NAVAL AIR TRAINING COMMAND

NAS CORPUS CHRISTI, TEXAS **CNATRAINST 1542.91J**
CIN Q-2C-0091 **14 Sept 15**

CHIEF OF NAVAL AIR TRAINING

ADVANCED HELICOPTER FLIGHT IUT MPTS CURRICULUM

2015

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

CNATRAINST 1542.91J
N714
14 Sep 15

CNATRA INSTRUCTION 1542.91J

Subj: ADVANCED HELICOPTER INSTRUCTOR UNDER TRAINING MULTI-SERVICE PILOT TRAINING SYSTEM

1. Purpose. To publish the curriculum for training Instructors Under Training (IUTs) to qualify them for the purpose of instructing student military aviators in the Undergraduate Advanced Helicopter phase of Naval Air Training Command (NATRACOM) flight training.

2. Cancellation. CNATRAINST 1542.91H will be cancelled when the last enrolled IUT completes that curriculum.

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

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

D. M. EDGECOMB
Chief of Staff

Distribution:
CNATRA Website
CNATRA SharePoint

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CHAPTER IX. COURSE TRAINING STANDARDS

CHAPTER X. MASTER MATERIALS LIST

SUMMARY OF CHANGES

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COURSE DATA

1. Course Title. Advanced Helicopter Flight Instructor Under Training (IUT), Multi-Service Pilot Training System (MPTS).

2. Course ID Number (CIN). Helicopter Q-2C-0091.

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

4. Course Status. Active.

5. Course Mission. Advanced Helicopter Flight IUT, MPTS is designed to provide designated aviators with appropriate flight procedures, instructional methodology, and techniques to instruct undergraduate rotary-wing flight students in the Advanced Helicopter MPTS.

6. Prerequisite Training. Designated Naval Aviator/military pilot.

7. Security Clearance Requirements. None.

8. Follow-on Training. As required to maintain currency.

9. Course Length. Overall time to train calculated in accordance with CNATRAINST 1550.6E.

	Calendar Weeks	Training Days
Basic Helicopter Instructor Training Unit and Instructor Pilot course	14.0	63.6
Contact Upgrade	2.4	10.8
Formation Upgrade	1.2	5.4
Tactics Upgrade	1.1	4.9
Night Vision Device (NVD) Upgrade	1.6	7.2

10. Class Capacity. Variable.

11. Instructor Requirements. As established by Chief of Naval Air Training planning factors.

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

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

14. Quota Control. Chief of Naval Operations.

15. Course Training Subjects

a. Ground Training

INITIAL GROUND TRAINING		
Subject	**Symbol**	**Hours**
Indoctrination	G01	1.5
Helicopter Aircrew Breathing Device	G02	4.0
Safety	G03	1.0
Global Positioning System	G04	1.0
Flight Instructor Training Course	G05	26.0
Commodore In-Brief	G06	0.5
Cross-Country Procedures	G07	0.5
Instructor Crew Resource Management	G08	1.5
MPTS/TIMS Training	G09	2.5
Checkout HITU/Check-In Squadron	G10	2.0
Standardization Officer Debrief	G11	2.0
Total		**42.5**

b. Flight Support

INITIAL FLIGHT SUPPORT		
Subject	**Symbol**	**Hours**
Systems ‘B’	C0101-07	8.5
Systems Exam	C0190	1.0
Helicopter Aerodynamics	C0201-19	24.0
Aerodynamics Exam	C0290	1.0
Preflight Procedures ‘B’	C0301	2.0
Course Rules Flight Procedures	C0501	2.0
Course Rules Exam	C0590	1.0
Contact ‘B’ Flight Preparation Brief	C0901	3.0
NATOPS Examinations (Open-Book)	C0601	3.0
NATOPS Examinations (Closed-Book)	C0690	3.0
Systems ‘C’	C0703	2.0
Contact Stage Exam	C1090	1.5
Mission Planning System	N0101	2.0
Tactics Flight Procedures	T0101-4	1.0
Emergency Procedures	C0801-2	1.5
Basic Instrument Flight Procedures	I0101-3	1.5
Instrument Navigation	I0301	6.0
Instrument Navigation Exam	I0390	3.0
Radio Instruments	I0401-9	6.0
Instrument Ground School	I0501	5.0
Instrument Ground School Exam	I0590	2.0
Instrument Stage Exam	I0690	1.5
Visual Flight Rules Navigation	N0201-3	2.5
Low-Level Navigation	N0301	2.5
Visual Flight Rules Navigation Stage Exam	N0490	1.5
Total		**88.0**

CONTACT UPGRADE FLIGHT SUPPORT		
Subject	**Symbol**	**Hours**
Tactics Flight Procedures	T0105-6	0.5
Contact Stage Exam	C1090	1.5
Total		**2.0**

FORMATION UPGRADE FLIGHT SUPPORT		
Subject	**Symbol**	**Hours**
Formation	F0101-3	3.5
Formation Stage Exam	F0290	1.5
Total		**5.0**

TACTICS ‘C’ UPGRADE FLIGHT SUPPORT		
Subject	**Symbol**	**Hours**
Shipboard Operations/Search and Rescue	S0101-4	1.0
Tactics ‘C’ Stage Exam	S0290	1.5
Total		**2.5**

NVD UPGRADE FLIGHT SUPPORT		
Subject	**Symbol**	**Hours**
Night Vision Device Training	V0101-2	8.5
Night Vision Device Stage Exam	V0290	1.5
Total		**10.0**

c. Flight Training. Below are the programmed times for each flight training event and media.

INITIAL FLIGHT TRAINING						
Flight/Events	**CPT**		**SIM**		**Dual**	
	Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Cockpit Procedures Trainer	3	3.9				
Contact ‘B’					6	12.6
NATOPS Check Ride					1	2.0
Contact ‘C’			1	1.3	2	3.0
Night Contact ‘C’					2	3.6
Basic Instruments			2	2.6	2	3.5
Emergency Procedures			1	1.3		
Radio Instruments			5	6.5	4	8.4
Instrument Check Ride					1	2.0
Visual Navigation					1	1.7
Low-Level Navigation					3	6.0
Instructor Pilot Flights					7	13.9
Totals	**3**	**3.9**	**9**	**11.7**	**29**	**56.7**

CONTACT UPGRADE FLIGHT TRAINING						
Flight/Events	**CPT**		**SIM**		**Dual**	
	Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Tactics					1	2.0
Advanced Transition Contact ‘B’	1	1.3			6	12.0
Contact ‘B’ Advanced Stage Check Ride					1	1.8
Totals	**1**	**1.3**			**8**	**15.8**

FORMATION UPGRADE FLIGHT TRAINING						
Flight/Events	**CPT**		**SIM**		**Dual**	
	Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Formation					2	4.0
Combat Cruise Formation					1	2.0
Formation Check Ride					1	2.0
Totals					**4**	**8.0**

TACTICS ‘C’ UPGRADE FLIGHT TRAINING						
Flight/Events	**CPT**		**SIM**		**Dual**	
	Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Field Deck Landing Practice					1	0.5
Ship Deck Landing/ Tactics ‘C’ Check Ride					1	0.5
Shipboard Operations/Search and Rescue			1	1.3	1	1.5
Totals			**1**	**1.3**	**3**	**2.5**

NVD UPGRADE FLIGHT TRAINING						
Flight/Events	**CPT**		**SIM**		**Dual**	
	Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Night Vision Device Flight					4	7.2
Night Vision Device Check Ride					1	2.0
Totals					**5**	**9.2**

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

ADDITIONAL TRAINING TIME PER CURRICULUM HOUR/EVENT			
Training Area	**Brief/Preflight/ Taxi**	**Taxi/ Debrief**	**Total**
Flight	2.25	0.50	2.75
Simulator/CPT	0.50	0.50	1.00

17. Physical Requirements. As specified in Chapter 15 of the Manual of the Medical Department (NAVMED P-117) and all applicable anthropometrical standards.

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

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

20. Preceding Curriculum Data. This curriculum replaces CNATRAINST 1542.91H.

21. IUT Performance Measurement/Application of Standards. The standards outlined in Chapter IX, Course Training Standards (CTS), are used to evaluate IUT performance for all items on all events. Final judgment regarding the satisfactory performance of any flight maneuver rests with the Standardization Instructor (SI), who must assess the environmental and systems factors affecting the conditions under which the performance is measured and the IUT’s experience within the stage.

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ABBREVIATIONS

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

ADDU	-	Additional Duty
ADF	-	Automatic Direction Finder
AERO	-	Aerodynamics
AFCS	-	Automatic Flight Control System
AGL	-	Above Ground Level
AIM	-	Aeronautical Information Manual
AIRMET	-	Airman’s Meteorological Information (In-Flight Weather Advisory)
AOB	-	Angle of Bank
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
BI	-	Basic Instrument
BIFP	-	Basic Instrument Flight Procedures
CAI	-	Computer-Assisted Instruction
CAWW	-	CNATRA Advisory Weather Warning
CDI	-	Course Deviation Indicator
CDO	-	Command Duty Officer
CPT	-	Cockpit Procedures Trainer

CR	-	Course Rules
CRM	-	Crew Resource Management
CTS	-	Course Training Standard
DA	-	Decision Altitude
DCONFP	-	Day Contact Flight Procedures
DH	-	Decision Height
DME	-	Distance Measuring Equipment
DP	-	Departure Procedures
ELVA	-	Emergency Low Visibility Approach
EMFP	-	Emergency Flight Procedures
EOB	-	End of Block
EP	-	Emergency Procedures
FAA	-	Federal Aviation Administration
FAC	-	Final Approach Course
FAF	-	Final Approach Fix
FAR	-	Federal Aviation Regulation
FDC	-	Flight Data Center
FDO	-	Flight Duty Officer
FIH	-	Flight Information Handbook
FLIP	-	Flight Information Publication
FORMFP	-	Formation Flight Procedures
FP	-	Full Panel
FPC	-	Final Progress Check
FSS	-	Field Service Station
FTI	-	Flight Training Instruction
GCA	-	Ground-Controlled Approach

GPS	-	Global Positioning System
GPSFP	-	Global Positioning System Flight Procedures
GPU	-	Ground Power Unit
HABD	-	Helicopter Aircrew Breathing Device
HITU	-	Helicopter Instructor Training Unit
HLT	-	Helicopter Landing Trainer
HOSTAC	-	Helicopter Operations from Ships Other Than Aircraft Carriers
HSI	-	Horizontal Situation Indicator
IAF	-	Initial Approach Fix
IAW	-	In Accordance With
ICAO	-	International Civil Aviation Organization
IFM	-	Instrument Flight Manual
IFR	-	Instrument Flight Rules
IGS	-	Instrument Ground School
ILS	-	Instrument Landing System
IMC	-	Instrument Meteorological Conditions
INAV	-	Instrument Navigation
IP	-	Instructor Pilot
IPC	-	Initial Progress Check
ITF	-	Instructor Training Form
ITJ	-	Instructor Training Jacket
ITO	-	Instrument Takeoff
IUT	-	Instructor Under Training
JOG	-	Joint Operations Graphic (Chart)
KIAS	-	Knots Indicated Airspeed

KNDZ - NAS South Whiting Field

LAHSO - Land and Hold Short Operations

LHD/CV - Amphibious Assault Ship (General Purpose)/ Multi-Purpose Aircraft Carrier

LLBI - Low-Level Basic Instruments

LLNAV - Low-Level Navigation

LOA - Letter of Agreement

LOC - Localizer

LSC - Level Speed Change

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

NDZ - South Whiting Field “NAVAID”

NG - No Grade

NI - NATOPS Instructor

NOTAMS - Notices to Airmen

NVD	-	Night Vision Device
NVG	-	Night Vision Goggles
OBS	-	Omni-Bearing Selector
OLF	-	Outlying Field
OPNAV	-	Office of the Chief of Naval Operations
ORM	-	Operational Risk Management
OSC	-	On-Scene Commander
PAC	-	Pilot at Controls
PAPI	-	Precision Approach Path Indicator
PAR	-	Precision Approach Radar
PMSV	-	Pilot-to-Metro Service
PNAC	-	Pilot Not at 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
RV	-	Radar Vectors
RWOP	-	Rotary Wing Operating Procedures
SAR	-	Search and Rescue
SFP	-	Shipboard Flight Procedures
SI	-	Standardization Instructor
SIGMET	-	Significant Meteorological Information
SLAP	-	Solar/Lunar Almanac Prediction (software)

SMA	-	Student Military Aviator
SNA	-	Student Naval Aviator
SOP	-	Standard Operating Procedure
SRT	-	Standard Rate Turn
SS	-	Self-Study
SSR	-	Special Syllabus Requirement
STARS	-	Standard Terminal Arrivals
SYS	-	Systems
TACAID	-	Tactical Airborne Information Document
TACAN	-	Tactical Air Navigation
TERF	-	Terrain Flight
TFP	-	Tactics Flight Procedures
TFR	-	Temporary Flight Restriction
TLA	-	Tactical Landing Area
TOT	-	Turbine Outlet Temperature
UNSAT	-	Unsatisfactory
VASI	-	Visual Approach Slope Indicator
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
WW	-	Weather Warning

GLOSSARY

1. Advancing X. Completed event within the normal syllabus flow. Excludes events with last characters in the range 85-89.

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

3. Aviation Training Jacket. The ATJ is the pilot's (student) 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. A tabular sheet listing the 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. The second numerical character in the lesson designator identifies a block.

6. Blue ATF. A standard or supplemental ATF that is printed on blue paper. The blue ATF is used to denote a Marginal event and the blue supplemental ATF is used to track students on SMS.

7. Check Ride (SXX90). A flight check in any stage of training.

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

9. Contact. The stage of training that combines both day and night familiarization.

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

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

12. Courseware. The technical data, flight training instructions, audio, video, film, CAI, instructor guides, student study guides, and other training material developed to support and implement the syllabus of instruction.

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

14. Deliverables. A CNATRA 1542/1827 Training Review Board (TRB) Summary Form generated by the TRB that summarizes a specific pilot's progress in a given syllabus and provides detailed information on the application of MPTS training for that IUT. Deliverables indicate whether the quality and continuity of training provided was IAW CNATRAINST 1542.91H and indicate the degree of influence by "human factors" on the pilot's performance.

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

16. End of Block. Last event in block. In order to progress past EOB, the IUT must meet or exceed MIF on all critical items, and all optional items attempted, in the block. Flight shall consist of a cross-section of critical items; however, all critical items do not have to be accomplished on the last flight in block as long as MIF had been previously met.

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

18. Final Progress Check (SXX89). A special check normally given by the Commanding Officer (CO) or Executive Officer (XO). The CO may designate, in writing, FPC 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 FPC returns the IUT to normal syllabus flow. An UNSAT FPC results in a TRB.

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

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

21. Initial Progress Check (SXX88). A progress check given by a senior O4 or above, designated in writing by the CO. A satisfactory IPC returns the IUT to normal syllabus flow. An UNSAT IPC results in an FPC.

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

23. Instructor Training Jacket. The ITJ is the IUT's training record. It contains ITFs, calendar card, grade reports, and all other associated training information. It is filed in the Instructor Training Unit and follows the IUT through all phases of training.

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

Char	Meaning	Remarks
1st	Stage	G—Ground C—Contact S—Shipboard/ SAR N—Navigation I—Instrument V—Night Vision Device F—Formation T—Tactical
2nd	Media	0 or 1—Ground Training 2—CPT 3—Simulator 4—Aircraft
3rd	Block	Sequential, indicating block within stage.
4th & 5th	Event/Check Identifier	Sequential, indicating event within block, or other event types as shown below: 84—Adaptation Flight 85—Practice Simulator 86—Warmup 87—Extra Training 88—Initial Progress Check 89—Final Progress Check 90—Check Ride/Exam

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

26. Master Syllabus. Chapters I-VIII list all training syllabus activities, prerequisites, and desired training flow for MPTS.

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

a. Pass - Return to training.

b. Fail - Proceed with the attrition process/attrite.

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

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

30. Progress Check Pilot. An instructor pilot designated in writing by the CO to administer initial or final progress checks.

31. Ready Room Unsatisfactory. 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.

32. Special Syllabus Requirement. One-time, ungraded demonstration item.

33. Stage of Training. All training of a particular type (Ground, Contact, Instruments, Navigation, Formation, Tactical, Shipboard/SAR, NVD) within a phase. The alphanumeric character in the lesson designator identifies the stage of each lesson (Example: F4101 is in the Formation stage).

34. Standardization Instructor. The squadron commander will designate Standardization Instructors (SIs) for each stage.

35. Student Monitoring Status. Squadron-initiated status to address substandard pilot performance.

36. Supplemental ATF. A form inserted into an IUT's ITJ that contains non-syllabus information.

37. Training Media. MPTS media includes aircraft, simulator, cockpit procedures trainer, ground training, and CAI. The first numerical character in the lesson identifier designates the training media.

38. Training Review Board. A fact-finding board appointed to conduct an administrative review of circumstances and procedures relative to a failed FPC.

39. 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.

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

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Chapter I

General Instructions

1. Syllabus Management

a. Distribution. Participating squadron personnel.

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

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

d. Changes. Recommended changes shall be submitted in accordance with CNATRAINST 1550.6E.

e. Execution. IUTs will execute all the curriculum events through G1101 before designation as an IP. All instructor upgrades beyond G1101 will be conducted using squadron selection criteria.

f. Syllabus Description. The Advanced Helicopter Instructor Under Training MPTS phase of flight training is designed to teach the fundamental skills of flying rotary-wing aircraft. All training is flown in either the TH-57B or the TH-57C aircraft. This syllabus is divided into stages. Stages are grouped by like flight training regimes: Contact, Instrument, Navigation, Tactical, and Formation. Each stage is subdivided into training blocks. The training blocks consist of a specified number of flights. Maneuver item files identify the acceptable level of performance that must be achieved at the completion of each training block.

2. Training Management

a. Syllabus Progression. Fly syllabus events within each stage sequentially, except as noted. Do not start a block without all prerequisites. IUTs may be in different stages or blocks simultaneously. Where applicable, IUTs will be eligible for, and shall be prepared for, more than one syllabus event. IUTs must complete all events. The flowcharts on pages I-4 and I-5 delineate the sequence of flying/device events and their

ground training prerequisites. Any block of training may be interrupted to facilitate continued progress during inclement weather or to facilitate cross-country training. System training management is designed to facilitate three graded events (flight, simulator, or exam) per IUT per day. No more than two flight or simulator events per day.

b. Accelerated Progression. Under exceptional circumstances, an IUT's previous flight experience or demonstrated proficiency may warrant accelerated progression. Refer to CNATRAINST 3710.13G for additional information.

c. Maneuver Continuity. IUTs should be allowed to attempt previously introduced maneuvers frequently enough to ensure maintaining required proficiency.

d. Hours/X. SIs shall plan and execute missions to meet H/X as closely as practical. If actual event length varies from H/X by more than 0.3 hours (greater or less than), the instructor shall annotate the reason(s) in ITF's general comments section.

e. Special Syllabus Requirements. Unless noted otherwise, SIs may accomplish SSRs on any flight within the block. SSRs shall be completed in the specified block. Specify completed SSRs in the ITF's maneuver item content line and document date of exposure on the SSR tab in TIMS. Assign NG/1 as the SSR maneuver grade.

f. Instructor Training Jacket Reviews. A jacket review shall be conducted during the Radio Instruments block in conjunction with I4301.

g. Instructor Pilot Flights. IP flights can be flown by HITU instructors, but are intended to be flown by destination squadron ADDU SIs. In the course of the ADDU SIs' instruction, they shall observe HITU standardization and provide feedback to the HITU as required. These flights also serve as an opportunity for ADDU SIs to assimilate the IUTs into their destination squadron and to acquaint them with squadron operating methods.

h. Flight Instructor Designation. On completion of the IUT syllabus and an interview with the IUT's designation squadron Commanding Officer, the IUT shall be designated in writing as a flight instructor in the appropriate categories. Designation letters will be filed in the pilot's NATOPS Flight Personnel Training and Qualification Jacket (OPNAVINST 3710.7U Form OPNAV 3760/32C or D).

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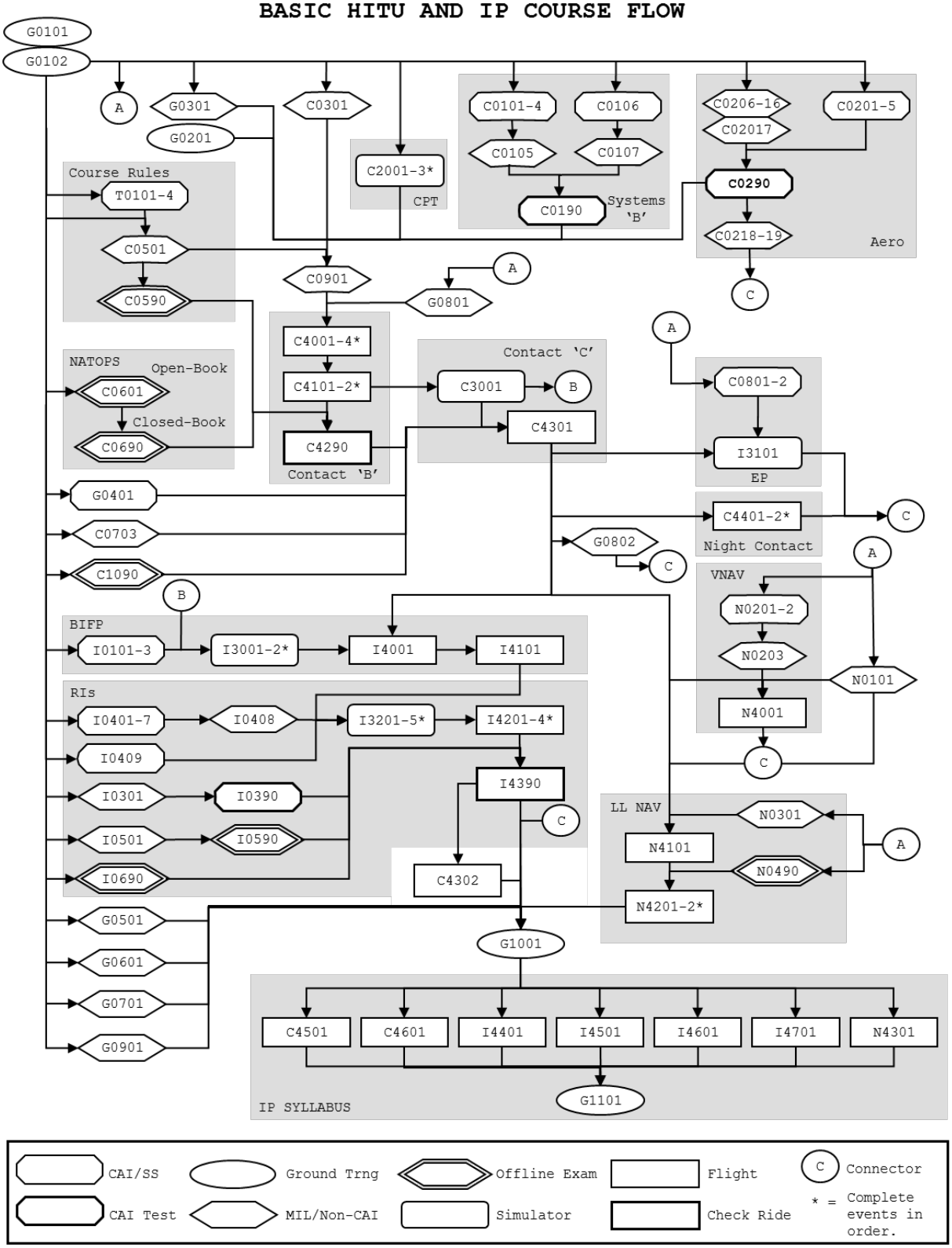
BASIC HITU AND IP COURSE FLOW



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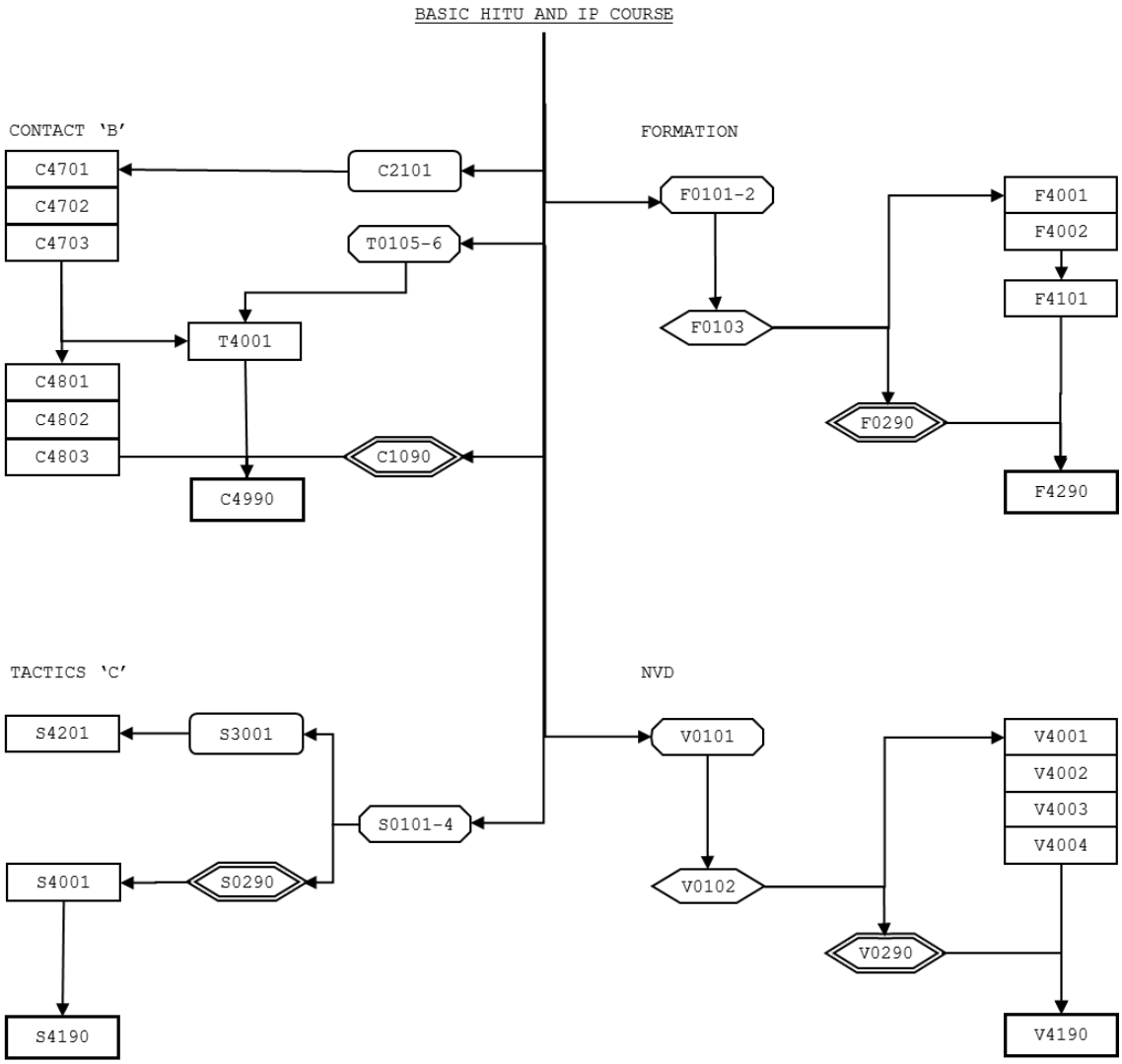
UPGRADE COURSE FLOW



	CAI		Simulator
	MIL/Non-CAI		Flight
	Offline Exam		Check Ride

* = Complete events in order.

Note: These events are also completed as needed annually to maintain required currencies.

C4301	I0690
G0802	C4290
I3101	C0601
I4390	C0690
I0501	N0490
I0590	

3. Ground Training and Briefing Requirements

a. Mission Preparation

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

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

(a) Thorough knowledge of:

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

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

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

(c) The latest ATFs for the stage.

b. Briefing. During the brief, the SI shall thoroughly cover the mission's:

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

(2) Specific objectives.

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

(4) Planned profile and contingencies.

c. Debriefing

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

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

(3) The SI shall input grades onto the ITF in a timely manner to allow the IUT sufficient opportunity to review and access a copy of his/her ATF prior to the next scheduled brief.

4. Mission Grading Procedures and Evaluation Policies

a. General Grading and Evaluation Policy. Maneuver Item Files listed in the MPTS are minimum stage/phase completion standards per maneuver.

b. Grading Procedures (Aircraft and Training Devices)

(1) Overall Grading

(a) The overall grade for all flights and devices, with the exception of the NATOPS Check Ride, will be pass/fail.

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

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

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

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

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

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

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

2. To indicate accomplishing SSRs for that event. Specify completed SSRs in the ITF's maneuver item content line and document date of exposure on the SSR tab.

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

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

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

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

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

C2001-3
C4001-4
C4101-2
C4290

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

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

c. Progression Rule. Performance must meet MIF by EOB. IUT shall maintain or exceed MIF performance from one block, stage, or media to the next. In all cases of overall UNSAT performance on an EOB flight or check ride, IUT training shall be suspended pending action by the TRAWING FIVE HITU officer in charge (OIC). The OIC shall direct an appropriate course of action, and upon satisfactory completion of such action, shall release the IUT for further training. Refer to CNATRAINST 3710.13G for additional information.

d. Maneuver Requirements. For each block:

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

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

e. Incomplete Events. In general, SIs should consider an event complete if able to accomplish the requirements in paragraph (1) below. This is particularly true when weather precludes accomplishing certain maneuver items, but the SI is able to emphasize training on other maneuver items. Subsequent events in the block, when available, can reverse this emphasis, hence achieving overall training balance. If an IUT has ample opportunity to learn a task and subsequently flies a short event, do not incomplete the event solely to provide unwarranted extra training.

(1) Assessment. Assess the event complete if:

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

(b) Sufficient events remain in the block to allow for completion of all remaining required maneuvers

(c) Otherwise, assess the event incomplete.

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

(3) Simulator Event Completion. Assess a simulator event complete if the IUT has received a full training period.

f. Policies for Evaluation Flights and Ground Evaluations

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

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

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

(c) The entire event should be devoted to assessing the IUT's skill attainment, ability, and readiness to progress to the next block of training. All maneuvers indicated with a plus (+) are check ride critical and must be completed to MIF.

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

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

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

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

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

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

1. Any critical item is below MIF, or

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

3. Any maneuver is graded U/2.

5. Special Instructions and Restrictions

a. Flight Hour/Event Requirements and Restrictions

(1) Programmed Hours and Events. Syllabus-programmed flight hours are listed on pages xi-xii. Event lengths, SXX86, 87, 88, and 89 events will cause variation. Accomplish all syllabus events.

(2) Minimum Night Hours. 5.0 hours by G1101. This includes all night hours flown in the Basic HITU and IP course as well as on the C4601 IP flight.

(3) Maximum Daily IUT Activities (Aircraft, Simulator, or Academic). IUTs shall not exceed three graded activities during one duty day (no more than two flight or simulator events per day). An exception is made for IUTs completing cross-country navigation flights. For airways and day/night navigation events, IUTs may complete three graded activities and not 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.

(4) Minimum IUT Turn-Times. There is no minimum IUT turn time between events. This is to ensure maximum flexibility for scheduling IUTs. However, the SI shall ensure that sufficient time is allocated towards effectively debriefing all maneuvers completed on the event as necessary prior to initiating the next event.

(5) Crew Day. The period from the beginning of the IUT's first event or official duty of the day until the completion of the last event of the day, including associated debrief and paperwork. Crew day shall not exceed 12 hours. Maximum IUT crew day for cross-country flights is 12 hours provided total flight time for SIs does not exceed 8 hours and IUT flight time does not exceed 6.5 hours.

(6) Crew Rest. The period from the end of one crew day until the start of the next shall be no less than 12 hours for IUTs. After six consecutive scheduled days, IUTs shall receive one day off.

(7) Pre-Maneuver Requirements. The IUT shall not perform a maneuver for the first time until the SI discusses, briefs, or demonstrates the maneuver, unless previous training adequately fulfills this requirement.

(8) IUT Flights. All IUT flights will be conducted in accordance with the applicable FTI, TH-57 NATOPS, and RWOP. No deviations from standard maneuvers are authorized except in cases of emergency.

(a) Completion of C4290 meets the NATOPS qualification requirements for the TH-57 aircraft.

(b) Completion of I4390 meets the OPNAVINST 3710.7U Instrument Rating requirements.

b. Aircraft/Simulator Interchangeability. Simulator events may be substituted in the aircraft when the simulator is unavailable for extended periods of time.

c. Simulated Boost-Off Approaches. Simulated boost-off approaches terminating in a sliding landing shall be made to a designated paved surface.

d. COMM/NAV Checklist. The COMM/NAV checklist shall be completed on all events flown in the TH-57C. This requirement may be waived at the discretion of the SI if the IUT has demonstrated thorough proficiency to the SI previously in stage or during an out-and-in/cross-country profile.

e. Cold Starts. At least four cold starts (two Bs and two Cs) are required prior to completion of the HITU.

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Chapter II

Ground Training

NOTE: Block numbering of Ground Training events matches the student syllabus except where noted.

Blk #	Media	Title	Events	Hrs	Blk Name
G01	Sqdn/ Issue	Indoctrination	2	1.5	ASI

1. Prerequisite. G0101 before G0102.

2. Events

G0101	Sqdn	Check-In	1.0
G0102	Issue	Materials Issue	0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G02	Lecture/ Pool	Helicopter Aircrew Breathing Device	1	4.0	ASI

1. Prerequisites. None.

2. Events

G0201	Lecture/ Pool	Helicopter Aircrew Breathing Device Training	4.0

3. Syllabus Notes

a. G0201 completed as applicable per directive (OPNAVINST 3710.7U).

b. G0201 can be completed prior to starting IUT syllabus.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G03	MIL	Safety	1	1.0	ASI

1. Prerequisite. G0102 (Materials Issue).

2. Events

G0301	MIL	Aviation Safety	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C01	CAI/MIL/ Test	Systems ‘B’	8	9.5	SYS

1. Prerequisites

   a. G0102 (Materials Issue) prior to C0101-4 in any order.

   b. C0106 prior to C0107.

   c. C0105 and C0107 prior to C0190.

2. Events

C0101	CAI	Power Plant	0.5
C0102	CAI	Fuel Supply System	0.5
C0103	CAI	Transmission and Drive Train	0.5
C0104	CAI	Rotor and Flight Control Systems	0.5
C0105	MIL	Allison 250 Turboshaft Engine Fuel Supply System Power Train System	3.0
C0106	CAI	Hydraulic System	0.5
C0107	MIL	Rotor System Hydraulic System ‘B’ Electrical System	3.0
C0190	CAI Test	Systems Exam	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C02	CAI/MIL/ Test	Helicopter Aerodynamics	20	25.0	AERO

1. Prerequisites

   a. G0102 (Materials Issue) prior to C0201-16 in any order.

   b. C0206-16 prior to C0217.

   c. C0201-05 and C0217 prior to C0290.

   d. C0290 prior to C0218-19 in any order.

2. Events

C0201	CAI	The Atmosphere	1.0
C0202	CAI	Rotor Blade Aerodynamics	1.0
C0203	CAI	Powered Flight Analysis	1.0
C0204	CAI	Autorotation	1.0
C0205	CAI	Flight Phenomena	1.0
C0206	MIL	Atmospherics/Overview	1.5
C0207	MIL	Aerodynamic Theories	1.0
C0208	MIL	Rotor System Dynamics	1.0
C0209	MIL	Rotor System Design	0.5
C0210	MIL	Tail Rotor Design and Performance	1.0
C0211	MIL	Stability and Control	1.5
C0212	MIL	Power and Performance	1.5
C0213	MIL	Hovering Flight	1.0
C0214	MIL	Forward and Climbing Flight	1.5
C0215	MIL	Descending Flight and Autorotations	1.5

2. Events cont

C0216	MIL	Hazards	2.0
C0217	MIL	Aerodynamics Review	2.0
C0290	CAI Test	Aerodynamics Exam	1.0
C0218	MIL	Special Mission Considerations I	2.0
C0219	MIL	Special Mission Considerations II	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C03	MIL	Preflight Procedures 'B'	1	2.0	DCONFP

1. Prerequisite. G0102 (Materials Issue).

2. Events

C0301	MIL	Preflight and Cockpit Procedures 'B'	2.0

3. Syllabus Note. The brief should include a visit to preflight planning, Aircraft Issue, squadron briefing spaces, and maintenance hangars.

4. Discuss Items

C0301
Weight and balance computation, aircraft issue operations (to include discrepancy reporting), aircraft interior/exterior inspection, emergency egress procedures, FTI/NATOPS manual use (verify changes posted), local operations, flight schedule, safety/standardization programs, weight and balance, fuel requirements, performance charts, go/no-go criteria, training time out policy, personal and emergency equipment, egress procedures, carbon lock/frozen turbine, NOTAMs, and weather briefing.

Blk #	Media	Title	Events	Hrs	Blk Name
C05	MIL/ Exam	Course Rules Flight Procedures	2	3.0	CR

1. Prerequisites

a. G0102 (Materials Issue).

b. T0101-4 (Site 8, Santa Rosa, Harold, and Duke Night Course Rules) in any order.

c. C0501 prior to C0590.

2. Events

C0501	MIL	Course Rules Flight Procedures	2.0
C0590	P/P Exam	Course Rules Exam	1.0

3. Syllabus Notes. The IUT version of the C0590 differs from the SNA version. It is an open-book exam administered by the HITU NATOPS Officer or designated representative.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C09	Sqdn	Contact ‘B’ Flight Preparation Brief	1	3.0	DCONFP

1. Prerequisites

   a. G0201 (Helicopter Aircrew Breathing Device Training).

   b. G0301 (Aviation Safety).

   c. C0190 (Systems Exam).

   d. C0290 (Aerodynamics Exam).

   e. C0301 (Preflight and Cockpit Procedures ‘B’).

   f. C0501 (Course Rules Flight Procedures).

   g. C2003.

2. Events

C0901	Sqdn	Contact ‘B’ Flight Preparation Brief	3.0

3. Syllabus Note. IUT shall complete a weight and balance form during the event and perform a full preflight.

4. Discuss Items

   C0901
   ORM Checklist, NATOPS brief, weight and balance computation, preflight procedures, emergency egress procedures, helicopter hover height trainer, local training area, flight line operations, hot refueling and maintenance troubleshooting, entering and exiting the rotor arc, VFR integrated scan, trim techniques, height-velocity diagram, CNATRAINST 3710.13G (FIST), TRAWINGFIVEINST 3740.5M (TW-5 FIST), OPNAVINST 3710.7U, NATOPS, TW-5 SOP (RWOP), TW-5 Flight Instructor Guide (FIG), squadron SOP, HITU SOP, aircraft discrepancy book, and IUT briefing preparation and standards

Blk #	Media	Title	Events	Hrs	Blk Name
C06	Exam	NATOPS Examinations	2	6.0	NATOPS

1. Prerequisite. G0102 (Materials Issue).

2. Events

C0601	P/P Exam	NATOPS Open-Book Exam	3.0
C0690	P/P Exam	NATOPS Closed-Book Exam	3.0

3. Syllabus Note. Complete C0601 within five working days prior to C0690.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C10	Exam	Contact Stage Exam	1	1.5	DCONFP

1. Prerequisite. G0102 (Materials Issue).

2. Events

C1090	P/P Exam	Contact Stage Exam	1.5

3. Syllabus Note. Complete C1090 prior to C4301 in the Basic HITU and IP course, and C4990 in the upgrade course.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G04	CAI	Global Positioning System	1	1.0	GPSFP

1. Prerequisite. G0102 (Materials Issue).

2. Events

G0401	CAI	Global Positioning System	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C07	MIL	Systems 'C'	1	2.0	SYS

1. Prerequisite. G0102 (Materials Issue).

2. Events

C0703	MIL	TH-57C Helicopter Systems TH-57C Electrical System TH-57C Ministab System TH-57C Avionics	2.0

3. Syllabus Note. C0701 and C0702 are student syllabus events (not required for IUTs).

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
N01	Lect	Mission Planning System	1	2.0	VNAVFP

1. Prerequisite. G0102 (Materials Issue).

2. Events

N0101	Lect	MPS Overview/Lab	2.0

3. Syllabus Note. Joint Mission Planning System (JMPS) meets the requirement for this lecture.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
T01	CAI	Tactics Flight Procedures	6	1.50	See Below

1. Prerequisites

   a. G0102 (Materials Issue) prior to T0101-4 in any order.

   b. Basic HITU and IP course prior to T0105-6 in any order.

2. Events

T0101	CAI	Site 8 Course Rules	0.25	CR
T0102	CAI	Santa Rosa Course Rules	0.25	CR
T0103	CAI	Harold Course Rules	0.25	CR
T0104	CAI	Duke Night Course Rules	0.25	CR
T0105	CAI	Confined Area Landing (CAL) and External Load Operations	0.25	TFP
T0106	CAI	Tactical Maneuvers	0.25	TFP

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C08	CAI	Emergency Procedures	2	1.5	EMFP

1. Prerequisite. G0102 (Materials Issue) prior to C0801-2 in any order.

2. Events

C0801	CAI	In-Flight Emergencies	0.75
C0802	CAI	Tail Rotor Emergencies	0.75

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
I01	CAI	Basic Instrument Flight Procedures	3	1.5	BIFP

1. Prerequisite. G0102 (Materials Issue) prior to I0101-3 in any order.

2. Events

I0101	CAI	Departure and Arrival Procedures	0.5
I0102	CAI	Basic Instrument Flight Maneuvers	0.5
I0103	CAI	Advanced Instrument Flight Maneuvers	0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
I03	MIL/CAI Test	Instrument Navigation	2	9.0	INAV

1. Prerequisite. G0102 (Materials Issue).

2. Events

I0301	MIL	Instrument Flight Rules	6.0
I0390	CAI Test	Instrument Navigation Exam	3.0

3. Syllabus Notes. I0302 (Instrument Navigation Self-Study) and I0303 (HELO MET Review) are student syllabus events. These are not required for IUTs.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
I04	CAI/MIL	Radio Instruments	9	6.0	RIFP

1. Prerequisites

a. G0102 (Materials Issue) prior to I0401-7 in any order and I0409.

b. I0401-7 prior to I0408.

2. Events

I0401	CAI	Introduction to NAVAIDs and RI Flight Procedures	0.4
I0402	CAI	Fundamentals of RI Flight Procedures	0.5
I0403	CAI	TACAN and VOR Approaches	0.4
I0404	CAI	ADF Approaches	0.4
I0405	CAI	VOR/TACAN with Failed Directional Gyro	0.4
I0406	CAI	ADF Procedures with a Failed Directional Gyro	0.4
I0407	CAI	Radar and ILS Approaches	0.5
I0408	MIL	Radio Instrument Flight Procedures	2.0
I0409	CAI	Helicopter Radio Instrument Review (HRIR)	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
I05	Lect/ Exam	Instrument Ground School	2	7.0	IFR

1. Prerequisite. G0102 (Materials Issue).

2. Events

I0501	Lect	Instrument Ground School Lecture	5.0
I0590	P/P Exam	Instrument Ground School Exam	2.0

3. Syllabus Notes

a. Complete I0501 prior to I0590 AND within 60 days of I4390.

b. Complete I0590 prior to AND within 60 days of I4390.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
I06	Exam	Instrument Stage Exam	1	1.5	IFR

1. Prerequisite. G0102 (Materials Issue).

2. Events

I0690	P/P Exam	Instrument Stage Exam	1.5

3. Syllabus Note. This is an open-book exam administered by the HITU Standardization Officer or designated representative.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
N02	CAI/MIL	Visual Flight Rules Navigation	3	2.5	VNAVFP

1. Prerequisites

   a. G0102 (Materials Issue) prior to N0201-2 in any order.

   b. N0201-2 prior to N0203.

2. Events

N0201	CAI	Day Navigation Flight Procedures	1.0
N0202	CAI	Night Navigation Flight Procedures	0.5
N0203	MIL	VFR Navigation Review	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
N03	MIL	Low-Level Navigation	1	2.5	LLNAV

1. Prerequisite. G0102 (Materials Issue).

2. Events

N0301	MIL	Map Interpretation	2.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
N04	Exam	Visual Flight Rules Navigation Stage Exam	1	1.5	VNAVFP

1. Prerequisite. G0102 (Materials Issue).

2. Events

N0490	P/P Exam	VFR Navigation Stage Exam	1.5

3. Syllabus Note. This is an open-book exam administered by the HITU Standardization Officer or designated representative.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G05	Lect	Flight Instructor Training Course	1	26.0	ASI

1. Prerequisite. G0102 (Materials Issue).

2. Events

G0501	Lect	Flight Instructor Training Course	26.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G06	Lect	Commodore In-Brief	1	0.5	ASI

1. Prerequisite. G0102 (Materials Issue).

2. Events

G0601	Lect	Commodore In-Brief	0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G07	Lect	Cross-Country Procedures	1	0.5	ASI

1. Prerequisite. G0102 (Materials Issue).

2. Events

G0701	Lect	Cross-Country Procedures	0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G08	MIL	Instructor CRM	2	1.5	CRM

1. Prerequisites

   a. G0102 (Materials Issue) prior to G0801.

   b. C4301 prior to G0802.

2. Events

G0801	MIL	Instructor CRM	0.75
G0802	MIL	CRM Facilitator	0.75

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G09	MIL	MPTS/TIMS Training	1	2.5	ASI

1. Prerequisite. G0102 (Materials Issue).

2. Events

G0901	MIL	MPTS/TIMS Training	2.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G10	Sqdn	Checkout HITU/ Check-In Squadron	1	2.0	ASI

1. Prerequisites

   a. G0501 (Flight Instructor Training Course).

   b. G0601 (Commodore In-Brief).

   c. G0701 (Cross-Country Procedures).

   d. G0802 (CRM Facilitator).

   e. G0901 (MPTS/TIMS Training).

   f. C0218-19 (Special Mission Considerations I and II).

   g. I3101.

   h. I4390.

   i. N4001.

   j. N4202.

   k. C4302.

   l. C4402.

2. Events

G1001	Sqdn	Checkout HITU/Check-In Squadron	2.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
G11	Sqdn	Standardization Officer Debrief	1	2.0	ASI

1. Prerequisites

   a. C4501.

   b. C4601.

   c. I4401.

   d. I4501.

   e. I4601.

   f. I4701.

   g. N4301.

2. Events

G1101	Sqdn	Standardization Officer Debrief	2.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
S01	CAI	Shipboard Operations/ Search and Rescue	4	1.0	SFP

1. Prerequisite. Basic HITU and IP course prior to S0101-4 in any order.

2. Events

S0101	CAI	General Shipboard Operations	0.25
S0102	CAI	Shipboard Qualification Procedures	0.25
S0103	CAI	SAR Organization and Planning	0.25
S0104	CAI	SAR Flight Procedures	0.25

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
S02	Exam	Tactics ‘C’ Stage Exam	1	1.5	SFP

1. Prerequisites. S0101-4 (Shipboard Operations/Search and Rescue).

2. Events

S0290	P/P Exam	Tactics ‘C’ Stage Exam	1.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
F01	CAI/MIL	Formation	3	3.5	FORMFP

1. Prerequisites

   a. Basic HITU and IP course prior to F0101-2 in any order.

   b. F0101-2 prior to F0103.

2. Events

F0101	CAI	Formation Flying	0.5
F0102	CAI	NATOPS and Mission Brief	0.5
F0103	MIL	Formation Lecture	2.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
F02	Exam	Formation Stage Exam	1	1.5	LLNAV

1. Prerequisite. F0103 (Formation Lecture).

2. Events

F0290	P/P Exam	Formation Stage Exam	1.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
V01	CAI/Lab	Night Vision Device Training	2	8.5	NVD

1. Prerequisite. Basic HITU and IP course.

2. Events

V0101	CAI	NVD Training	0.5
V0102	Lab	NVD Lab	8.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
V02	Exam	Night Vision Device Stage Exam	1	1.5	NVD

1. Prerequisite. V0102 (NVD Lab).

2. Events

V0290	P/P Exam	NVD Stage Exam	1.5

3. Syllabus Notes. None.

4. Discuss Items. None.

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Chapter III

NATOPS Training

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

2. Stage MIF

Simulator Event
Check Ride Event

NATOPS STAGE MANEUVER ITEM FILE					
CTS REF	**MANEUVER**	**C2003**	**C4004**	**C4102**	**C4290**
1	General Knowledge/Procedures	3+	4+	4+	4+
2	Emergency Procedures/System Failures	3+	3+	4+	4+
3	Headwork/Situational Awareness	3+	4+	4+	4+
4	Basic Air Work		4+	4+	4+
5	Flight Planning		4+	4+	4+
7	Ground Operations	3	4+	4+	4+
8	CRM	3+	4+	4+	4+
9	Cockpit Management	3+	4+	4+	4+
10	Blindfold Cockpit Check	3+			
11	Radio Procedures	3+	4+	4+	4+
13	Vertical Takeoff		4+		
14	Simulated Engine Failure on Takeoff			3+	3+
16	No-Hover Takeoff		3+	4	4
18	Transition to Forward Flight		4+	4+	4+
20	Course Rules		4+	4+	4+
22	Hover		4+		

MIF continued on next page.

NATOPS STAGE MANEUVER ITEM FILE					
CTS REF	**MANEUVER**	**C2003**	**C4004**	**C4102**	**C4290**
23	Simulated Loss of Tail Rotor Thrust in a Hover			3+	3+
24	Simulated Fixed Pitch Tail Rotor Malfunction in a Hover			3+	3+
25	Simulated Fixed Pitch Tail Rotor Malfunction in Flight			3+	3+
26	Turn on the Spot/Clearing Turn		4+		
27	Low Work			4+	4+
29	Hover Taxi		4+		
30	Max Load Takeoff		3+	4	4
33	Normal Approach		4+	4+	4+
34	Steep Approach		4+	4+	4
35	Hydraulic Boost Off Approach		3+	4+	4+
40	Sliding Landing		4+	4+	4+
41	No-Hover Landing		4+	4	4
43	Waveoff (Power On)		4	4+	4+
44	Waveoff (Power Off)		4	4+	4+
45	Power Recovery Autorotations		3+	4+	4+
46	Full Autorotation		3+	4+	4+
47	Maximum Glide Autorotation			3+	3
50	Square Patterns		4+		
51	Simulated Engine Failure at Altitude		3+	4+	4+
52	Simulated Engine Failure in a Hover		4+	4+	4+
53	Simulated Engine Failure in a Hover Taxi		4+	4+	4+
54	Quick Stop From a Hover		3+	4	4
100	Vertical Landing		4+		
	Special Syllabus Requirement	1	1		

Blk #	Media	Title	Events	Hrs	H/X
C20	2C67	Cockpit Procedures Trainer	3	3.9	1.3

1. Prerequisite. G0102 (Materials Issue).

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

C2001
Blindfold cockpit check, cockpit management, radio procedures, ground operations, emergency procedures, Contact stage checklists and voice reports, RPM beep control, normal start/shutdown procedures, abnormal starts (including engine fire on start), anti-ice operation, postshutdown fire (internal), and emergency engine shutdown.

C2002
Cockpit management, radio procedures, ground operations, emergency procedures, Contact stage checklists and voice reports, normal start procedures, abnormal starts, emergency engine shutdown, engine oil system malfunctions, transmission oil system malfunctions, tach/gen malfunctions, TOT malfunctions, overtorque/overtemp/overspeed, torque malfunctions, generator failure/electrical malfunctions, hydraulic system malfunctions, chip lights, fuel system malfunctions, and postshutdown fire (internal).

C2003
Cockpit management, radio procedures, ground operations, emergency procedures, Contact stage checklists and voice reports, normal start procedures, abnormal starts, overspeed/high N_r, underspeed/low N_r, compressor stall, engine failure, electrical fire, smoke and fume elimination, suspected fuel leakage, main drive shaft failure, engine restart in flight, and normal shutdown procedures.

3. Special Syllabus Requirement

C2001
Demonstrate CPT console operation.

4. Discuss Items

C2001
IUT responsibilities for block C20; curriculum introduction and general information; cockpit management; radio procedures; use of checklists/voice reports; limitations; cold weather limitations; APU start; location, function, power source, and operation of cockpit gauges, radios, switches, and engine/rotor controls; RPM beep control; use of lights; abnormal starts; postshutdown fire (internal); and CRM (aircraft start and shutdown, flight control check/dual concurrence, and ground emergencies).

C2002
In-flight malfunctions, single instrument indications, caution system, PAN/MAYDAY reports, hydraulic system, sprag clutch malfunctions, main drive shaft failure, autorotation into the trees, and CRM (in-flight emergencies).

C2003
Ditching, engine restart in flight, mast bumping, dynamic rollover, vibration identification, rotor blade stall, vortex ring state, and power required exceeds power available.

5. Block MIF

CTS REF	MANEUVER	C2003
1	General Knowledge/Procedures	3+
2	Emergency Procedures/System Failures	3+
3	Headwork/Situational Awareness	3+
7	Ground Operations	3
8	CRM	3+
9	Cockpit Management	3+
10	Blindfold Cockpit Check	3+
11	Radio Procedures	3+
	Special Syllabus Requirement	1

Blk #	Media	Title	Events	Hrs	H/X
C40	TH-57B	Contact ‘B’	4	8.0	2.0

1. Prerequisites

a. C0901 (Contact ‘B’ Flight Preparation Brief).

b. G0801 (Instructor CRM).

2. Syllabus Notes

a. C4001 and C4002 should use Site 8 OLF.

b. C4003 and C4004 should use Spencer OLF or Santa Rosa OLF.

c. Emphasize 90/180-degree autorotations.

3. Special Syllabus Requirements

C4001
Conduct emergency egress drill. Utilize helicopter hover height trainer.

4. Discuss Items

C4001
Flight control system, phase lag, jammed flight controls, abort start, abnormal starts (hot start, hung start, engine fire on start), emergency shutdown, postshutdown fire (internal), dynamic rollover, blowback/pendulum effect, CRM (in-flight emergencies, simulated emergencies, practice autorotations), contact maneuvers, course rules (NDZ and Site 8), and high wind operations.

C4002
Electrical system, generator failure, DC loadmeter and voltmeter, battery TEMP/HOT caution lights, electrical fire, smoke and fume elimination, fuselage fire, on-scene commander’s checklist, aircraft limitations, caution system and associated responses, single instrument indications, landing criteria for emergencies/definitions, and CRM (waveoff, mission analysis, and decision making).

C4003
Engine system, engine failures (NATOPS, FTI), engine restart in flight, engine and transmission chip clearing procedures, autorotation into the trees, compressor stall, vortex ring state, power required exceeds power available, blade element diagram, autorotative aerodynamics, and CRM (assertiveness and communications).

C4004
Transmission system, sprag clutch slippage, sprag clutch seizure, main drive shaft failure, overtorque, icing, ground vortex, hydraulic system, hydraulic system failure, hydraulic power cylinder malfunction, mast bumping, special VFR course rules, and CRM (leadership and adaptability/ flexibility).

5. Block MIF

CTS REF	MANEUVER	C4004
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	3+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
13	Vertical Takeoff	4+
16	No-Hover Takeoff	3+
18	Transition to Forward Flight	4+
20	Course Rules	4+
22	Hover	4+
26	Turn on the Spot/Clearing Turn	4+
29	Hover Taxi	4+

MIF continued on next page.

CTS REF	MANEUVER	C4004
30	Max Load Takeoff	3+
33	Normal Approach	4+
34	Steep Approach	4+
35	Hydraulic Boost Off Approach	3+
40	Sliding Landing	4+
41	No-Hover Landing	4+
43	Waveoff (Power On)	4
44	Waveoff (Power Off)	4
45	Power Recovery Autorotations	3+
46	Full Autorotation	3+
50	Square Patterns	4+
51	Simulated Engine Failure at Altitude	3+
52	Simulated Engine Failure in a Hover	4+
53	Simulated Engine Failure in a Hover Taxi	4+
54	Quick Stop From a Hover	3+
100	Vertical Landing	4+
	Special Syllabus Requirement	1

Blk #	Media	Title	Events	Hrs	H/X
C41	TH-57B	Contact 'B'	2	4.6	2.3

1. Prerequisite. C4004.

2. Syllabus Notes

   a. C41 should use Spencer OLF or Santa Rosa OLF.

   b. Emphasize 90/180-degree autorotations.

3. Special Syllabus Requirements. None.

4. Discuss Items

   C4101
   Control feedback, vibrations, simulated loss of tail rotor thrust in a hover, simulated fixed pitch tail rotor malfunctions in a hover and in flight, rotor RPM droop, mechanical versus virtual axis, dissymmetry of lift, geometric imbalance, retreating blade stall, uncommanded right roll during flight below 1 G, and CRM (situational awareness).

   C4102
   Fuel system, fuel boost pump failure, airframe fuel filter, fuel contamination, fuel control failure, suspected fuel leakage, engine fire in flight, engine overspeed (N_f) rotor RPM (N_r), underspeeding N_f/N_r, and procedure versus pilot technique.

5. Block MIF

CTS REF	MANEUVER	C4102
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+

MIF continued on next page.

CTS REF	MANEUVER	C4102
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
14	Simulated Engine Failure on Takeoff	3+
16	No-Hover Takeoff	4
18	Transition to Forward Flight	4+
20	Course Rules	4+
23	Simulated Loss of Tail Rotor Thrust in a Hover	3+
24	Simulated Fixed Pitch Tail Rotor Malfunction in a Hover	3+
25	Simulated Fixed Pitch Tail Rotor Malfunction in Flight	3+
27	Low Work	4+
30	Max Load Takeoff	4
33	Normal Approach	4+
34	Steep Approach	4+
35	Hydraulic Boost Off Approach	4+
40	Sliding Landing	4+
41	No-Hover Landing	4
43	Waveoff (Power On)	4+
44	Waveoff (Power Off)	4+
45	Power Recovery Autorotations	4+
46	Full Autorotation	4+
47	Maximum Glide Autorotation	3+
51	Simulated Engine Failure at Altitude	4+
52	Simulated Engine Failure in a Hover	4+

MIF continued on next page.

CTS REF	MANEUVER	C4102
53	Simulated Engine Failure in a Hover Taxi	4+
54	Quick Stop From a Hover	4

Blk #	Media	Title	Events	Hrs	H/X
C42	TH-57B	NATOPS Check Ride	1	2.0	2.0

1. Prerequisites

a. C0590 (Course Rules Exam).

b. C0690 (NATOPS Closed-Book Exam).

c. C4102.

2. Syllabus Notes

a. C4290 should use Spencer OLF or Santa Rosa OLF.

b. Fly C4290 with a qualified NATOPS instructor (ANI or NI).

c. Emphasize 90/180-degree autorotations.

d. The NATOPS oral examination is also part of the ground evaluation, but may be conducted as part of the flight evaluation. Complete the NATOPS evaluation report OPNAV 3710.7 (3-95) IAW OPNAVINST 3710.7U.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any previously briefed emergency procedure or aircraft limitation, any aircraft system, and course rules.

5. Block MIF

CTS REF	MANEUVER	C4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
14	Simulated Engine Failure on Takeoff	3+
16	No-Hover Takeoff	4
18	Transition to Forward Flight	4+
20	Course Rules	4+
23	Simulated Loss of Tail Rotor Thrust in a Hover	3+
24	Simulated Fixed Pitch Tail Rotor Malfunction in a Hover	3+
25	Simulated Fixed Pitch Tail Rotor Malfunction in Flight	3+
27	Low Work	4+
30	Max Load Takeoff	4
33	Normal Approach	4+
34	Steep Approach	4
35	Hydraulic Boost Off Approach	4+
40	Sliding Landing	4+
41	No-Hover Landing	4
43	Waveoff (Power On)	4+
44	Waveoff (Power Off)	4+
45	Power Recovery Autorotations	4+

MIF continued on next page.

CTS REF	MANEUVER	C4290
46	Full Autorotation	4+
47	Maximum Glide Autorotation	3
51	Simulated Engine Failure at Altitude	4+
52	Simulated Engine Failure in a Hover	4+
53	Simulated Engine Failure in a Hover Taxi	4+
54	Quick Stop From a Hover	4

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Chapter IV

Contact Training

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

2. Stage MIF

Simulator Event
Check Ride Event

CONTACT STAGE MANEUVER ITEM FILE										
CTS REF	**MANEUVER**	**C3001**	**C4302**	**C4402**	**C4501**	**C4601**	**C2101**	**C4703**	**C4803**	**C4990**
1	General Knowledge/ Procedures	4+	4+	4+	4+	4+	4+	4+	4+	4+
2	Emergency Procedures/ System Failures	4+	4+	4+	4+	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+	4+	4+	4+	4+	4+
4	Basic Air Work		4+	4+	4+	4+		4+	4+	4+
5	Flight Planning		4+	4+	4+	4+		4+	4+	4+
7	Ground Operations		4+	4+	4+	4+	4+	4+	4+	4+
8	CRM	4+	4+	4+	4+	4+	4+	4+	4+	4+
9	Cockpit Management		4+	4+	4+	4+	4+	4+	4+	4+
9	COMM/NAV Checklist	3+								
10	Blindfold Cockpit Check	3+								
11	Radio Procedures	3+	4+	4+	4+	4+	4+	4+	4+	4+
13	Vertical Takeoff							4+		

MIF continued on next page.

CONTACT STAGE MANEUVER ITEM FILE										
CTS REF	**MANEUVER**	**C3001**	**C4302**	**C4402**	**C4501**	**C4601**	**C2101**	**C4703**	**C4803**	**C4990**
14	Simulated Engine Failure on Takeoff							4	4	4
16	No-Hover Takeoff		4+					4	4	4
18	Transition to Forward Flight		4+	4+				4+	4+	4+
20	Course Rules		4+	4+	4+	4+		4+	4+	4+
22	Hover							4+		
23	Simulated Loss of Tail Rotor Thrust in a Hover								4+	4+
24	Simulated Fixed Pitch Tail Rotor Malfunction in a Hover								4+	4+
25	Simulated Fixed Pitch Tail Rotor Malfunction in Flight								4+	4+
26	Turn on the Spot/Clearing Turn							4+		
27	Low Work		4+	4+					4+	4+
29	Hover Taxi							4+		
30	Max Load Takeoff		4+					4		4+
33	Normal Approach		4+	4+				4+	4+	4+
33 42	Normal Approach, Stab-Off Flight		4+							
34	Steep Approach		4+	3+				4+	4+	4+
35	Hydraulic Boost Off Approach		4+					4		4+
40	Sliding Landing		4+					4	4+	4+
41	No-Hover Landing		4+	3+				4	4+	4+
43	Waveoff (Power On)		4	4				4	4+	4
44	Waveoff (Power Off)		4+	4				4+	4+	4+

MIF continued on next page.

CONTACT STAGE MANEUVER ITEM FILE										
CTS REF	**MANEUVER**	**C3001**	**C4302**	**C4402**	**C4501**	**C4601**	**C2101**	**C4703**	**C4803**	**C4990**
45	Power Recovery Autorotations		4+	4+	4			4+	4+	4+
46	Full Autorotation		3		3			3+	4+	4+
47	Maximum Glide Autorotation								4	
50	Square Patterns							4		
51	Simulated Engine Failure at Altitude		4+					4+	4+	4+
52	Simulated Engine Failure in a Hover		4+					4+		4+
53	Simulated Engine Failure in a Hover Taxi		4+					4+		4+
54	Quick Stop From a Hover							4+	4+	4
56	LSC/Contact							4		
59	Turn Pattern/Contact							4		
100	Vertical Landing							4+		
104	Error Detection, Analysis, Correction				3+	3+		3+	4+	4+
105	Defensive Posturing				3+	3+		3+	4+	4+
106	Instructional Technique				3+	3+		3+	4+	4+
107	Maneuver Explanation/ Demonstration				3+	3+		3+	4+	4+
108	Conduct of Flight				3+	3+		3+	4+	4+

Blk #	Media	Title	Events	Hrs	H/X
C30	2B42A	Contact Simulator 'C' Model Transition	1	1.3	1.3

1. Prerequisite. C4102.

2. Syllabus Notes

a. The purpose of this block is to introduce the IUT 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. IUT shall execute a blind cockpit check.

3. Special Syllabus Requirements. None.

4. Discuss Items. Checklists (prestart, start, instrument takeoff (ITO), shutdown, hot refuel, hot seat), COMM/NAV checklist, cockpit crew coordination brief.

5. Block MIF

CTS REF	MANEUVER	C3001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
8	CRM	4+
9	COMM/NAV Checklist	3+
10	Blindfold Cockpit Check	3+
11	Radio Procedures	3+

Blk #	Media	Title	Events	Hrs	H/X
C43	TH-57C	Contact ‘C’	2	3.0	1.5

1. Prerequisites

a. G0401 (Global Positioning System).

b. C0703 (Systems ‘C’ MIL).

c. C1090 (Contact Stage Exam).

d. C3001.

e. C4290.

f. I4390 prior to C4302.

2. Syllabus Notes

a. Emphasize checklists and new requirements/variations during start, operation, emergencies, and shutdown.

b. Accomplish all TH-57C ground checklists and voice reports with special emphasis on the COMM/NAV checklist.

c. Emphasize straight-in/90/180 power recovery and full autorotations.

3. Special Syllabus Requirements. None.

4. Discuss Items

C4301
Cockpit management (COMM/NAV checklist), ‘C’ ministab flight control system, TH-57C electrical system/malfunctions, flight maneuvers in the TH-57C, preflight differences between ‘C’ and ‘B’ model aircraft, maneuver explanation/demonstration, autorotative differences between ‘C’ and ‘B’ model aircraft, and DA computation.

C4302
Santa Rosa and Site 8 course rules, engine failure at altitude, engine failure on takeoff, checklist errors, briefing standards for students, language barriers, use of ATFs, verbal presentation, and common student errors.

5. Block MIF

CTS REF	MANEUVER	C4302
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
16	No-Hover Takeoff	4+
18	Transition to Forward Flight	4+
20	Course Rules	4+
27	Low Work	4+
30	Max Load Takeoff	4+
33	Normal Approach	4+
33 42	Normal Approach, Stab-Off Flight	4+
34	Steep Approach	4+
35	Hydraulic Boost Off Approach	4+
40	Sliding Landing	4+
41	No-Hover Landing	4+
43	Waveoff (Power On)	4
44	Waveoff (Power Off)	4+
45	Power Recovery Autorotations	4+

MIF continued on next page.

CTS REF	MANEUVER	C4302
46	Full Autorotation	3
51	Simulated Engine Failure at Altitude	4+
52	Simulated Engine Failure in a Hover	4+
53	Simulated Engine Failure in a Hover Taxi	4+

Blk #	Media	Title	Events	Hrs	H/X
C44	TH-57C	Night Contact 'C'	2	3.6	1.8

1. Prerequisite. C4301.

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 straight-in/90-degree autorotations.

3. Special Syllabus Requirements. None.

4. Discuss Items

C4401
Discuss items for SNA Night Contact stage (dark adaptation, night hover scan, helicopter procedures at night, vertigo, emergency procedures at night, landing site evaluation at night, night visual flight techniques), night course rules (NDZ, Santa Rosa, Choctaw, and Duke Field), use of low work areas at night, use of lights, and organization of SNA night flights.

C4402
Discuss items for SNA Night Contact stage (VASI/PAPI, landing zone lighting, inadvertent IMC at night), required equipment for night flight, hospital route, and common student errors at night.

5. Block MIF

CTS REF	MANEUVER	C4402
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
18	Transition to Forward Flight	4+
20	Course Rules	4+
27	Low Work	4+
33	Normal Approach	4+
34	Steep Approach	3+
41	No-Hover Landing	3+
43	Waveoff (Power On)	4
44	Waveoff (Power Off)	4
45	Power Recovery Autorotations	4+

Blk #	Media	Title	Events	Hrs	H/X
C45	TH-57C	Instructor Pilot Contact 'C'	1	2.0	2.0

1. Prerequisite. G1001 (Checkout HITU/Check-In Squadron).

2. Syllabus Notes

a. Emphasize error detection, analysis, and correction; defensive posturing; and instructional technique.

b. IP flights can be flown in any sequence.

3. Special Syllabus Requirements. None.

4. Discuss Items. SOP, ORM brief items, common SNA errors on TH-57C contact flights, defensive posturing, grading ATFs, maintenance recovery procedures, and FDO check-in/out procedures.

5. Block MIF

CTS REF	MANEUVER	C4501
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
20	Course Rules	4+
45	Power Recovery Autorotations	4
46	Full Autorotation	3
104	Error Detection, Analysis, Correction	3+
105	Defensive Posturing	3+
106	Instructional Technique	3+
107	Maneuver Explanation/Demonstration	3+
108	Conduct of Flight	3+

Blk #	Media	Title	Events	Hrs	H/X
C46	TH-57C	Instructor Pilot Night Contact 'C'	1	2.2	2.2

1. Prerequisite. G1001 (Checkout HITU/Check-In Squadron).

2. Syllabus Notes

a. Emphasize error detection, analysis, and correction; defensive posturing; and instructional technique.

b. IP flights can be flown in any sequence.

3. Special Syllabus Requirements. None.

4. Discuss Items. Night course rules (Santa Rosa, Duke, and Choctaw), night weather considerations, night hazards, common SNA errors at night, defensive posturing, and ORM brief items.

5. Block MIF

CTS REF	MANEUVER	C4601
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
20	Course Rules	4+
104	Error Detection, Analysis, Correction	3+
105	Defensive Posturing	3+
106	Instructional Technique	3+
107	Maneuver Explanation/Demonstration	3+
108	Conduct of Flight	3+

Blk #	Media	Title	Events	Hrs	H/X
C21	2C67	Advanced Transition Contact 'B'	1	1.3	1.3

1. Prerequisite. Complete the Basic HITU and IP course prior to C2101.

2. Syllabus Notes. None.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any aircraft limitation, emergency shutdown, abnormal starts (hot start, hung start, starter failure, igniter failure, and abort start), engine fire, and emergency egress.

5. Block MIF

CTS REF	MANEUVER	C2101
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+

Blk #	Media	Title	Events	Hrs	H/X
C47	TH-57B	Advanced Transition Contact ‘B’	3	6.0	2.0

1. Prerequisite. C2101.

2. Syllabus Note. Emphasize 90/180-degree autorotations.

3. Special Syllabus Requirements. None.

4. Discuss Items

C4701
Scheduling considerations (on-wing), Spencer/Pace/Santa Rosa/Site 8 course rules, vortex ring state, power required exceeds power available, height-velocity diagram, hover versus air taxi, verbal presentation, conduct of SNA Contact ‘B’ flights, hot/hung start student errors, and introduction of simulated emergencies to SNAs.

C4702
Simulated engine failures at altitude, simulated engine failure on takeoff demonstration, hot seating solos, language barrier, site solo watch duties, checklist errors, briefing standards for on-wing students, trend analysis and use of ATFs, and squadron SOP.

C4703
Tail rotor malfunction demonstrations.

5. Block MIF

CTS REF	MANEUVER	C4703
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
13	Vertical Takeoff	4+
14	Simulated Engine Failure on Takeoff	4
16	No-Hover Takeoff	4
18	Transition to Forward Flight	4+
20	Course Rules	4+
22	Hover	4+
26	Turn on the Spot/Clearing Turn	4+
29	Hover Taxi	4+
30	Max Load Takeoff	4
33	Normal Approach	4+
34	Steep Approach	4+
35	Hydraulic Boost Off Approach	4
40	Sliding Landing	4
41	No-Hover Landing	4
43	Waveoff (Power On)	4
44	Waveoff (Power Off)	4+
45	Power Recovery Autorotations	4+
46	Full Autorotation	3+

MIF continued on next page.

CTS REF	MANEUVER	C4703
50	Square Patterns	4
51	Simulated Engine Failure at Altitude	4+
52	Simulated Engine Failure in a Hover	4+
53	Simulated Engine Failure in a Hover Taxi	4+
54	Quick Stop From a Hover	4+
56	LSC/Contact	4
59	Turn Pattern/Contact	4
100	Vertical Landing	4+
104	Error Detection, Analysis, Correction	3+
105	Defensive Posturing	3+
106	Instructional Technique	3+
107	Maneuver Explanation/Demonstration	3+
108	Conduct of Flight	3+

Blk #	Media	Title	Events	Hrs	H/X
C48	TH-57B	Advanced Transition Contact 'B'	3	6.0	2.0

1. Prerequisite. C4703.

2. Syllabus Notes.

a. Emphasize on C48 flights: common student errors; error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/ demonstration; conduct of flight; verbal procedures; and 90/180-degree autorotations.

b. All C4800 block and C4990 transition flights shall be flown at the HITU.

3. Special Syllabus Requirements. None.

4. Discuss Items

C4801
Max glide autorotation demonstration; error detection, analysis, and correction; defensive posturing; instructional technique; and conduct of error detection flights.

C4802
Common low-stage student errors on C4001-C4004, maneuver explanation/demonstration, role of on-wing, and procedure versus technique.

C4803
Common midstage errors on C4101-C4203; correlation of aircraft systems, limitations, and EPs; and SNA safe-for-solo check ride profile and criteria.

5. Block MIF

CTS REF	MANEUVER	C4803
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
14	Simulated Engine Failure on Takeoff	4
16	No-Hover Takeoff	4
18	Transition to Forward Flight	4+
20	Course Rules	4+
23	Simulated Loss of Tail Rotor Thrust in a Hover	4+
24	Simulated Fixed Pitch Tail Rotor Malfunction in a Hover	4+
25	Simulated Fixed Pitch Tail Rotor Malfunction in Flight	4+
27	Low Work	4+
33	Normal Approach	4+
34	Steep Approach	4+
40	Sliding Landing	4+
41	No-Hover Landing	4+
43	Waveoff (Power On)	4+
44	Waveoff (Power Off)	4+
45	Power Recovery Autorotations	4+
46	Full Autorotation	4+

MIF continued on next page

CTS REF	MANEUVER	C4803
47	Maximum Glide Autorotation	4
51	Simulated Engine Failure at Altitude	4+
54	Quick Stop From a Hover	4+
104	Error Detection, Analysis, Correction	4+
105	Defensive Posturing	4+
106	Instructional Technique	4+
107	Maneuver Explanation/Demonstration	4+
108	Conduct of Flight	4+

Blk #	Media	Title	Events	Hrs	H/X
C49	TH-57B	Contact 'B' Advanced Stage Check Ride	1	1.8	1.8

1. Prerequisites

a. C1090 (Contact Stage Exam).

b. C4803.

c. T4001.

2. Syllabus Notes

a. Emphasize the IUT's ability to present maneuvers while simultaneously executing the maneuvers within CTS.

b. Additionally emphasize the IUT's ability to detect and correct errors before they become hazardous to the aircraft, crew, and/or others.

c. Emphasize 90/180-degree autorotations.

d. All C4800 block and C4990 transition flights shall be flown at the HITU.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any aircraft system, limitation, or emergency procedure; course rules; special VFR course rules; solo weather minimums for student C4401; squadron SOP; hot seat procedures; and lost plane procedures.

5. Block MIF

CTS REF	MANEUVER	C4990
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
14	Simulated Engine Failure on Takeoff	4
16	No-Hover Takeoff	4
18	Transition to Forward Flight	4+
20	Course Rules	4+
23	Simulated Loss of Tail Rotor Thrust in a Hover	4+
24	Simulated Fixed Pitch Tail Rotor Malfunction in a Hover	4+
25	Simulated Fixed Pitch Tail Rotor Malfunction in Flight	4+
27	Low Work	4+
30	Max Load Takeoff	4+
33	Normal Approach	4+
34	Steep Approach	4+
35	Hydraulic Boost Off Approach	4+
40	Sliding Landing	4+
41	No-Hover Landing	4+
43	Waveoff (Power On)	4
44	Waveoff (Power Off)	4+

MIF continued on next page.

CTS REF	MANEUVER	C4990
45	Power Recovery Autorotations	4+
46	Full Autorotation	4+
51	Simulated Engine Failure at Altitude	4+
52	Simulated Engine Failure in a Hover	4+
53	Simulated Engine Failure in a Hover Taxi	4+
54	Quick Stop From a Hover	4
104	Error Detection, Analysis, Correction	4+
105	Defensive Posturing	4+
106	Instructional Technique	4+
107	Maneuver Explanation/Demonstration	4+
108	Conduct of Flight	4+

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Chapter V

Instrument Training

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

2. Stage MIF

Simulator Event
Check Ride Event

INSTRUMENT STAGE MANEUVER ITEM FILE												
CTS REF	**MANEUVER**	**I3002**	**I4001**	**I4101**	**I3101**	**I3205**	**I4204**	**I4390**	**I4401**	**I4501**	**I4601**	**I4701**
1	General Knowledge/ Procedures	4+	4+	4+	4+	4+	4+	4+	4+			4+
2	Emergency Procedures/ System Failures	4+	4+	4+	4+	4+	4+	4+	4+			4+
2	Abnormal Starts				4+							
2	Engine Overspeed				4+							
2	Underspeeding				4+							
2	Sprag Clutch Slippage				4+							
2	Main Driveshaft Failure				4+							
2	Hydraulic System Failure				4+							
2	Hydraulic Power Cylinder Malfunction				4+							
2	Engine Failure				4+							
2	Engine Restart in Flight				4+							

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE												
CTS REF	**MANEUVER**	**I3002**	**I4001**	**I4101**	**I3101**	**I3205**	**I4204**	**I4390**	**I4401**	**I4501**	**I4601**	**I4701**
2	Compressor Stall				4+							
2	Torquemeter Malfunction				4+							
2	Loss of Tail Rotor Thrust in Flight				4+							
2	Vibration Analysis				4+							
2	Tachometer Generator Failures				4+							
3	Headwork/Situational Awareness	4+	4+	4+	4+	4+	4+	4+	4+			4+
4	Basic Air Work	3+	4+	4+	4+	4+	4+	4+	4+			4+
4	Straight and Level	3+	4+	4+					4			4
4	Level Standard Rate Turns	3+	4+	4+					4			4
4	Standard Rate Climbs and Descents	3+										
5	Flight Planning		4+	4+			4+	4+	4+			4+
7 21	Filing/Closing Flight Plans						4+	4+				
8	CRM	4+	4+	4+	4+	4+	4+	4+	4+	4+	4+	4+
8	Copilot Duties						4+	4+	4+			4+
9	Cockpit Management	3+	3+	3+	4+	4+	4+	4+	4+			4+
9	ITO Checklist	4+	4+	4+					4+			4+
9	Level-Off Checklist	4+	4+	4+					4+			4+
11	Radio Procedures	4	4+	4+	4+	4+	4+	4+	4+			4
15	Instrument Takeoff	3+	4+	4+			4+	4				4
19	Departure Procedures	4	4+	4+			4+	4+	4+			4
21	Enroute Procedures						4+	4+	4+			4

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE												
CTS REF	**MANEUVER**	**I3002**	**I4001**	**I4101**	**I3101**	**I3205**	**I4204**	**I4390**	**I4401**	**I4501**	**I4601**	**I4701**
21	Groundspeed/Fuel Checks	4+	4+	4+			4+	4+	4			4
21	Tracking					4+	4					4
42	Stab-Off Flight			4+					4			4
42	Stab-Off Flight (Partial Panel)			4+					4			4
55	LSC	3+	4+	4+					4			
57	Vertical S-1 Pattern	3+	4+	4+					4			
58	Turn Pattern	3+	4+	4+					4			
60	Oscar Pattern	3+	4+	4+					4			
62	Unusual Attitude Recovery (Full Panel)	3+	4+	4+					4			
62 65	Unusual Attitude Recovery (Partial Panel)			4+					4			
63	Instrument Autorotation	3+	4+	4+	4+			4	4			4
64	Magnetic Compass Turns	3+	4+	4+					4			4
65	Partial Panel Air Work, Straight and Level	3+	4+	4+					4			4
65	Partial Panel Air Work, Climbs/ Descents		4+	4+					4			4
65	Partial Panel Air Work, Turns	3+	4+	4+					4			4
66	Radial/Bearing Intercepts					4+	4+					4
67	TACAN Point-to-Point Navigation			4		4+	4+	4				4

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE												
CTS REF	**MANEUVER**	**I3002**	**I4001**	**I4101**	**I3101**	**I3205**	**I4204**	**I4390**	**I4401**	**I4501**	**I4601**	**I4701**
68	Terminal Procedures			4+			4+	4+	4			4
68	Option Approach						4+	4				
69	TACAN/VOR/NDB Approach	3+	4+	4+		4+	4+	4	4			4
69	Localizer Approach					4+	4+	4				4
69	ASR Approach					4+	4+	4				4
69	RNAV/GPS Approach					4+	4+	4				4
70	PAR Approach					4+	4+	4				4
70	ILS Approach					4+	4+	4				4
71	TACAN/VOR/NDB Failed Dir Gyro Approach					4+	4+	4				4
71	PAR/ASR Failed Dir Gyro Approach					4+	4+	4				4
72	Holding					4+	4+	4				4
72	Intersection Holding						4	4				4
73	Missed Approach					4+	4+	4				4
104	Error Detection, Analysis, Correction								4+			4+
105	Defensive Posturing								4+			4+
106	Instructional Technique								4+			4+
107	Maneuver Explanation/ Demonstration								4			4
108	Conduct of Flight								4			4
	Special Syllabus Requirements			1			1					

Blk #	Media	Title	Events	Hrs	H/X
I30	2B42A	Basic Instruments	2	2.6	1.3

1. Prerequisites

a. C3001.

b. I0101-3 (Basic Instrument Flight Procedures).

2. Syllabus Notes

a. IUTs shall fly a minimum of two instrument takeoffs, two departures, and one approach.

b. Practice COMM/NAV checklist items.

3. Special Syllabus Requirements. None.

4. Discuss Items

I3001
Conduct and organization of SNA Basic Instrument simulator events, attitude instrument flight/trim/scan, approximate power settings, AFCS/force trim, crew coordination, communication procedures, ITO checklist, and level-off checklist.

I3002
VOR receiver checks (airborne, ground, dual NAV), magnetic compass turns, electrical fire during IMC flight, engine fire during IMC, fuselage fire during IMC, and pitot-static instruments/failure.

5. Block MIF

CTS REF	MANEUVER	I3002
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	3+
4	Straight and Level	3+
4	Level Standard Rate Turns	3+
4	Standard Rate Climbs and Descents	3+
8	CRM	4+
9	Cockpit Management	3+
9	ITO Checklist	4+
9	Level-Off Checklist	4+
11	Radio Procedures	4
15	Instrument Takeoff	3+
19	Departure Procedures	4
21	Groundspeed/Fuel Checks	4+
55	LSC	3+
57	Vertical S-1 Pattern	3+
58	Turn Pattern	3+
60	Oscar Pattern	3+
62	Unusual Attitude Recovery (Full Panel)	3+
63	Instrument Autorotation	3+
64	Magnetic Compass Turns	3+
65	Partial Panel Air Work, Straight and Level	3+
65	Partial Panel Air Work, Turns	3+
69	TACAN/VOR/NDB Approach	3+

Blk #	Media	Title	Events	Hrs	H/X
I40	TH-57C	Basic Instruments	1	2.0	2.0

1. Prerequisites

   a. C4301.

   b. I3002.

2. Syllabus Note. SI shall conduct an area familiarization in one of the two designated BI instrument working areas (preferably in the Western area) on this flight.

3. Special Syllabus Requirements. None.

4. Discuss Items. Attitude instrument flight/trim/scan, NATOPS instrument brief, approach brief, CRM (instrument approach responsibilities PNAC), publications carried on instrument flights, ministab operation, weather requirements for BI flights, NDZ “on top” weather briefing, NDZ pre-filed flight plans, vertigo parameters, VFR orientation in the instrument working areas, organization of an SNA basic instrument flight, and preparing for an instrument approach.

5. Block MIF

CTS REF	MANEUVER	I4001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
4	Straight and Level	4+
4	Level Standard Rate Turns	4+
5	Flight Planning	4+
8	CRM	4+
9	Cockpit Management	3+
9	ITO Checklist	4+
9	Level-Off Checklist	4+
11	Radio Procedures	4+
15	Instrument Takeoff	4+
19	Departure Procedures	4+
21	Groundspeed/Fuel Checks	4+
55	LSC	4+
57	Vertical S-1 Pattern	4+
58	Turn Pattern	4+
60	Oscar Pattern	4+
62	Unusual Attitude Recovery (Full Panel)	4+
63	Instrument Autorotation	4+
64	Magnetic Compass Turns	4+
65	Partial Panel Air Work, Straight and Level	4+
65	Partial Panel Air Work, Climbs/ Descents	4+
65	Partial Panel Air Work, Turns	4+
69	TACAN/VOR/NDB Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
I41	TH-57C	Basic Instruments	1	1.5	1.5

1. Prerequisite. I4001.

2. Syllabus Note. This flight shall be conducted in the opposite instrument area conducted on I4001.

3. Special Syllabus Requirement. The SI shall conduct an area familiarization of the selected instrument area.

4. Discuss Items. Required equipment for IMC, battery relay light, types of NOTAMS, TFRs, FIH, lost communications - NDZ on top, WW/CAWW/convective SIGMET/AIRMET, sources of weather information, altimeter error, attitude gyro malfunction (IMC), VFR orientation in instrument area, backup NAVAIDs, and standby generator operation/airspeed limitations.

5. Block MIF

CTS REF	MANEUVER	I4101
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
4	Straight and Level	4+
4	Level Standard Rate Turns	4+
5	Flight Planning	4+
8	CRM	4+
9	Cockpit Management	3+
9	ITO Checklist	4+
9	Level-Off Checklist	4+
11	Radio Procedures	4+
15	Instrument Takeoff	4+
19	Departure Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	I4101
21	Groundspeed/Fuel Checks	4+
42	Stab-Off Flight	4+
42	Stab-Off Flight (Partial Panel)	4+
55	LSC	4+
57	Vertical S-1 Pattern	4+
58	Turn Pattern	4+
60	Oscar Pattern	4+
62	Unusual Attitude Recovery (Full Panel)	4+
62 65	Unusual Attitude Recovery (Partial Panel)	4+
63	Instrument Autorotation	4+
64	Magnetic Compass Turns	4+
65	Partial Panel Air Work, Straight and Level	4+
65	Partial Panel Air Work, Climbs/Descents	4+
65	Partial Panel Air Work, Turns	4+
67	TACAN Point-to-Point Navigation	4
68	Terminal Procedures	4+
69	TACAN/VOR/NDB Approach	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
I31	2B42A	Emergency Procedures	1	1.3	1.3

1. Prerequisites

    a. C0801-C0802 (Emergency Procedures).

    b. C4301.

2. Syllabus Note. Execute the following emergency procedures: abnormal starts, engine overspeed (N_f) rotor RPM (N_r), underspeeding N_f or N_g (low N_r), sprag clutch slippage, main driveshaft failure, hydraulic system failure, hydraulic power cylinder malfunction, engine failure, engine restart in flight, compressor stall, torquemeter malfunction, loss of tail rotor thrust in flight, vibration analysis, and tachometer generator failures.

3. Special Syllabus Requirements. None.

4. Discuss Items. Land as soon as possible, land as soon as practicable, emergency reports, single instrument indications, in-flight malfunctions when IMC, crew coordination during an emergency, in the Radio Instrument stage.

5. Block MIF

CTS REF	MANEUVER	I3101
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
2	Abnormal Starts	4+
2	Engine Overspeed	4+
2	Underspeeding	4+
2	Sprag Clutch Slippage	4+
2	Main Driveshaft Failure	4+
2	Hydraulic System Failure	4+
2	Hydraulic Power Cylinder Malfunction	4+
2	Engine Failure	4+
2	Engine Restart in Flight	4+
2	Compressor Stall	4+
2	Torquemeter Malfunction	4+
2	Loss of Tail Rotor Thrust in Flight	4+
2	Vibration Analysis	4+
2	Tachometer Generator Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
63	Instrument Autorotation	4+

Blk #	Media	Title	Events	Hrs	H/X
I32	2B42A	Radio Instruments	5	6.5	1.3

1. Prerequisites

a. I0408 (RIFP).

b. I0409 (HRIR).

c. I4101.

2. Syllabus Notes

a. IUTs shall fly both station and non-station side holding.

b. IUTs shall fly approaches both with and without DME.

c. During I3205, IUTs shall fly a minimum of three GPS approaches with at least one being a full procedure approach.

3. Special Syllabus Requirements. None.

4. Discuss Items

I3201
TACAN procedures, use of CDI and HIS, 40-degree lock-off, cone of confusion, cockpit setup, cockpit/COMM/NAV organization, initial radio contact with ATC, required voice reports, expected further clearance, groundspeed check, and instrument autorotation to touchdown.

I3202
VOR procedures; ADF procedures, characteristics, and limitations; cockpit setup; backup NAVAIDs; NDB tracking versus homing; approach plate symbols; computing timing from FAF to MAP; VOR ground and airborne checkpoint; NAVAID voice capability; sprag clutch seizure; sprag clutch slippage; compressor stall; engine underspeed; and engine overspeed.

I3203
Failed directional gyro TACAN procedures, failed directional gyro NDB procedures, lost communication while being radar vectored, Flight Information Handbook, fuel control malfunctions, and engine restart in flight.

I3204
Localizer procedures, back course localizer procedures, ILS procedures, marker beacons, compass locator, reverse sensing (CDI and HSI), AFCS requirements for IMC flight, low fuel state during IMC, hydraulic system malfunctions, and main drive shaft failure.

I3205
GPS procedures, GPS flight plans, enroute procedures, GPS approach (OBS/leg, arm/active), overlay approach, and GPS missed approach.

5. Block MIF

CTS REF	MANEUVER	I3205
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
21	Tracking	4+
66	Radial/Bearing Intercepts	4+
67	TACAN Point-to-Point Navigation	4+
69	TACAN/VOR/NDB Approach	4+
69	Localizer Approach	4+
69	ASR Approach	4+
69	RNAV/GPS Approach	4+
70	PAR Approach	4+
70	ILS Approach	4+
71	TACAN/VOR/NDB Failed Dir Gyro Approach	4+
71	PAR/ASR Failed Dir Gyro Approach	4+
72	Holding	4+
73	Missed Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
I42	TH-57C	Radio Instruments	4	8.4	2.1

1. Prerequisite. I3205.

2. Syllabus Notes

a. Each flight in this block should consist of a minimum of four approaches and holding.

b. I4202 should focus on no-gyro approaches. The following is the minimum number of no-gyro approaches to be completed on this event:

2 VOR/TACAN failed directional gyro approaches.
1 GCA failed directional gyro approach.

c. When scheduled for an out-and-in profile, the IUT shall call the SI the night prior for route of flight details, not to interfere with crew rest requirements.

d. I4204 is intended to leave the local area; therefore, it should originate or terminate at an airfield other than South Whiting to the maximum extent possible.

e. IUT shall notify SI of approaches needed to satisfy OPNAVINST 3710.7U instrument check approach requirements.

3. Special Syllabus Requirements

I4203
Conduct jacket review to verify IUT is tracking to meet OPNAVINST 3710.7U instrument check approach requirements and to identify any negative trends during the instrument stages.

4. Discuss Items

I4201
TACAN procedures, VOR procedures, NDB procedures, cockpit management - COMM/NAV organization, NDZ prefiled flight plans, weather requirements for RI flights (RWOP, OPNAVINST 3710.7U), organization of SNA TACAN/VOR/NDB flights, eastern RI training area, altitude restrictions when cleared for the approach, terminal procedures, and common student errors on TACAN/VOR/NDB flights.

I4202
Failed directional gyro VOR/TACAN procedures, HSI or CDI failure, GCA lost communications, organization of SNA failed directional gyro flights, western RI area, and common student errors on failed directional gyro flights.

I4203
ILS/localizer procedures, glideslope failure, course receiver failure, CAT II ILS, GPS procedures, GPS/ILS/localizer local training areas, organization of SNA GPS/ILS/localizer flights, and common student errors on GPS/ILS/localizer flights.

I4204
Organization of SNA I4401-4 flights, SNA I4690 brief, weather briefs (DD-175-1), equipment lost with essential No. 2 bus failure, and emergency operation procedures for audio control panel.

5. Block MIF

CTS REF	MANEUVER	I4204
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+

MIF continued on next page.

CTS REF	MANEUVER	I4204
7 21	Filing/Closing Flight Plans	4+
8	CRM	4+
8	Copilot Duties	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
15	Instrument Takeoff	4+
19	Departure Procedures	4+
21	Enroute Procedures	4+
21	Groundspeed/Fuel Checks	4+
21	Tracking	4
66	Radial/Bearing Intercepts	4+
67	TACAN Point-to-Point Navigation	4+
68	Terminal Procedures	4+
68	Option Approach	4+
69	TACAN/VOR/NDB Approach	4+
69	Localizer Approach	4+
69	ASR Approach	4+
69	RNAV/GPS Approach	4+
70	PAR Approach	4+
70	ILS Approach	4+
71	TACAN/VOR/NDB Failed Dir Gyro Approach	4+
71	PAR/ASR Failed Dir Gyro Approach	4+
72	Holding	4+
72	Intersection Holding	4
73	Missed Approach	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
I43	TH-57C	Instrument Check Ride	1	2.0	2.0

1. Prerequisites

a. I0390 (Instrument Navigation Exam).

b. I0590 (Instrument Ground School Exam).

c. I0690 (Instrument Stage Exam).

d. I4204.

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 stage. Completion of I4390 warrants issuing the IUT an Instrument Rating.

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

c. The Instrument Ground School Exam (I0590) must be completed no more than sixty (60) days ***prior*** to flight.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any previously briefed item in the Instrument stage with a heavy emphasis on FAR/AIM/OPNAVINST 3710.7U knowledge and emergency procedures.

5. Block MIF

CTS REF	MANEUVER	I4390
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7 21	Filing/Closing Flight Plans	4+
8	CRM	4+
8	Copilot Duties	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
15	Instrument Takeoff	4
19	Departure Procedures	4+
21	Enroute Procedures	4+
21	Groundspeed/Fuel Checks	4+
63	Instrument Autorotation	4
67	TACAN Point-to-Point Navigation	4
68	Terminal Procedures	4+
68	Option Approach	4
69	TACAN/VOR/NDB Approach	4
69	Localizer Approach	4
69	ASR Approach	4
69	RNAV/GPS Approach	4
70	PAR Approach	4
70	ILS Approach	4
71	TACAN/VOR/NDB Failed Dir Gyro Approach	4
71	PAR/ASR Failed Dir Gyro Approach	4
72	Holding	4

MIF continued on next page.

CTS REF	MANEUVER	I4390
72	Intersection Holding	4
73	Missed Approach	4

Blk #	Media	Title	Events	Hrs	H/X
I44	TH-57C	Instructor Pilot Basic Instruments	1	2.0	2.0

1. Prerequisite. G1001 (Checkout HITU/Check-In Squadron).

2. Syllabus Notes

a. Emphasize common student errors; error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/demonstration; and conduct of flight.

b. IP flights can be flown in any sequence.

3. Special Syllabus Requirements. None.

4. Discuss Items. Eastern and western operating areas, organization of BI flights, common BI student errors, defensive posturing, BI ORM briefing items, and use of common area frequencies.

5. Block MIF

CTS REF	MANEUVER	I4401
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
4	Straight and Level	4
4	Level Standard Rate Turns	4
5	Flight Planning	4+
8	CRM	4+
8	Copilot Duties	4+
9	Cockpit Management	4+
9	ITO Checklist	4+

MIF continued on next page.

CTS REF	MANEUVER	I4401
9	Level-Off Checklist	4+
11	Radio Procedures	4+
19	Departure Procedures	4+
21	Enroute Procedures	4+
21	Groundspeed/Fuel Checks	4
42	Stab-Off Flight	4
42	Stab-Off Flight (Partial Panel)	4
55	LSC	4
57	Vertical S-1 Pattern	4
58	Turn Pattern	4
60	Oscar Pattern	4
62	Unusual Attitude Recovery (Full Panel)	4
62 65	Unusual Attitude Recovery (Partial Panel)	4
63	Instrument Autorotation	4
64	Magnetic Compass Turns	4
65	Partial Panel Air Work, Straight and Level	4
65	Partial Panel Air Work, Climbs/ Descents	4
65	Partial Panel Air Work, Turns	4
68	Terminal Procedures	4
69	TACAN/VOR/NDB Approach	4
104	Error Detection, Analysis, Correction	4+
105	Defensive Posturing	4+
106	Instructional Technique	4+
107	Maneuver Explanation/Demonstration	4
108	Conduct of Flight	4

Blk #	Media	Title	Events	Hrs	H/X
I45	TH-57C	Instructor Pilot Observe Radio Instruments	1	2.0	2.0

1. Prerequisite. G1001 (Checkout HITU/Check-In Squadron).

2. Syllabus Notes

a. IUT will observe an SNA I4690 event.

b. IP flights can be flown in any sequence.

3. Special Syllabus Requirements. None.

4. Discuss Item. Observer responsibilities and potential hazards/risks during RI stage flights.

5. Block MIF

CTS REF	MANEUVER	I4501
8	CRM	4+

Blk #	Media	Title	Events	Hrs	H/X
I46	TH-57C	Instructor Pilot Observe Basic Instruments	1	1.7	1.7

1. Prerequisite. G1001 (Checkout HITU/Check-In Squadron).

2. Syllabus Notes

a. IUT will observe an SNA I4001 event.

b. IP flights can be flown in any sequence.

3. Special Syllabus Requirements. None.

4. Discuss Item. Observer responsibilities and potential hazards/risks during BI stage flights.

5. Block MIF

CTS REF	MANEUVER	I4601
8	CRM	4+

Blk #	Media	Title	Events	Hrs	H/X
I47	TH-57C	Instructor Pilot Radio Instruments	1	2.0	2.0

1. Prerequisite. G1001 (Checkout HITU/Check-In Squadron).

2. Syllabus Notes

a. Emphasize common student errors; error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/demonstration; and conduct of flight.

b. IP flights can be flown in any sequence.

3. Special Syllabus Requirements. None.

4. Discuss Items. Eastern and western operating areas, organization of RI flights, common RI student errors, defensive posturing, RI ORM briefing items, and proper radio terminology and procedures.

5. Block MIF

CTS REF	MANEUVER	I4701
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
4	Straight and Level	4
4	Level Standard Rate Turns	4
5	Flight Planning	4+
8	CRM	4+
8	Copilot Duties	4+
9	Cockpit Management	4+
9	ITO Checklist	4+

MIF continued on next page.

CTS REF	MANEUVER	I4701
9	Level-Off Checklist	4+
11	Radio Procedures	4
15	Instrument Takeoff	4
19	Departure Procedures	4
21	Enroute Procedures	4
21	Groundspeed/Fuel Checks	4
21	Tracking	4
42	Stab-Off Flight	4
42	Stab-Off Flight (Partial Panel)	4
63	Instrument Autorotation	4
64	Magnetic Compass Turns	4
65	Partial Panel Air Work, Straight and Level	4
65	Partial Panel Air Work, Climbs/ Descents	4
65	Partial Panel Air Work, Turns	4
66	Radial/Bearing Intercepts	4
67	TACAN Point-to-Point Navigation	4
68	Terminal Procedures	4
69	TACAN/VOR/NDB Approach	4
69	Localizer Approach	4
69	ASR Approach	4
69	RNAV/GPS Approach	4
70	PAR Approach	4
70	ILS Approach	4
71	TACAN/VOR/NDB Failed Dir Gyro Approach	4
71	PAR/ASR Failed Dir Gyro Approach	4
72	Holding	4
72	Intersection Holding	4
73	Missed Approach	4

MIF continued on next page.

CTS REF	MANEUVER	I4701
104	Error Detection, Analysis, Correction	4+
105	Defensive Posturing	4+
106	Instructional Technique	4+
107	Maneuver Explanation/Demonstration	4
108	Conduct of Flight	4

Chapter VI

Navigation Training

1. Aircraft. Events in this stage may be flown in the TH-57B only when the TH-57C is not available.

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

3. Stage MIF

NAVIGATION STAGE MANEUVER ITEM FILE					
CTS REF	**MANEUVER**	**N4001**	**N4101**	**N4202**	**N4301**
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures/System Failures	4+	4+	4+	4+
2 21	Lost Aircraft Procedures	4+			
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	Basic Air Work	4+	4+	4+	4+
5	Flight Planning	4+	4+	4+	4+
7	Ground Operations	4+	4+	4+	4+
7 21	Filing/Closing Flight Plans	4+			
8	CRM	4+	4+	4+	4+
9	Cockpit Management	4+	4+	4+	4+
11	Radio Procedures	4+	4+	4+	4+
16	No-Hover Takeoff		4+	4+	4+
19	Departure Procedures	4+			

MIF continued on next page.

NAVIGATION STAGE MANEUVER ITEM FILE					
CTS REF	**MANEUVER**	**N4001**	**N4101**	**N4202**	**N4301**
21	Enroute Procedures	4+			4+
21	Groundspeed/Fuel Checks	4+	4+	4+	
21	Use of Flight Watch/Metro/FSS	4+			
33	Normal Approach	4+	4+	4+	
37	360-Degree Overhead Approach		4+	4+	4+
38	180-Degree Offset Approach		4+	4+	4+
39	90-Degree Offset Approach		4+	4+	4+
68	Terminal Procedures	4+			
83	VFR Navigation	4+			
83 1	Flight Rules and Regulations	4+			
83 1	Sectional Symbology	4+			
84	Low-Level Navigation		4+	4+	4+
85	Timing		4+	4+	4+
104	Error Detection, Analysis, Correction				4+
105	Defensive Posturing				4+
106	Instructional Technique				4+
107	Maneuver Explanation/Demonstration				4+
108	Conduct of Flight				4+
	Special Syllabus Requirements		1		

Blk #	Media	Title	Events	Hrs	H/X
N40	TH-57C/B	Visual Navigation	1	1.7	1.7

1. Prerequisites

a. N0101 (MPS Overview/Lab).

b. N0203 (VFR Navigation Review).

c. C4301.

2. Syllabus Notes

a. N4001 shall be flown as an out-and-in profile to emphasize cross-country procedures.

b. IUT shall call the SI before the flight to obtain route for planning purposes.

c. IUT prepares VFR sectional chart for assigned route, including course line, waypoints, and “doghouse” with heading, distance, and zero wind time at 100 knots.

d. IUT shall also create a jet log. (MPS may be utilized.)

3. Special Syllabus Requirements. None.

4. Discuss Items. VFR filing and flight procedures, special visual flight rules (SVFR) course rules, sectional/aeronautical charts, airspace (A, B, C, D, E, G, controlled, uncontrolled, special use, etc.), fuel planning/computation, lost aircraft procedures, use of GPS, wake turbulence, LAHSO, air versus hover taxi, airport operations with and without control tower, night navigation techniques, night emergency landing site evaluation, airport lighting, and CRM.

5. Block MIF

CTS REF	MANEUVER	N4001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
2 21	Lost Aircraft Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
7 21	Filing/Closing Flight Plans	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
19	Departure Procedures	4+
21	Enroute Procedures	4+
21	Groundspeed/Fuel Checks	4+
21	Use of Flight Watch/Metro/FSS	4+
33	Normal Approach	4+
68	Terminal Procedures	4+
83	VFR Navigation	4+
83 1	Flight Rules and Regulations	4+
83 1	Sectional Symbology	4+

Blk #	Media	Title	Events	Hrs	H/X
N41	TH-57C/B	Low-Level Navigation	1	2.2	2.2

1. Prerequisites

a. N0101 (MPS Overview/Lab).

b. N0301 (Map Interpretation).

c. C4301.

2. Syllabus Notes

a. Fly routes using 1:250,000 maps.

b. Plan routes using 90 knots groundspeed and fly using 60-100 KIAS.

c. IUT shall use the Green route for N4101. Route will be flown in both directions.

d. Fly N41 block flights no lower than 500 feet AGL.

e. After SI demonstrates low-level brief (SSR - N4101), the IUT will navigate the route in the opposite direction.

3. Special Syllabus Requirements. SI shall demonstrate the first low-level navigation brief and navigate an entire route in one direction.

4. Discuss Items. CRM for low-level navigation, TERF profiles, timing, use of GPS, checkpoints, hazards, low-level navigation areas, map types and preparation, route cards, map interpretation, map changeover point, route selection, use of barriers, effects of wind during navigation, TLA approaches, wind evaluation for TLA landings, waveoffs, and common student errors during low-level navigation.

5. Block MIF

CTS REF	MANEUVER	N4101
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
16	No-Hover Takeoff	4+
21	Groundspeed/Fuel Checks	4+
33	Normal Approach	4+
37	360-Degree Overhead Approach	4+
38	180-Degree Offset Approach	4+
39	90-Degree Offset Approach	4+
84	Low-Level Navigation	4+
85	Timing	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
N42	TH-57C/B	Low-Level Navigation	2	3.8	1.9

1. Prerequisites

a. N0490 (VFR Navigation Stage Exam).

b. N4101.

2. Syllabus Notes

a. Fly route using 1:50,000.

b. Plan route using 90 knots groundspeed and fly using 60-100 KIAS.

c. IUT shall use the Orange route for N4201 and the Purple route for N4202. The Orange route shall be flown forward only. The Purple route shall be flown in both directions.

d. Fly N4201 no lower than 500-feet AGL and N4202 no lower than 200-feet AGL.

3. Special Syllabus Requirements. None.

4. Discuss Items

N4201
Precision navigation using the GPS, crew comfort levels, emergency at low altitude, effects of adverse weather on mission planning, 360/180/90-degree offset to final TLA approaches, error detection, and common student errors during TLA approaches.

N4202
Disorientation procedures, bingo fuel, any N41 or N42 block discussion item, and any emergency procedure or aircraft limitation.

5. Block MIF

CTS REF	MANEUVER	N4202
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
16	No-Hover Takeoff	4+
21	Groundspeed/Fuel Checks	4+
33	Normal Approach	4+
37	360-Degree Overhead Approach	4+
38	180-Degree Offset Approach	4+
39	90-Degree Offset Approach	4+
84	Low-Level Navigation	4+
85	Timing	4+

Blk #	Media	Title	Events	Hrs	H/X
N43	TH-57C/B	Instructor Pilot Low-Level Navigation	1	2.0	2.0

1. Prerequisite. G1001 (Checkout HITU/Check-In Squadron).

2. Syllabus Notes

a. Emphasize common student errors; error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/demonstration; and conduct of flight.

b. IP flights can be flown in any sequence.

3. Special Syllabus Requirements. None.

4. Discuss Items. Low-level navigation areas, conduct of SNA low-level flights, common SNA errors on low-level flights, defensive posturing, and low-level ORM brief items.

5. Block MIF

CTS REF	MANEUVER	N4301
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
16	No-Hover Takeoff	4+
21	Enroute Procedures	4+
37	360-Degree Overhead Approach	4+
38	180-Degree Offset Approach	4+
39	90-Degree Offset Approach	4+
84	Low-Level Navigation	4+
85	Timing	4+
104	Error Detection, Analysis, Correction	4+
105	Defensive Posturing	4+
106	Instructional Technique	4+
107	Maneuver Explanation/Demonstration	4+
108	Conduct of Flight	4+

Chapter VII

Formation Training

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

2. Stage MIF

Check Ride Event

FORMATION STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**F4002**	**F4101**	**F4290**
1	General Knowledge/Procedures	4+	4+	4+
2	Emergency Procedures/System Failures	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+
4	Basic Air Work	4+	4+	4+
6	Formation NATOPS/Mission Brief	4+	4+	4+
8	CRM	4+	4+	4+
9	Cockpit Management	4+	4+	4+
17	Section Takeoffs	4+		4+
74	Crossover	4+		4+
75	Cruise Turns	4+		4+
76	Cruise Climbs and Descents	4+		4+
77	Breakup and Rendezvous	4+		4+
78	Overrun	4+		4+
79	Lead Change	4+		4+
80	Section Cruise	4+		4+
81	Section Landings	4+		4+
82	Combat Cruise Flight		4+	4+
85	Timing		4+	4+
89	Section Low-Level Flight/Navigation		4+	4+
92	Section High-Speed Approaches	4+		4+
96	Section Waveoff	4+		4+
104	Error Detection, Analysis, Correction	1	1	1
105	Defensive Posturing	1	1	1
106	Instructional Technique	1	1	1
107	Maneuver Explanation/Demonstration	1	1	1

MIF continued on next page.

FORMATION STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**F4002**	**F4101**	**F4290**
108	Conduct of Flight	1	1	1
	Special Syllabus Requirements	1		

Blk #	Media	Title	Events	Hrs	H/X
F40	TH-57C	Formation	2	4.0	2.0

1. Prerequisite. F0103 (Formation Lecture).

2. Syllabus Notes

a. Emphasize CRM during all flights.

b. Complete section waveoffs on F4002.

c. Emphasize common student errors; error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/demonstration; and conduct of flight.

3. Special Syllabus Requirements

F4001
Demonstrate section parade and home-field break.

F4002
Demonstrate inadvertent IMC and lost communication items.

4. Discuss Items

F4001
NATOPS/conduct of flight brief for formation flights, relative motion and radius of turn relationships, Lead and Wing aircraft responsibilities and considerations, cruise position/cruise maneuvers/brevity codes, overtorque, formation course rules/local formation areas, Wing awareness/lookout doctrine, down plane procedures, and CRM (inter-aircraft communication, formation maneuvers, Lead change, and formation waveoff).

F4002
Any emergency/limitation, course rules, effects of adverse weather on mission planning, inadvertent IMC at low level, JOG AIR preparation, and checkpoint selection criteria.

5. Block MIF

CTS REF	MANEUVER	F4002
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
6	Formation NATOPS/Mission Brief	4+
8	CRM	4+
9	Cockpit Management	4+
17	Section Takeoffs	4+
74	Crossover	4+
75	Cruise Turns	4+
76	Cruise Climbs and Descents	4+
77	Breakup and Rendezvous	4+
78	Overrun	4+
79	Lead Change	4+
80	Section Cruise	4+
81	Section Landings	4+
92	Section High-Speed Approaches	4+
96	Section Waveoff	4+
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
F41	TH-57C	Combat Cruise Formation	1	2.0	2.0

1. Prerequisite. F4002.

2. Syllabus Notes

a. Emphasize CRM during all flights.

b. Emphasize common student errors; error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/demonstration; and conduct of flight.

3. Special Syllabus Requirements. None.

4. Discuss Items. Combat cruise; effects of adverse weather on mission planning; inadvertent IMC at low level; JOG AIR preparation; checkpoint selection criteria; and any previous discuss item, aircraft emergency procedure, or limitations.

5. Block MIF

CTS REF	MANEUVER	F4101
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
6	Formation NATOPS/Mission Brief	4+
8	CRM	4+
9	Cockpit Management	4+
82	Combat Cruise Flight	4+
85	Timing	4+
89	Section Low-Level Flight/ Navigation	4+
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1

Blk #	Media	Title	Events	Hrs	H/X
F42	TH-57C	Formation Check Ride	1	2.0	2.0

1. Prerequisites

a. F0290 (Formation Stage Exam).

b. F4101.

2. Syllabus Notes

a. Prepare low-level navigation charts for designated routes.

b. Emphasize CRM during all flights.

c. Emphasize common student errors; error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/demonstration; and conduct of flight.

3. Special Syllabus Requirements. None.

4. Discuss Items. Common SNA errors in formation flights and any previous discuss item, aircraft emergency procedure, or limitation.

5. Block MIF

CTS REF	MANEUVER	F4290
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
6	Formation NATOPS/Mission Brief	4+
8	CRM	4+
9	Cockpit Management	4+
17	Section Takeoffs	4+
74	Crossover	4+
75	Cruise Turns	4+
76	Cruise Climbs and Descents	4+
77	Breakup and Rendezvous	4+
78	Overrun	4+
79	Lead Change	4+
80	Section Cruise	4+
81	Section Landings	4+
82	Combat Cruise Flight	4+
85	Timing	4+
89	Section Low-Level Flight/ Navigation	4+
92	Section High-Speed Approaches	4+
96	Section Waveoff	4+
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1

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Chapter VIII

Tactical Training

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

2. Tactics Stage MIF

TACTICS STAGE MANEUVER ITEM FILE		
CTS REF	**MANEUVER**	**T4001**
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
16	No-Hover Takeoff	4+
18	Transition to Forward Flight	4+
28	Power Checks	4+
31	Confined Area Operations	4+
32	Pinnacle Operations	4+
33	Normal Approach	4+
34	Steep Approach	4+
36	High-Speed Approach	4+
41	No-Hover Landing	4+
45	Power Recovery Autorotations	4+
46	Full Autorotation	4
48	High-Speed/Low-Level Autorotation	4+
49	External Load Operations	4+
61	Quick Stop	4+
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1

3. Shipboard/Search and Rescue Stage MIF

Simulator Event
Check Ride Event

SHIPBOARD/SEARCH AND RESCUE STAGE MANEUVER ITEM FILE					
CTS REF	**MANEUVER**	**S4001**	**S4190**	**S3001**	**S4201**
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures/System Failures	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	Basic Air Work	4+	4+	4+	4+
8	CRM	4+	4+	4+	4+
9	Cockpit Management	4+	4+	4+	4+
12	Shipboard Radio Procedures	4+	4+		
86	LLBI				4+
87	Stab-Off LLBI				4+
88	Partial Panel LLBI				4+
90	SAR Patterns/Scenarios			4+	4+
91	Windline Rescue Pattern			4+	4+
93	ELVA			4+	4+
94	Shipboard TACAN/NDB Approach			4+	4
95	Field Deck Landing Practice (Takeoff/Landing)	4+			
97	Field Deck Landing Practice Waveoff	4+			
98	Response to LSE	4+	4+		
99	Ship Deck Landing Qualification (Takeoff/Landing)		4		
104	Error Detection, Analysis, Correction	1	1		1
105	Defensive Posturing	1	1		1
106	Instructional Technique	1	1		1
107	Maneuver Explanation/Demonstration	1	1		1
108	Conduct of Flight	1	1		1

4. Night Vision Device Stage MIF

Check Ride Event

NIGHT VISION DEVICE STAGE MANEUVER ITEM FILE			
CTS REF	**MANEUVER**	**V4004**	**V4190**
1	General Knowledge/Procedures	4+	4+
2	Emergency Procedures/System Failures	4+	4+
3	Headwork/Situational Awareness	4+	4+
4	Basic Air Work	4+	4+
5	Flight Planning	4+	4+
7	Ground Operations	4+	4+
8	CRM	4+	4+
9	Cockpit Management	4+	4+
11	Radio Procedures	4+	4+
13	Vertical Takeoff	4+	4+
16	No-Hover Takeoff	4+	4+
18	Transition to Forward Flight	4+	4+
19	Departure Procedures	4+	4+
22	Hover	4+	4+
26	Turn on the Spot/Clearing Turn	4+	4+
29	Hover Taxi	4+	4+
33	Normal Approach	4+	4+
34	Steep Approach	4+	4+
41	No-Hover Landing	4+	4+
43	Waveoff (Power On)	4+	4+
44	Waveoff (Power Off)	4+	4+
45	Power Recovery Autorotations	4+	4+
68	Terminal Procedures	4+	4+
83	VFR Navigation	4+	4+
100	Vertical Landing	4+	4+

MIF continued on next page.

NIGHT VISION DEVICE STAGE MANEUVER ITEM FILE			
CTS REF	**MANEUVER**	**V4004**	**V4190**
101	NVD Knowledge	4+	4+
102	Goggle/De-goggle Procedures	4+	4+
103	NVD Emergency Procedures	4+	4+
104	Error Detection, Analysis, Correction		4+
105	Defensive Posturing		4+
106	Instructional Technique		4+
107	Maneuver Explanation/Demonstration		4+
108	Conduct of Flight		4+
	Special Syllabus Requirements	1	

Blk #	Media	Title	Events	Hrs	H/X
T40	TH-57B	Tactics	1	2.0	2.0

1. Prerequisites

a. C4703.

b. T0105 (Confined Area Landing and External Load Operations).

c. T0106 (Tactical Maneuvers).

2. Syllabus Notes

a. Emphasize CRM during all flights.

b. Fly the T40 block flight in TH-57B model aircraft.

3. Special Syllabus Requirements. None.

4. Discuss Items. Dynamic rollover; mast bumping; use of radar altimeter; Harold course rules; low-level lookout doctrine; crew coordination; aircrew brief; weight and balance; power checks; procedures/waveoffs/CRM for confined area/pinnacle/and external load operations; torque considerations; airspeed restrictions with doors removed; engine failures at high-speed, low-level; high-speed, low-level autorotation demonstration; power required exceeds power available; vortex ring state; engine failure with external load and common student errors on SNA T40 flights.

5. Block MIF

CTS REF	MANEUVER	T4001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
16	No-Hover Takeoff	4+
18	Transition to Forward Flight	4+
28	Power Checks	4+
31	Confined Area Operations	4+
32	Pinnacle Operations	4+
33	Normal Approach	4+
34	Steep Approach	4+
36	High-Speed Approach	4+
41	No-Hover Landing	4+
45	Power Recovery Autorotations	4+
46	Full Autorotation	4
48	High-Speed/Low-Level Autorotation	4+
49	External Load Operations	4+
61	Quick Stop	4+
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1

Blk #	Media	Title	Events	Hrs	H/X
S40	TH-57C	Field Deck Landing Practice	1	0.5	0.5

1. Prerequisite. S0290 (Tactics ‘C’ Stage Exam).

2. Syllabus Notes

a. Schedule S4001 with S4190.

b. Emphasize CRM during the flight.

c. Complete field deck landing practice (FDLP) requirements IAW TH-57 NATOPS.

3. Special Syllabus Requirements. None.

4. Discuss Items. FDLP pattern and airspeeds, LSE signals, shipboard terminology/signals, lost communication procedures, NAVAIR 00-80T-122, HOSTAC, shipboard aviation facilities resume, OLF/HLT course rules, flight leader responsibilities, and CRM - FDLP.

5. Block MIF

CTS REF	MANEUVER	S4001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
12	Shipboard Radio Procedures	4+
95	Field Deck Landing Practice (Takeoff/Landing)	4+
97	Field Deck Landing Practice Waveoff	4+
98	Response to LSE	4+
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1

Blk #	Media	Title	Events	Hrs	H/X
S41	TH-57C	Ship Deck Landing/ Tactics ‘C’ Check Ride	1	0.5	0.5

1. Prerequisite. S4001.

2. Syllabus Notes

a. Emphasize CRM during the flight.

b. Schedule S4190 with S4001.

3. Special Syllabus Requirements. None.

4. Discuss Items. Ship’s communication, NAVAID frequencies and identification, CHARLIE and DELTA patterns, overhead time, deck spotting, ship’s heading (Foxtrot Corpen) and base recovery course (BRC), wind direction and speed, and radio discipline.

5. Block MIF

CTS REF	MANEUVER	S4190
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
12	Shipboard Radio Procedures	4+
98	Response to LSE	4+
99	Ship Deck Landing Qualification (Takeoff/Landing)	4
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1

Blk #	Media	Title	Events	Hrs	H/X
S30	2B42A	Shipboard Operations	1	1.3	1.3

1. Prerequisite. S0101-4 (Shipboard Operations/SAR).

2. Syllabus Notes

a. IUTs will fly up to two TACAN or NDB Shipboard Instrument Approaches (CV, LHA/LHD, or Air-Capable Ships), one ELVA, and two SAR patterns (Expanding Square, Creeping Line, or Sector Search) with the Windline Rescue Pattern.

b. S3001 requires a visual simulator.

3. Special Syllabus Requirements. None.

4. Discuss Items. Shipboard terminology, SAR patterns, Windline Rescue pattern, low-level scan using radar altimeter, shipboard aviation facilities resume, BRC/wind direction and speed, and radio discipline.

5. Block MIF

CTS REF	MANEUVER	S3001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
90	SAR Patterns/Scenarios	4+
91	Windline Rescue Pattern	4+
93	ELVA	4+
94	Shipboard TACAN/NDB Approach	4+

Blk #	Media	Title	Events	Hrs	H/X
S42	TH-57C	Shipboard Operations/ Search and Rescue	1	1.5	1.5

1. Prerequisite. S3001.

2. Syllabus Notes

a. Emphasize CRM during the flight.

b. Emphasize error detection, analysis, and correction; defensive posturing; instructional technique; maneuver explanation/demonstration; and conduct of flight.

3. Special Syllabus Requirements. None.

4. Discuss Items. Ditching, shipboard approaches, lost plane procedures, stab/force trim failure at low altitude, use of GPS during SAR, flight in restricted visibility over water, radar altimeter failure, inadvertent IMC at low level over water, ELVA approach, SAR patterns, SAR TACAID, and organization of SNA low-level BI flights.

5. Block MIF

CTS REF	MANEUVER	S4201
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
86	LLBI	4+
87	Stab-Off LLBI	4+
88	Partial Panel LLBI	4+
90	SAR Patterns/Scenarios	4+
91	Windline Rescue Pattern	4+
93	ELVA	4+
94	Shipboard TACAN/NDB Approach	4
104	Error Detection, Analysis, Correction	1
105	Defensive Posturing	1
106	Instructional Technique	1
107	Maneuver Explanation/Demonstration	1
108	Conduct of Flight	1

Blk #	Media	Title	Events	Hrs	H/X
V40	TH-57C	Night Vision Device Flight	4	7.2	1.8

1. Prerequisite. V0102 (NVD Lab).

2. Syllabus Notes

a. Instructor pilots shall have logged a minimum of 100 NVD hours prior to undergoing the NVD upgrade. No differentiation will be made between pilot-in-command NVD time, copilot NVD time, high-light/low-light level NVD time, or fleet versus training command NVD time. This requirement may be waived on a case-by-case basis by the commanding officer for those instructor pilots, with less than the required hours, who demonstrate advanced ability.

b. This block is broken down into two sections, each consisting of two flights. The first two flights should concentrate on basic familiarization maneuvers using NVDs. The second two flights should concentrate on navigation routes and procedures while using NVDs.

c. At the end of the block, the total hours shall equal no less than 7.2 hours NVD time.

d. The V4001 and V4002 must be flown separately and may not be combined.

e. Simulated emergencies will not be practiced on V4001.

f. Navigation route will not be flown on V4001 or V4002.

3. Special Syllabus Requirements

V4002
Simulated emergencies, power recovery autorotations (90-degree entry), and no-hover takeoffs will be introduced.

4. Discuss Items

V4001
Preflight NVDs, dark adaptation, light-level chart, light effects, lighting phenomenon, scan pattern, CRM (pilot and copilot duties), interior and exterior lighting, NVD battery failure, NVD tube failure, goggle/de-goggle procedures, and low work and scan.

V4002
Emergency procedures utilizing NVDs, capabilities of NVDs, closure rates, depth perception, and engine failure at night.

V4003
Inadvertent IMC, emergencies at low altitude at night, light-level chart, sun/moon position chart, map interpretation, low-level hazard in flight, and navigation utilizing NVDs.

V4004
Any previously discussed item and tactical application of NVDs (Marine Corps/Navy).

5. Block MIF

CTS REF	MANEUVER	V4004
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
13	Vertical Takeoff	4+
16	No-Hover Takeoff	4+
18	Transition to Forward Flight	4+
19	Departure Procedures	4+
22	Hover	4+
26	Turn on the Spot/Clearing Turn	4+
29	Hover Taxi	4+
33	Normal Approach	4+
34	Steep Approach	4+
41	No-Hover Landing	4+
43	Waveoff (Power On)	4+
44	Waveoff (Power Off)	4+
45	Power Recovery Autorotations	4+
68	Terminal Procedures	4+
83	VFR Navigation	4+
100	Vertical Landing	4+
101	NVD Knowledge	4+
102	Goggle/De-goggle Procedures	4+
103	NVD Emergency Procedures	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
V41	TH-57C	Night Vision Device Check Ride	1	2.0	2.0

1. Prerequisites

a. V4004.

b. V0290 (NVD Stage Exam).

2. Syllabus Note. Must log a minimum of 1.8 NVD hours on this flight.

3. Special Syllabus Requirements. None.

4. Discuss Items. Any previously discussed item.

5. Block MIF

CTS REF	MANEUVER	V4190
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
13	Vertical Takeoff	4+
16	No-Hover Takeoff	4+
18	Transition to Forward Flight	4+
19	Departure Procedures	4+
22	Hover	4+

MIF continues on next page.

CTS REF	MANEUVER	V4190
26	Turn on the Spot/Clearing Turn	4+
29	Hover Taxi	4+
33	Normal Approach	4+
34	Steep Approach	4+
41	No-Hover Landing	4+
43	Waveoff (Power On)	4+
44	Waveoff (Power Off)	4+
45	Power Recovery Autorotations	4+
68	Terminal Procedures	4+
83	VFR Navigation	4+
100	Vertical Landing	4+
101	NVD Knowledge	4+
102	Goggle/De-goggle Procedures	4+
103	NVD Emergency Procedures	4+
104	Error Detection, Analysis, Correction	4+
105	Defensive Posturing	4+
106	Instructional Technique	4+
107	Maneuver Explanation/Demonstration	4+
108	Conduct of Flight	4+

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Chapter IX

Course Training Standards

1. Purpose. These standards outline the tasks and proficiency required of IUTs during the initial and upgrade training.

2. IUT 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 VMC maneuvers in conjunction with visual clearing.

b. Unless otherwise specified, use ***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 MIF regulates IUT progression to meet required standards prior to phase completion. Standardization Instructors shall evaluate IUT 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 IUT …"

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.

BEHAVIOR STATEMENT	STANDARDS
2. Emergency Procedures/System Failures	
• Maintain in-depth knowledge of NATOPS and appropriate directives. • Begin with the introduction of the emergency by the SI. • End when SI announces simulation complete.	• Maintains positive control of the aircraft. • Properly identifies the simulated emergency or system failure, and calls for the appropriate procedure. • Executes/directs MEMORY items in proper order and in a timely manner. • Calls for appropriate checklist following execution of MEMORY items or when no MEMORY items apply. • Applies appropriate landing criteria for simulation.
3. Headwork/Situational Awareness	
• Comply with the FTI and NATOPS while maintaining situational awareness sufficient for flight safety.	• Understands instructions, demonstrations, and explanations. • Foresees and avoids possible difficulties. • Remains alert and spatially oriented.
4. Basic Air Work	
• Establish and maintain desired altitude, airspeed, and heading during flight.	• Maintains aircraft in balanced flight and within 100 feet, 10 KIAS, 10° of heading. • Appropriately uses power, attitude, and trim. • Levels off within 100 feet of desired altitude. • Accomplishes within ±10 seconds of correct time as applicable.

BEHAVIOR STATEMENT	STANDARDS
5. Flight Planning	
• Complete appropriate items required for specific flight prior to scheduled brief time.	• Plans the flight in a timely manner utilizing real time weather and all appropriate FLIP publications to meet all FTI/flight requirements. • Acquires a current weather brief for route of flight. • Plans and prepares a DD 175 IAW current GP publication and jet log IAW INAV class standards and/or Instrument Ground School. • Ensures that flight plan meets all IFR OPNAV requirements. • Screens all NOTAMS for the route of flight. • Completes Weight and Balance and verifies within limits.
6. Formation NATOPS/Mission Brief	
• Present modified NATOPS/mission brief concerning multiplane operations.	• Executes procedures IAW current FTI with minimal errors.

BEHAVIOR STATEMENT	STANDARDS
7. Ground Operations	
• Begin when departing flight planning room or base operations for the aircraft. • End when transitioning to forward flight. • Begin again when aircraft clears the runway and continue until transitioning to forward flight for a subsequent takeoff or when the aircrew is clear of the aircraft and postflight duties are complete.	• Complies with OPNAVINST 3710.7U, NATOPS, FTI, RWOP, Squadron SOP, and training directives. • Determines aircraft status. • Properly preflights and starts the aircraft. • Properly operates aircraft systems on ground. • Ensures clearance of line personnel, ground equipment, and other aircraft using appropriate signals. • Taxies aircraft at speeds commensurate with safety based on location, weather conditions, and pilot skills. • Maintains taxiway boundaries (including hold short) and gives way to other aircraft as appropriate. • Properly shuts down the aircraft, postflights, and secures the aircraft.

BEHAVIOR STATEMENT	STANDARDS
8. Crew Resource Management	
• 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, and resolves conflict in a positive manner. • Provides positive leadership to the crew, and 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 IAW NATOPS, FTI, and checklist. • Performs all duties in a timely manner.

BEHAVIOR STATEMENT	STANDARDS
9. Cockpit Management	
• Prioritize and manage crew tasks during mission profile. • Ensure complete checklist discipline and the following of all standard operating procedures.	• Correctly prioritizes multiple tasks, and uses all available resources to manage workload. • Accomplishes all required normal and emergency checklists for each phase of flight, and completes checklists in a timely manner with all items addressed.
10. Blindfold Cockpit Check	
• Conduct in CPTs and the simulator as a cockpit orientation drill.	• Without aid of visual cues, IUT is expected to positively identify all items in the cockpit requested by the SI.
11. Radio Procedures	
• Perform verbal communications during mission profile.	• Uses precise, properly formatted radio calls with standard terminology. • Acknowledges all communications. • Understands and prioritizes transmissions in a multiple communications environment. • Asks for and provides clarification when necessary.
12. Shipboard Radio Procedures	
• Perform normal shipboard communication procedures.	• Executes procedures IAW current FTI.
13. Vertical Takeoff	
• Begin when adding power for takeoff. • End when aircraft is safely established in a hover.	• Executes maneuver IAW NATOPS and FTI. • Ascends at a rate commensurate with conditions and skill.

BEHAVIOR STATEMENT	STANDARDS
14. Simulated Engine Failure on Takeoff	
• Begin during a normal transition to forward flight when aircraft is at minimum 50 feet AGL and in position for a safe landing on the runway or otherwise suitable landing site. • End with either a full or power recovery autorotation.	• Clears intended point of landing, checks windspeed and direction, and ensures crew is set for maneuver. • Executes maneuver IAW FTI.
15. Instrument Takeoff	
• Begin when increasing power for takeoff. • End when aircraft is safely airborne, and climb power and airspeed are established.	• Checks aircraft performance and executes procedures IAW NATOPS and FTI. • Maintains takeoff torque ±5 percent. • Smoothly accelerates to appropriate climb speed. • Climbs at 70 KIAS ±5 knots.
16. No-Hover Takeoff	
• Transition to forward flight while avoiding environmental hazards.	• Executes procedures IAW FTI.
17. Section Takeoffs	
• Begin from takeoff. • End on arrival at initial cruising altitude or commencement of next maneuver.	• Executes procedures IAW current FTI. • Wing maintains step-up +10/-5 feet through initial climb. • Lead maintains normal takeoff parameters.

BEHAVIOR STATEMENT	STANDARDS
18. Transition to Forward Flight	
• Begin with forward cyclic input. • End when established on desired altitude and airspeed.	• Checks aircraft performance prior to commencing transition. • Clears aircraft prior to commencing transition. • Considers wind direction and speed prior to transition. • Executes maneuver IAW NATOPS and FTI.
19. Departure Procedures	
• Begin when climb is established. • End when established on desired altitude with desired heading and airspeed or instrument departure is complete.	• Complies with ATC/DP/flight plan clearance or VFR course rules, as appropriate.
20. Course Rules	
• Begin from takeoff. • End when flight event is complete.	• Executes procedures IAW RWOP.
21. Enroute/Fuel Procedures	
• Begin when established at assigned altitude. • End with initial power reduction for descent into terminal environment or entering holding.	• Updates/validates planned time and fuel computations as required to safely and efficiently accomplish the mission IAW FAR, NATOPS, and OPNAVINST 3710.7U. • Effectively uses ATC, FSS, PMSV, and ATIS as required. • Maintains course orientation and alignment with minor deviations (if VFR). • Maintains course centerline between all NAVAIDs and fixes with minor deviations (if IFR). • Effectively plans for next phase, i.e., terminal environment.

BEHAVIOR STATEMENT	STANDARDS
22. Hover	
• Begin when established over desired spot.	• Checks power required IAW NATOPS. • Maintains 5 feet ±1 foot of skid height. • Maintains heading ±10°. • Maintains aircraft position directly over desired location. • Maintains situational awareness.
23. Simulated Loss of Tail Rotor Thrust in a Hover	
• Begin with pedal application. • End when aircraft has landed and collective is full down.	• Executes maneuver IAW NATOPS and FTI.
24. Simulated Fixed Pitch Tail Rotor Malfunction in a Hover	
• Begin with pedal application. • End when aircraft has landed and collective is full down.	• Executes maneuver IAW NATOPS and FTI.
25. Simulated Fixed Pitch Tail Rotor Malfunction in Flight	
• Begin while in the crosswind/downwind. • End in a hover taxi (for demo) or when aircraft is landed and collective is full down.	• Executes maneuver IAW NATOPS and FTI.
26. Turn on the Spot/Clearing Turn	
• Begin with pedal application to affect rate of turn. • End when stabilized on desired heading.	• Considers wind direction and speed prior to commencing turn. • Executes maneuver IAW NATOPS and FTI. • Maintains constant rate of turn. • Maintains skid height ±2 feet.

BEHAVIOR STATEMENT	STANDARDS
27. Low Work	
• Governs the handling of the aircraft under conditions in close proximity to the ground when not specifically covered by another CTS.	• Operates the aircraft IAW OPNAVINST 3710.7U, NATOPS, CTW-5 and squadron SOP, FTI, FLIP, and NOTAMS. • Aircraft control is smooth and positive. • Hover and hover taxi at altitude of 5 feet ±2 feet, heading ±10°, alignment ±3 feet of aircraft centerline and speed commensurate with safety and skills. • Vertical takeoff and landing: Ascends and descends at rate commensurate with safety and skills. • Turns/clearing turns/turns on the spot: Rates of turn are consistent and commensurate with safety, skills, and ambient conditions.
28. Power Checks	
• Begin in a hover. • End in a hover or in transition-to-forward flight.	• Calculates expected power requirements prior to flight. • Rechecks power expectation for current observed ambient conditions and load. • Checks actual power requirement. • Utilizes aircrew for greater situational awareness.

BEHAVIOR STATEMENT	STANDARDS
29. Hover Taxi	
• Begin from a hover with cyclic displacement. • End when established in a hover or transition-to-forward flight.	• Considers wind direction and speed prior to commencing taxi. • Executes maneuver IAW NATOPS and FTI. • Maintains skid height ±2 feet, heading ±10°, alignment ±3 feet of aircraft centerline and safe speed. • Smoothly stops in a hover over desired spot or accelerates into a transition-to-forward flight.
30. Maximum Load Takeoff	
• Begin in a hover when checking N_g power for simulated maximum allowable power. • End when established in transition-to-forward flight after obtaining 40 KIAS at or below 20 feet.	• Clears area before takeoff. • Considers wind direction and speed prior to transition. • Executes maneuver IAW NATOPS and FTI. • After completion of FTI procedures, intercepts normal transition-to-forward flight profile, and parameters.
31. Confined Area Operations	
• Takeoff begins from a hover in the confined area. • Takeoff ends when established in a normal climb. • Landing begins when aircraft is in position for a safe landing in the landing area. • Landing ends when established in a hover.	• Executes maneuver IAW NATOPS and FTI. • Utilizes aircrew for greater situational awareness.

BEHAVIOR STATEMENT	STANDARDS
32. Pinnacle Operations	
• Takeoff begins from a hover on the pinnacle area. • Takeoff ends when established in a normal climb. • Approach begins when aircraft is in position for a safe landing in the landing area. • Approach ends transitioning to a hover or no hover landing.	• Executes maneuver IAW NATOPS and FTI. • Utilizes aircrew for greater situational awareness.
33. Normal Approach	
• Begin with initial power reduction at 500 feet AGL at 70 KIAS. • End when stable in a hover or transitioning to affect a no-hover or sliding landing.	• Executes maneuver IAW NATOPS and FTI. • Maintains desired profile ±50 feet, ±10 KIAS, and 10-20° glideslope. • Executes profile with minimal corrections to power and near constant angle of bank in turns and glideslope on final.
34. Steep Approach	
• Begin with initial power reduction at 500 feet AGL at 70 KIAS. • End when stable in a hover or transitioning to affect a landing.	• Executes maneuver IAW NATOPS and FTI. • Maintains desired profile ±50 feet, ±10 KIAS, and 25-45° glideslope. • Executes profile with minimal corrections to power and near constant angle of bank in turns and glideslope on final.

BEHAVIOR STATEMENT	STANDARDS
35. Hydraulic Boost Off Approach	
• Begin when hydraulic system is secured. • End when the aircraft is safely landed and collective is full down or SNA profile option.	• Executes maneuver IAW NATOPS and FTI to effect an approach with a shallow approach angle. • Lands the aircraft on an improved surface with positive control. ▶ Sliding landing is recommended but not required. ▶ (SNA profile option) Identifies safe landing speed and stabilizes in a hover taxi.
36. High-Speed Approach	
• Begin when accelerating from normal pattern downwind to 100 KIAS. • End in a hover or no-hover landing.	• Executes maneuver IAW NATOPS and FTI.
37. 360-Degree Overhead Approach	
• Begin at 200 feet AGL and 80 KIAS over the intended point of landing. • End in a hover or no-hover landing.	• Executes maneuver IAW NATOPS and FTI.
38. 180-Degree Offset Approach	
• Tactical approach utilizing key terrain feature prior to entry from 180° position.	• Executes procedures IAW current FTI. • Maintains altitude ±25 feet and airspeed ±10 KIAS.
39. 90-Degree Offset Approach	
• Tactical approach utilizing key terrain feature prior to entry from 90° position.	• Executes procedures IAW current FTI. • Maintains altitude ±25 feet and airspeed ±10 KIAS.

BEHAVIOR STATEMENT	STANDARDS
40. Sliding Landing	
• Begin when on final approach. • End when stopped and collective is fully down.	• Executes maneuver IAW NATOPS and FTI. • Lands with groundspeed commensurate with power available, landing surface, and atmospheric conditions. • Touches down with skids in a level attitude, aligned with direction of travel.
41. No-Hover Landing	
• Begin when on final approach. • End when stopped and collective is full down.	• Executes maneuver IAW NATOPS and FTI. • Lands aircraft with little to no forward movement and not vertically from a hover. • Touches down with skids in a level attitude.
42. Stab-Off Flight	
• Begin when automatic flight control system is secured. • End at landing or when AFCS is engaged.	• Complies with NATOPS and FTI procedures. • Maintains ±15° from assigned heading while partial panel in simulated instrument conditions. • Can terminate in either a vertical landing or a no-hover landing.
43. Waveoff (Power On)	
• Begin when called for by Tower or SI, or announced by PAC. • End when stable at desired altitude, heading, and airspeed.	• Executes maneuver IAW NATOPS, RWOP, and FTI. • Adds power smoothly without exceeding continuous operation limitations.

BEHAVIOR STATEMENT	STANDARDS
44. Waveoff (Power Off)	
• Begin when called for by Tower or SI, or announced by PAC. • End when stable at desired altitude, heading, and airspeed.	• Executes maneuver IAW NATOPS, RWOP, and FTI. • Adds power smoothly without exceeding continuous operation limitations.
45. Power Recovery Autorotations	
• Begin at 600 feet AGL and in position for a safe landing on the runway or otherwise suitable landing site. • End in a hover taxi.	• Clears intended point of landing, checks windspeed and direction, and ensures crew is set prior to initiating maneuver. • Executes maneuver IAW NATOPS and FTI.
46. Full Autorotation	
• Begin at 600 feet AGL and in position for a safe landing on the runway or otherwise suitable landing site. • End when aircraft is stopped and collective is full down.	• Clears intended point of landing, checks windspeed and direction, and ensures crew is set prior to initiating maneuver. • Executes maneuver IAW NATOPS and FTI.
47. Maximum Glide Autorotation	
• Begin when in position for a safe landing on the runway or otherwise suitable landing site. • End with either a full or power recovery autorotation.	• Clears intended point of landing, checks windspeed and direction, and ensures crew is set for maneuver. • Executes maneuver IAW NATOPS and FTI.

BEHAVIOR STATEMENT	STANDARDS
48. High-Speed Low-Level Autorotation	
• Begin at 100 feet AGL, 100 KIAS, and in position for a safe landing on the runway or otherwise suitable landing site. • End with either a full or power recovery autorotation.	• Clears intended point of landing, checks windspeed and direction, and ensures crew is set for maneuver. • Executes maneuver IAW NATOPS and FTI.
49. External Load Operations	
• Begin with the attachment of an external load. • End when load is placed and released on intended point of delivery.	• Executes maneuver IAW NATOPS and FTI. • Utilizes aircrew for greater situational awareness.
50. Square Patterns	
• Begin with aircraft in a hover at the starting point. • End after one full transition around the square.	• Considers wind direction and speed prior to commencing. • Executes maneuver IAW FTI. • Maintains skid height ±2 feet, heading ±10°, and alignment ±3 feet of centerline of the aircraft.
51. Simulated Engine Failure at Altitude	
• Begin with the introduction of the engine failure by the SI. • End when SI calls for waveoff or with a power recovery autorotation (at the site).	• Maintains positive control of the aircraft. • Executes maneuver IAW NATOPS and FTI.

BEHAVIOR STATEMENT	STANDARDS
52. Simulated Engine Failure in a Hover (Hover Cut Gun)	
• Begin when the SI rotates the twist grip to flight idle. • End when the aircraft is safely on deck and collective is full down.	• SI ensures aircraft is in a stable 5-foot hover into the wind and over a suitable landing surface. • Executes maneuver IAW NATOPS and FTI. • Lands with no drift and skids level.
53. Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	
• Begin when SI rotates the twist grip to flight idle. • End when the aircraft is safely on deck and collective is full down.	• SI ensures aircraft is in a stable 5-foot/5-knot forward hover taxi into the wind and over suitable landing surface. • Executes maneuver IAW NATOPS and FTI. • Lands with no lateral drift and skids aligned with direction of travel.
54. Quick Stop From a Hover	
• Begin when transitioning from a hover. • End when reestablished on normal climb parameters.	• Executes maneuver IAW NATOPS and FTI. • Maintains altitude –10/+15 feet. • Maintains desired ground track.
55. Level Speed Change	
• Begin with initial power change or turn. • End when aircraft is stabilized in straight-and-level flight in position for the next maneuver.	• Executes all maneuvers IAW NATOPS and FTI. • Maintains ±75 feet. • Maintains ±5°.
56. Level Speed Change/Contact	
• Begin when established at assigned altitude, heading, and airspeed. • End with return to that airspeed and heading.	• Clears area before commencing. • Executes maneuver IAW FTI. • Maintains ±50 feet and ±10° of heading.

BEHAVIOR STATEMENT	STANDARDS
57. Vertical S-1 Pattern	
• Begin with initial power change or turn. • End when aircraft is stabilized in straight-and-level flight in position for the next maneuver.	• Executes all maneuvers IAW NATOPS and FTI. • Maintains VSI at 500 FPM ±200 FPM. • Completes maneuver ±5 KIAS, ±75 feet, and ±5°.
58. Turn Pattern	
• Begin with initial power change or turn. • End when aircraft is stabilized in straight-and-level flight in position for the next maneuver.	• Executes all maneuvers IAW NATOPS and FTI. • Maintains ±5° angle of bank, ±75 feet, and rolls out ±5° from desired heading.
59. Turn Pattern/Contact	
• Begin when established at assigned altitude, heading, and airspeed. • End with return to that heading.	• Clears area before commencing. • Executes maneuver IAW FTI.
60. Oscar Pattern	
• Begin with initial power change or turn. • End when aircraft is stabilized in straight-and-level flight in position for the next maneuver.	• Executes all maneuvers IAW NATOPS and FTI. • Maintains VSI at 500 FPM ±200 FPM. • Makes smooth inputs and timely corrections in relation to standard rate turns. • Completes maneuver ±10 KIAS, ±75 feet, and ±15° heading.

BEHAVIOR STATEMENT	STANDARDS
61. Quick Stop	
• Begin when accelerating from normal pattern downwind to 100 KIAS. • End when established in a normal climb.	• Executes maneuver IAW NATOPS and FTI.
62. Unusual Attitude Recovery	
• Begin when unusual attitude is recognized. • End when aircraft is stable on recovery airspeed, altitude, and heading.	• Recovers aircraft IAW FTI. • Recognizes deviations from normal parameters. • Maintains smooth and positive aircraft control.
63. Instrument Autorotation	
• Begin when twist grip is reduced to flight idle. • End when at recovery altitude at maneuvering airspeed.	• Completes maneuver IAW FTI and NATOPS. • Maintains airspeed IAW FTI ±10 knots. • Recovers at ±50 feet of FTI requirements.
64. Magnetic Compass Turns	
• Apply during all failed directional gyro scenarios.	• Executes procedures IAW current FTI. • Constantly updates headings and air work.
65. Partial Panel Air Work	
• Governs the handling of the aircraft under partial panel conditions.	• Operates the aircraft IAW NATOPS Manual and FTI. • Maintains: ▶ Smooth and positive aircraft control. ▶ ±15° of assigned heading. ▶ ±150 feet of assigned altitude. ▶ ±15 knots of assigned/briefed airspeed. • Does not exceed standard rate turns.

BEHAVIOR STATEMENT	STANDARDS
66. Radial/Bearing Intercepts	
• Begin when given an assigned radial/ bearing by the SI. • End once established on that radial/bearing.	• Executes procedure and intercepts assigned radial/bearing IAW the FTI.
67. TACAN Point-to-Point Navigation	
• Navigation from one TACAN fix to another TACAN fix.	• Has a general understanding of TACAN capabilities and procedures. • Demonstrates the ability to navigate IAW the FTI to an assigned TACAN/VORTAC fix within ±5 radials and ±0.5 DME concurrently.
68. Terminal Procedures	
• IFR: Begin when departing the MDA or DH on a visual glidepath to the landing environment. • End with commencement of ground operations. • VFR: Begin at termination of VFR navigation. • End with commencement of ground operations.	• Establishes proper communication and complies with appropriate ATC in a timely manner. • Once VMC, maintains a safe visual glidepath to the landing environment, allowing for safe visual maneuvering to a landing. • Follows visual approach guidance as appropriate, i.e., VASI, PAPI, etc. • If VASI/PAPI does not apply, then helicopter maintains a safe profile to either the runway threshold or short final for an appropriate helipad.

BEHAVIOR STATEMENT	STANDARDS
69. Non-Precision Approach	
• Begin when established on a published portion of approach or cleared for the approach, or on radar vectors to final. • End at transition to landing environment or applying power to execute a missed approach/climbout.	• Performs IAW the FTI/INAV procedures and the applicable FAR/AIM. • FAF to MAP: Begins timing within ±5 seconds if appropriate, ±5 KIAS of approach airspeed, final approach course (FAC) ±5° and/or ±3/4 deflection (±3 dot width). • Arrives at the MDA prior to MAP in a safe position to make a normal visual descent to land. • Maintains MDA +50/-0 feet. • Executes the missed approach procedure when applicable for the intended runway. • NDB final approach: Maintains ±10° bearing. • ASR approach: Does not exceed “well left/right of course” and complies with the controller’s instructions in a timely manner. • GPS approach: Executes IAW current FTI.

BEHAVIOR STATEMENT	STANDARDS
70. Precision Approach	
• Begin when established on a published portion of approach or cleared for the approach, or on radar vectors to final. • End at transition to landing environment or applying power to execute a missed approach/climbout.	• Performs IAW the FTI/INAV procedures and the applicable FAR/AIM. • ILS final: Maintains within ¾ deflection (±3 dot width) of localizer and glideslope; maintains airspeed ±10 KIAS. • PAR approach: Does not exceed "well above/below glidepath" or "well left/right of course" and complies with the controller's instructions in a timely manner. • Immediately initiates the missed approach procedure at DH, if applicable.
71. Failed Directional Gyro Approaches	
• Begin when established on a published portion of approach or cleared for the approach, or on radar vectors to final. • End at transition to landing environment or applying power to execute a missed approach/climbout. • IP initiates the failed directional gyro situation by pulling the HSI circuit breaker.	• Executes the maneuver IAW current FTI and NATOPS procedures in a timely manner. • TACAN/VOR failed card: IAF to MAP, begins timing within ±5 seconds if appropriate, ±10 KIAS of approach airspeed, FAC ±5° and/or ±¾ deflection (±3 dot width). • Arrives at the MDA prior to MAP in a safe position to make a normal visual descent to land. • Maintains MDA +100/-0 feet. • Executes the missed approach procedure when applicable for the intended runway. • Radar Approaches: Does not exceed "well left/right of course" and complies with the controller's instructions in a timely manner. • Does not exceed full SRT or half SRT as appropriate for the segment of the approach.

BEHAVIOR STATEMENT	STANDARDS
72. Holding	
• Begin when crossing the holding fix. • End when departing the holding pattern for a subsequent fix or the approach.	• Enters and maintains holding IAW the FTI/INAV procedures and the applicable FAR/AIM. • While in holding, plans ahead for follow-on navigation.
73. Missed Approach	
• Execute procedures when aircraft arrives at the DH or the MAP, and power is added to execute either published missed approach instructions or to comply with ATC instructions.	• Accomplishes IAW FTI and NATOPS. • Complies with FLIP missed approach procedures or climbout instructions, as appropriate. • Requests, if appropriate, ATC clearance to an alternate airport or a new clearance limit.
74. Crossover	
• Begin when Wing moves from the normal cruise position on one side of Lead to the normal cruise position on the other side.	• Executes procedures IAW current FTI and NATOPS. • Lead maintains stable platform. • Wing maintains step-up +10/-5 feet.
75. Cruise Turns	
• Begin when Wing maneuvers about Lead using radius of turn to maintain cruise position in a turn without adjusting power.	• Executes procedures IAW current FTI. • Lead maintains AOB ±5°. • Wing: 3-6 rotor diameters, +10 feet step-up and ±10° of bearing.
76. Cruise Climbs and Descents	
• Begin when flight climbs and descends in cruise formation.	• Executes procedures IAW current FTI. • Lead maintains 500 FPM climb/ descent ±100 FPM and ±5 KIAS. • Wing maintains step-up +10 feet and ±10° of bearing.

BEHAVIOR STATEMENT	STANDARDS
77. Breakup and Rendezvous	
• Begin when flight separates. • End when flight returns to section cruise formation.	• Executes procedures IAW current FTI. • Maintains ±5° AOB. • Wing maintains step-up and avoids ±10° of bearing.
78. Overrun	
• Begin when Wing maneuvers to discontinue join-up due to excessive closure rate. • End with Wing stabilized in section cruise.	• Wing recognizes requirement for overrun in time to safely execute procedures IAW the current FTI.
79. Lead Change	
• Transfer control of the formation from Lead to Wing.	• Executes procedures IAW current FTI and NATOPS.
80. Section Cruise	
• Allow aircraft to fly in close proximity to one another safely.	• Executes procedures IAW current FTI. • Lead maintains altitude ±50 feet. • Wing maintains ±10° of bearing.
81. Section Landings	
• Perform landing in close formation.	• Executes procedures IAW current FTI. • Lead maintains normal approach profile IAW CTS. • Wing maintains ±10° of bearing.
82. Combat Cruise Flight	
• Allow maximum flight flexibility and maneuverability while retaining control and flight discipline.	• Executes procedures IAW current FTI.

BEHAVIOR STATEMENT	STANDARDS
83. VFR Navigation	
• Begin at start of visual navigation route. • End with terminal procedures.	• Accomplishes mission IAW FTI and FAR/AIM. • Arrives at brief with a neat and properly prepared sectional and all required documents per FTI and VNAV binders. • Demonstrates a working knowledge of chart depictions and airspace limitations and rules. • Executes proper entry into uncontrolled tower pattern IAW FAR/AIM (if applicable). • Makes appropriate course corrections to maneuver the aircraft to checkpoints and recovery airfield. • Proactive in navigation and leg timing.
84. Low-Level Navigation	
• Navigate at low level with appropriate charts.	• Executes procedures IAW current FTI. • Positively identifies chart information in conjunction with terrain.
85. Timing	
• Begin at first checkpoint on route. • End at last checkpoint on route.	• Executes procedures IAW current FTI.
86. Low-Level Basic Instruments	
• Execute basic instrument procedures while at low level.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet.
87. Stab-Off LLBI	
• Execute basic instrument procedures under diminished stabilization.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet.

BEHAVIOR STATEMENT	STANDARDS
88. Partial Panel LLBI	
• Execute basic instrument procedures with partial instrumentation.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet.
89. Section Low-Level Flight/Navigation	
• Conduct low-level navigation with emphasis on multiplane operations.	• Executes procedures IAW current FTI. • Maintains section orientation as both Lead and Wing.
90. Search and Rescue Patterns/Scenarios	
• Begin with SI-driven scenario, and IUT demonstrates general knowledge and techniques regarding search and rescue pattern selection.	• Accomplishes mission IAW current FTI. • Demonstrates knowledge of SAR terminology, responsibilities of OSC, search-planning variables, and a general knowledge of the SAR TACAID. • Determines correct search plan for given scenario. • Demonstrates CRM leadership in crew utilization during scenario. • Adheres to SAR pattern FTI guidelines.
91. Windline Rescue Pattern	
• Begin with the completion of a selected SAR pattern or locating survivor, and IUT selects entry for rescue based on last known winds.	• Executes procedures IAW current FTI. • Calculates timing correction based on last known wind for outbound leg. • Determines required turn prior to pattern entry.
92. Section High-Speed Approaches	
• Allow flight to execute a high-speed approach in formation.	• Executes procedures IAW current FTI. • Lead maintains 50 feet until intercepting steep approach glideslope. • Wing maintains step-up +10 feet and ±10° of bearing.

BEHAVIOR STATEMENT	STANDARDS
93. Emergency Low Visibility Approach	
• Approach required for emergency weather conditions.	• Executes procedures IAW current FTI.
94. Shipboard TACAN/NDB Approach	
• Execute radio instrument procedures in a shipboard environment.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet. • Computes BRC-corrected headings and wind-corrected timing for approach in an expeditious manner.
95. Field Deck Landing Practice (Takeoff/Landing)	
• Preparation pattern designed to demonstrate shipboard landing pattern.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet, airspeed ±5 KIAS, and FAC ±10°.
96. Section Waveoff	
• Begin with either aircraft, individually or collectively, discontinuing an approach.	• Executes procedures IAW current FTI. • Lead/Wing makes appropriate waveoff transmission(s).
97. Field Deck Landing Practice Waveoff	
• Begin when approach terminates, which is deemed unsafe or uncomfortable.	• Executes procedures IAW current FTI.
98. Response to LSE	
• Operate aircraft under LSE direction.	• Recognizes information given by LSE and follows direction properly.
99. Ship Deck Landing Qualification (Takeoff/Landing)	
• Conduct normal shipboard environment operations.	• Executes procedures IAW current FTI and NATOPS. • Maintains altitude ±50 feet, airspeed ±5 KIAS, and FAC ±10°.

BEHAVIOR STATEMENT	STANDARDS
100. Vertical Landing	
• Begin when established over desired landing spot. • End when aircraft is safely on deck and collective is full down.	• Executes maneuver IAW NATOPS and FTI. • Continues descent without intermediate stops.
101. NVD Knowledge	
• The specific knowledge required for safe, efficient flight operations and mission effectiveness as it relates to the use of night vision devices.	• Conducts proper NVG preflight. • Demonstrates full knowledge of NVG light effects and phenomenon. • Demonstrates proper use of aircraft interior and exterior lighting. • Understands proper NVG scan pattern. • Understands capabilities and limitations of NVGs. • Demonstrates knowledge of the use of sun/moon charts in mission planning.
102. Goggle/De-goggle Procedures	
• Begin when the need to goggle or de-goggle arises in the aircraft, whether in-flight or on the deck.	• Demonstrates full knowledge of goggle/de-goggle procedures. • Able to goggle/de-goggle in a timely fashion, with regard to safety for phase of flight. • Sets proper aircraft lighting regime, both interior and exterior.

BEHAVIOR STATEMENT	STANDARDS
103. NVD Emergency Procedures	
• The specific application of NATOPS procedures to resolve an aircraft emergency whether airborne or on the ground as it relates to night vision devices.	• Handles the emergency IAW NATOPS and FTI. • Demonstrates sound judgment when no specific guidance exists. • Resolves the emergency and carries to a logical conclusion. • Maneuvers the aircraft in a safe manner, descending no lower than specified in local procedures and no slower than 40 KIAS. • Demonstrates thorough knowledge of NVG battery failure, and NVG tube failure, including recognition of each condition and the subsequent emergency procedures.
104. Error Detection, Analysis, Correction	
• Identify typical student errors and propose effective, corrective solutions.	• Enables a positive learning environment through accurate, timely error detection.
105. Defensive Posturing	
• Manage posture and cockpit duties to facilitate rapid assumption of the controls to prevent errant and critical inputs in the wrong direction.	• Maintains a position conducive to assuming controls in a timely manner or preventing erroneous control input.

BEHAVIOR STATEMENT	STANDARDS
106. Instructional Technique	
• Provide further explanation that amplifies the procedures.	• Provides explanation that is an enhancement of FTI and enables further understanding of procedures.
107. Maneuver Explanation/Demonstration	
• Present maneuvers in a clear, verbal, standard method while performing the maneuver.	• Makes clear, verbal presentation that is IAW FTI and enhances understanding of basic procedure.
108. Conduct of Flight	
• Manage flight to adequately utilize allotted time to conduct all necessary maneuvers in an organized manner.	• Safely conducts flight IAW all applicable procedures and manuals.

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Chapter X

Master Materials List

Individually Issued Materials

NOMENCLATURE	IDENTIFICATION	QTY PER PILOT
1. Flight Training Instructions		
a. Contact FTI	CNATRA P-457	1
b. Instrument/Navigation FTI	CNATRA P-458	1
c. Tactical/Formation/NVD FTI	CNATRA P-459	1
2. Ground Training Publications		
a. Aerodynamics Workbook	CNATRA P-401	1
b. Systems Workbook	CNATRA P-402	1
c. IFR Workbook	CNATRA P-403	1
d. Flight Planning Workbook	CNATRA P-404	1

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