedures, inadvertent entry into IMC.

NAV4002A
Use of GPS, GTN-650 pan menu and graphical flight plan editing, contract gas, fuel planning and computation.

NAV4003A
Wake turbulence, land and hold-short operations (LAHSO), unfamiliar airport taxiing, airport operations with and without a control tower.

NAV4004A
CRM, CNAF 3710.7 (local flying area, civilian airfields, other than airfield locations, closed tower vs closed airfield).

NAV4005A
NOTAMs, TFRs, SIGMETs, AIRMETs, any previously discussion item from NAV4001A - NAV4004A.

5. Block MIF

CTS REF	MANEUVER	NAV4005A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
12	Preflight/Post-flight	4+
12	Filing/Closing Flight Plans	4+
13	Departure Procedures	4+
14	En route Procedures	4+
14	Lost Aircraft Procedures	4+
14	Groundspeed/Fuel Checks	4+
14	Use of Flight Watch/Metro/FSS	4+
15	Terminal Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	NAV4005A
27	Transition to Forward Flight	4+
73	Modified Normal Approach	4+
75	VFR Navigation	4+
75	Flight Rules and Regulations	4+
75	Sectional Symbology	4+

Blk #	Media	Title	Events	Hrs	H/X
NAV41	TH-57C	Night Navigation	1	1.7	1.7

1. Prerequisites

a. NAV4001A.

b. FAM4701A.

2. Syllabus Notes

a. SNA shall call the IP before the flight to obtain route for planning purposes.

b. SNA shall prepare VFR sectional chart for assigned route, including (at a minimum) course line, a minimum of 8 waypoints, and "doghouse" with heading, distance, and timing at 100 knots groundspeed. SNA must also create a NavLog.

c. SNA shall bring a completed Flight Plan.

d. A minimum of one hour of flight time must be one-half hour after sunset.

e. To the maximum extent possible, this flight should be conducted together as part of a multi-leg cross country event to and from a destination outside of the local flying area with NAV40 block flights.

3. Special Syllabus Requirements. None.

4. Discuss Items. Night navigation techniques, night in-flight emergencies, night emergency landing site evaluation, airport lighting, aircraft lighting requirements, minimum equipment for night flight, night cockpit setup.

5. Block MIF

CTS REF	MANEUVER	NAV4101A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
12	Preflight/Post-flight	4+
12	Filing/Closing Flight Plans	4+
13	Departure Procedures	4+
14	En route Procedures	4+
14	Lost Aircraft Procedures	4+
14	Groundspeed/Fuel Checks	4+
14	Use of Flight Watch/Metro/FSS	4+
15	Terminal Procedures	4+
27	Transition to Forward Flight	4+
73	Modified Normal Approach	3+
75	VFR Navigation	3+
75	Flight Rules and Regulations	4+
75	Sectional Symbology	4+

Blk #	Media	Title	Events	Hrs	Blk Name
INS05	MIL/SS/ Test	Instrument Navigation	4	24.5	INAV

1. Prerequisite. BI4101A.

2. Events

INS0501A	MIL	Instrument Flight Rules	7.0
INS0502A	SS	Instrument Navigation	13.0
INS0503A	MIL	HELO MET Review	1.5
INS0590A	CAI Test	Instrument Navigation Exam	3.0

3. Syllabus Notes

   a. INS0501A-3A shall be completed prior to INS0590A.

   b. INS0501A and INS0503A may be done in any order.

   c. INS0502A should not be scheduled until INS0501A or INS0503A have been completed.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
RI01	CAI/MIL	Radio Instruments	4	3.3	RIFP

1. Prerequisite. BI4101A.

2. Events

RI0101A	CAI	GTN-650 Procedures	0.4
RI0102A	CAI	ATC Radio Procedures	0.4
RI0103A	CAI	Radar and ILS Approaches	0.5
RI0104A	MIL	Radio Instrument Flight Procedures	2.0

3. Syllabus Notes. RI0101A-3A shall be completed prior to RI0104A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
EP31	2F302C6/ 2F302C7	Emergency Procedures	2	2.6	1.3

1. Prerequisites

   a. NAV4101A.

   b. NAV4005A.

   c. BI4103A.

   d. INS0503A.

   e. RI0104A.

   f. RI3004A and CPI3002A before EP3102A.

2. Syllabus Notes. None.

3. Special Syllabus Requirements. None.

4. Discuss Items

   EP3101A
   Land as soon as possible, land as soon as practicable, MAYDAY/emergency report, landing site selection, single instrument indications, in-flight malfunctions when IMC, crew coordination during emergencies, and RI syllabus.

   EP3102A
   Emergency Landing site selection upon regaining VMC, Emergency Communication with ATC for assistance required, any EP, any NATOPS Limit.

5. Block MIF (Pilot)

CTS REF	MANEUVER	EP3102A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	4+
5	Checklist Management	4+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
9	Abnormal Starts	4+
9	Engine Over-speed	3+
9	Hydraulic Power Cylinder Malfunction	3+
9	Compressor Stall	3+
9	Engine Failure	3+
9	Engine Restart	3+
9	Main Driveshaft Failure	3+
9	Torque-meter Malfunction	4+
9	Vibration Analysis	3+
9	Fuel Control Malfunction	3+
9	Generator Failure	3+
9	Fuel Boost Pump Failure	3+
9	Electrical Fire	3+
18	Wave-off (Power-Off)	3+
57	Instrument Takeoff	3+
74	Instrument Autorotation	3+

Blk #	Media	Title	Events	Hrs	H/X
RI30	2F302C7/ 2F302C6	Radio Instruments	4	5.2	1.3

1. Prerequisite. EP3101A.

2. Syllabus Notes

a. SNAs shall fly approaches both with and without DME.

b. SNAs shall fly a minimum of three GPS approaches with at least one being a full procedure approach, and should fly a minimum of three TACAN/VOR approaches by the end of block.

c. The following events may be conducted on the same day. For each of the two events listed, the RI30 event shall be flown prior to the CPI30 event.

(1) RI3001A - CPI3001A.

(2) RI3002A - CPI3002A.

3. Special Syllabus Requirements. None.

4. Discuss Items

RI3001A
TACAN Point-to-point procedures, NAVAID voice capability, tracking versus homing, required voice reports, initial radio contact with ATC, compressor stall, engine under-speed, engine over-speed.

RI3002A
VOR procedures, VOR holding, intersection holding, VOR procedure turn, cockpit setup, backup NAVAIDS, approach plate symbols, computing timing from final approach fix (FAF) to MAP, VDPs

RI3003A
TACAN procedures, TACAN holding, TACAN arcing, use of course deviation indicator (CDI) and horizontal situation indicator (HSI), radial intercepts, 40-degree lock-off, cone of confusion, groundspeed check, instrument autorotation to touchdown, cockpit/Comm/Nav organization.

RI3004A
GPS procedures, flight plans, en route procedures, LPV/LNAV approaches, WAAS, ADS-B, RAIM, RNAV missed approach.

5. Block MIF

CTS REF	MANEUVER	RI3004A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	3+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
14	Tracking	3+
18	Wave-off (Power-Off)	3+
66	Intercepts	3+
67	TACAN Point-to-Point Navigation	3+
68	Holding	3+
69	Non-Precision Approach	3+
70	Precision Approach	3+
72	Missed Approach	3+
74	Instrument Autorotation	3+

Blk #	Media	Title	Events	Hrs	H/X
CPI30	2F302C6/ 2F302C7	Co-Pilot Radio Instruments	2	2.6	1.3

1. Prerequisite. EP3101A.

2. Syllabus Notes

a. At least one event shall be flown with a Military Instructor Pilot.

b. Both events shall not be flown with the same instructor.

c. The CI/IP shall instruct from the left cockpit seat acting as the flying pilot & pilot in command.

d. A minimum of three approaches shall be conducted on each event.

e. A minimum of one non-towered approach shall be conducted during the block (i.e. KCEW, K1R8, K0J4).

f. The following events may be conducted on the same day. For each of the two events listed, the RI30 event shall be flown prior to the CPI30 event.

(1) RI3001A - CPI3001A.

(2) RI3002A - CPI3002A.

g. CTS Items for this block shall be evaluated based on PNAC/Co-Pilot performance per FTI and NATOPS.

h. The following types of approaches shall be executed at least once during the block:

(1) TACAN.

(2) VOR.

(3) RNAV.

(4) ILS.

3. Special Syllabus Requirements. CPI3001A: IP shall demonstrate proper tasking of the PNAC following an approach brief.

4. Discuss Items

CPI3001A
PAC responsibilities and tasks, PNAC responsibilities and tasks, checklist management, CRM skills (assertiveness, mission analysis, communication, leadership), two-challenge rule, PNAC TACAN/VOR procedures, PNAC IMC emergencies
(icing, lost communications, attitude gyro failure).

CPI3002A
Observer responsibilities and tasks, CRM skills (adaptability/flexibility, situational awareness, decision making), ATC departure and approach instructions, PNAC ILS approach procedures, PNAC RNAV approach procedures, recognizing spatial disorientation as PNAC, unusual attitude as PNAC, PNAC IMC emergencies (main generator malfunction, FCS inverter failure, engine fire).

5. Block MIF (Co-Pilot)

CTS REF	MANEUVER	CPI3002A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	CRM-Assertiveness	3+
3	CRM-Mission Analysis	3+
3	CRM-Communication	3+
3	CRM-Adaptability/Flexibility	3+
3	CRM-Situational Awareness	3+
3	CRM-Leadership	3+
3	CRM-Decision Making	3+
4	Cockpit Management	3+
5	Checklist Management	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
14	En route Procedures	4+
15	Terminal Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	CPI3002A
19	Spatial Disorientation Recognition and Recovery	4+
69	Non-Precision Approach	4+
70	Precision Approach	4+
72	Missed Approach	4+
	Special Syllabus Requirement	1

Blk #	Media	Title	Events	Hrs	H/X
RI31	2F302C7	Radio Instruments	5	6.5	1.3

1. Prerequisites

   a. EP3102A and INS0590A before RI3101A.

   b. RI3103A before RI3104A.

2. Syllabus Notes

   a. SNA should fly at least one approach via radar vectors to final.

   b. Events shall be flown from the right seat.

   c. SNA shall fly RI3104A and RI3105A with another SNA conducting CPI3101A and CPI3102A. If an SNA event is not available to support RI3104A and/or RI3105A, those events may be flown with a CI/IP at the discretion of the squadron commanding officer.

   d. The following events may be conducted on the same day. For each of the two events listed, events may be flown in any order.

      (1) RI3104A - CPI3101A.

      (2) RI3105A - CPI3102A.

3. Special Syllabus Requirements. None.

4. Discuss Items

   RI3101A
   Failed directional gyro TACAN approach, lost communication while being radar vectored, engine fire in flight.

   RI3102A
   Alternate requirements, Fuel planning requirements, required equipment for IMC, fuel control malfunctions, engine restart in flight.

   RI3103A
   GCA procedures, GCA lost communications, AFCS requirements for IMC flight, low fuel state during IMC, hydraulic system malfunctions.

RI3104A
Localizer, ILS procedures, marker beacons, compass locators, localizer holding, main driveshaft failure.

RI3105A
Expected further clearance, equipment malfunction reports, CRM.

5. Block MIF (Pilot)

CTS REF	MANEUVER	RI3105A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
14	Tracking	4+
18	Wave-off (Power-Off)	3+
67	TACAN Point-to-Point Navigation	4+
68	Holding	4+
69	TACAN/VOR Approach	4+
69	Localizer Approach	3+
69	ASR Approach	3+
69	RNAV/GPS Approach	3+
70	ILS Approach	3+
70	PAR Approach	4+
71	TACAN/VOR Failed Directional Gyro Approaches	3+
71	PAR/ASR Failed Dir Gyro Approach	3+
72	Missed Approach	4+
74	Instrument Autorotation	4+

Blk #	Media	Title	Events	Hrs	H/X
CPI31	2F302C7	Co-Pilot Radio Instruments	3	3.9	1.3

1. Prerequisite. RI3103A prior to CPI3101A.

2. Syllabus Notes

a. CTS Items for this block shall be evaluated based on PNAC/Co-Pilot performance per FTI and NATOPS.

b. SNA shall fly CPI3101A and CPI3102A with another SNA conducting RI3104A and RI3105A. If an SNA event is not available to support CP3101A and/or CP3102A, those events may be flown with another SNA who has already completed RI3105A, or a CI/IP at the discretion of the Squadron Commanding Officer.

c. SNA shall fly CPI3103A with another SNA conducting RI3201A. If an SNA event is not available to support CPI3103A, the event may be flown with another SNA who has already completed RI3201A or a CI/IP at the discretion of the squadron commanding officer.

d. The following events may be conducted on the same day. For each of the two events listed, events may be flown in any order.

(1) RI3104A – CPI3101A.

(2) RI3105A – CPI3102A.

(3) RI3201A – CPI3103A.

e. Events flown with another SNA shall be flown from the left seat. When flying with a CI, SNA may be placed in the right seat at the instructor's discretion.

3. Special Syllabus Requirements. None.

4. Discuss Items

CPI3101A
Localizer, back course localizer and ILS procedures, marker beacons, compass locators, reverse sensing (CDI and HSI), main driveshaft failure. PNAC responsibilities.

CPI3102A
Expected further clearance, equipment malfunction reports, CRM. PNAC responsibilities.

CPI3103A
Lost communications en route, en route emergency divert fields, en route low altitude chart symbols, closing flight plans (military and civilian fields), CRM. PNAC responsibilities.

5. Block MIF (Co-Pilot)

CTS REF	MANEUVER	CPI3103A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	CRM-Assertiveness	4+
3	CRM-Mission Analysis	4+
3	CRM-Communication	4+
3	CRM-Adaptability/Flexibility	4+
3	CRM-Situational Awareness	4+
3	CRM-Decision Making	4+
4	Cockpit Management	3+
5	Checklist Management	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
14	En route Procedures	3+
15	Terminal Procedures	3+
69	Non-Precision Approach	3+
70	Precision Approach	3+
72	Missed Approach	3+

Blk #	Media	Title	Events	Hrs	H/X
RI40	TH-57C	Radio Instruments	8	14.4	1.8

1. Prerequisite. FAM4801A.

2. Syllabus Notes

a. **RI4001A-RI4004A : COPT-R SNAs will only conduct these four events. Events that have been waived for COPT-R SNAs are also waived as prerequisites for follow-on events, where applicable.**

b. Flights in this block shall consist of a minimum of three approaches and holding. Students should conduct a minimum of one each of the following approaches during the block: TACAN, VOR, ILS, GPS, ASR and PAR. Inability to get a minimum of one approach of each type due to lack of approach system availability shall be annotated on the student grade sheet.

c. The SNA shall fly a minimum of three failed directional gyro approaches on RI4003A with no more than one of those approaches being a failed directional gyro GCA.

d. SNA shall prepare NavLog and Flight Plan (using INAV class standards) appropriate for conditions and remaining maneuvers in the block.

e. SNA shall be responsible for tracking the completion of required approaches in syllabus notes a and b, and shall inform the IP of their approach requirements.

3. Special Syllabus Requirements. None.

4. Discuss Items

RI4001A
ATC IFR procedures, HSI orientation, TACAN procedures, copter approach procedures, publications carried on RI flights, NDZ stereotype flight plans, weather requirements for RI flights (RWOP, M-3710.7), approach brief, cockpit/COMNAV organization.

RI4002A
VOR procedures, ILS/localizer procedures, glideslope failure, course receiver failure, ILS Categories, takeoff/approach/landing minimums (RWOP/M-3710.7), CNAF M-3710.7 flight plan signing and filing (DD-1801).

RI4003A
Failed directional gyro VOR/TACAN procedures, GCA Approaches and pattern, obstacle departure procedures, diverse departure, nonstandard takeoff minimums (Trouble T), nonstandard alternate minimums (Delta A), and airport surface hot spot.

RI4004A
GPS procedures, helicopter GPS procedures, terminal arrival area (TAA), fly-by versus fly-over waypoints, HSI or CDI failure, practice approaches VFR/IFR, WAAS, ADS-B, voice reports (required/additional), requirements for runway environment, emergencies and malfunctions while IMC.

RI4005A
Altitude restrictions when cleared for the approach, MOCA, MCA, MRA, criteria for continuing an approach to landing, missed approach vs climb-out.

RI4006A
Required equipment for IMC (CNAF M-3710.7, NATOPS), option approach, HAA, HAT, HAL, precision minima, lost communications on KNDZ stereotype flight plans.

RI4007A
Altitude restrictions when cleared for the approach, criteria for continuing an approach to landing, missed approach vs climb-out.

RI4008A
Any previously discussed EP, limit, or discuss item in RI4001A - RI4007A.

5. Block MIF

CTS REF	MANEUVER	RI4008A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
8	Instrument Flight Checklist	4+
9	Emergency Procedures/System Failures	4+

MIF continued on next page.

CTS REF	MANEUVER	RI4008A
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	4+
14	En route Procedures	4+
15	Terminal Procedures	4+
15	Option Approach	4+
27	Transition to Forward Flight	4+
57	Instrument Takeoff	4+
67	TACAN Point-to-Point Navigation	4+
68	Holding	4+
69	Non-Precision Approach	4+
70	Precision Approach	4+
71	Failed Directional Gyro Approaches	3+
72	Missed Approach	4+
73	Modified Normal Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
FAM48	TH-57C	Familiarization 'C'	2	3.0	1.5

1. Prerequisites

   a. RI3201A and CPI3103A before FAM4801A.

   b. RI4008A before FAM4802A.

2. Syllabus Notes

   a. The purpose of this block is to review air work skills during basic maneuvers, emergency procedures, autorotation, and CRM in the TH-57C model aircraft.

   b. Emphasis should be placed on maneuvers previously performed and flight leadership.

3. Special Syllabus Requirements. None.

4. Discuss Items

   FAM4801A
   Loss of tail-rotor effectiveness, complete loss of tail-rotor thrust, fixed pitch left pedal, fixed pitch right pedal.

   FAM4802A
   Fuselage fire, post shutdown fire (internal), single instrument indications, engine chip light, aircraft discrepancy book (ADB).

5. Block MIF

CTS REF	MANEUVER	FAM4802A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+

MIF continued on next page.

CTS REF	MANEUVER	FAM4802A
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
8	Comm/Nav Checklist	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
16	Stab-Off Flight	3+
17	Wave-off (Power-On)	4+
18	Wave-off (Power-Off)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	4+
35	Sliding Landing	4+
36	No-Hover Landing	4+
37	Maximum Load Takeoff	4+
41	Hydraulic Boost Off Approach	1
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	4+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	4+
44	Power Recovery Autorotations	4+
46	Simulated Engine Failure at Altitude	4+

Blk #	Media	Title	Events	Hrs	H/X
RI32	2F302C7	Airways Navigation	1	1.3	1.3

1. Prerequisite. RI3105A.

2. Syllabus Notes

a. SNA shall fly RI3201A with another SNA conducting CPI3103A. If an SNA event is not available to support RI3201A, the event may be flown with a CI/IP at the discretion of the Squadron Commanding Officer.

b. The following events may be conducted on the same day. For each of the two events listed, events may be flown in any order.

(1) RI3201A.

(2) CPI3103A.

c. Event shall be flown from the right seat.

3. Special Syllabus Requirements. None.

4. Discuss Items. Lost communications en route, en route emergency divert fields, en route low altitude chart symbols, closing flight plans (military and civilian fields), CRM.

5. Block MIF

CTS REF	MANEUVER	RI3201A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
13	Departure Procedures	3+
14	En route Procedures	3+
27	Transition to Forward Flight	4+
69	Non-Precision Approach	4+
70	Precision Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
INS40	TH-57C	Instrument Navigation	6	12.0	2.0

1. Prerequisite. RI4001A.

2. Syllabus Notes

a. **INS4001A-INS4004A : COPT-R SNAs will only conduct these four events. Events that have been waived for COPT-R SNAs are also waived as prerequisites for follow-on events, where applicable.**

b. SNA shall call the IP before the flight to obtain route for planning purposes.

c. SNA shall develop a NavLog and flight plan based on 100 KIAS and forecast winds at altitude.

d. To the maximum extent possible, flights in this block should be conducted together as part of a multi-leg cross country event to and from a destination outside of the local flying area.

3. Special Syllabus Requirements. None.

4. Discuss Items

INS4001A
Airfield information in IFR en route supplement, CNAF M-3710.7 fuel planning, military contract fuel requirements and availability, GPU requirements (NATOPS) and availability (IFR SUPP), IFR lost communications.

INS4002A
Sources of weather (in-flight and on-deck), weather minimums, CNAF M-3710.7 alternate filing minimums, turbulence penetration.

INS4003A
Terminal procedures, air taxi versus hover taxi, airport diagram, airport hot-spots.

INS4004A
ILS critical area (Hold short), circle to land, SIDs, and STARs.

INS4005A
Landing at "other than an airfield," CNAF M-3710.7 approved airfields.

INS4006A
Any previously discussed emergency procedure, limit, or discuss item in INS4001A - INS4005A.

5. Block MIF

CTS REF	MANEUVER	INS4006A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
12	Filing/Opening/Closing Flight Plan	4+
13	Departure Procedures	4+
14	En route Procedures	4+
14	Groundspeed/Fuel Checks	4+
14	Use of Flight Watch/Metro/FSS	4+
15	Terminal Procedures	4+
27	Transition to Forward Flight	4+
69	Non-Precision Approach	4+
70	Precision Approach	4+
73	Modified Normal Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
RI41	TH-57C	Radio Instruments	4	8.0	2.0

1. Prerequisite. RI4008A.

2. Syllabus Notes

a. Flights in this block shall consist of a minimum of three approaches. During each flight, the SNA should execute holding and/or point-to-point navigation.

b. Students shall conduct a minimum of one each of the following approaches for this block of training: RNAV/GPS, ILS, PAR, TACAN/VOR, GCA Failed Gyro Approach.

c. SNA shall call the instructor the night prior for route of flight/details. SNA shall show up to the brief with a completed Flight Plan and NavLog (using INAV class standards).

d. RI41 block flights should originate or terminate at airfields other than South Whiting to the maximum extent possible.

e. SNA shall be responsible for tracking the completion of required approaches in syllabus note b, and shall inform the IP of their approach requirements.

f. SNA shall ensure CNAF M-3710.7 approach minimums are met, and shall notify IPs of any additional approaches required.

3. Special Syllabus Requirements. None.

4. Discuss Items

RI4101A
Required equipment for night flight, electrical system malfunctions while IMC, flight control malfunctions while IMC, en route/feeder routes, minimum safe altitudes/emergency safe altitudes, MOCA/MCA/MRA, DD-1801.

RI4102A
Airspace (controlled, uncontrolled, special use, A through G designations), GCA lost comm, airport approach/runway lighting, inoperative components or visual aids table, helicopter point-in-space approach, types of NOTAMs, NOTAM codes, GPS NOTAMs.

RI4103A
“Execute missed approach,” missed approach from DH/MDA/circling, instrument approach/communications at an uncontrolled airport, lost communications procedures on an IFR flight plan, weather sources, standard instrument rating requirements.

RI4104A
Visual approach, contact approach, CNAF M-3710.7, Flight Information Handbook, minimum vectoring altitude, flight rules and regulations, (FAR/AIM), any aircraft limitation/emergency procedures, any previously briefed item in the Instrument stage.

5. Block MIF

CTS REF	MANEUVER	RI4104A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
8	Instrument Flight Checklist	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	4+
14	En route Procedures	4+
15	Terminal Procedures	4+
27	Transition to Forward Flight	4+
57	Instrument Takeoff	4+
67	TACAN Point-to-Point Navigation	4+
68	Holding	4+
69	Non-Precision Approach	4+
70	Precision Approach	4+
71	Failed Directional Gyro Approaches	3+
72	Missed Approach	4+
73	Modified Normal Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
FAM49	TH-57C	Familiarization 'C' Check Flight	1	1.5	1.5

1. Prerequisites

a. RI4104A.

b. FAM4802A.

c. INS4006A.

2. Syllabus Notes

a. The purpose of this block is to evaluate air work skills during basic maneuvers, emergency procedures, autorotation, and CRM in the TH-57C model aircraft.

b. Emphasize maneuvers previously performed and flight leadership.

c. Flight shall be flown with an Instrument or Familiarization Standardization Instructor.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any aircraft system, NATOPS limit, or emergency procedure, course rules, special VFR course rules, solo weather minimums, squadron SOP, hot seat procedures, lost plane procedures, and high wind recovery procedures.

5. Block MIF

CTS REF	MANEUVER	FAM4990A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	FAM4990A
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
16	Stab-Off Flight	3+
17	Wave-off (Power-On)	4+
18	Wave-off (Power-Off)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	4+
34	Vertical Landing	4+
35	Sliding Landing	4+
36	No-Hover Landing	4+
37	Maximum Load Takeoff	4+
41	Hydraulic Boost Off Approach	1
42	Simulated Engine Failure in a Hover (Hover Cut Gun)	4+
43	Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	4+
44	Power Recovery Autorotations	4+
46	Simulated Engine Failure at Altitude	4+

Blk #	Media	Title	Events	Hrs	H/X
RI42	TH-57C	Instrument Safe-for-Solo Check Flight	1	1.8	1.8

1. Prerequisite. FAM4990A.

2. Syllabus Notes

a. This event will be an evaluation of IFR procedural execution and abilities involving a representative cross section of maneuvers previously presented and/or discussed in the instrument syllabus.

b. Event shall consist of a minimum of two non-precision approaches and one precision approach.

c. SNA shall call the instructor the night prior for route of flight/details. SNA shall show up to the brief with a completed Flight Plan and NavLog.

d. Flight shall be flown with an Instrument standardization instructor.

e. SNA initial CRM flight evaluation shall be conducted in concurrence with this event. Annotate completion in the Comment section of this grade sheet.

f. Students are required to bring a completed instrument rating request form to the brief.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any previously briefed item in the instrument syllabus with a heavy emphasis on FAR/AIM, CNAF M-3710.7, and emergency procedures.

5. Block MIF

CTS REF	MANEUVER	RI4290A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
8	Instrument Flight Checklist	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	4+
14	En route Procedures	4+
15	Terminal Procedures	4+
27	Transition to Forward Flight	4+
57	Instrument Takeoff	4+
68	Holding	4+
69	Non-Precision Approach	4+
70	Precision Approach	4+
72	Missed Approach	4+
73	Modified Normal Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
RI43	TH-57C	Instrument Navigation Solo	1	1.7	1.7

1. Prerequisite. RI4290A.

2. Syllabus Notes

a. Flight shall be flown to a destination greater than 50 NM straight-line distance. Aircraft should be shut down unless hot-seating to an Instructor Pilot at KNDZ.

b. Flight shall be flown with another student who has completed RI4290A.

c. SNA shall bring a completed Flight Plan, NavLog, and prepped map to the ODO at scheduled brief time.

d. Flight shall be flown within five days of the RI4290A. If this is not possible, an RI4286 event shall be flown with a minimum of one precision approach, one non-precision approach, one power-recovery autorotation, and one simulated emergency.

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	RI4301A
1	General Knowledge/Procedures	1
2	Headwork/Situational Awareness	1
3	Crew Resource Management	1
4	Cockpit Management	1
5	Checklist Management	1
6	Radio Procedures	1
7	Basic Air Work, Scan, and Trim	1
8	NATOPS Procedures and Limits	1
8	Comm/Nav Checklist	1
9	Emergency Procedures/System Failures	1
10	Flight Planning	1
11	NATOPS/Mission Brief	1
12	Ground Operations	1
12	Filing/Opening/Closing Flight Plans	1
13	Departure Procedures	1
14	En route Procedures	1
14	Groundspeed/Fuel Checks	1
15	Terminal Procedures	1
22	Vertical Takeoff	1
69	Non-Precision Approach	1
70	Precision Approach	1
73	Modified Normal Approach	1

Blk #	Media	Title	Events	Hrs	H/X
NAV42	TH-57C	Day Navigation Solo	1	1.5	1.5

1. Prerequisite. RI4290A.

2. Syllabus Notes

a. Flight shall be flown to a destination greater than 50 nautical miles (NM) straight-line distance. Aircraft should be shut down unless hot-seating to an Instructor Pilot at KNDZ.

b. Flight shall be flown with another student that has completed RI4290A.

c. SNA shall bring a completed Flight Plan, NavLog, and prepped map to the ODO at scheduled brief time.

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	NAV4201A
1	General Knowledge/Procedures	1
2	Headwork/Situational Awareness	1
3	Crew Resource Management	1
4	Cockpit Management	1
5	Checklist Management	1
6	Radio Procedures	1
7	Basic Air Work, Scan, and Trim	1
8	NATOPS Procedures and Limits	1
9	Emergency Procedures/System Failures	1

MIF continued on next page.

CTS REF	MANEUVER	NAV4201A
10	Flight Planning	1
11	NATOPS/Mission Brief	1
12	Ground Operations	1
12	Preflight/Post-flight	1
12	Filing/Closing Flight Plans	1
13	Departure Procedures	1
14	En route Procedures	1
14	Groundspeed/Fuel Checks	1
14	Use of Flight Watch/Metro/FSS	1
15	Terminal Procedures	1
22	Vertical Takeoff	1
27	Transition to Forward Flight	1
32	Normal Approach	1
34	Vertical Landing	1
75	VFR Navigation	1

Blk #	Media	Title	Events	Hrs	Blk Name
TRF01	MIL	TERF Navigation	1	2.5	TRFNAV

1. Prerequisite. RI4290A.

2. Events

TRF0101A	MIL	Map Interpretation		2.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
SHP01	CAI	Shipboard Operations	2	0.5	SHPFP

1. Prerequisites

   a. NAV4201A.

   b. RI4301A.

2. Events

SHP0101A	CAI	General Shipboard Operations	.25
SHP0102A	CAI	Shipboard Qualification Procedures	.25

3. Syllabus Notes. **SHP01 block is waived for U.S. Coast Guard Advanced Helicopter Students. Blocks or events that have been waived for USCG SNAs are also waived as prerequisites for follow-on events, where applicable.**

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
SAR01	CAI	Search and Rescue	2	0.5	SARFP

1. Prerequisites

   a. NAV4201A.

   b. RI4301A.

2. Events

SAR0101A	CAI	SAR Organization and Planning	.25
SAR0102A	CAI	SAR Flight Procedures	.25

3. Syllabus Notes. **SAR01 block is waived for U.S. Coast Guard Advanced Helicopter Students. Blocks or events that have been waived for USCG SNAs are also waived as prerequisites for follow-on events, where applicable.**

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
SAR30	2F302C7	Shipboard Search and Rescue Fundamentals	1	1.3	1.3

1. Prerequisites

a. SAR0102A.

b. SHP0102A.

2. Syllabus Notes

a. SAR30 block is waived for U.S. Coast Guard Advanced Helicopter Students. Blocks or events that have been waived for USCG SNAs are also waived as prerequisites for follow-on events, where applicable.

b. The event should be conducted using the SNA service's commonly used ships.

c. The event should consist of a combination of four landings and takeoffs from an air capable ship (CG/DDG/LCS/LPD/WMSL) and/or from an aviation ship (CVN/LHD).

d. Students should fly a minimum of two search patterns; expanding square, creeping line, or sector search. SAR scenario should be conducted using the On-Scene Commander Checklist and the wind-line rescue pattern.

e. This event requires a copilot, but the copilot is not graded. SNA acting as copilot shall be BI4103A complete. Any IP or IUT may be utilized as a copilot.

3. Special Syllabus Requirements. Demonstrate smoke, dye marker, and buzz-saw signals.

4. Discuss Items. Takeoff procedures, shipboard terminology, LSE signals, deck status lights, base recovery course (BRC)/wind direction and speed, , air-capable ship TACAN approach procedures, SAR patterns, overland SAR, overwater SAR, wind-line rescue pattern, on-scene commander checklist.

5. Block MIF

CTS REF	MANEUVER	SAR3001A
1	General Knowledge/Procedures	3+
2	Headwork/Situational Awareness	3+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
19	Spatial Disorientation Recognition and Recovery	4+
82	Search and Rescue Patterns	3+
83	Wind-line Rescue Pattern	3+
84	Response to LSE	3+
85	Shipboard Landings	3+
86	Shipboard Landing – Wave-off	3+
87	Shipboard Instrument Approach	1
88	Emergency Low Visibility Approach (ELVA)	1
	Special Syllabus Requirement	1

Blk #	Media	Title	Events	Hrs	H/X
SAR40	TH-57C	SAR/LLBI	1	2.0	2.0

1. Prerequisite. SAR3001A.

2. Syllabus Notes

a. **SAR40 block is waived for U.S. Coast Guard Advanced Helicopter Students. Blocks or events that have been waived for USCG SNAs are also waived as prerequisites for follow-on events, where applicable.**

b. Emphasize CRM during flight.

c. The On-Scene Commander Checklist shall be used in conjunction with one scenario during the event.

d. This event shall be completed during the day.

3. Special Syllabus Requirements. None.

4. Discuss Items. SAR planning and organization, on-scene commander checklist and responsibilities, required equipment for over water and shipboard operations, authorized landing areas (helicopter), hospital pad identification/landing zone evaluation, anti-exposure suits (CNAF, RWOP, SOP), crew coordination/responsibilities, fuel management/planning.

5. Block MIF

CTS REF	MANEUVER	SAR4001A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
11	NATOPS/Mission Brief	4+
14	En route Procedures	4+
14	Groundspeed/Fuel Checks	4+
52	Landing Zone (LZ) Evaluation	3+
78	Low-Level Basic Instruments (LLBI) – Level Speed Change	1
79	Low-Level Basic Instruments (LLBI) – Turn Pattern	1
81	Low-Level Basic Instruments (LLBI) – Partial Panel	1
82	Search and Rescue Patterns	3+
83	Wind-line Rescue Pattern	3+

Blk #	Media	Title	Events	Hrs	H/X
TRF40	TH-57C	TERF Navigation	3	6.0	2.0

1. Prerequisite. GND0402A.

2. Syllabus Notes

a. TRF4001A Route shall be flown using a 1:250,000 chart.

b. TRF4002A-3A Routes shall be flown using 1:50,000 charts.

c. Routes shall be planned using 90 knots groundspeed.

d. TRF4001A-2A shall be flown no lower than 500 feet AGL.

e. TRF4003A shall be flown no lower than 200 feet AGL.

f. SNA shall prepare the route on the proper chart according to the Navigation FTI.

g. SNA shall include a coversheet, MPS route card, MPS bingo route card, LZ imagery, and TW5 debrief card in the smart pack.

3. Special Syllabus Requirements. None.

4. Discuss Items

TRF4001A GREEN ROUTE, 1:250,000
Precision navigation using the global positioning system (GPS), crew comfort levels, emergencies at low altitude, disorientation procedures, CRM for TERF Navigation.

TRF4002A ORANGE ROUTE FWD/REV, 1:50,000
Techniques for tactical route selection to be briefed by IP, map changeover points, environmental conditions encountered in landing zones (sand, dust, and snow), no-hover takeoff.

TRF4003A PURPLE ROUTE FWD/REV, 1:50,000
Bingo, joker, and mission fuel, effects of adverse weather on mission planning, any emergency procedure or aircraft limitation.

5. Block MIF

CTS REF	MANEUVER	TRF4003A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
10	Chart Preparation	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
14	En route Procedures	4+
14	Groundspeed/Fuel Checks	4+
22	Vertical Takeoff	4+
23	No-Hover Takeoff	4+
27	Transition to Forward Flight	4+
32	Normal Approach	4+
34	Vertical Landing	4+
36	No-Hover Landing	4+
52	Landing Zone (LZ) Evaluation	4+
55	Dynamic Landing Approaches	3+
76	TERF Navigation	4+
76	Checkpoint Identification	4+
76	Terrain Feature Identification/Utilization	4+
77	Timing	4+

Blk #	Media	Title	Events	Hrs	Blk Name
FRM01	CAI/MIL	Formation Procedures	3	3.0	FRMFP

1. Prerequisite. TRF4001A.

2. Events

FRM0101A	CAI	Formation Flying	0.5
FRM0102A	CAI	NATOPS and Mission Brief	0.5
FRM0103A	MIL	Formation	2.0

3. Syllabus Notes. FRM0101A-2A shall be completed prior to FRM0103A.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
FRM30	2F302C7	Formation	1	1.3	1.3

1. Prerequisites

   a. FRM0103A.

   b. TRF4003A.

2. Syllabus Notes. None.

3. Special Syllabus Requirements. None.

4. Discuss Items. Wingman awareness/lookout doctrine, IIMC, loss of visual contact, lost communications, disorientation procedures, downed aircraft, aborts, and wave-offs.

5. Block MIF

CTS REF	MANEUVER	FRM3001A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
89	Formation Takeoffs	3+
90	Crossover	3+
91	Cruise Turns	3+
92	Cruise Climbs and Descents	3+
93	Breakup and Rendezvous	3+
94	Overrun	3+
95	Lead Change	3+
96	Cruise Formation	3+
97	Formation Landings	3+
98	Formation High-Speed Approach	3+
99	Formation Wave-off	3+

Blk #	Media	Title	Events	Hrs	H/X
FRM40	TH-57C	Formation	4	8.0	2.0

1. Prerequisite. FRM3001A.

2. Syllabus Notes

a. **FRM4001A-3A : COPT-R SNAs will only conduct these three events. Events that have been waived for COPT-R SNAs are also waived as prerequisites for follow-on events, where applicable.**

b. Emphasize CRM during all flights.

c. COPT-R students may fly FRM4002A and FRM4003A together.

d. CORPS students may fly FRM4003A and FRM4004A together.

e. FRM4003A and/or FRM4004A: Should be flown using the Purple TERF route and a 1:50,000 chart.

f. SNA shall prepare the routes on the proper chart.

g. Route shall be prepared using 90 knots ground speed.

h. SNA shall prepare a route card using MPS.

i. Route shall be flown no lower than 200 ft AGL if flown using the purple route. Green or Orange TERF route shall be flown no lower than 500 ft AGL.

3. Special Syllabus Requirements

a. FRM4001A: Demonstrate IIMC, section parade and home-field break.

b. FRM4002A: Demonstrate Loss of Visual Contact and Lost Communications.

4. Discuss Items

FRM4001A
Relative motion and radius of turn relationships, Lead and Wing aircraft responsibilities and considerations, cruise position/cruise maneuvers/brevity codes, Section Landings, High Speed Approaches, frequency changes and check-ins.

FRM4002A
CRM and inter-aircraft communications, loss of visual contact, lost communications, wave-offs, over-torque, and course rules (Eastern and Western formation area).

FRM4003A
Combat cruise, effects of adverse weather on mission planning, inadvertent IMC at low level, fuel management and planning, JOG AIR preparation, checkpoint selection criteria, lead and wing considerations and responsibilities along the route, and any previous discuss items.

FRM4004A
Any previous discuss items.

5. Block MIF

CTS REF	MANEUVER	FRM4004A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
89	Formation Takeoffs	4+
90	Crossover	4+
91	Cruise Turns	3+
92	Cruise Climbs and Descents	3+
93	Breakup and Rendezvous	4+
94	Overrun	3+

MIF continued on next page.

CTS REF	MANEUVER	FRM4004A
95	Lead Change	4+
96	Cruise Formation	4+
97	Formation Landings	3+
98	Formation High-Speed Approach	3+
99	Formation Wave-off	3+
100	Combat Cruise Flight	4+
101	Formation TERF Navigation	1
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
FRM41	TH-57C	Formation Capstone	2	4.0	2.0

1. Prerequisites

   a. FRM4004A.

   b. AER0501A.

2. Syllabus Notes

   a. Flight should consist of an out and in profile to the max extent possible.

   b. SNA shall fly in the lead position for a minimum of one event in block.

   c. Student shall contact the Section Leader the night prior to the event for planning guidance.

   d. SNA shall prepare a route card using MPS.

   e. SNA shall prepare the routes on the appropriate chart(s), as required.

   f. SNA should be scheduled with an Instructor the working day prior to the event.

   g. Instructor shall assist building the smart pack during the scheduled planning day.

3. Special Syllabus Requirements. None.

4. Discuss Items

   FRM4101A
   Flight management for lead and wing aircraft (specific emphasis on task delegation, communication plan, fuel considerations), lead aircraft responsibilities (emphasis on flight through congested airspace and urban environments).

FRM4102A
Wing aircraft responsibilities (emphasis on flight through congested airspace and urban environments). Any previously discussed item in the Formation Syllabus, emergency procedure, or aircraft limitation.

5. Block MIF

CTS REF	MANEUVER	FRM4102A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
75	VFR Navigation	4+
89	Formation Takeoffs	4+
96	Cruise Formation	4+
97	Formation Landings	4+
100	Combat Cruise Flight	4+

Blk #	Media	Title	Events	Hrs	Blk Name
AER05	MIL	Advanced Aerodynamics	1	1.0	ADVAERO

1. Prerequisite. TRF4001A.

2. Events

AER0501A	MIL	Advanced Aerodynamics II		1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
NVG01	Lab	NITE Lab	1	8.0	NVD

1. Prerequisite. SAR4001A.

2. Events

NVG0101A	LAB	Night Imaging Threat Evaluation (NITE) Lab	8.0

3. Syllabus Notes

a. NITE Lab should be completed no more than five days prior to NVG3001A.

b. SNAs shall bring their NVG modified helmet, one set of AN/AVS-9 NVGs, and their NATOPS jacket to the NITE lab.

c. NVGs shall be checked out from the Paraloft.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	H/X
NVG30	2F302C7	Night Vision Device Simulator	1	1.3	1.3

1. Prerequisites

a. NVG0101A.

b. TRF4003A.

2. Syllabus Notes

a. SNA shall check out a pair of NVGs from the Paraloft, conduct focusing procedures in the ANV-20/20 Hoffman Box and bring them to the brief, along with an NVG-configured helmet.

b. NVG3001A emphasis should be on goggle/de-goggle procedures and familiarization with NVG integrated scan, BAW and course rules.

c. NVG 3001A - Effects of varying aircraft and environmental lighting on NVGs should be demonstrated.

d. NVG 3001A should include a flight to OLF Site X.

e. NVG3001A shall be flown with a military instructor pilot.

f. NVG3001A should include NATOPS Emergency Procedures and NVG failures.

g. Event should be conducted within 5 days of completing NVG0101A.

3. Special Syllabus Requirements. NVG3001A: Demonstrate weather effects.

4. Discuss Items. AN/AVS-9 NVG preflight procedures, NVG preflight support equipment, NVG ground and airborne adjustment procedures, goggle/de-goggle procedures, NVG integrated scan, NVG map preparation considerations, terrain flight considerations,

5. Block MIF

CTS REF	MANEUVER	NVG3001A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	3+
7	Basic Air Work, Scan, and Trim	3+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
12	Ground Operations	3+
13	Departure Procedures	3+
15	Terminal Procedures	3+
17	Wave-off (Power-On)	4+
21	Course Rules	3+
22	Vertical Takeoff	3+
23	No-Hover Takeoff	3+
24	Hover	3+
25	Clearing Turn	3+
26	Hover Taxi	3+
27	Transition to Forward Flight	3+
30	Low Work	3+
32	Normal Approach	3+
33	Steep Approach	3+
34	Vertical Landing	3+
36	No-Hover Landing	3+
45	Full Autorotation	3+
75	VFR Navigation	3+
102	NVD Knowledge	4+
103	NVG Preflight	3+
104	NVG Emergency Procedures	3+
	Special Syllabus Requirement	1

Blk #	Media	Title	Events	Hrs	H/X
NVG40	TH-57C	Night Vision Device Familiarization Flight	3	5.4	1.8

1. Prerequisite. NVG3001A.

2. Syllabus Notes

a. SNA shall check out a pair of NVGs from the Paraloft, conduct focusing procedures in the ANV-20/20 Hoffman Box and bring them to the brief for NVG4001A and NVG4002A along with an NVG-configured helmet.

b. IP shall demonstrate NATOPS NVG Brief on NVG4001A.

c. At least one event **in block** shall be conducted at a military OLF with NVG-compatible lighting.

3. Special Syllabus Requirements. NVG4001A: Power recovery autorotations shall be demonstrated by the instructor during this block.

4. Discuss Items

NVG4001A
Night environment, Electromagnetic Spectrum, NVD Scene Variables, Atmospheric Conditions, Aircraft Lighting NVG compatibility, RWOP NVG lighting configurations, NVG course rules, NVG Failures, NVG briefing guide, Solar Lunar Almanac Prediction (SLAP) data.

NVG4002A
Overview of AN/AVS-9 NVG, AN/AVS-9 Binocular Assembly Components, NVG Integrated Scan. NVG Scene interpretation: Terrain Assessment, NVG Scene Descriptions, Atmospheric Impact on NVG Performance.

NVG4003A
Aircrew Visual Acuity and NVG Resolution, depth perception and distance estimation visual cues, motion-based visual cues, dark adaptation, unaided peripheral cueing, fatigue, visual illusions, NVG crew coordination, complacency/overconfidence, and NVG Failures.

5. Block MIF

CTS REF	MANEUVER	NVG4003A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	4+
15	Terminal Procedures	4+
17	Wave-off (Power-On)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
23	No-Hover Takeoff	4+
24	Hover	4+
25	Clearing Turn	4+
26	Hover Taxi	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	3+
34	Vertical Landing	4+

MIF continued on next page.

CTS REF	MANEUVER	NVG4003A
36	No-Hover Landing	3+
102	NVD Knowledge	4+
103	NVG Preflight	4+
104	NVG Emergency Procedures	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
NVG41	TH-57C	Night Vision Device Navigation and Tactics	2	4.0	2.0

1. Prerequisite. NVG4003A.

2. Syllabus Notes

a. Green Route shall be flown on the NVG4101A event.

b. Student shall contact instructor the night prior to the event for route guidance.

c. Each event shall consist of a route with a minimum of 10 checkpoints with landing pattern work at an airfield other than KNDZ.

3. Special Syllabus Requirements. None.

4. Discuss Items

NVG4101A
Mission Briefing Considerations, Aircraft Emergencies, Inadvertent Instrument Meteorological Conditions, NVG Terrain Flight Considerations, NVG emergency landing considerations.

NVG4102A
NVG Terrain Flight considerations, landing zones, NVG low light level (LLL) operating considerations, flight operations with NVGs (CNAF).

5. Block MIF

CTS REF	MANEUVER	NVG4102A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+

MIF continued on next page.

CTS REF	MANEUVER	NVG4102A
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	4+
15	Terminal Procedures	4+
17	Wave-off (Power-On)	4+
21	Course Rules	4+
22	Vertical Takeoff	4+
23	No-Hover Takeoff	4+
24	Hover	4+
25	Clearing Turn	4+
26	Hover Taxi	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	4+
34	Vertical Landing	4+
36	No-Hover Landing	4+
75	VFR Navigation	3+
102	NVD Knowledge	4+
103	NVG Preflight	4+
104	NVG Emergency Procedures	4+

Blk #	Media	Title	Events	Hrs	H/X
NVG42	TH-57C	Night Vision Device Capstone	1	2.3	2.3

1. Prerequisites

a. NVG4102A.

b. AER0501A.

2. Syllabus Notes

a. Student shall call instructor the day prior to the event for scenario guidance.

b. The purpose of the Capstone event is for the SNA to demonstrate the ability to apply previously learned skills to a basic mission profile. SNA will be expected to perform necessary mission planning to complete the assigned scenario.

c. Event shall consist of a route with a minimum of ten checkpoints with landing pattern work at an airfield other than KNDZ.

d. Event should not be scheduled in conjunction with any other student or IUT graded event.

e. A mission reconstruction debrief should be conducted in dedicated briefing spaces following the event if possible

3. Special Syllabus Requirements. None.

4. Discuss Items. Any previously covered discuss item and mission application of NVGs.

5. Block MIF

CTS REF	MANEUVER	NVG4201A
1	General Knowledge/Procedures	4+
2	Headwork/Situational Awareness	4+
3	Crew Resource Management	4+
4	Cockpit Management	4+
5	Checklist Management	4+

MIF continued on next page.

CTS REF	MANEUVER	NVG4201A
6	Radio Procedures	4+
7	Basic Air Work, Scan, and Trim	4+
8	NATOPS Procedures and Limits	4+
9	Emergency Procedures/System Failures	4+
10	Flight Planning	4+
11	NATOPS/Mission Brief	4+
12	Ground Operations	4+
13	Departure Procedures	4+
15	Terminal Procedures	4+
17	Wave-off (Power-On)	1
21	Course Rules	4+
22	Vertical Takeoff	4+
23	No-Hover Takeoff	4+
24	Hover	4+
25	Clearing Turn	4+
26	Hover Taxi	4+
27	Transition to Forward Flight	4+
30	Low Work	4+
32	Normal Approach	4+
33	Steep Approach	4+
34	Vertical Landing	4+
36	No-Hover Landing	4+
75	VFR Navigation	4+
102	NVD Knowledge	4+
103	NVG Preflight	4+
104	NVG Emergency Procedures	4+

Blk #	Media	Title	Events	Hrs	Blk Name
GND05	Sqdn	Checkout	1	1.0	CHCKOUT

1. Prerequisites

   a. NVG4201A.

   b. FRM4102A.

2. Events

   GND0501A Sqdn Checkout 1.0

3. Syllabus Notes. All syllabus requirements must be complete prior to conducting this event.

4. Discuss Items. None

Chapter III

Course Training Standards

1. Purpose. These standards outline the tasks and proficiency required of graduates of this syllabus.

2. Student Duties and Responsibilities

a. Plan the mission.

b. Ensure the aircraft is preflighted, inspected, and equipped for the assigned mission.

c. Operate the aircraft to accomplish the mission using sound judgment and airmanship.

3. General Standards

a. Achieve training standards for visual meteorological condition maneuvers in conjunction with visual clearing.

b. Unless otherwise specified, use ***Basic Air Work (BAW)*** standards for all items with altitude, airspeed, or heading parameters.

c. "Standard" equates to **good** (G/4).

d. Aircraft control must be smooth and positive. Performance may be within CTS and still not warrant a grade of ***good*** if control inputs are delayed, erratic, imprecise, or inappropriate. Slight deviations in establishing or maintaining the proper or desired aircraft attitude or position may occur during the maneuver being performed.

e. Momentary deviations outside CTS that do not compromise flight safety are acceptable if subsequent corrections are timely.

f. Procedural knowledge and application must comply with applicable directives and allow efficient mission accomplishment. If individual tasks require pre-mission planning, the standards from ***Mission Planning*** apply.

4. Execution. The Maneuver Item File regulates student progression to meet required standards prior to phase completion. Instructor Pilots shall evaluate student performance against these standards.

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

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

6. Graded Items. The MIF for specific graded items varies for each stage. Several items are graded on all complete syllabus events. The standards for these universally graded items are listed first.

7. Course Training Standards

BEHAVIOR STATEMENT	STANDARDS
1. General Knowledge/Procedures	
● Maintain working knowledge of all appropriate flight training instructions and directives.	● Recites, discusses, and/or performs all applicable items essential to the operation of the aircraft.
2. Headwork/Situational Awareness	
● Provides positive leadership to the crew; encourages crew participation in the decision making process. ● Adapts to meet new situational demands. ● Demonstrates the ability to maintain awareness of what is happening on the ground, in the air, and with other crewmembers; copes with any subsequent mission impact as a result of these happenings. ● As a copilot, performs duties per NATOPS and FTI. ● Comply with the FTI and NATOPS using critical thinking skills while maintaining situational awareness sufficient for flight safety.	● Understands instructions. ● Anticipates and effectively mitigates potential issues. ● Remains alert and oriented. ● Able to correctly receive, process, and apply information during execution.

BEHAVIOR STATEMENT	STANDARDS
3. Crew Resource Management (CRM)	
● Decision Making. ● Assertiveness. ● Mission Analysis. ● Communications. ● Leadership. ● Adaptability. ● Situational Awareness.	● Gathers available data before arriving at final decision; clearly states decisions to the crew; and provides rationale for decisions. ● Displays assertive behavior when necessary and accepts assertive behavior from other crewmembers. ● Assesses requirements, risks, and makes decisions; identifies probable contingencies and alternatives ● Ensures effective communication. ● Recognizes and eliminates hazardous attitudes in self and other crewmembers; resolves conflict in a positive manner. ● Provides positive leadership to the crew; encourages crew participation in the decision making process. ● Adapts to meet new situational demands. ● Demonstrates the ability to maintain awareness of what is happening on the ground, in the air, and with other crewmembers; copes with any subsequent mission impact as a result of these happenings. ● As a copilot, performs duties per NATOPS and FTI.
4. Cockpit Management	
● Prioritizes and manages crew tasks during mission execution. ● Effectively sets up, utilizes, and monitors aircraft systems, indicators, radios, and flight support materials in the conduct of flight duties. ● Exercises checklist discipline and follows standard operating procedures.	● Effectively conducts cockpit setup and in-flight cockpit management. ● Prioritizes cockpit tasks using all available resources within the cockpit. ● Appropriately delegates cockpit management tasks and monitors performance of delegated tasks. ● Accomplishes all required normal and emergency checklist steps in a timely manner with all items executed per NATOPS, FTIs, and SOPs.

BEHAVIOR STATEMENT	STANDARDS
5. Checklist Management	
● Properly utilizes checklists in support of mission, assisting PAC as appropriate. ● Verbalizes checklist steps in a logical, clear, and concise manner with appropriate tempo. ● Identifies and verbalizes checklist requirement for emergency procedures in a timely manner. ● Efficiently executes emergency procedures. ● Puts checklist away by 200' or upon completion as directed.	● Complies with NATOPS and FTI procedures. ● Determines correct checklist or emergency procedure and locates it in the PCL. ● Communicates each step clearly and concisely, with appropriate tempo. ● Conducts PNAC duties per FTIs and NATOPS, or as directed by PAC. ● Secures systems and circuit breakers as briefed, with dual concurrence, as required, or as directed by the PAC.
6. Radio Procedures	
● Performs concise, professional, effective verbal communications using aircraft radios during the mission. ● Tunes appropriate frequency, selects appropriate radio, and executes correct procedure to transmit.	● Uses concise, properly formatted radio calls with standard terminology. ● Recognizes and acknowledges all communications directed to SNAs own aircraft/aircrew. ● Able to understand, differentiate, and prioritize transmissions in a multiple communications environment. ● Asks for and provides clarification when necessary. ● Is able to explain the purpose, format, and content of radio calls for a given situation.

BEHAVIOR STATEMENT	STANDARDS
7. Basic Air Work, Scan and Trim	
● Establish and maintain desired altitude, airspeed, and heading during flight.	● Appropriately uses collective, cyclic and pedals to adjust collective pitch, aircraft attitude, and trim. ● Maintains an effective scan inside and outside of the cockpit throughout the flight, identifying deviations, and properly responding using appropriate corrective control inputs. ● Maintains aircraft in balanced flight and within 100 feet, 10 KIAS, 10° of heading. ● Levels off within 100 feet of desired altitude. ● Accomplishes desired parameter within ±10 seconds of correct time, as applicable.
8. NATOPS Procedures and Limits	
● Maintain in-depth knowledge of NATOPS procedures, limits, and prohibited maneuvers.	● Able to utilize NATOPS Checklists in conduct of flight responsibilities. ● Recalls NATOPS Limits, prohibited maneuvers, system limits, and operating parameters as provided in the NATOPS Manual. ● Able to apply NATOPS Limit knowledge to decision making in the aircraft.
9. Emergency Procedures/System Failures	
● Maintain in-depth knowledge of NATOPS Emergency Procedures, System Indications, and appropriate directives.	● Executes emergency procedures per NATOPS. ● Maintains positive control of the aircraft. ● Properly identifies the emergency or system failure indications, and calls for the appropriate NATOPS procedure. ● Executes/directs CRITICAL MEMORY ITEMS in proper order and in a timely manner. ● Calls for appropriate checklist following execution of CRITICAL MEMORY ITEMS or when no CRITICAL MEMORY ITEMS apply. ● Applies EP and Systems knowledge to decision making using critical thinking skills. ● Selects appropriate landing criteria.

BEHAVIOR STATEMENT	STANDARDS
10. Flight Planning	
● Completes appropriate flight planning items required for specific mission prior to scheduled brief time.	● Plans the flight thoroughly and timely using authorized weather sources and all appropriate FLIP publications and FTIs to meet mission requirements. ● Acquires a current weather brief for the route of flight. ● Plans and prepares an appropriate flight plan per current FLIP publications and a NavLog per INAV standards and/or Instrument Ground School, as required. ● Ensures that flight plan meets all CNAF IFR requirements. ● Screens all NOTAMs for the route of flight including possible diverts. ● Completes Weight and Balance and verifies mission capability within limits. ● For navigation stage flights, neatly and accurately prepares chart, including all FTI required markings. ● For TERF, Formation, and NVG flights, creates a professional accurate smart-pack for the mission, per MCG and FTI requirements.
11. NATOPS/Mission Brief	
● Presents appropriate NATOPS and mission brief for the flight.	● Executes brief per current NATOPS and FTI with minimal errors. ● Delivers brief confidently and professionally with minimal distractions and mistakes. ● Clearly and concisely briefs the mission plan resulting in comprehension by all participating aircrew. ● Correctly briefs NATOPS considerations applicable to the specific day and mission.

BEHAVIOR STATEMENT	STANDARDS
12. Ground Operations	
● Comply with CNAF-M 3710.7, NATOPS, FTI, Local SOPs, and training directives. ● Inspect and properly wear personal equipment. ● Perform preflight duties. ● Move aircraft to and from parking area, as required. ● Perform post-flight duties.	● Complies with CNAF M-3710.7, NATOPS, FTI, Local SOPs, and training directives. ● Determines aircraft status. ● Conducts thorough inspection of flight gear and ensures gear is serviceable for the assigned mission. ● Properly pre-flights and starts the aircraft. ● Properly operates aircraft systems on ground. ● Ensures line personnel, ground equipment, and other aircraft are clear prior to executing NATOPS and flight procedures, using appropriate signals. ● Taxies aircraft at 5ft AGL, and at speeds commensurate with safe aircraft taxi, based on location, environmental conditions, aircraft weight and power available, and pilot's own skills. ● Maintains aircraft position within taxiway boundaries and generally aligned with taxiway centerline. ● Prevents aircraft from crossing taxi limits, including hold short line, and gives way to other aircraft when appropriate. ● Properly shuts down the aircraft, post-flights and secures the aircraft.
13. Departure Procedures	
● Transitions from takeoff location to en route environment. ● Executes appropriate departure briefs and procedures prior to commencing departure, as required.	● Executes appropriate departure procedures for the mission being flown. ● Provides appropriate brief to crew for departure. ● For the departure, achieves assigned/required headings within 10 degrees, altitudes within 100 ft, airspeeds within 10 KIAS, and intercepts within +/- 5 radials of assigned radial and +/- 5 DME of assigned DME. ● Makes appropriate radio calls, frequency changes, and NAVAID adjustments. ● Complies with appropriate departure instructions, clearances, and/or procedures.

BEHAVIOR STATEMENT	STANDARDS
14. En route Procedures	
● Conduct appropriate en route procedures per FTIs, FLIPs, and NATOPS. ● Maintain awareness of en route considerations necessary for successful execution of mission.	● Updates/validates planned time and fuel computations as required to safely and efficiently accomplish the mission per FAR, NATOPS, and CNAF M-3710.7. ● Effectively uses ATC, FSS, PMSV, ATIS, and available aircraft systems, as required. ● Maintains awareness of and updates present position while remaining established on desired flight path when navigating VFR. ● Maintains course centerline between all NAVAIDs, fixes, and IFR checkpoints. Maintains within +/- 3 radials of desired radial, and within +/- 2NM of GPS centerline, as appropriate. ● Effectively plans for next phase of flight, and takes appropriate actions prior to transitioning out of en route portion of flight.
15. Terminal Procedures	
● Executes tasks and procedures associated with transition from the en route portion of a flight to landing at an airfield/landing area.	● Executes procedures per NATOPS, FTIs, and Local SOPs. ● Acquires necessary information for commencement of terminal procedures. ● Establishes required communication with appropriate agencies in support of terminal procedures. ● Complies with controlling agency/entity's instructions in a timely manner. ● Establishes an appropriate flight path and landing profile for the terminal area and landing site utilizing appropriate visual references and/or pattern procedures. ● Follows required visual approach guidance as appropriately (i.e. VASI, PAPI, Modified Normal Approach, etc.).

BEHAVIOR STATEMENT	STANDARDS
16. Stab-Off/Stab-Off Partial Panel Flight	
● Conduct aircraft operations with automatic flight control system (AFCS) secured in both VFR and IFR conditions with full panel and partial panel scans, as appropriate.	● Complies with NATOPS and FTI procedures. ● Recognizes change in AFCS condition, and initiates appropriate actions per NATOPS and FTI. ● Accounts for AFCS changes and initiates smooth coordinated control inputs to maintain control of the aircraft. ● Maintains heading +/-15 degrees, altitude +/- 150 ft, and airspeed +/-15 KIAS when operating in simulated instrument conditions or conducting instrument training. ● Transitions from full panel to partial panel instrument scan while maintaining flight parameters during instrument training.
17. Wave-off (Power-On)	
● Aborts a transition to landing or a descent using NATOPS and FTI procedures during a power-on maneuver.	● Executes maneuver per NATOPS, FTI, and Local SOPs. ● Makes appropriate Radio/ICS calls per NATOPS, FTIs, and Local SOPs. ● Initiates smooth coordinated control inputs, increasing collective smoothly without exceeding NATOPS limits. ● Ensures throttle is in the full open position. ● Ensures safe flight path throughout the maneuver, remaining prepared for an emergency landing in the event of a power loss. ● Expeditiously arrests rate of descent and transitions to a positive rate of climb while maintaining a 70 KIAS attitude in balanced flight.

BEHAVIOR STATEMENT	STANDARDS
18. Wave-off (Power-Off)	
● Aborts a simulated emergency procedure or autorotative descent using NATOPS and FTI procedures during a power-off maneuver.	● Executes maneuver per NATOPS, FTI, and Local SOPs. ● Makes appropriate Radio/ICS calls per NATOPS, FTIs, and Local SOPs. ● Initiates smooth coordinated control inputs, increasing collective smoothly without exceeding NATOPS limits. ● Time permitting, ensures collective is full down prior to increasing throttle. ● Ensures safe flight path clearing the aircraft of traffic and obstacles throughout the maneuver, remaining prepared for an emergency landing in the event of a power loss. ● Expeditiously arrests rate of descent and transitions to a positive rate of climb while maintaining a 70 KIAS attitude in balanced flight.
19. Spatial Disorientation Recognition and Recovery	
● Recognizes the signs and symptoms of spatial disorientation and initiates the appropriate actions to recover from or assist in the recovery from spatial disorientation.	● Demonstrates knowledge of spatial disorientation as explained in NATOPS, FTIs, and Local SOPs. ● Demonstrates knowledge of signs and symptoms of spatial disorientation. ● Demonstrates knowledge of recovery options for both PAC and PNAC per NATOPS and FTI procedures. ● Executes appropriate and effective CRM to avoid the occurrence of spatial disorientation. ● Executes appropriate and effective CRM upon recognizing signs or symptoms of spatial disorientation. ● Executes appropriate actions/procedures to recover from spatial disorientation with emphasis on safety of flight.

BEHAVIOR STATEMENT	STANDARDS
Familiarization Stage	
20. Blindfold Cockpit Check	
● Locate and identify aircraft systems, flight controls, circuit breakers, switches and buttons at the request of the instructor.	● Without aid of visual cues, positively identify all items in the cockpit requested by the instructor. ● Verbally explain the location of the specified cockpit item, and be able to locate the item on command.
21. Course Rules	
● Navigates local operating area using correct altitudes, airspeeds, transponder codes, and radio calls, per Local SOPs. ● Visually identifies required checkpoints inflight.	● Conducts course rules navigation per Local SOPs. ● Correctly identifies course rules checkpoints. ● Able to recall required altitudes, airspeeds, radios frequencies, transponder codes, and routes of flights for all local area course rules.
22. Vertical Takeoff	
● Maneuvers aircraft vertically from a landed condition to a 5ft AGL hover.	● Executes maneuver per NATOPS and FTI. ● Ascends at a rate commensurate with conditions and skill. ● Properly adjust control inputs throughout maneuver in response to aircraft movements and winds. ● Stabilizes aircraft within 1ft of a 5ft AGL hover. ● Maintains aircraft nose alignment within 10 degrees of desired heading. ● Maintains aircraft position over takeoff point.
23. No-Hover Takeoff	
● Transitions from a landed state to forward flight, in a continuous maneuver without establishing a hover.	● Executes procedures per FTI. ● Smoothly coordinates collective pull with cyclic and pedals throughout maneuver, without exceeding FTI torque limit. ● Maintains heading alignment within 10 degrees throughout the maneuver.

BEHAVIOR STATEMENT	STANDARDS
24. Hover	
● Maintains the aircraft in a zero ground speed, stable position over an assigned ground reference point at a consistent altitude.	● Maintains 5 ft AGL skid height +/-1 ft. ● Maintains heading +/-10 degrees. ● Maintains aircraft position directly over desired ground reference point. ● Makes appropriate corrections for drift, yaw, and altitude changes. ● Properly accounts for environmental conditions and aircraft weight and power available. ● Maintains obstacle, personnel, and aircraft awareness while in a hover.
25. Clearing Turn	
● Maneuvers aircraft to view surrounding areas to identify traffic. ● Executes hover turn per Local SOPs to clear aircraft of traffic.	● Properly accounts for wind direction and speed prior to commencing turn. ● Executes maneuver per NATOPS and FTI. ● Initiates smooth, coordinated control inputs to achieve a controlled constant rate of turn. ● Maintains 5 ft AGL skid height +/-2 ft. ● Properly identifies surrounding traffic, and accounts for them prior to maneuvering aircraft.
26. Hover Taxi	
● Maneuver the aircraft in ground effect, usually below translational lift airspeed. ● Initiates coordinated smooth control inputs to change speed, heading and altitude.	● Accounts for wind direction and speed when initiating taxi. ● Initiates coordinated smooth control inputs appropriate to desired aircraft movement. ● Executes maneuver per NATOPS and FTI. ● Maintains 5 ft AGL skid height +/-2 ft, within +/-10 degrees of heading, and maintains alignment +/-3 ft of centerline and at a speed commensurate with safety and pilot skill. ● Smoothly transitions to a hover or to forward flight.

BEHAVIOR STATEMENT	STANDARDS
27. Transition to Forward Flight	
● Transitions from a stationary position through translational lift to establish forward flight. ● Executes the maneuver per the FTI.	● Conducts appropriate clearing turn prior to commencing transition. ● Properly accounts for wind direction and speed with appropriate control adjustments during transition. ● Executes FTI Procedures within +/-5 ft and +/-5 KIAS of checkpoints. ● Maintains within 10 degrees of takeoff heading.
28. Level Speed Change (LSC) - FAM	
● Executes a level transition between airspeeds, as required, while maintaining heading and altitude in balanced flight.	● Executes maneuver per NATOPS and FTI. ● Clears aircraft for traffic prior to commencing maneuver. ● Initiates smooth coordinated control inputs to establish appropriate and consistent deceleration/acceleration to achieve specified airspeed(s). ● Maintains constant heading +/- 10 degrees, constant altitude +/- 75 ft, and does not overshoot desired indicated airspeed by more than 5 KIAS. ● Maintains balanced flight throughout maneuver. ● Stabilizes, momentarily, at each airspeed checkpoint, then smoothly transitions, as required. ● Provides maneuver complete report upon completion of maneuver.
29. Turn Pattern - FAM	
● Executes coordinated turns at various angles of bank for specific amounts of heading change while maintaining constant altitude and airspeed in balanced flight.	● Executes maneuver per NATOPS and FTI. ● Clears aircraft for traffic prior to commencing maneuver. ● Initiates smooth coordinated control inputs to establish appropriate angle of bank. ● Maintains constant angle of bank +/- 5 degrees, constant airspeed +/- 5 KIAS, constant altitude +/- 75 ft, and rollout of turns +/- 5 degrees of desired heading. ● Maintains balanced flight throughout maneuver. ● Initiates reversal using smooth coordinated control inputs. ● Provides maneuver complete report upon completion of maneuver.

BEHAVIOR STATEMENT	STANDARDS
30. Low Work	
● Handles the aircraft in close proximity to the ground when not specifically covered by another course training standard. ● Maintains awareness of obstacles, altitude, airspeed, and collective pitch throughout maneuvers.	● Complies with NATOPS, FTI, and local procedures. ● Initiates smooth, coordinated control inputs. ● Hover and hover taxi at an altitude of 5 ft AGL +/-2 ft, within +/-10 degrees of heading, maintaining alignment ±3 feet of centerline and at a speed commensurate with safety and pilot skill. ● Conducts clearing turns at appropriate times. ● Maintains awareness of obstacles, traffic, personnel and vehicles while maneuvering. ● Accounts for environmental conditions and aircraft weight and power when maneuvering.
31. Square Patterns	
● Executes precise aircraft patterns at hover altitude using coordinated control inputs to execute smooth aircraft movement.	● Executes maneuver per FTI. ● Accounts for wind direction and speed prior to commencing maneuver. ● Initiates aircraft movement using smooth coordinated control inputs appropriate to environmental conditions and desired aircraft motion. ● Maintains 5 ft AGL skid height +/-2 ft, heading alignment +/-10 degrees, and aircraft alignment +/-3 ft of flight path centerline. ● Maintains appropriate visual scan resulting in appropriately anticipating control input requirements for maneuver execution.
32. Normal Approach	
● Executes a transition to landing from a forward flight profile per FTI procedures.	● Executes maneuver per NATOPS and FTI. ● Maintains desired profile +/-50 ft, +/-10 KIAS, and using 10-20 degree glideslope. ● Accounts for winds when flying normal approach profile, initiating appropriate corrections and adjustments to arrive at the landing site. ● Initiates smooth coordinated control inputs to establish and maintain normal approach profile. ● Manages energy state effectively to avoid steep approaches, high rates of descent or excessive closure rates.

BEHAVIOR STATEMENT	STANDARDS
33. Steep Approach	
● Executes a transition to landing using a steeper than normal glideslope for power management and/or obstacle avoidance.	● Executes maneuver per NATOPS and FTI. ● Initiates a smooth transition to enter a steep approach profile, while maintaining a safe profile that does not exceed +/-50 ft, +/-10 KIAS, and 25-45 degree glideslope en route to landing. ● Accounts for winds and airspeed when commencing the transition, making appropriate smooth coordinated control inputs to intercept the steep approach profile. ● Manages energy state effectively to avoid high rates of descent or excessive closure rates. ● Effectively anticipates power requirements to arrest rates of closure and rates of descent, avoiding over controlling prior landing.
34. Vertical Landing	
● Maneuvers aircraft vertically from a hover to a landing in a smooth continuous manner.	● Executes maneuver per NATOPS and FTI. ● Accounts for environmental conditions, aircraft weight and power available, and landing surface when landing. ● Executes landing using smooth coordinated control inputs to smoothly transition to the touchdown with no sideward drift or yaw prior to touchdown. ● Descends at a rate commensurate with conditions and skill. ● Properly adjust control inputs throughout maneuver in response to aircraft movements and winds. ● Maintains aircraft nose alignment within 10 degrees of desired heading. ● Maintains aircraft position over desired landing point. ● After touchdown, smoothly lowers collective to the full down position.

BEHAVIOR STATEMENT	STANDARDS
35. Sliding Landing	
● Executes a touchdown landing while maintaining some forward airspeed by sliding along the landing surface, minimizing power requirements.	● Executes maneuver per NATOPS and FTI. ● Accounts for environmental conditions, aircraft weight and power available, and landing surface when determining landing speed. ● Initiates landing with appropriate groundspeed for given scenario. ● Touches down with skids in a level attitude, aligned with direction of travel. ● Initiates smooth collective pitch reductions after landing avoiding a sudden stop, while arresting aircraft forward movement.
36. No-Hover Landing	
● Executes transition to a zero airspeed touchdown landing that does not utilize a hover in order to minimize power requirement and avoid rotor-wash related reduced visibility.	● Executes maneuver per NATOPS and FTI. ● Accounts for environmental conditions, aircraft weight and power available, and landing surface when transitioning to landing profile. ● Initiates landing using smooth coordinated control inputs to smoothly transition to the touchdown landing per NATOPS and FTI. ● Establishes a landing profile with no sideward drift or yaw prior to touchdown, and lands in a skids level attitude. ● Manages energy effectively to land the aircraft with minimal or no forward movement and does not result in a vertical landing from a hover.
37. Maximum Load Takeoff	
● Conduct the FTI Maximum Load Takeoff procedures ● Execute power limited takeoff simulating maximum aircraft loading requiring near maximum power available.	● Conducts appropriate clearing turn prior to executing maneuver, identifying traffic that could affect aircraft maneuver. ● Accounts for wind direction and speed prior to initiating maneuver. ● Executes maneuver per NATOPS and FTI. ● Does not exceed assigned Ng until complete with the maneuver. ● Safely accelerates to 40 KIAS at or below 20 ft AGL.

BEHAVIOR STATEMENT	STANDARDS
38. Level Speed Change From a Hover	
● Execute a coordinated deceleration while maintaining constant flight path and altitude.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish a level, decelerating flight profile. ● Decelerates to approximately 25 knots groundspeed. ● Maintains altitude +15/-10 ft. ● Maintains constant flight path. ● Initiates smooth coordinated control inputs to transition to 50 KIAS. ● Resumes transition to a forward flight profile. ● Accounts for winds and adjusts control inputs appropriately throughout maneuver.
39. Quick Stop	
● Execute a coordinated deceleration while maintaining constant flight path and altitude.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish a level, decelerating flight profile. ● Maintains 50 ft AGL +/-10 ft and decelerates to 45 KIAS. ● Decelerate no slower than 40 KIAS. ● Maintains constant flight path. ● Initiates smooth coordinated control inputs to transition to 70 KIAS climb. ● Accounts for winds and adjusts control inputs appropriately throughout maneuver.
40. High-Speed Approach	
● Conduct transition to landing beginning at higher than normal airspeed. ● Manage energy to intercept steep approach profile to landing.	● Executes maneuver per NATOPS and FTI. ● Initiates a smooth transition to reduce airspeed and intercept a steep approach profile, while maintaining a safe profile that does not exceed +/-50 ft, +/-10 KIAS until established on steep approach profile. ● Accounts for winds when commencing the transition, adjusting inputs using smooth coordinated control inputs to intercept the steep approach profile. ● Manages energy state effectively to avoid high rates of descent, excessive closure rates, or excessive power requirements.

BEHAVIOR STATEMENT	STANDARDS
41. Hydraulic Boost Off Approach	
● Executes flight operations with hydraulics system secured to simulate hydraulic system malfunctions. ● Conduct transition from forward flight to hover taxi, per NATOPS and FTI.	● Executes maneuver per NATOPS and FTI. ● Effectively transitions to a landing profile, maneuvering the aircraft while accounting for additional forces necessary to establish flight profile changes. ● Properly assesses safe landing speed for sliding landing at an appropriate landing surface per NATOPS and FTI. ● Executes smooth coordinated control inputs to transition to a hover taxi at a safe landing.
42. Simulated Engine Failure in a Hover (Hover Cut Gun)	
● Executes appropriate response to a simulated engine failure while in hover. ● Executes an autorotation from the hover to safe landing.	● Executes maneuver per NATOPS and FTI. ● Initiates timely, smooth coordinated control inputs in response to simulated engine failure initiation. ● Upon IP initiation of the simulated engine failure, does not move collective until ready to cushion the autorotation landing. ● Eliminates yaw and all lateral and aft drift using smooth control inputs. ● Initiates collective pitch increase appropriately for the aircraft sink rate and remaining N_R, resulting in a safe autorotation landing. ● Maintains a skid level attitude and accepts minimal forward drift at touchdown. ● After landing, smoothly lowers collective to full down position.
43. Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	
● Executes appropriate response to a simulated engine failure while in a hover taxi condition. ● Executes an autorotation from the hover taxi to safe landing.	● Executes maneuver per NATOPS and FTI. ● Initiates timely, smooth coordinated control inputs in response to simulated engine failure initiation. ● Upon IP initiation of the simulated engine failure, does not move collective until ready to cushion the autorotation landing.

BEHAVIOR STATEMENT	STANDARDS
43. Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun) (cont.)	
	● Eliminates yaw and all lateral and aft drift using smooth control inputs. ● Initiates collective pitch increase appropriately for the aircraft sink rate and remaining Nr, resulting in a safe autorotation landing. ● Maintains a skid level attitude at touchdown. ● After landing, smoothly lowers collective to full down position.
44. Power Recovery Autorotation	
● Executes an autorotation per NATOPS, FTI, and Local SOPs and completes maneuver in a power-on condition.	● Executes maneuver per NATOPS and FTI. ● Accounts for environmental conditions and aircraft weight and power available prior to executing maneuver and adheres to NATOPS, FTI, and local SOP requirements for conducting an autorotation. ● Clears intended point of landing properly accounting for traffic, obstacles, and suitability of landing site. ● Accounts for wind speed and direction, and adjusts flight path accordingly. ● Verifies crew is set prior to initiating maneuver. ● Ensures aircraft is no lower than 600 ft AGL and no slower than 70 KIAS before initiating maneuver. ● Initiates smooth coordinated control inputs to enter and fly the maneuver maintaining balanced flight throughout. ● Maintains N_R within NATOPS limits, and properly anticipates needed collective pitch changes. ● Establishes aircraft on landing course line no lower than 200 ft AGL. ● Places collective in the full down position no lower than 150 ft AGL. ● Executes flare and recovery commensurate with environmental conditions and aircraft weight to arrive over a safe landing area in a 0-10 knot hover taxi.

BEHAVIOR STATEMENT	STANDARDS
45. Full Autorotation	
● Executes an autorotation per NATOPS, FTI, and Local SOPs and completes maneuver in a power-off condition.	● Accounts for environmental conditions and aircraft weight and power available prior to executing maneuver and adheres to NATOPS, FTI, and local SOP requirements for initiating an autorotation. ● Clears intended point of landing properly accounting for traffic, obstacles, and suitability of landing site. ● Accounts for wind speed and direction, and adjusts flight path accordingly. ● Verifies crew is set prior to initiating maneuver. ● Ensures aircraft is no lower than 600 ft AGL and no slower than 70 KIAS before initiating maneuver. ● Initiates smooth coordinated control inputs to enter and fly the maneuver maintaining balanced flight throughout. ● Maintains N_R within NATOPS limits, and properly anticipates needed collective pitch changes. ● Establishes aircraft on landing course line no lower than 200 ft AGL. ● Places collective in the full down position no lower than 150 ft AGL. ● Executes flare and recovery commensurate with environmental conditions and aircraft weight. ● Executes touchdown at a safe landing area with a skids level attitude, with the aircraft aligned with the direction of travel, and having eliminated any sideward drift prior to touching down.

BEHAVIOR STATEMENT	STANDARDS
46. Simulated Engine Failure at Altitude	
● Executes appropriate response to a simulated engine failure while in forward flight. ● Executes an autorotation, selecting and maneuvering appropriately to a safe landing area.	● Executes maneuver per NATOPS, FTI, and Local SOP. ● Initiates timely, smooth coordinated control inputs in response to simulated engine failure initiation. ● Maintains N_R within NATOPS limits throughout maneuver. ● Executes emergency procedures per NATOPS, simulating actions as required. ● Properly identifies and selects a safe landing area. ● Accounts for winds when maneuvering to landing area, adjusting flight path appropriately. ● Maneuvers aircraft to selected safe landing area while maintaining balanced flight with airspeed between 50 and 72 KIAS. ● Terminates maneuver appropriately for given scenario. (Wave-off, Power Recovery Autorotation, or Full Autorotation).
47. Tail-Rotor Fixed Pitch in a Hover	
● Executes a fixed pitch tail-rotor emergency procedure from a hover per NATOPS.	● Executes emergency procedures per NATOPS. ● Properly identified the emergency and initiates appropriate and timely response. ● Executes appropriate CRM, as appropriate for the emergency.
48. Tail-Rotor Fixed Pitch at Altitude	
● Executes a fixed pitch tail-rotor emergency procedure initiated while at altitude in forward flight per NATOPS.	● Executes emergency procedures per NATOPS. ● Properly identified the emergency and initiates appropriate and timely response. ● Executes appropriate CRM, as appropriate for the emergency. ● Determines approximate power setting allowable during landing and adjusts landing profile accordingly.

BEHAVIOR STATEMENT	STANDARDS
49. Loss of Tail-Rotor Effectiveness (LTE)	
● Executes a loss of Tail-Rotor effectiveness emergency procedure per NATOPS.	● Demonstrates knowledge of the five contributing factors in loss of Tail-Rotor effectiveness per NATOPS. ● Demonstrates knowledge of methods to avoid LTE. ● Executes emergency procedures per NATOPS. ● Properly identified the emergency and initiates appropriate and timely response. ● Executes appropriate CRM, as appropriate for the emergency.
50. Complete Loss of Tail-Rotor Thrust	
● Executes a loss of Tail-Rotor thrust emergency procedure per NATOPS.	● Executes emergency procedures per NATOPS. ● Properly identified the emergency and initiates appropriate and timely response. ● Executes appropriate CRM, as appropriate for the emergency. ● Maintains airspeed above min rate of descent in an autorotation until the flare.
Logistics Stage	
51. Power Checks	
● Verify aircraft power available for the mission. ● Compare results to preflight performance calculations to ensure sufficient power is available to continue mission.	● Calculates expected power requirements prior to flight. ● Validates actual aircraft loading and environmental conditions match those expected during preflight calculations. If they do not, reassesses power requirement for comparison to actual power available. ● Checks aircraft power available per NATOPS and FTI procedures. ● Exercises effective CRM with aircrew to complete power checks.

BEHAVIOR STATEMENT	STANDARDS
52. Landing Zone (LZ) Evaluation	
● Conducts landing zone evaluation in preflight and/or in-flight assessing suitability for landing and executing safe landing to appropriate landing zone.	● Demonstrates knowledge of preflight and inflight LZ evaluation procedures per NATOPS and FTIs. ● Demonstrates knowledge of LZ types, surface and lighting types, and safety considerations per FTI. ● Conducts through landing zone preflight planning per NATOPS, FTIs, and local SOPs and presents information in mission briefs, as required. ● Executes LZ evaluation per NATOPS, FTIs, and local procedures. ● Properly accounts for environmental conditions, aircraft weight and power, identifies safety hazards and obstacles, and selects an appropriate approach and wave-off path for the LZ. ● Executes appropriate and effective CRM throughout LZ evaluation. ● Maintains situational awareness throughout inflight LZ evaluation ensuring aircraft remains safe from traffic and obstacles and does not exceed NATOPS limits or violate CNAF M3710.7, local SOPs, or FAR/AIM requirements.
53. Confined Area Operations	
● Conduct flight operations into and out of areas with confined landing and operating areas with obstacles in close proximity. ● Account for transitions in and out of ground effect and the resulting changes in power available and power required. ● Exercise CRM working with Aircrew during confined area operations.	● Executes maneuver per NATOPS and FTI. ● Exercises effective CRM with aircrew to conduct confined area operations. ● Initiates appropriate ICS/Radio calls per local SOPs. ● Accounts for environmental conditions and aircraft weight and power available when preparing for operations. ● Accounts for wind effect and obstacle locations when conducting takeoffs and landings. ● Properly assesses landing area per FTI procedures. ● Maintains a steep approach profile for entry into and landing in the confined area.

BEHAVIOR STATEMENT	STANDARDS
53. Confined Area Operations (cont.)	
	● Maintains safe flight profile for entry and departures from confined areas, maintaining a minimum of 10ft of obstacle clearance. ● Properly assesses wave-off options for the area of operations. ● Initiates smooth coordinated control inputs, minimizing power required during execution of confined area operations.
54. Pinnacle Operations	
● Conduct aircraft operations using an elevated landing area or surface (IE: Building, Ship, terrain peak/hilltop). ● Account for transitions into and out of ground effect and the resulting changes in power available and power required. ● Exercise CRM working with Aircrew during pinnacle operations.	● Executes maneuver per NATOPS and FTI. ● Exercises effective CRM with aircrew to conduct pinnacle operations. ● Initiates appropriate ICS/Radio calls per local SOPs. ● Accounts for environmental conditions and aircraft weight and power available when conducting takeoffs and landings. ● Properly assesses pinnacle landing site per FTI procedures. ● Maintains the assigned approach profile for landing on the pinnacle. ● Properly assesses wave-off options for the area of operations.
55. Dynamic Landing Approaches	
● Executes transition to landing from various locations relative to the landing zone while travelling at en route speeds utilizing energy management principles to maneuver to intercept the landing profile.	● Executes maneuver per NATOPS and FTI. ● Initiates a smooth transition to execute a 360 degree turn, while maintaining a safe profile that does not exceed +/-25 ft and +/-10 KIAS. ● Accounts for winds and airspeed when commencing the transition, making appropriate smooth coordinated control inputs to intercept the landing profile. ● Manages energy state effectively, maintaining positive g-loading, to avoid high rates of descent, excessive closure rates, or excessive power requirements.

BEHAVIOR STATEMENT	STANDARDS
56. External Load Operations	
● Conduct logistics flight operations carrying a load via external load attachment. ● Exercises CRM with aircrew in the conduct of external load operations.	● Executes maneuver per NATOPS and FTI. ● Exercises effective CRM with aircrew to conduct external load operations. ● Initiates appropriate ICS/Radio calls per local SOPs. ● Accounts for environmental conditions and aircraft weight and power available with and without an external load when conducting operations. ● Properly responds to aircrew verbal directions when establishing hover over load hookup and drop site. ● Notes the altitude on the RADALT at "tension on". ● Maintains an altitude at or above "Tension On" altitude plus 5 ft AGL unless directed to descend by aircrew. ● Intercepts approach profile that does not exceed +/-50 ft, and +/-10 KIAS of the desired flight path. ● Anticipates power requirements, and initiates control inputs appropriately to avoid high rates of closure, power required exceeding power available, and high rates of descent. ● Properly assesses wave-off options and jettison considerations for the area of operations.
Instrument Stage CTS Items	
57. Instrument Takeoff	
● Transitions to forward flight without reference to a visible horizon. ● Conducts takeoff per FTI and NATOPS procedures.	● Executes procedures per NATOPS and FTI. ● Maintains takeoff torque ±5 percent. ● Smoothly accelerates to appropriate climb speed. ● Maintains nose alignment with runway/takeoff heading. ● Climbs at 70 KIAS ±5 knots.

BEHAVIOR STATEMENT	STANDARDS
58. Level Speed Change (LSC) – Instruments	
● Executes a level transition between airspeeds, as required, while maintaining heading and altitude in balanced flight.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish appropriate and consistent deceleration/acceleration to achieve specified airspeed(s). ● Maintains constant heading +/- 5 degrees, constant altitude +/- 50 ft, and does not overshoot desired indicated airspeed by more than 5 KIAS. ● Maintains balanced flight throughout maneuver. ● Stabilizes, momentarily, at each airspeed checkpoint, then smoothly transitions, as required. ● Provides maneuver complete report upon completion of maneuver.
59. Vertical S-1 Pattern	
● Executes a coordinated transition to descend/climb for 1 minute and 500 ft of altitude change followed by transitioning back to the starting altitude while maintaining constant heading and airspeed in balanced flight.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish appropriate rate of climb/descent. ● Maintains constant heading +/- 5 degrees, constant airspeed +/- 5 KIAS, and VSI at 500 FPM +/-200 FPM. ● Maintains balanced flight throughout maneuver. ● Checks progress of climb/descent every 15 seconds and makes appropriate control inputs to adjust parameters. ● Completes maneuver +/- 75 ft of desired altitude. ● Provides maneuver complete report upon completion of maneuver.
60. Turn Pattern - Instruments	
● Executes coordinated turns at various angles of bank for specific amounts of heading change while maintaining constant altitude and airspeed in balanced flight.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish appropriate angle of bank. ● Maintains constant angle of bank +/- 5 degrees, constant airspeed +/- 5 KIAS, constant altitude +/- 75 ft, and rollout of turns +/- 5 degrees of desired heading.

BEHAVIOR STATEMENT	STANDARDS
60. Turn Pattern – Instruments (cont.)	
	● Maintains balanced flight throughout maneuver. ● Initiates reversal using smooth coordinated control inputs at ½ the angle of bank in degrees of heading prior to the desired heading. ● Provides maneuver complete report upon completion of maneuver.
61. Oscar Pattern	
● Executes a coordinated transition requiring altitude change while doing a standard rate turn for 2 min, resulting in 1000 ft of altitude change and 360 degrees of heading change, followed by a transition back to starting heading and altitude while maintaining constant airspeed in balanced flight.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish a standard rate of turn and desired rate of climb/descent. ● Maintains a standard rate turn +/- ½ needle width, constant airspeed +/- 5 KIAS, and VSI at 500 FPM +/- 200 FPM. ● Maintains balanced flight throughout maneuver. ● Checks progress of climb/descent every 15 seconds and makes appropriate control inputs to adjust parameters. ● Completed maneuver +/-75 ft of desired altitude and +/-10 degrees of desired heading. ● Provides maneuver complete report upon completion of maneuver.
62. Partial Panel, Directional Gyro Failure	
● Execute turns using failed directional gyro procedures while maintaining all other instrument parameters. ● Secures equipment as necessary to ensure magnetic compass accuracy. ● Uses magnetic compass to fly assigned/desired headings.	● Executes magnetic compass turn procedures per FTI. ● Executes appropriate NATOPS procedures in response to failed direction gyro. ● Executes “Timed Turn” or “Lead Point” Technique to initiate required changes of heading. ● Correctly determines direction of turn, and appropriate time/rollout lead heading for turn. ● Initiates smooth coordinated control inputs to begin turn. ● Maintains balanced flight throughout maneuver.

BEHAVIOR STATEMENT	STANDARDS
62. Partial Panel, Directional Gyro Failure (cont.)	
	● Completes turns maintaining altitude +/-75ft, airspeed +/- 5 KIAS, and arriving at +/- 15 degrees of desired heading. ● Provides maneuver complete report upon completion of maneuver.
63. Partial Panel, Attitude Gyro Failure	
● Execute instrument flight using failed attitude gyro procedures while maintaining assigned instrument parameters using remaining flight instruments for situational awareness.	● Executes instrument flight per NATOPS and FTI. ● Executes appropriate NATOPS procedures in response to failed attitude gyro. ● Maintains balanced flight throughout maneuver. ● Maintains smooth and positive control of the aircraft. ● Maintains heading +/-15 degrees, altitude +/-150 ft, and airspeed +/-15 KIAS of assigned parameters. ● Does not exceed standard-rate turns. ● Remains oriented to current flight parameters and aircraft location.
64. Unusual Attitude Recovery	
● Executes a recovery from an unusual attitude establishing the aircraft on a desired heading, altitude, and airspeed. ● Properly identifies unusual attitude situation and required actions. ● Initiates recovery using smooth control inputs.	● Execute maneuver per NATOPS and FTI. ● Recognizes deviations and/or unusual attitude and executes appropriate procedures for instrument panel condition (full or partial). ● Initiates verbal communication or assumes controls as required for given scenario, per established NATOPS flight brief parameters. ● Maintains smooth and positive aircraft control. ● Does not allow aircraft to decelerate below 40 KIAS. ● Provides maneuver complete report upon completion of maneuver.

BEHAVIOR STATEMENT	STANDARDS
65. Unusual Attitude Recovery-Partial Panel	
● Executes a recovery from an unusual attitude establishing the aircraft on a desired heading, altitude, and airspeed. ● Properly identifies unusual attitude situation and required actions. ● Initiates recovery using smooth control inputs.	● Execute maneuver per NATOPS and FTI. ● Recognizes deviations and/or unusual attitude and executes appropriate procedures for instrument panel condition (full or partial). ● Initiates verbal communication or assumes controls as required for given scenario, per established NATOPS flight brief parameters. ● Maintains smooth and positive aircraft control. ● Does not allow aircraft to decelerate below 40 KIAS. ● Provides maneuver complete report upon completion of maneuver.
66. Intercepts	
● Executes the intercept of a radial or bearing using instrument navigation techniques.	● Executes intercept per the FTI. ● Determines the correct category for the required intercept and selects an appropriate method for executing the intercept. ● Identifies present position bearing/radial and correctly determines the direction of turn required and desired initial heading and/or needle position. ● Leads intercept turn appropriately and intercepts within +/- 5 degrees of bearing, or within +/-2 radials of desired bearing/radial. ● Remains oriented based upon RMI needles and is able to recognize position and deviations based on RMI reference. ● Does not rely solely on HSI as reference for intercepts. ● Executes initial turns and intercept maneuvering in a timely manner commensurate with skills.
67. TACAN Point-to-Point Navigation	
● Executes navigation from one TACAN radial/DME location to a different TACAN radial/DME location using a direct track.	● Executes point-to-point navigation per the FTI. ● Able to describe procedures for point-to-point navigation as defined by the FTI. ● Identifies present position and is able to describe point-to-point navigation destination relative to current location.

BEHAVIOR STATEMENT	STANDARDS
67. TACAN Point-to-Point Navigation (cont.)	
	● Correctly determines an effective no-wind heading and applies reasonable wind corrections to initiate initial navigation to destination. ● Re-evaluates aircraft track and adjusts the heading as required during transit. ● Arrive at assigned destination +/-5 radials and +/- 0.5 DME of the assigned TACAN radial/DME location.
68. Holding	
● Executes instrument holding using appropriate reference system for the assigned holding pattern. ● Executes correct entry into holding per published procedures or holding assignment.	● Enters and maintains holding per CNAF M-3710.7, NATOPS, FTI, INAV WB, DOD FLIP, Instrument NATOPS, and applicable FAR/AIM procedures and guidance. ● Executes instrument navigation from present position to holding location. ● Determines correct entry method based on current location and holding pattern entry direction. ● Executes holding entry correctly, turning in the correct directions, and remaining oriented during entry. ● Initiates smooth coordinated control inputs to establish holding speed +/- 5 KIAS. ● Executes standard rate turns for holding turns, making appropriate adjustments for winds. ● Maintains awareness of Expected Further Clearance time and is prepared for actions upon departing holding.

BEHAVIOR STATEMENT	STANDARDS
69. Non-Precision Approach	
● Executes an instrument approach using non-precision instruments and procedures.	● Executes approaches per CNAF M-3710.7, NATOPS, FTI, INAV WB, DOD FLIP, Instrument NATOPS, and applicable FAR/AIM procedures and guidance. ● Exercises appropriate CRM during the execution of the approach. ● Obtains appropriate information, and accounts for current weather, winds, runway options, and available approaches when selecting an approach. ● Conducts an approach brief prior to commencing an approach. ● Once cleared for the approach and prior to final approach course, slows to 90 KIAS +/- 5 KIAS, and maintains assigned altitude +/-75 ft. ● Initiates timing +/-5 seconds of required start and maintains awareness of timing throughout the approach, as required. ● Maintains +/- 5 KIAS of approach speed, and remains on final approach course +/-2 radials for VOR/TACAN procedures, +/- 5 degrees for NDB procedures, and/or +/-2 dots for RNAV/Localizer procedures from FAF to MAP. ● Descends no lower than MDA +50/-0 ft until at MAP or until cleared to descend (i.e. by tower controller, or until visual the runway for non-towered airfields). ● Executes appropriate transition upon reaching the MAP. ● Transitions to land, correctly selecting a flight path and maneuvering the aircraft safely to intercept the landing profile. ● During a GCA, complies with controller instructions in a timely manner. ● Properly identifies the need to execute a missed approach and executes the correct missed approach procedure for the approach being flown or as assigned.

BEHAVIOR STATEMENT	STANDARDS
70. Precision Approach	
● Executes an instrument approach using precision instruments and procedures.	● Executes approaches per CNAF M-3710.7, NATOPS, FTI, INAV WB, DOD FLIP, Instrument NATOPS, and applicable FAR/AIM procedures and guidance. ● Exercises appropriate CRM during the execution of the approach. ● Obtains appropriate information, and accounts for current weather, winds, runway options, and available approaches when selecting an approach. ● Conducts an approach brief prior to commencing an approach. ● Once cleared for the approach and prior to final approach course, slows to 90 KIAS +/- 5 KIAS, and maintains assigned altitude +/-75 ft. ● Maintains +/- 5 KIAS of approach speed, and remains +/-2 dots deviation for an ILS approach. ● Executes appropriate transition upon reaching the DH/DA. ● Transitions to land, correctly selecting a flight path and maneuvering the aircraft safely to intercept the landing profile. ● During a GCA, complies with controller instructions in a timely manner. ● Properly identifies the need to execute a missed approach and executes the correct missed approach procedure for the approach being flown or as assigned.

BEHAVIOR STATEMENT	STANDARDS
71. Failed Directional Gyro Approaches	
● Executes an instrument approach with a failed directional gyro, utilizing alternate means to maintain desired heading/track.	● Executes approaches per CNAF M-3710.7, NATOPS, FTI, INAV WB, DOD FLIP, Instrument NATOPS, and applicable FAR/AIM procedures and guidance. ● Executes appropriate NATOPS procedures in response to the failed directional gyro. ● Exercises appropriate CRM during the execution of the approach. ● Obtains appropriate information, and accounts for current weather, winds, runway options, and available approaches when selecting an approach. ● Identifies desired alternative options to conduct approach with failed directional gyro (i.e.: No-Gyro vectors, Mag Compass Turns, etc.). ● Conducts an approach brief prior to commencing an approach. ● Once cleared for the approach and prior to final approach course, slows to 90 KIAS +/- 5 KIAS, and maintains assigned altitude +/-75 ft. ● Initiates timing +/-5 seconds of required start and maintains awareness of timing throughout the approach, as required. ● For TACAN/VOR failed gyro begins timing within +/-5 sec (as required), maintains +/- 10 KIAS of approach speed, and remains on final approach course +/-5 radials from IAF to MAP. ● Descends no lower than MDA +50/-0 ft until at MAP or until cleared to descend (i.e. by tower controller, or until visual the runway for non-towered airfields). ● Executes appropriate transition upon reaching the MAP. ● Transitions to land, correctly selecting a flight path and maneuvering the aircraft safely to intercept the landing profile. ● During a GCA, complies with controller instructions in a timely manner.

BEHAVIOR STATEMENT	STANDARDS
71. Failed Directional Gyro Approaches (cont.)	
	● Does not exceed the turn rate requirement for the segment of the approach being conducted (i.e. ½ or full SRT) ● Maintains balanced flight throughout approach. ● Properly identifies the need to execute a missed approach and executes the correct missed approach procedure for the approach being flown or as assigned.
72. Missed Approach	
● Executes instrument flight maneuvers to safely transition away from the terminal environment following an instrument approach. ● Executes procedures assigned or required following an instrument approach. ● Exercises appropriate actions when a missed approach is well before arriving at, or after departing the MAP/DH/DA.	● Executes a missed approach per CNAF M-3710.7, NATOPS, FTI, INAV WB, DOD FLIP, Instrument NATOPS, and applicable FAR/AIM procedures and guidance. ● Properly identifies the need to execute a missed approach and executes the correct missed approach procedure for the approach being flown or as assigned the controlling agency. ● Exercises appropriate CRM during the execution of the missed approach. ● Arrests rate of descent, and maintains altitude or climbs in a timely manner. ● Initiates smooth coordinated control inputs to establish missed approach procedure flight profile. ● Determines appropriate actions following missed approach, and makes appropriate requests to IP and/or controlling agency.

BEHAVIOR STATEMENT	STANDARDS
73. Modified Normal Approach	
● Executes a transition to landing from a non-standard pattern arrival path, intercepting the normal approach profile prior to landing.	● Executes maneuver per NATOPS and FTI. ● Intercepts normal approach profile prior to landing, while maintaining a safe profile that does not exceed +/-50 ft, +/-10 KIAS, and 10-20 degrees glideslope of the desired flight path to landing. ● Accounts for winds, airspeed, and altitude when commencing the transition to landing and makes appropriate smooth coordinated control inputs to intercept the normal approach profile. ● Manages energy state effectively to avoid steep approaches, high rates of descent or excessive closure rates. ● Properly assesses traffic, orientation to landing site, obstacles, and winds when determining how to maneuver to intercept the normal approach profile. ● Does not exceed any NATOPS limit or accept any unsafe condition when executing a modified normal approach.
74. Instrument Autorotation	
● Execute an autorotation in IMC after a simulated engine failure.	● Executes maneuver per NATOPS, FTI, and Local SOP. ● Initiates timely, smooth coordinated control inputs in response to simulated engine failure initiation. ● Maintains N_R within NATOPS limits throughout maneuver. ● Maintains airspeed per FTI ±10 knots and balanced flight. ● Turns in the direction of last known winds, as appropriate. ● Executes emergency procedures per NATOPS, simulating actions, as required. ● Executes terminal phase of autorotation commensurate with conditions experienced upon reaching 200 ft and per FTI procedures.

BEHAVIOR STATEMENT	STANDARDS
Navigation Stage	
75. VFR Navigation	
● Executes in-flight navigation in VMC using visual references, checkpoints, and applicable maps and charts.	● Executes visual navigation per CNAF M-3710.7, NATOPS, FTI, DOD FLIPs, and applicable FAR/AIM procedures and guidance. ● Exercises appropriate and effective CRM during the execution visual navigation. ● Obtains appropriate flight related information, and accounts for weather, winds, airspace, obstacles, landing areas and airports when planning the navigation route. ● Prepares a VFR navigation chart with appropriate route, markings, and information on the chart per FTI and Local SOPs. ● Prepares an appropriate VFR flight plan for route of flight, as required by IP or and/or CNAF M-3710.7, FAR/AIM, and Local SOPs. ● Provides mission brief that includes a detailed visual navigation route brief that specifically addresses airspace boundaries, route checkpoints, obstacles and hazards, fuel considerations, possible diverts along route of flight, and destination information, and additional information as required by FTI, IP or local SOP. ● Demonstrates detailed knowledge of chart symbology, airspace considerations, and route information. ● Executes effective navigation remaining aware of present position throughout the flight and adjusting course and/or route of flight as appropriate in response to weather, obstacles, fuel considerations, and/or emergencies. ● Executes appropriate procedures to enter terminal environment utilizing appropriate radios calls and pattern entries per FAR/AIM and CNAF M-3710.7, as required.

BEHAVIOR STATEMENT	STANDARDS
76. TERF Navigation	
● Executes TERF Navigation using low level TERF profile with the aid of charts and graphics using visual reference to terrain and terrain features, manmade objects, and aircraft systems, as required.	● Executes TERF navigation per CNAF M-3710.7, NATOPS, FTI, and applicable FAR/AIM procedures and guidance. ● Exercises appropriate and effective CRM during the execution of TERF navigation. ● Obtains appropriate flight related information, and accounts for weather, winds, airspace, obstacles, landing areas and airports when planning the navigation route. ● Prepares a chart per FTI procedures with all required markings and information visible and functionally usable in-flight. ● Prepares and provides mission smart-pack per FTI, and effectively uses smart-pack during flight to maintain situational awareness. ● Demonstrates detailed knowledge of the planned route, terrain and terrain features, obstacles, and appropriate navigation aids (i.e. limiting features, funneling features, etc.) along the route of flight. ● Executes effective navigation remaining aware of present position throughout the flight and adjusts course and/or route of flight as appropriate in response to weather, obstacles, fuel considerations, and/or emergencies. ● Able to accurately associate visual references, including terrain and terrain features, with navigation chart symbology to remain oriented along route of flight. ● Executes appropriate procedures to enter terminal environment utilizing appropriate radios calls and pattern entries per FTI, FAR/AIM and CNAF M-3710.7, and Local SOPs, as required.

BEHAVIOR STATEMENT	STANDARDS
77. Timing	
● Plans and maintains awareness of mission timing required to achieve mission timeline making adjustments as required.	● Executes procedures per current FTI. ● Maintains route timing awareness and makes appropriate adjustments to airspeed, route, and/or authorized ETA to remain on mission timeline. ● Exercises appropriate and effective CRM during execution to maintain timing awareness and remain on mission timeline. ● Completes timed route at ETA +/-2 min, unless authorized to deviate by IP. ● Effectively employs aircraft systems/timers in flight to maintain timing awareness and to remain on mission timeline.
Ship/SAR Stage	
78. Low-Level Basic Instruments (LLBI) – Level Speed Change	
● Executes a level transition between airspeeds, as required, while maintaining heading and altitude in balanced flight at low altitude.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish appropriate and consistent deceleration/acceleration to achieve specified airspeed(s). ● Maintains constant heading +/- 10 degrees, constant altitude +/- 50 ft, and does not overshoot desired indicated airspeed by more than 5 KIAS. ● Maintains balanced flight throughout maneuver. ● Stabilizes, momentarily, at each airspeed checkpoint, then smoothly transitions, as required. ● Provides maneuver complete report upon completion of maneuver.

BEHAVIOR STATEMENT	STANDARDS
79. Low-Level Basic Instruments (LLBI) – Turn Pattern	
● Executes coordinated turns at various angles of bank for specific amounts of heading change while maintaining constant altitude and airspeed in balanced flight at low altitude.	● Executes maneuver per NATOPS and FTI. ● Initiates smooth coordinated control inputs to establish appropriate angle of bank. ● Maintains constant angle of bank +/- 5 degrees, constant airspeed +/- 10 KIAS, constant altitude +/-50 ft, and rollout of turns +/- 5 degrees of desired heading. ● Maintains balanced flight throughout maneuver. ● Initiates reversal using smooth coordinated control inputs at ½ the angle of bank in degrees of heading prior to the desired heading. ● Provides maneuver complete report upon completion of maneuver.
80. Low-Level Basic Instruments (LLBI) – Stab Off/Stab-Off Partial Panel	
● Conduct LLBI maneuvers with automatic flight control system (AFCS) secured with full panel and partial panel scans, as appropriate.	● Executes maneuvers per NATOPS and FTI procedures. ● Recognizes change in AFCS condition, and initiates appropriate actions per NATOPS and FTI. ● Accounts for AFCS changes and initiates smooth coordinated control inputs to maintain control of the aircraft. ● Maintains balanced flight throughout maneuver. ● For LLBI level speed change, initiates smooth coordinated control inputs to establish appropriate and consistent deceleration/acceleration to achieve specified airspeed(s). ● For LLBI level speed change, maintains heading +/-10 degrees, and altitude +/- 50 ft. ● For LLBI level speed change, stabilizes, momentarily, at each airspeed checkpoint, then smoothly transitions, as required. ● For LLBI turn pattern, maintains altitude +/- 50 ft and airspeed +/-10 KIAS as required. ● For LLBI turn pattern, initiates smooth coordinated control inputs to establish appropriate angle of bank.

BEHAVIOR STATEMENT	STANDARDS
80. Low-Level Basic Instruments (LLBI) – Stab Off/Stab-Off Partial Panel (cont.)	
	● For LLBI turn pattern, initiates reversal using smooth coordinated control inputs at ½ the angle of bank in degrees of heading prior to the desired heading. ● Transitions from full panel to partial panel instrument scan while maintaining flight parameters during maneuvers. ● Provides maneuver complete report upon completion of maneuver.
81. Low-Level Basic Instruments (LLBI) – Partial Panel	
● Execute LLBI level speed change and turn patterns using failed directional gyro procedures while maintaining all other instrument parameters. ● Secures equipment as necessary to ensure magnetic compass accuracy. ● Uses magnetic compass to fly assigned/desired headings. ● Execute LLBI level speed change and turn patterns using failed attitude gyro procedures while maintaining assigned parameters using remaining flight instruments for situational awareness	● Executes instrument flight per NATOPS and FTI. ● Executes magnetic compass turn procedures per FTI. ● Executes appropriate NATOPS procedures in response to failed direction and/or attitude gyro. ● Initiates smooth coordinated control inputs to begin turns. ● Maintains smooth and positive control of the aircraft. ● For failed attitude gyro, does not exceed standard-rate turns. ● For LLBI turn patterns, executes “Timed Turn” or “Lead Point” Technique to initiate required changes of heading. ● Initiates smooth coordinated control inputs to begin turns. ● For LLBI turn patterns, completes turns maintaining altitude +/-50 ft, airspeed +/- 10 KIAS, and arriving at +/- 15 degrees of desired heading. ● For LLBI level speed change, maintains heading +/-10 degrees, and altitude +/-50 ft. ● Maintains balanced flight throughout maneuver. ● Provides maneuver complete report upon completion of maneuver.

BEHAVIOR STATEMENT	STANDARDS
82. Search and Rescue Patterns	
● Execute search and rescue patterns as a part of a scenario utilizing appropriate standard SAR search patterns.	● Executes maneuvers per NATOPS, FTI, local SOP, and service specific search and rescue related instructions. ● Determines and executes the appropriate search pattern based upon the provided scenario. ● Executes appropriate and effective CRM throughout the scenario. ● Initiates SAR pattern using smooth coordinated control inputs maintaining awareness of location relative to the search pattern.
83. Wind-line Rescue Pattern	
● Executes rescue pattern to place aircraft into the wind-line in a position to effect a survivor recovery.	● Executes maneuvers per NATOPS, FTI, local SOP, and service specific search and rescue related instructions. ● Executes appropriate and effective CRM throughout the scenario. ● Calculates appropriate time correction based upon last known winds for the outbound leg. ● Determines the required turn and initiates landing checks prior to pattern entry. ● Rolls out of turn within 30 degrees +/-5 degrees of desired heading. ● Initiates smooth coordinated control inputs and maintains balanced flight throughout the maneuver.
84. Response to LSE	
● Executes commands provided by LSE via hand and arm signals. ● Recognizes and properly adheres to all mandatory signals.	● Execute maneuvers directed by LSE per NATOPS, FTI, and Local SOPs. ● Demonstrates knowledge of signals' meaning, and executed appropriate actions in response to LSE signals. ● Recognizes and adheres to all mandatory signals. ● Initiates smooth coordinated control inputs ensuring safe aircraft operation when in close proximity to LSE.

BEHAVIOR STATEMENT	STANDARDS
85. Shipboard Instrument Approach	
● Executes an instrument approach to an air capable ship using TACAN, NDB, or ASR procedures.	● Executes approaches per NATOPS, and FTI. ● Executes appropriate and effective CRM throughout the approaches. ● Conducts appropriate check in with ship. ● Properly selects appropriate NAVAIDs for approach being flown. ● Utilizes the RADALT as the primary altitude reference throughout the approach. ● Initiates smooth coordinated control inputs throughout the approach and maintains altitude +/-50 ft and airspeed +/-5 KIAS. ● Maintains balanced flight throughout. ● Maintains +/-2 radials, +/- 5 degrees of bearing, or +/-5 degrees of heading, as required. ● Executes appropriate transition upon completion of the approach (i.e. landing or missed approach).
86. Emergency Low Visibility Approach (ELVA)	
● Executes an instrument approach to an air capable ship when weather is below instrument approach minimums and landing is necessary.	● Executes maneuver per NATOPS and FTI. ● Appropriately determines the need to execute an ELVA due to weather. ● Properly initiates and responds to radio calls per FTI. ● Complies with approach controllers instructions. ● Initiates smooth coordinated control inputs throughout the maneuver. ● Maintains balanced flight throughout. ● Maintains altitude +/- 50 ft AGL, airspeed +/-5 KIAS. ● Executes appropriate transition upon completion of the approach (i.e. landing or missed approach). ● If executing missed approach, correctly navigates and complies with missed approach procedures.

BEHAVIOR STATEMENT	STANDARDS
87. Shipboard Landings	
● Executes VMC shipboard landings using normal shipboard traffic patterns, maintaining appropriate intervals and using appropriate radio calls.	● Executes procedures per NATOPS and FTI. ● Recognizes, responds to, and provides appropriate signals and radio calls per FTI. ● Acknowledges or reports three indications of climb and positive airspeed indication during takeoff. ● Initiates smooth coordinated control inputs throughout maneuvers while maintaining balanced flight. ● Properly identifies and remains oriented to assigned landing spot and landing pattern to be used. ● Maintains altitude +/-50 ft, airspeed +/-5 KIAS, and final approach course +/-10 degrees. ● Sets appropriate lighting configuration during landing checks. ● Intercepts line-up line with 0.5 DME of final, 200 feet AGL altitude and 50 KIAS airspeed when turning to final for landings. ● Maintains constant glideslope on final for landings. ● Recognizes the need for, and properly executes a wave-off per NATOPS and FTI procedures.
88. Shipboard Landing – Wave-off	
● Aborts a transition to landing or a descent using NATOPS and FTI procedures during a shipboard landing.	● Executes maneuver per NATOPS, FTI, and Local SOPs. ● Appropriately responds to Wave-off signals/calls. ● Makes appropriate Radio/ICS calls per NATOPS, FTIs, and Local SOPs. ● Ensures throttle is in the full open position. ● Initiates smooth coordinated control inputs, increasing collective smoothly without exceeding NATOPS limits.

BEHAVIOR STATEMENT	STANDARDS
88. Shipboard Landing – Wave-off (cont.)	
	● Ensures safe flight path throughout the maneuver, remaining prepared for an emergency landing in the event of a power loss. ● Expeditiously arrests rate of descent and transitions to a positive rate of climb while maintaining a 70 KIAS attitude in balanced flight.
Formation Stage	
89. Formation Takeoffs	
● Conducts transition to forward flight while in formation and while maintaining appropriate position.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, initiates calls for the flight per NATOPS, FTIs, and local SOPs. ● As the lead aircraft, initiates smooth coordinated control inputs to execute a normal takeoff maintaining a stable and predictable profile. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the lead aircraft, properly accounts for winds when positioning for takeoff. ● As the wing aircraft, properly accounts for winds and lead's position when positioning for takeoff. If lead is positioned in an upwind position, acknowledges and takes appropriate actions. ● As the wing aircraft, initiates smooth coordinated control inputs to execute maneuver while maintaining step-up +10/-5 ft throughout the maneuver. ● As the wing aircraft, maintains sight of lead aircraft at all times.

BEHAVIOR STATEMENT	STANDARDS
90. Crossover	
● Executes aircraft maneuver, while remaining in formation from the wingman position, transitioning to the opposite side of lead aircraft.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, clears the flight of traffic and obstacles while maintaining a stable platform with constant heading +/- 5 degrees, constant altitude +/- 50 ft, and constant airspeed +/- 5 KIAS. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the wing aircraft, initiates smooth coordinated control inputs to execute maneuver while maintaining step-up throughout the maneuver. ● As the wing aircraft, maintains 20 ft step-up +10/- 5 ft while transitioning horizontally to the opposite side of the lead aircraft. All other times, maintains step-up per FTI. ● As the wing aircraft, maintains sight of lead aircraft at all times.
91. Cruise Turns	
● Executes aircraft maneuver, while remaining in formation from the wingman position, using radius of turn principles to maintain position without adjusting power.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, clears the flight of traffic and obstacles while maintaining a stable platform with constant angle of bank of +/- 5 degrees, constant altitude +/- 50 ft, constant airspeed +/- 5 KIAS, and makes correction utilizing no more than 200 FPM climb/descent. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the lead aircraft, initiates smooth coordinated control inputs to commence turns and reversals during cruise turns. ● As the wing aircraft, initiates appropriate calls per FTI. ● As the wing aircraft, maintains sight of lead aircraft at all times.

BEHAVIOR STATEMENT	STANDARDS
91. Cruise Turns (cont.)	
	● As the wing aircraft, initiates smooth coordinated control inputs to execute cruise turns and maintain position of 3-7 rotor diameters, 10 ft step up +10/-5 ft, and +/-10 degrees of required bearing. ● As the wing aircraft, anticipates control input requirements necessary to maintain position, and initiates smooth control inputs avoiding high closure rates with lead aircraft. ● As the wing aircraft, maintains sight of lead aircraft at all times.
92. Cruise Climbs and Descents	
● Executes climbs and descents maintaining cruise formation.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, clears the flight of traffic and obstacles, smoothly initiates a shallow turn, maintaining a constant angle of bank of +/- 5 degrees, constant airspeed +/- 5 KIAS, and 500 FPM climb/descent +/-100 FPM. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the lead aircraft, initiates smooth coordinated control inputs to commence maneuver. ● As the wing aircraft, initiates appropriate calls per FTI. ● As the wing aircraft, initiates smooth coordinated control inputs to maintain position with 10 ft step up +10/-5 ft, and +/-10 degrees of required bearing. ● As the wing aircraft, anticipates control input requirements necessary to maintain position, and initiates smooth control inputs avoiding high closure rates with lead aircraft. ● As the wing aircraft, maintains sight of lead aircraft at all times.

BEHAVIOR STATEMENT	STANDARDS
93. Breakup and Rendezvous	
● Executes a formation break-up and rendezvous using radius of turn principles to initiate the formation join-up.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, clears the flight of traffic and obstacles, identifies and acknowledges the appropriate signal from wing aircraft and smoothly initiates the break turn. ● As the lead aircraft, initiates a wing flash, and then a shallow turn, maintaining a constant angle of bank of +/- 5 degrees, constant airspeed of 80 KIAS +/- 5 KIAS, and constant altitude +/-75 ft. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the lead aircraft, initiates smooth coordinated control inputs to commence maneuver. ● As the wing aircraft, initiates appropriate calls per FTI. ● As the wing aircraft, initiates smooth coordinated control inputs to execute break-up and commence rendezvous while keeping lead on the horizon. ● As the wing aircraft, anticipates control input requirements necessary to execute maneuver, and initiates smooth control inputs avoiding high closure rates with lead aircraft. ● As the wing aircraft, joins-up in cruise position with 10 ft step up +10/-5 ft, and +/-10 degrees of required bearing on the inside of lead aircraft's turn. ● As the wing aircraft, maintains sight of lead aircraft at all times.

BEHAVIOR STATEMENT	STANDARDS
94. Overrun	
● Executes maneuver as wing aircraft to discontinue join-up on lead aircraft due to excessive closure rate and/or an unsafe condition.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the wing aircraft, recognizes the need to initiate overrun and elects to do so, anticipating control input requirements necessary to execute maneuver. ● As the wing aircraft, initiates smooth coordinated control inputs to execute overrun procedures and increases step-up to 20 ft +10/5-ft, and levels the wings. ● As the wing aircraft, initiates appropriate calls per FTI. ● As the wing aircraft, maintains sight of lead aircraft at all times.
95. Lead Change	
● Initiates an exchange of flight lead responsibilities with a corresponding maneuver to position aircraft in the appropriate formation position for the responsibility being assumed.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, clears the flight of traffic and obstacles while maintaining a stable platform with constant heading +/- 5 degrees, constant altitude +/- 50 ft, and constant airspeed +/- 5 KIAS. ● As the lead aircraft, maintains wingman awareness throughout the maneuver, and ensures the pilot on the side of the wing aircraft is at the controls. ● As the lead aircraft, establishes and maintains sight of wing aircraft prior to and throughout maneuver. ● As the lead aircraft, upon assuming position and role as wing aircraft, establishes appropriate formation position per FTI. ● As the wing aircraft, maintains sight of lead aircraft throughout the maneuver, and ensures the pilot on the side of the lead aircraft is at the controls.

BEHAVIOR STATEMENT	STANDARDS
95. Lead Change (cont.)	
	● As the wing aircraft, initiates maneuver per FTI. ● As the wing aircraft, initiates smooth coordinated control inputs, ensuring safe lateral separation is maintained throughout the maneuver. ● As the wing aircraft, upon assuming position and role as lead aircraft, establishes appropriate formation position per FTI.
96. Cruise Formation	
● Executes a formation used by aircraft flying together as part of a flight with separation facilitating safety and wing aircraft maneuvering flexibility.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, clears the flight of traffic and obstacles, and maintains a stable platform throughout the flight. ● As the lead aircraft, maintains parameters +/-50 ft of altitude, +/-5 KIAS, +/-5 degrees heading, and rate of climb/descent 200 FPM +/- 100 FPM, as required, unless specified otherwise per CTS and/or FTI procedures. ● As the lead aircraft, maintains wingman awareness throughout the flight. ● As the lead aircraft, initiates smooth coordinated control inputs to commence and maneuvers. ● As the wing aircraft, maintains step-up of 10 ft +10/-5 ft, 30 degree bearing line +/-10 degrees, and 3 rotor diameters distance +/- 1 rotor diameter. ● As the wing aircraft, initiates smooth coordinated control inputs to maintain position, anticipating power requirements to avoid large power changes and high closure rates. ● As the wing aircraft, maintains sight of lead aircraft at all times.

BEHAVIOR STATEMENT	STANDARDS
97. Formation Landings	
● Conducts transition to landing while in formation and while maintaining appropriate position.	● Executes procedures per NATOPS, FTI, and Local SOP. ● Recognizes the need for a wave-off and executes the wave-off in a safe manner based on aircraft positioning in the formation. ● As the lead aircraft, initiates smooth coordinated control inputs to execute a normal approach maintaining a stable and predictable profile. ● As the lead aircraft, properly accounts for winds when selecting landing location and position. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the wing aircraft, maintains cruise position +/- 10 degrees of bearing line, and step-up +10/-5 ft until short final. ● As the wing aircraft, properly accounts for winds and lead's position when positioning for landing. If lead is positioned for an upwind landing position, acknowledges and takes appropriate actions. ● As the wing aircraft, initiates smooth coordinated control inputs to execute maneuver while anticipating control input requirements avoiding high closure rates with lead and lead's rotor-wash. ● As the wing aircraft, does not overtake lead aircraft during landing. ● As the wing aircraft, maintains sight of lead aircraft at all times.
98. Formation High-Speed Approach	
● Conduct transition to landing beginning at higher than normal airspeed while in formation, maintaining position. ● Manage energy to intercept steep approach profile to landing.	● Executes maneuver per NATOPS and FTI. ● Recognizes the need for a wave-off and executes the wave-off in a safe manner based on aircraft positioning in the formation. ● Accounts for winds when commencing the transition, adjusting inputs using smooth coordinated control inputs to intercept the steep approach profile.

BEHAVIOR STATEMENT	STANDARDS
98. Formation High-Speed Approach (cont.)	
	● Manages energy state effectively to avoid high rates of descent, excessive closure rates, or excessive power requirements. ● As the lead aircraft, initiates smooth transition to reduce airspeed and intercept a steep approach profile, while maintaining a stable and predictable profile that does not exceed +/-50 ft, +/-5 KIAS until established on steep approach profile. ● As the lead aircraft, properly accounts for winds when selecting landing location and position. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the wing aircraft, maintains cruise position +/-10 degrees of bearing line, and step-up +10 until short final. ● As the wing aircraft, properly accounts for winds and lead's position when positioning for landing. If lead is positioned for an upwind landing position, acknowledges and takes appropriate actions. ● As the wing aircraft, initiates smooth coordinated control inputs to execute maneuver while anticipating control input requirements avoiding high closure rates with lead and lead's rotor-wash. ● As the wing aircraft, does not overtake lead aircraft during landing. ● As the wing aircraft, maintains sight of lead aircraft at all times.

BEHAVIOR STATEMENT	STANDARDS
99. Formation Wave-off	
● Aborts a transition to landing or a descent using NATOPS and FTI procedures during a formation maneuver either as a flight or as individual aircraft.	● Executes maneuver per NATOPS, FTI, and Local SOPs. ● Makes appropriate Radio/ICS calls per NATOPS, FTIs, and Local SOPs when wave off is conducted by individual aircraft. ● Responds appropriately and timely to a call to wave-off. ● Ensures throttle is in the full open position. ● Initiates smooth coordinated control inputs, increasing collective smoothly without exceeding NATOPS limits. ● Ensures safe flight path throughout the maneuver, maintaining safe separation from external traffic and company formation traffic. ● Expeditiously arrests rate of descent and transitions to a positive rate of climb while maintaining a 70 KIAS attitude in balanced flight. ● As the lead aircraft, maintains wingman awareness throughout the maneuver. ● As the lead aircraft, makes appropriate Radio/ICS calls per NATOPS, FTIs, and Local SOPs when the flight waves off. ● As the wing aircraft, maintains sight of lead aircraft at all times.
100. Combat Cruise Flight	
● Executes a formation used by aircraft flying together as part of a flight with extended separation facilitating the flight lead's flexible control of the flight and the wing's maximum maneuvering flexibility with a reduced workload.	● Executes procedures per NATOPS, FTI, and Local SOP. ● As the lead aircraft, clears the flight of traffic and obstacles, and maintains a stable platform throughout the flight +/-50 ft of altitude, +/-5 KIAS, and climbs/descends no greater than 200 FPM +/-100 FPM. ● As the lead aircraft, notifies wing aircraft prior to commencing sharp turns into wing aircraft position, as required. ● As the lead aircraft, maintains wingman awareness throughout the flight.

BEHAVIOR STATEMENT	STANDARDS
100. Combat Cruise Flight (cont.)	
	● As the wing aircraft, maintains position on lead anywhere from 10 degrees forward of abeam +/-5 degrees, at a distance of 4-5 rotor diameters +/- rotor diameter, and avoids prolonged flight in the area +/-30 degrees of lead aircraft's tail. ● As the wing aircraft, initiates smooth coordinated control inputs primarily using radius of turn to maintain position. ● As the wing aircraft, remain prepared to support lead aircraft. ● As the wing aircraft, remains alert for lead aircraft maneuvering and appropriately maneuvers to maintain safe separation from lead while maintaining position. ● As the wing aircraft, maintains sight of lead aircraft at all times.
101. Formation TERF Navigation	
● Executes TERF Navigation using low level TERF profile with the aid of charts and graphics using visual reference to terrain and terrain features, manmade objects, and aircraft systems, while a in a flight of aircraft remaining in formation.	● Executes TERF navigation per CNAF M-3710.7, NATOPS, FTI, and applicable FAR/AIM procedures and guidance. ● Exercises appropriate and effective CRM within the individual cockpit and as a formation during the execution of TERF navigation. ● Obtains appropriate flight related information, and accounts for weather, winds, airspace, obstacles, landing areas and airports when planning the navigation route. ● Prepares a chart per FTI procedures with all required markings and information visible and functionally usable in-flight. ● Prepares and provides mission smart-pack per FTI, and effectively uses smart-pack during flight to maintain situational awareness. ● Demonstrates detailed knowledge of the planned route, terrain and terrain features, obstacles, and appropriate navigation aids (i.e. limiting features, funneling features, etc.) along the route of flight.

BEHAVIOR STATEMENT	STANDARDS
101. Formation TERF Navigation (cont.)	
	● Executes effective navigation remaining aware of present position throughout the flight and adjusts course and/or route of flight as appropriate in response to weather, obstacles, fuel considerations, and/or emergencies. ● Able to accurately associate visual references, including terrain and terrain features, with navigation chart symbology to remain oriented along route of flight. ● Executes appropriate procedures to enter terminal environment utilizing appropriate radios calls and pattern entries per FTI, FAR/AIM and CNAF M-3710.7, and Local SOPs, as required. ● Executes formation flight per NATOPS, FTI, and Local SOP. ● As the lead aircraft, notifies wing aircraft prior to commencing sharp turns into wing aircraft position, as required. ● As the lead aircraft, maintains wingman awareness throughout the flight. ● As the wing aircraft, maintains position on lead as required. ● As the wing aircraft, maintains awareness throughout route of flight and remains prepared to support lead aircraft with backup navigation and aircraft clearing. ● As the wing aircraft, remains alert for lead aircraft maneuvering and appropriately maneuvers to maintain safe separation from lead while maintaining position. ● As the wing aircraft, maintains sight of lead aircraft at all times.

BEHAVIOR STATEMENT	STANDARDS
102. NVD Knowledge	
● Demonstrates and is able to recall FTI information required for the safe and effective use of NVGs during flight operations and remains able to apply that information during execution of the mission.	● Demonstrates in-depth knowledge of NVG operations, NVG parts and functions, procedures, emergencies, and requirements per CNAF M-3710.7, NATOPS, FTI, and local SOPs. ● Demonstrates knowledge of light effects, atmospheric effects, and associated light level effects on NVG performance per FTI. ● Demonstrates knowledge of the proper use of aircraft interior and exterior lighting when on NVGs. ● Demonstrates knowledge of and is able to exercise an effective NVG scan pattern during flight operations. ● Demonstrates knowledge SLAP data and how to use it for NVG mission planning.
103. NVG Preflight	
● Executes proper NVG adjustment and assessment procedures per FTI procedures ensuring NVGs are fully functional prior to the mission.	● Executes adjustment and assessment procedures per FTI. ● Demonstrates in-depth knowledge of NVG adjustment and assessment procedures. ● Verifies proper fit of helmet and ensures NVG bracket and battery mounting brackets are free and clear of debris. ● Inspects all parts and accessories, ensuring all controls move freely and appropriately and wires are intact. ● Loads batteries, and mounts battery pack and NVG mount to helmet. ● Inspects NVG binocular assembly, ensuring lenses are clean and free of scratches, debris, or other damage. ● Appropriately presets eyepiece or diopter adjustment ring and fore-and-aft or eye relief adjustment. ● Centers tilt, sets IPD, adjusts vertical position, and dons helmet.

BEHAVIOR STATEMENT	STANDARDS
103. NVG Preflight (cont.)	
	● Attaches and removes binocular assembly verifying proper seating, correct mounting direction, and that the bearings are properly aligned. ● Ensures battery switch is off prior to lowering the binocular assembly. ● Conducts proper alignment and focus procedures utilizing available tools to ensure image quality is sufficient for mission execution.
104. NVG Emergency Procedures	
● Executes emergency procedures per NATOPS, using sound judgement for issues not specifically addressed, and applying considerations specific to NVG flight.	● Executes emergency procedures per NATOPS. ● Maintains positive control of the aircraft. ● Properly identifies the emergency or system failure indications, and calls for the appropriate NATOPS procedure. ● Demonstrates sound judgment and takes safe and appropriate action when no specific guidance exists. ● Executes/directs CRITICAL MEMORY ITEMS in proper order and in a timely manner. ● Calls for appropriate checklist following execution of CRITICAL MEMORY ITEMS or when no CRITICAL MEMORY ITEMS apply. ● Applies EP and Systems knowledge to decision making using critical thinking skills. ● Selects appropriate landing criteria. ● Continues to work through the emergency until resolved. ● Executes appropriate and effective CRM throughout the emergency. ● Maneuvers the aircraft in a safe manner per NATOPS, FTI, and local SOPs. ● Is able to state the indications of and procedures for NVG battery failure and NVG tube failure. ● Recognizes indications of and executes appropriate responses to NVG battery failure and NVG tube failure.

Chapter IV

Training Material and References

1. Individually Issued Materials

Pub ID	Title	QTY	CNATRA Stage Manager
NAVAIR 01-H57BC-1	TH-57 NATOPS	1	N/A
NAVAIR 01-H57BC-1B	TH-57 NATOPS Pocket Checklist	1	N/A
CNATRA P-421	Aerodynamics Workbook	1	Ground
CNATRA P-422	Systems Workbook	1	Ground
CNATRA P-423	Familiarization FTI	1	Familiarization
CNATRA P-424	Logistics FTI	1	Logistics
CNATRA P-425	Instrument FTI	1	Instrument
CNATRA P-426	Instrument Navigation Workbook	1	Instrument
CNATRA P-427	Flight Planning Work Book	1	Instrument
CNATRA P-428	Navigation FTI	1	Navigation
CNATRA P-429	Shipboard Operations and SAR FTI	1	Ship/SAR
CNATRA P-430	Formation FTI	1	Formation
CNATRA P-431	NVG FTI	1	NVG
	TH-57B Cockpit Poster	1	Familiarization
	TH-57C Cockpit Poster	1	Familiarization
COMTRAWINGFIVEINST 3710.8	Rotary-Wing Operations Procedures (RWOP)	1	N/A
COMTRAWINGFIVEINST 3710.9	TH-57 In-Flight Guide	1	N/A
COMTRAWINGFIVEINST 3710.15A	TH-57 Checklist Study Guide	1	Familiarization
TRAWING FIVE 46C	Student Instrument Approach Plates	1	Instrument

2. Training References

*Training Reference Material			
Source	**Pub ID**	**Title**	**Web site/Digital Location**
CNAF	COMNAVAIRFOR M3710.7	CNAF M-3710.7	https://www.secnav.navy.mil/doni/SECNAV%20Manuals1/Forms/AllItems.aspx
CNATRA	CNATRAINST 1500.4L	Training and Administration Manual**	https://cpf.navy.deps.mil/sites/cnatra/Pages/Instructions.aspx
FAA	FAR	Title 14 Aeronautics and Space Federal Aviation Regulations	https://www.faa.gov/regulations_policies/faa_regulations/
FAA	FAR AIM	FAR Aeronautical Information Manual (AIM)	https://www.faa.gov/air_traffic/publications/
CNATRA	CNATRAINST 1550.6 (Series)	Training Improvement Program (TIP)*	https://cpf.navy.deps.mil/sites/cnatra/Pages/Instructions.aspx
NAVAIR	NAVAIR 00-80-T-112	Instrument NATOPS***	https://mynatec.navair.navy.mil/natechome.htm
MAWTS-1	N/A	MAWTS-1 NVD Manual (CUI)***	https://mceits.usmc.mil/sites/mawts1
FAA	FAA Order 8260.3D	United States Standard for Terminal Instrument Procedures (TERPS)	https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentid/1032731
FAA	FAA-H-8083-25B	Pilot’s Handbook of Aeronautical Knowledge	https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/
FAA	FAA Aeronautical Chart User's Guide	FAA Aeronautical Chart Users Guide	https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/aero_guide/
FAA	FAA-H-8083-16B	FAA Instrument Procedures Handbook	https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/instrument_procedures_handbook/

Source	Pub ID	Title	Web site/Digital Location
FAA	FAA-H-8083-21B	Helicopter Flying Handbook	https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/helicopter_flying_handbook/
FAA	AC 90-66B	Non-Towered Airport Flight Operations	https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1032988
FAA	AC 90-114B	Automatic Dependent Surveillance-Broadcast Operations	https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1036989
GARMIN	190-02327-03	GTN-650 Pilot's Guide	http://static.garmin.com/pumac/190-02327-03_b.pdf
NAVAIR	NWP 3-22.5-SAR-TAC	SAR TACAID	https://www.public.navy.mil/airfor/srss/Documents/PUBS/NWP%203-22-5-SARTAC.pdf
Training references requiring special access are not necessary to successfully complete the syllabus. Any information found in those documents is additional, and will not be used to as a basis for grading criteria for training standards.			
***** Requires CAC Card Access, All SNAs authorized to have access.***			
****** Requires CAC Card Access, US SNAs authorized to have access.***			

3. CNATRA Stage Manager Course Responsibilities

a. Ground Stage Manager

Event Code	Media	Title
GND0101A	Sqdn	Check-In
GND0102A	Issue	Training Publications Issue
GND0103A	Sqdn	Curriculum Indoctrination and Flt Ldr's Brf
GND0104A	Sqdn	Welcome Aboard
GND0501A	Sqdn	Checkout
GND0201A	MIL	Aviation Training
CRM0101A	MIL	Crew Resource Management
CRM0102A	MIL/Lab	Check List Lab
SYS0101A	CAI	Power Plant

Event Code	Media	Title
SYS0102A	CAI	Fuel Supply System
SYS0103A	CAI	Transmission and Drive Train
SYS0104A	CAI	Rotor and Flight Control Systems
SYS0105A	CAI	Hydraulic System
SYS0106A	MIL	Allison 250 Turboshaft Engine Fuel Supply System Power Train System
SYS0107A	MIL	Rotor System Hydraulic System 'B' Electrical System
SYS0190A	CAI Test	Systems Exam
AER0101A	CAI	The Atmosphere
AER0102A	CAI	Rotor Blade Aerodynamics
AER0103A	CAI	Powered Flight Analysis
AER0104A	MIL	Atmospherics/Overview
AER0105A	MIL	Aerodynamic Theories
AER0106A	MIL	Rotor System Design
AER0107A	MIL	Rotor System Dynamics
AER0108A	MIL	Stability and Control
AER0109A	MIL	Power and Performance
AER0110A	MIL	Hovering Flight
AER0111A	MIL	Forward and Climbing Flight
AER0112A	MIL	Aerodynamics Review
AER0190A	CAI-Test	Aerodynamics Exam
AER0201A	CAI	Autorotation
AER0202A	MIL	Descending Flight and Autorotations
AER0301A	MIL	Tail-Rotor Design and Performance
AER0302A	MIL	Hazards
AER0401A	CAI	Flight Phenomena
AER0402A	MIL	Advanced Aero and Rotor System Dynamics
AER0501A	MIL	Advanced Aerodynamics II
CR0101A	CAI	South Whiting Course Rules
CR0102A	CAI	Pace Course Rules
CR0103A	CAI	Spencer Course Rules
CR0104A	CAI	Santa Rosa Course Rules
CR0105A	MIL	Course Rules Flight Procedures I
CR0190A	CAI Exam	Course Rules Exam
CR0201A	CAI	Site X Course Rules
CR0202A	CAI	Harold Course Rules

Event Code	Media	Title
CR0203A	CAI	Night Operations
GND0401A	Lecture/Lab	MPS Overview/Lab-Navigation
GND0402A	Lecture/Lab	MPS Overview/Lab-Mission Planning
GND0301A	SS	GTN-650 Aircraft Systems Interaction (TH-57B)
GND0302A	CAI-Offline	GTN-650 Computer Based Training
GND0303A	MIL	GTN-650 Aircraft Systems Interaction (TH-57C)
SYS0201A	CAI	TH-57C Electrical System
SYS0202A	CAI	TH-57 Mini-Stab System
SYS0203A	MIL	TH-57C Helicopter Systems TH-57C Electrical System TH-57C Mini-Stab System TH-57C Avionics

b. Familiarization Stage Manager

Event Code	Media	Title
FAM0101A	Sqdn	FAM 0 – Part I
FAM0102A	Sqdn	FAM 0 – Part II
FAM2001A	CPT (TH-57B/FTD-6)	Cockpit Procedures
FAM2002A	CPT (TH-57B/FTD-6)	Cockpit Procedures
FAM2101A	CPT (TH-57B/FTD-6)	Flight Line and Course Rules Introduction
FAM2102A	CPT (TH-57B/FTD-6)	Flight Line and Course Rules Introduction
FAM3001A	Sim (57B/FTD-6/7)	Cockpit Procedures and Flight Introduction (MIP)
FAM3002A	Sim (57B/FTD-6/7)	Cockpit Procedures and Flight Introduction
FAM3003A	Sim (57B/FTD-6/7)	Cockpit Procedures and Flight Introduction
FAM3101A	Sim (57C/FTD-6/7)	Familiarization Simulator 'C' Model Transition
FAM4001A	TH-57B	Familiarization 'B'
FAM4002A	TH-57B	Familiarization 'B'
FAM4003A	TH-57B	Familiarization 'B'
FAM4004A	TH-57B	Familiarization 'B'
FAM4101A	TH-57B	Familiarization 'B'
FAM4102A	TH-57B	Familiarization 'B'
FAM4103A	TH-57B	Familiarization 'B'
FAM4104A	TH-57B	Familiarization 'B'
FAM4105A	TH-57B	Familiarization 'B'

Event Code	Media	Title
FAM4106A	TH-57B	Familiarization 'B'
FAM4201A	TH-57B	Familiarization 'B'
FAM4202A	TH-57B	Familiarization 'B'
FAM4203A	TH-57B	Familiarization 'B'
FAM4390A	TH-57B	Familiarization 'B' Safe-For-Solo Check Flight
FAM4401A	TH-57B	Familiarization 'B' Solo
FAM4501A	TH-57B	Familiarization 'B'
FAM4502A	TH-57B	Familiarization 'B'
FAM4601A	TH-57C	Familiarization 'C'
FAM4602A	TH-57C	Familiarization 'C'
FAM4701A	TH-57C	Night Familiarization 'C'
FAM4801A	TH-57C	Familiarization 'C'
FAM4802A	TH-57C	Familiarization 'C'
FAM4990A	TH-57C	Familiarization 'C' Check Flight
CRM0101A	Offline MIL	Crew Resource Management-Familiarization Stage
NAT0101A	P/P Exam	NATOPS Open-Book Exam
NAT0190A	P/P Exam	NATOPS Closed-Book Exam
EP0101A	CAI	In-Flight Emergencies
EP0102A	CAI	Tail-Rotor Emergencies
EP3001A	Sim (57C/FTD-7)	Emergency Procedures
EM3001A	Sim (57B/FTD-7)	Introduction to Autorotation (MIP)
EM3101A	Sim (57B/FTD-7)	Introduction to Tail-Rotor Maneuvers (MIP)

c. Logistics Stage Manager

Event Code	Media	Title
LOG0101A	CAI	Confined Area Landing (CAL) and External Load Operations
LOG0102A	CAI	Dynamic Maneuvers
LOG4001A	TH-57B	Logistics
LOG4002A	TH-57B	Logistics
EM3201A	Sim (57B/FTD-7)	Aircraft Handling

d. Instrument Stage Manager

Event Code	Media Type	Title
INS0101A	CAI	Instrument Displays and Cross-Check
INS0102A	CAI	Turns, Climbs, Descents
INS0103A	CAI	Basic Instrument Maneuvers
INS0104A	CAI	Basic Instrument Review
INS0105A	CAI	Basic Radio Instrument Maneuvers
INS0106A	MIL	Basic Radio Instruments Review
INS0107A	MIL/Lab	Basic Radio Instruments Practice Lab
INS0108A	CAI	Basic Holding Concepts
INS0109A	MIL	Basic Holding Concepts Review
INS0110A	MIL/Lab	Basic Holding Concepts Lab
INS0201A	CAI	Flight Information Publications 1 (FLIP)
INS0202A	CAI	Flight Information Publications 2 (FLIP)
INS0203A	CAI	NOTAMs and Weather
INS0204A	MIL	FLIP, NOTAMs, and Weather Review
INS0205A	CAI	Mission Planning Computations
INS0206A	CAI	IFR Mission Planning
INS0207A	MIL	IFR Mission Planning Lab 1
INS0208A	MIL	IFR Mission Planning Lab 2
INS0301A	CAI	IFR Clearance, Taxi, Instrument Takeoff, and Departure
INS0302A	CAI	En route Procedures
INS0303A	MIL	IFR Navigation Review 1
INS0304A	CAI	Terminal Procedures
INS0305A	CAI	Low Altitude Approaches
INS0306A	MIL	IFR Navigation Review 2
INS0307A	CAI	Final Approach
INS0308A	CAI	Radar Approaches
INS0309A	CAI	High Altitude Approaches
INS0310A	CAI	Transition to Landing and Missed Approach
INS0311A	MIL	IFR Navigation Review 3
INS0312A	MIL	IFR Navigation Review 4
INS0313A	MIL/Lab	Navigation Practice Lab
INS0314A	Lect	CRM Case Studies
INS0401A	CAI	Departure and Arrival Procedures
INS0402A	CAI	Basic Instrument Flight Maneuvers
INS0403A	CAI	Advanced Instrument Flight Procedures
INS0404A	CAI	Introduction to NAVAIDS & RI Flight Procedures
INS0405A	CAI	Fundamentals of RI Flight Procedures

Event Code	Media Type	Title
INS0406A	CAI	TACAN & VOR Approaches
INS0407A	CAI	VOR/TACAN with Failed Gyro
CRM0201	Offline MIL	Crew Resource Management - Instrument
INS0501A	MIL	Instrument Flight Rules
INS0502A	SS	Instrument Navigation
INS0503A	MIL	HELO MET Review
INS0590A	CAI-Test	Instrument Navigation Exam
RI0101A	CAI	GTN-650 Procedures
RI0102A	CAI	ATC Radio Procedures
RI0103A	CAI	Radar and ILS Approaches
RI0104A	MIL	Radio Instrument Flight Procedures
BI3001A	Sim (57C/FTD-6/7)	Basic Instruments
BI3002A	Sim (57C/FTD-6/7)	Basic Instruments
BI3003A	Sim (57C/FTD-6/7)	Basic Instruments
BI3004A	Sim (57C/FTD-6/7)	Basic Instruments
BI3005A	Sim (57C/FTD-6/7)	Basic Instruments
BI4001A	TH-57C	Basic Instruments
BI4002A	TH-57C	Basic Instruments
BI4003A	TH-57C	Basic Instruments
BI4101A	TH-57C	Basic Instruments
BI4102A	TH-57C	Basic Instruments
BI4103A	TH-57C	Basic Instruments
EP3101A	Sim (57C/FTD-6/7)	Emergency Procedures
EP3102A	Sim (57C/FTD-6/7)	Emergency Procedures
RI3001A	Sim (57C/FTD-6/7)	Radio Instruments
RI3002A	Sim (57C/FTD-6/7)	Radio Instruments
RI3003A	Sim (57C/FTD-6/7)	Radio Instruments
RI3004A	Sim (57C/FTD-6/7)	Radio Instruments
RI3101A	Sim (57C/FTD-7)	Radio Instruments
RI3102A	Sim (57C/FTD-7)	Radio Instruments
RI3103A	Sim (57C/FTD-7)	Radio Instruments
RI3104A	Sim (57C/FTD-7)	Radio Instruments
RI3105A	Sim (57C/FTD-7)	Radio Instruments
RI3201A	Sim (57C/FTD-7)	Airways Navigation
RI4001A	TH-57C	Radio Instruments
RI4002A	TH-57C	Radio Instruments
RI4003A	TH-57C	Radio Instruments
RI4004A	TH-57C	Radio Instruments
RI4005A	TH-57C	Radio Instruments

Event Code	Media	Title
RI4006A	TH-57C	Radio Instruments
RI4007A	TH-57C	Radio Instruments
RI4008A	TH-57C	Radio Instruments
RI4101A	TH-57C	Radio Instruments
RI4102A	TH-57C	Radio Instruments
RI4103A	TH-57C	Radio Instruments
RI4104A	TH-57C	Radio Instruments
RI4290A	TH-57C	Instrument Safe-For-Solo Check Flight
RI4301A	TH-57C	Instrument Navigation Solo
INS4001A	TH-57C	Instrument Navigation
INS4002A	TH-57C	Instrument Navigation
INS4003A	TH-57C	Instrument Navigation
INS4004A	TH-57C	Instrument Navigation
INS4005A	TH-57C	Instrument Navigation
INS4006A	TH-57C	Instrument Navigation
CPI3001A	Sim (57C/FTD-6/7)	Co-Pilot Radio Instruments
CPI3002A	Sim (57C/FTD-6/7)	Co-Pilot Radio Instruments
CPI3101A	Sim (57C/FTD-7)	Co-Pilot Radio Instruments
CPI3102A	Sim (57C/FTD-7)	Co-Pilot Radio Instruments
CPI3103A	Sim (57C/FTD-7)	Co-Pilot Radio Instruments

e. Navigation Stage Manager

Event Code	Media Type	Title
NAV0101A	CAI	VFR Mission Planning
NAV0102A	CAI	Lost Procedures
NAV0103A	CAI	VFR Arrivals
NAV0104A	CAI	Strange Field Procedures
NAV0105A	MIL	VFR Navigation Review
NAV0106A	MIL	VFR Navigation Planning Lab
NAV0201A	CAI	Day Navigation Flight Procedures
NAV0202A	CAI	Night Navigation Flight Procedures
NAV0203A	MIL	VFR Navigation Review
TRF0101A	MIL	Map Interpretation
NAV4001A	TH-57C	Day Navigation
NAV4002A	TH-57C	Day Navigation
NAV4003A	TH-57C	Day Navigation
NAV4004A	TH-57C	Day Navigation
NAV4005A	TH-57C	Day Navigation
NAV4101A	TH-57C	Night Navigation

Event Code	Media	Title
NAV4201A	TH-57C	Day Navigation Solo
TRF4001A	TH-57C	TERF Navigation
TRF4002A	TH-57C	TERF Navigation
TRF4003A	TH-57C	TERF Navigation

f. Ship/SAR Stage Manager

Event Code	Media Type	Title
SHP0101A	CAI	General Shipboard Operations
SHP0102A	CAI	Shipboard Qualification Procedures
SAR0101A	CAI	SAR Organization and Planning
SAR0102A	CAI	SAR Flight Procedures
SAR3001A	Sim (57C/FTD-7)	Shipboard Search and Rescue Fundamentals
SAR4001A	TH-57C	SAR/Low-Level Basic Instruments

g. Formation Stage Manager

Event Code	Media Type	Title
FRM0101A	CAI	Formation Flying
FRM0102A	CAI	NATOPS and Mission Brief
FRM0103A	MIL	Formation
FRM3001A	Sim (57C/FTD-7)	Formation
FRM4001A	TH-57C	Formation
FRM4002A	TH-57C	Formation
FRM4003A	TH-57C	Formation
FRM4004A	TH-57C	Formation
FRM4101A	TH-57C	Formation Capstone
FRM4102A	TH-57C	Formation Capstone

h. NVG Stage Manager

Event Code	Media Type	Title
NVG0101A	LAB	NITE Lab
NVG3001A	Sim (57C/FTD-7)	Night Vision Device Simulator (MIP)
NVG4001A	TH-57C	Night Vision Device Familiarization Flight
NVG4002A	TH-57C	Night Vision Device Familiarization Flight
NVG4003A	TH-57C	Night Vision Device Familiarization Flight
NVG4101A	TH-57C	Night Vision Device Navigation and Tactics
NVG4102A	TH-57C	Night Vision Device Navigation and Tactics
NVG4201A	TH-57C	Night Vision Device Capstone

APPENDIX A

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	GND0101A	Sqdn	Check-In	
	GND0102A	Issue	Training Publications Issue	
	GND0103A	Sqdn	Curriculum Indoctrination and Flt Ldr's Brf	
	GND0104A	Sqdn	Welcome Aboard	
	GND0105A	Lect	EKB Issue/Setup	
	GND0201A	MIL	Aviation Safety	
	CRM0101A	MIL	Crew Resource Management	
	CRM0102A	MIL/Lab	Check List Lab	
	SYS0101A	CAI	Power Plant	
	SYS0102A	CAI	Fuel Supply System	
	SYS0103A	CAI	Transmission and Drive Train	
	SYS0104A	CAI	Rotor and Flight Control Systems	
	SYS0105A	CAI	Hydraulic System	
	SYS0106A	MIL	Allison 250 Turboshaft Engine Fuel Supply System Power Train System	
	SYS0107A	MIL	Rotor System Hydraulic System 'B' Electrical System	
	SYS0190A	CAI Test	Systems Exam	
	GND0301A	MIL	GTN-650 Aircraft Systems Interaction (TH-57B)	
	FAM2001A	CPT (TH-57B/FTD-6)	Cockpit Procedures	
	FAM2002A	CPT (TH-57B/FTD-6)	Cockpit Procedures	
	AER0101A	CAI	The Atmosphere	
	AER0102A	CAI	Rotor Blade Aerodynamics	
	AER0103A	CAI	Powered Flight Analysis	
	AER0104A	MIL	Atmospheric/Overview	
	AER0105A	MIL	Aerodynamic Theories	
	AER0106A	MIL	Rotor System Design	
	AER0107A	MIL	Rotor System Dynamics	
	AER0108A	MIL	Stability and Control	
	AER0109A	MIL	Power and Performance	

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	AER0110A	MIL	Hovering Flight	
	AER0111A	MIL	Forward and Climbing Flight	
	AER0112A	MIL	Aerodynamics Review	
	AER0190A	CAI-Test	Aerodynamics Exam	
	CRM0101A	MIL	Crew Resource Management-Familiarization Stage	
	CR0101A	CAI	South Whiting Course Rules	
	CR0102A	CAI	Pace Course Rules	
	CR0103A	CAI	Spencer Course Rules	
	CR0104A	CAI	Santa Rosa Course Rules	
	CR0105A	MIL	Course Rules Flight Procedures I	
	CR0190A	CAI Exam	Course Rules Exam	
	FAM2101A	CPT (TH-57B/FTD-6)	Flight Line and Course Rules Introduction	
	FAM2102A	CPT (TH-57B/FTD-6)	Flight Line and Course Rules Introduction	
	FAM3001A	Sim (57B/FTD-7)	Cockpit Procedures and Flight Introduction (MIP)	
	FAM3002A	Sim (57B/FTD-7)	Cockpit Procedures and Flight Introduction	
	FAM3003A	Sim (57B/FTD-7)	Cockpit Procedures and Flight Introduction	
	FAM0101A	Sqdn	FAM 0 - Part I	
	FAM0102A	Sqdn	FAM 0 - Part II	
	FAM4001A	TH-57B	Familiarization 'B'	
	FAM4002A	TH-57B	Familiarization 'B'	
	FAM4003A	TH-57B	Familiarization 'B'	
	FAM4004A	TH-57B	Familiarization 'B'	
	AER0201A	CAI	Autorotation	
	AER0202A	MIL	Descending Flight and Autorotations	
	EM3001A	Sim (57B/FTD-7)	Introduction to Autorotations (MIP)	
	FAM4101A	TH-57B	Familiarization 'B'	
	FAM4102A	TH-57B	Familiarization 'B'	
	FAM4103A	TH-57B	Familiarization 'B'	
	FAM4104A	TH-57B	Familiarization 'B'	
	FAM4105A	TH-57B	Familiarization 'B'	
	FAM4106A	TH-57B	Familiarization 'B'	
	EP0101A	CAI	In-Flight Emergencies	
	EP0102A	CAI	Tail-Rotor Emergencies	

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	AER0301A	MIL	Tail-Rotor Design and Performance	
	AER0302A	MIL	Hazards	
	EM03101A	Sim (57B/FTD-7)	Introduction to Tail-Rotor Maneuvers (MIP)	
	FAM4201A	TH-57B	Familiarization 'B'	
	FAM4202A	TH-57B	Familiarization 'B'	
	FAM4203A	TH-57B	Familiarization 'B'	
	NAT0101A	P/P Exam	NATOPS Open-Book Exam	
	NAT0190A	P/P Exam	NATOPS Closed-Book Exam	
	FAM4390A	TH-57B	Familiarization 'B' Safe-For-Solo Check Flight	
	FAM4401A	TH-57B	Familiarization 'B' Solo	
	CR0201A	CAI	Site X Course Rules	
	CR0202A	CAI	Harold Course Rules	
	CR0203A	CAI	Night Operations	
	FAM4501A	TH-57B	Familiarization 'B'	
	FAM4502A	TH-57B	Familiarization 'B'	
	AER0401A	CAI	Flight Phenomena	
	AER0402A	MIL	Advanced Aero and Rotor System Dynamics	
	LOG0101A	CAI	Confined Area Landing (CAL) and External Load Operations	
	LOG0102A	CAI	Dynamic Maneuvers	
	EM3201A	Sim (57B/FTD-7)	Aircraft Handling	
	LOG4001A	TH-57B	Logistics	
	LOG4002A	TH-57B	Logistics	
	GND0302A	CAI-Offline	GTN-650 Computer Based Training	
	GND0303A	MIL	GTN-650 Aircraft Systems Interaction (TH-57C)	
	SYS0201A	CAI	TH-57C Electrical System	
	SYS0202A	CAI	TH-57 Ministab System	
	SYS0203A	MIL	TH-57C Helicopter Systems TH-57C Electrical System TH-57C Ministab System TH-57C Avionics	
	FAM3101A	Sim (57C/FTD-6)	Familiarization Simulator 'C' Model Transition	
	EP3001A	Sim (57C/FTD-7)	Emergency Procedures	
	FAM4601A	TH-57C	Familiarization 'C'	

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	INS0101A	CAI	Instrument Displays and Cross-Check	
	INS0102A	CAI	Turns, Climbs, Descents	
	INS0103A	CAI	Basic Instrument Maneuvers	
	INS0104A	CAI	Basic Instrument Review	
	INS0105A	CAI	Basic Radio Instrument Maneuvers	
	INS0106A	MIL	Basic Radio Instruments Review	
	INS0107A	MIL/Lab	Basic Radio Instruments Practice Lab	
	INS0108A	CAI	Basic Holding Concepts	
	INS0109A	MIL	Basic Holding Concepts Review	
	INS0110A	MIL/Lab	Basic Holding Concepts Lab	
	INS0201A	CAI	Flight Information Publications 1 (FLIP)	
	INS0202A	CAI	Flight Information Publications 2 (FLIP)	
	INS0203A	CAI	NOTAMs and Weather	
	INS0204A	MIL	FLIP, NOTAMs, and Weather Review	
	INS0205A	CAI	Mission Planning Computations	
	INS0206A	CAI	IFR Mission Planning	
	INS0207A	MIL	IFR Mission Planning Lab 1	
	INS0208A	MIL	IFR Mission Planning Lab 2	
	INS0301A	CAI	IFR Clearance, Taxi, Instrument Takeoff, and Departure	
	INS0302A	CAI	En route Procedures	
	INS0303A	MIL	IFR Navigation Review 1	
	INS0304A	CAI	Terminal Procedures	
	INS0305A	CAI	Low Altitude Approaches	
	INS0306A	MIL	IFR Navigation Review 2	
	INS0307A	CAI	Final Approach	
	INS0308A	CAI	Radar Approaches	
	INS0309A	CAI	High Altitude Approaches	
	INS0310A	CAI	Transition to Landing and Missed Approach	
	INS0311A	MIL	IFR Navigation Review 3	
	INS0312A	MIL	IFR Navigation Review 4	
	INS0313A	MIL/Lab	Navigation Practice Lab	
	INS0314A	Lect	CRM Case Studies	
	INS0401A	CAI	Departure and Arrival Procedures	
	INS0402A	CAI	Basic Instrument Flight Maneuvers	
	INS0403A	CAI	Advanced Instrument Flight Procedures	

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	INS0404A	CAI	Introduction to NAVAIDS & RI Flight Procedures	
	INS0405A	CAI	Fundamentals of RI Flight Procedures	
	INS0406A	CAI	TACAN & VOR Approaches	
	INS0407A	CAI	VOR/TACAN with Failed Gyro	
	BI3001A	Sim (57C/FTD-6)	Basic Instruments	
	BI3002A	Sim (57C/FTD-6)	Basic Instruments	
	BI3003A	Sim (57C/FTD-6)	Basic Instruments	
	BI3004A	Sim (57C/FTD-7)	Basic Instruments	
	BI3005A	Sim (57C/FTD-7)	Basic Instruments	
	BI4001A	TH-57C	Basic Instruments	
	BI4002A	TH-57C	Basic Instruments	
	BI4003A	TH-57C	Basic Instruments	
	FAM4602A	TH-57C	Familiarization 'C'	
	FAM4701A	TH-57	Night Familiarization ‘C’	
	NAV0101A	CAI	VFR Mission Planning	
	NAV0102A	CAI	Lost Procedures	
	NAV0103A	CAI	VFR Arrivals	
	NAV0104A	CAI	Strange Field Procedures	
	NAV0105A	MIL	VFR Navigation Review	
	NAV0106A	MIL	VFR Navigation Planning Lab	
	NAV0201A	CAI	Day Navigation Flight Procedures	
	NAV0202A	CAI	Night Navigation Flight Procedures	
	NAV0203A	MIL	VFR Navigation Review	
	GND0401A	Lecture/Lab	MPS Overview/Lab Navigation	
	NAV4001A	TH-57C	Day Navigation	
	NAV4002A	TH-57C	Day Navigation	
	NAV4003A	TH-57C	Day Navigation	
	NAV4004A	TH-57C	Day Navigation	
	NAV4005A	TH-57C	Day Navigation	
	NAV4101A	TH-57C	Night Navigation	
	BI4101A	TH-57C	Basic Instruments	
	BI4102A	TH-57C	Basic Instruments	
	BI4103A	TH-57C	Basic Instruments	

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	INS0501A	MIL	Instrument Flight Rules	
	INS0502A	SS	Instrument Navigation	
	INS0503A	MIL	HELO MET Review	
	INS0590A	CAI-Test	Instrument Navigation Exam	
	RI0101A	CAI	GTN-650 Procedures	
	RI0102A	CAI	ATC Procedures	
	RI0103A	CAI	Radar and ILS Approaches	
	RI0104A	MIL	Radio Instrument Flight Procedures	
	CRM0201	MIL	Crew Resource Management - Instrument	
	EP3101A	Sim (57C/FTD-6)	Emergency Procedures	
	RI3001A	Sim (57C/FTD-7)	Radio Instruments	
	RI3002A	Sim (57C/FTD-7)	Radio Instruments	
	RI3003A	Sim (57C/FTD-7)	Radio Instruments	
	RI3004A	Sim (57C/FTD-7)	Radio Instruments	
	CPI3001A	Sim (57C/FTD-6)	Co-Pilot Radio Instruments	
	CPI3002A	Sim (57C/FTD-6)	Co-Pilot Radio Instruments	
	EP3102A	Sim (57C/FTD-6)	Emergency Procedures	
	RI3101A	Sim (57C/FTD-7)	Radio Instruments	
	RI3102A	Sim (57C/FTD-7)	Radio Instruments	
	RI3103A	Sim (57C/FTD-7)	Radio Instruments	
	RI3104A	Sim (57C/FTD-7)	Radio Instruments	
	RI3105A	Sim (57C/FTD-7)	Radio Instruments	
	CPI3101A	Sim (57C/FTD-7)	Co-Pilot Radio Instruments	
	CPI3102A	Sim (57C/FTD-7)	Co-Pilot Radio Instruments	
	RI4001A	TH-57C	Radio Instruments	
	RI4002A	TH-57C	Radio Instruments	
	RI4003A	TH-57C	Radio Instruments	
	RI4004A	TH-57C	Radio Instruments	
	RI4005A	TH-57C	Radio Instruments	
	RI4006A	TH-57C	Radio Instruments	
	RI4007A	TH-57C	Radio Instruments	
	RI4008A	TH-57C	Radio Instruments	
	FAM4801A	TH-57C	Familiarization 'C'	

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	RI3201A	Sim (57C/FTD-7)	Airways Navigation	
	CPI3103A	Sim (57C/FTD-7)	Co-Pilot Radio Instruments	
	INS4001A	TH-57C	Instrument Navigation	
	INS4002A	TH-57C	Instrument Navigation	
	INS4003A	TH-57C	Instrument Navigation	
	INS4004A	TH-57C	Instrument Navigation	
	INS4005A	TH-57C	Instrument Navigation	
	INS4006A	TH-57C	Instrument Navigation	
	RI4101A	TH-57C	Radio Instruments	
	RI4102A	TH-57C	Radio Instruments	
	RI4103A	TH-57C	Radio Instruments	
	RI4104A	TH-57C	Radio Instruments	
	FAM4802A	TH-57C	Familiarization 'C'	
	FAM4990A	TH-57C	Familiarization 'C' Check Flight	
	RI4290A	TH-57C	Instrument Safe-For-Solo Check Flight	
	NAV4201A	TH-57C	Day Navigation Solo	
	RI4301A	TH-57C	Instrument Navigation Solo	
	GND0402A	Lecture/Lab	MPS Overview/Lab Mission Planning	
	TRF0101A	MIL	Map Interpretation	
	SHP0101A	CAI	General Shipboard Operations	
	SHP0102A	CAI	Shipboard Qualification Procedures	
	SAR3001A	Sim (57C/FTD-7)	Shipboard Search and Rescue Fundamentals	
	SAR0101A	CAI	SAR Organization and Planning	
	SAR0102A	CAI	SAR Flight Procedures	
	SAR4001A	TH-57C	SAR/Low-Level Basic Instruments	
	TRF4001A	TH-57C	TERF Navigation	
	TRF4002A	TH-57C	TERF Navigation	
	TRF4003A	TH-57C	TERF Navigation	
	AER0501A	MIL	Advanced Aerodynamics II	
	FRM0101A	CAI	Formation Flying	
	FRM0102A	CAI	NATOPS and Mission Brief	
	FRM0103A	MIL	Formation Flying	
	FRM3001A	Sim (57C/FTD-7)	Formation	
	FRM4001A	TH-57C	Formation	

Student Course Completion Tracker				
Done	**Event Code**	**Acft/Device/Media**	**Event Name**	**Date**
	FRM4002A	TH-57C	Formation	
	FRM4003A	TH-57C	Formation	
	FRM4004A	TH-57C	Formation	
	FRM4101A	TH-57C	Formation Capstone	
	FRM4102A	TH-57C	Formation Capstone	
	NVG0101A	LAB	NITE Lab	
	NVG3001A	Sim (57C/FTD-7)	Night Vision Device Simulator (MIP)	
	NVG4001A	TH-57C	Night Vision Device Familiarization Flight	
	NVG4002A	TH-57C	Night Vision Device Familiarization Flight	
	NVG4003A	TH-57C	Night Vision Device Familiarization Flight	
	NVG4101A	TH-57C	Night Vision Device Navigation and Tactics	
	NVG4102A	TH-57C	Night Vision Device Navigation and Tactics	
	NVG4201A	TH-57C	Night Vision Device Capstone	
	GND0501A	Sqdn	Checkout	