NAVAL AIR TRAINING COMMAND

NAS CORPUS CHRISTI, TEXAS
CIN Q-2C-0156

CNATRAINST 1542.156D
29 SEP 2015

CHIEF OF NAVAL AIR TRAINING

ADVANCED HELICOPTER MPTS CURRICULUM

2015

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

CNATRAINST 1542.156D
N714
29 Sep 15

CNATRA INSTRUCTION 1542.156D

Subj: ADVANCED HELICOPTER MULTI-SERVICE PILOT TRAINING SYSTEM (MPTS)

1. Purpose. To publish the curriculum for training Student Military Aviators (SMA) in the Advanced Helicopter phase of Naval Air Training Command (NATRACOM) flight training.

2. Cancellation. CNATRAINST 1542.156C will be cancelled when the last student enrolled completes the curriculum.

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

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

D. M. EDGECOMB
Chief of Staff

Distribution:
CNATRA Website
CNATRA SharePoint

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LIST OF EFFECTIVE PAGES

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CHAPTER X. MASTER MATERIALS LIST

SUMMARY OF CHANGES

CHANGE NUMBER	DATE OF CHANGE	CHANGE DESCRIPTION	PAGES AFFECTED/ INITIALS

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COURSE DATA

1. Course Title. Advanced Helicopter Multi-Service Pilot Training System (MPTS).

2. Course ID Number (CIN). Q-2C-0156.

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

4. Course Status. Active.

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

6. Prerequisite Training. Successful completion of MPTS Primary Curriculum (Q-2A-0108), T-6B JPPT (Q-2A-0217), or USN T-6 Joint Primary Pilot Training (Q-2B-0181).

7. Security Clearance Requirements. None.

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

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

Training Days	Calendar Weeks
126.1	28

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

HELICOPTER		
Subject	**Symbol**	**Hours**
Indoctrination	G01	8.5
Helicopter Aircrew Breathing Device	G02	4.0
Safety	G03	1.0
Global Positioning System	G04	1.0
Total		**14.5**

b. Flight Support

HELICOPTER		
Subject	**Symbol**	**Hours**
Systems 'B'	C01	9.5
Helicopter Aerodynamics	C02	25.0
Preflight Procedures 'B'	C03	2.0
Crew Resource Management - Contact	C04	1.0
Course Rules Flight Procedures	C05	3.0
NATOPS Examinations	C06	6.0
Mission Planning System	N01	2.0
Tactics Flight Procedures	T01	1.5
Systems 'C'	C07	3.0
Basic Instrument Flight Procedures	I01	1.5
Visual Flight Rules Navigation	N02	2.5
Low-Level Navigation	N03	2.5
Formation Procedures	F01	3.0
Shipboard Operations/Search and Rescue	S01	1.0
Emergency Procedures	C08	1.5
Crew Resource Management - Instrument	I02	2.0
Instrument Navigation	I03	27.0
Radio Instruments	I04	5.0
Night Vision Device Training	V01	8.0
Total		**107.0**

c. Flight Training. The programmed times for flight training events and media are:

HELICOPTER								
Flight/Events	**CPT**		**SIM**		**TH-57B/C**			
					Dual		**Solo**	
	Flts	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**	**Flts**	**Hrs**
Procedures Trainer	5	6.5						
Contact 'B'					13	23.1	1	1.0
Contact 'B' Safe-for-Solo Check Ride					1	1.2		
Contact 'C'			1	1.3	4	6.0		
Contact Emergency Procedures			1	1.3				
Contact 'C' Check Ride					1	1.2		
Night Contact 'C'					2	3.0		
Basic Instruments			5	6.5	6	10.2		
Basic Instruments Check Ride					1	1.5		
Instrument Emergency Procedures			2	2.6				
Radio Instruments			18	23.4	8	15.2		
Airways Navigation			2	2.6				
Instrument Navigation					4	8.0	1	2.0
Instrument "Safe for Solo" Check Ride					1	1.8		
Day Navigation					3	5.1	1	1.7
Night Navigation					1	1.7		
Low-Level Navigation					5	7.5		
Formation					3	6.9		
Combat Cruise Formation					1	1.8		
Tactics					3	4.5		
Shipboard/SAR			2	2.6	2	2.0		
Night Vision Device			1	1.3	5	8.5		
Totals	**5**	**6.5**	**32**	**41.6**	**64**	**109.2**	**3**	**4.7**

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

ADDITIONAL FORMAL TRAINING TIME PER EVENT			
Training Area	**Brief/Preflight/ Taxi**	**Taxi/Debrief**	**Total**
Flight	2.25	0.5	2.75
Simulator/CPT	0.50	0.5	1.00

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

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

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

20. Preceding Curriculum Data. This curriculum replaces CNATRAINST 1542.156C.

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

ABBREVIATIONS

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

ADF	-	Automatic Direction Finder
AERO	-	Aerodynamics
AGL	-	Above Ground Level
AIM	-	Aeronautical Information Manual
AIRMET	-	Airman's Meteorological Information (In-Flight Weather Advisory)
APU	-	Auxiliary Power Unit
ASI	-	Aviation Student Indoctrination
ASR	-	Airport Surveillance Radar
ATC	-	Air Traffic Control
ATF	-	Aviation Training Jacket
ATIS	-	Automatic Terminal Information Service
ATS	-	Aviation Training Summary
BAW	-	Basic Air Work
BIFP	-	Basic Instrument Flight Procedures
CAI	-	Computer-Assisted Instruction
CDO	-	Command Duty Officer
CO	-	Commanding Officer
CPT	-	Cockpit Procedures Trainer
CR	-	Course Rules
CRM	-	Crew Resource Management
CTS	-	Course Training Standard
DCONFP	-	Day Contact Flight Procedures
DH	-	Decision Height

DME	-	Distance Measuring Equipment
DP	-	Departure Procedures
EMFP	-	Emergency Flight Procedures
EOB	-	End of Block
EP	-	Emergency Procedure
ET	-	Extra Training
FAA	-	Federal Aviation Administration
FAC	-	Final Approach Course
FAR	-	Federal Aviation Regulation
FIH	-	Flight Information Handbook
FLIP	-	Flight Information Publication
FORMFP	-	Formation Flight Procedures
FP	-	Full Panel
FSS	-	Flight Service Station
FTI	-	Flight Training Instructions
GCA	-	Ground-Controlled Approach
GPS	-	Global Positioning System
GPSFP	-	Global Positioning System Flight Procedures
HABD	-	Helicopter Aircrew Breathing Device
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

ILS	-	Instrument Landing System
IMC	-	Instrument Meteorological Conditions
IMS	-	International Military Student
INAV	-	Instrument Navigation
IP	-	Instructor Pilot
JOG	-	Joint Operations Graphic (Chart)
KNDZ	-	NAS South Whiting Field
LECT	-	Lecture
LHD/CV	-	Amphibious Assault Ship (General Purpose)/Multi-Purpose Aircraft Carrier
LOA	-	Letter of Agreement
LOC	-	Localizer
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
NG	-	No Grade

NOTAMS	-	Notices to Airmen
NVD	-	Night Vision Device
ODO	-	Operations Duty Officer
OLQ	-	Officer-Like Quality
OPNAV	-	Office of the Chief of Naval Operations
OPSO	-	Operations Officer
ORM	-	Operational Risk Management
OSC	-	On-Scene Commander
PAN	-	Word to signify urgent condition
PAR	-	Precision Approach Radar
PMSV	-	Pilot Meteorological Information Service
PNAC	-	Pilot Not at the Controls
PP	-	Partial Panel
PT	-	Procedure Turn
RI	-	Radio Instruments
RIFP	-	Radio Instruments Flight Procedures
RNAV	-	Area Navigation System
RON	-	Remain Overnight
RPM	-	Revolutions Per Minute
RRU	-	Ready Room UNSAT
RV	-	Radar Vectors
RWOP	-	Rotary Wing Operating Procedures
SAR	-	Search and Rescue
SIGMET	-	Significant Meteorological Information
Sim	-	Simulator
SLAP	-	Solar/Lunar Almanac Prediction (software)

SMS	-	Student Monitoring Status
SNA	-	Student Naval Aviator
SOP	-	Standard Operating Procedure
SS	-	Self-Study
SSR	-	Special Syllabus Requirement
STARS	-	Standard Terminal Arrivals
SYS	-	Systems
TACAID	-	Tactical Aid
TACAN	-	Tactical Air Navigation
TERF	-	Terrain Flight
TFP	-	Tactics Flight Procedures
TRB	-	Training Review Board
UNSAT	-	Unsatisfactory
VFR	-	Visual Flight Rules
VFRNAV	-	Visual Flight Rules Navigation
VMC	-	Visual Meteorological Conditions
VNAVFP	-	Visual Navigation Flight Procedures
VOR	-	Very High Frequency (VHF) Omnidirectional Range
VSI	-	Vertical Speed Indicator
WU	-	Warmup

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GLOSSARY

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

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

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

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

5. Block of Training. A sequential series of lessons within a training stage sharing an identical MIF. The third 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, which is conducted by a standardization instructor qualified in that stage.

8. Class Advisor (CA). An Instructor Pilot assigned by Student Control to provide counseling and guidance to a specific student pilot 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 (CTS). 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 (FTIs), 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 (Rev 4-04) Training Review Board (TRB) Summary Form, generated by the TRB, that summarizes a specific student's progress in a given syllabus and provides detailed information on the application of MPTS training for that student. Deliverables indicate whether the quality and continuity of training provided was IAW CNATRAINST 1542.156D and IAW CNATRAINST 1500.4H.

15. End of Block (EOB). Last event in block. In order to progress past EOB, the student must meet or exceed MIF on all critical items, and all optional items attempted, by the end of 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.

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

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

18. Final Progress Check (FPC) (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 student to normal syllabus flow. An UNSAT FPC results in a TRB.

19. Flight Training Instruction (FTI). 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 (IPC) (SXX88). A special check given by the Operations Officer or his representative. A satisfactory IPC returns the student to normal syllabus flow. An UNSAT IPC results in an FPC.

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

Char	**Meaning**	**Remarks**		
1st	Stage	G—Ground C—Contact S—Shipboard/ SAR	I—Instrument N—Navigation 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	

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

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

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

26. On-Wing. The student's assigned instructor in the Contact 40 through 42 blocks of training and IAW CNATRAINST 1500.4H.

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

a. Pass - Return to training.

b. Fail - Proceed with the elimination process/eliminate.

28. Phase of Training. A major division in the course of training. Helicopter 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 authorized to administer initial or final progress checks.

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

32. Special Syllabus Requirement (SSR). One-time, ungraded demonstration items.

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

34. Student Monitoring Status (SMS). Squadron-initiated status to address substandard student performance.

35. Supplemental ATF. A form inserted into a student's ATJ that contains non-syllabus information. Also referred to as a "writeup" in TIMS.

36. Training Media. MPTS media include aircraft, simulator, Cockpit Procedures Trainers (CPTs), ground training, and CAI. The second character in the lesson identifier designates the training media.

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

38. 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.

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

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Chapter I

General Instructions

1. Syllabus Management

a. Distribution. Participating squadron personnel.

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

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

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

e. Execution. Students will execute all the curriculum events.

f. Syllabus Description. Advanced Helicopter MPTS consists of undergraduate helicopter training for USN, USMC, USCG, and IMS students who will go to helicopter follow-on pipelines. This advanced phase of training is flown in both the TH-57B and the TH-57C aircraft. This syllabus is divided into stages. Stages are grouped by like flight training regimes: Ground, Contact, Instrument, Navigation, Formation, Tactical, Shipboard/SAR, and Night Vision Device. Each stage is subdivided into training blocks. The training blocks consist of a specified number of flights. Maneuver item files (MIFs) identify the acceptable level of performance that must be achieved at the completion of each training block.

g. Grade Calculation

(1) Phase Aggregate Score (PAS). An NFS's PAS is a comparative ranking based on the previous population of completers for a specific phase or portion of a phase of aviation training. PAS indicates only NFS performance relative to a normative population of other recent NFSs. Under the MPTS system, PAS is not by itself an indication of whether an NFS has met the criteria necessary for winging or continuation in aviation training. PAS is calculated for each block within a curriculum, for the subset of blocks completed by an NFS still in training (Interim PAS), and for the entire phase.

MPTS SNA Calculations. From a population of previous SNAs, an SNA's PAS is calculated using equation (1), below:

$$SNA\_PAS = 50 + 10 * \left(0.9 * \frac{S - M1}{S1} + 0.1 * \frac{M2 - NMU}{S2} \right) \quad (1)$$

Where

S – SNA Score
NMU – SNA NMU
M1 – Squadron Average Score
M2 – Squadron Average Number of Marginals and UNSATs (NMU)
S1 – Standard Deviation of Squadron Score
S2 – Standard Deviation of Squadron NMU

(2) NSS. NSS is calculated to correct for potential non-normality in the distribution of PAS. NSS is calculated for each block within a curriculum, for the subset of blocks completed by an NFS still in training (Interim NSS), and for the entire phase. NSS is calculated from PAS by using equation (2), below:

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

Where

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

2. Training Management

a. Syllabus Progression. Fly syllabus events within each stage sequentially, except the I45 block may be flown anytime within the I43/I44 blocks and S4001 and S4101 can be flown sequentially any time after I4290/S3002. Do not start a block without all prerequisites. Students may be in different stages or blocks simultaneously. Where applicable, students will be eligible for, and shall be prepared for, more than one syllabus event. Students must complete all events. Simulator copilot events may be waived by OPSO on a case-by-case basis. Document reasons for waived events on a supplemental ATF. The flowcharts on page I-4 and I-5 delineate the sequence of events. 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

two graded events (flight, simulator, or exam) per student per day.

b. Accelerated Progression. Under exceptional circumstances, a student's previous flight experience or demonstrated proficiency may warrant accelerated progression. The Squadron Commander may advance the student to the next block of instruction when all required items for the current block of instruction meet EOB MIF. This policy shall not be used to accelerate squadron production goals. It is strictly for the rare instances where the student's demonstrated proficiency makes completion of all events within a block of instruction unnecessary. For example, pipeline reassignment students from Strike may warrant acceleration through the Instrument stage based on previous instrument training. All records for the accelerated student, including the ATJ and mini-ATJ, will be clearly marked ACCELERATED PROGRESSION. ATFs for the events not flown will be completed with a note in the remarks section stating "ACCELERATED PROGRESSION – EVENT NOT FLOWN. ATF COMPLETED FOR ADMINISTRATIVE PURPOSES ONLY IAW CNATRAINST 1500.4H."

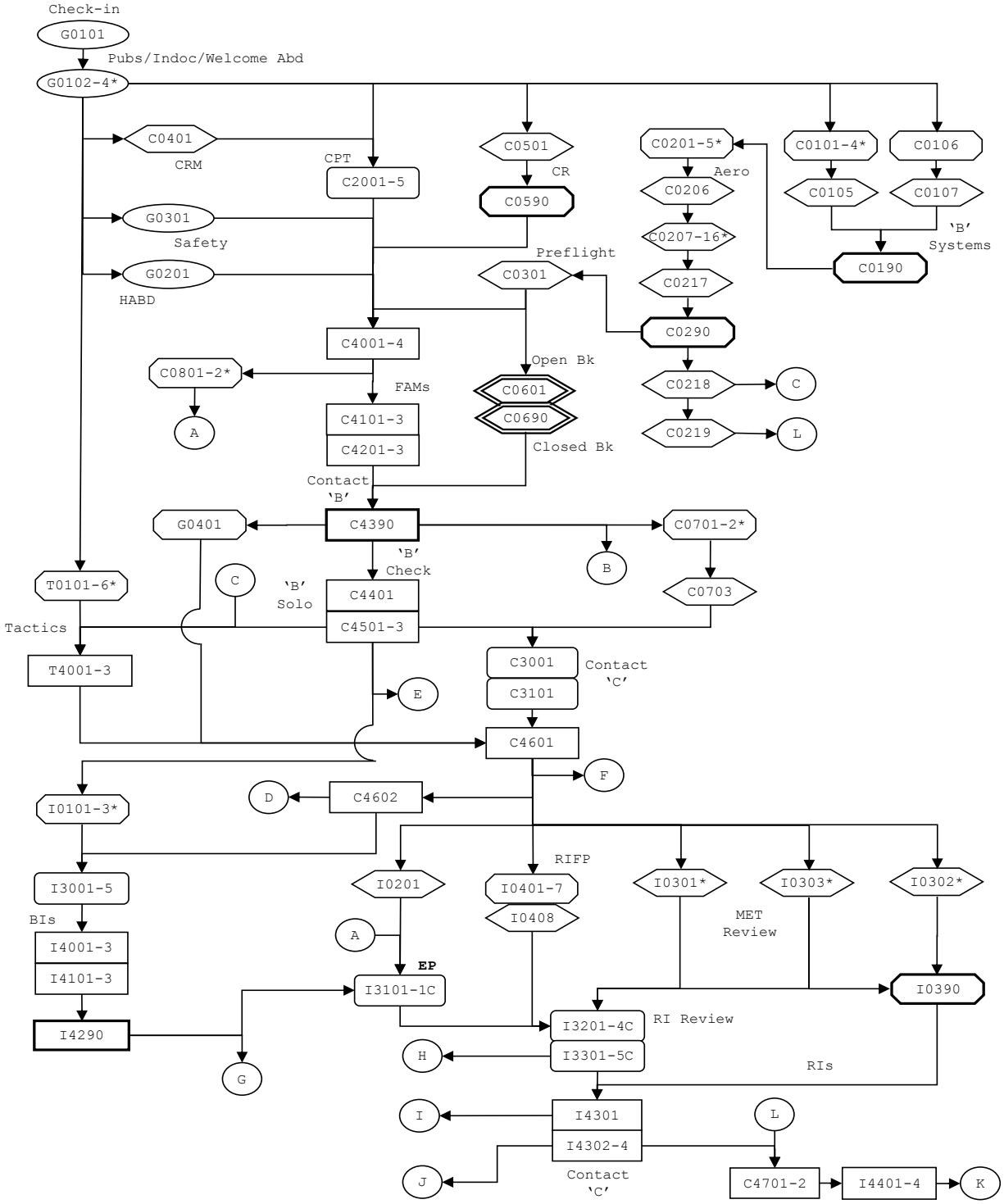
c. Maneuver Continuity. Students must accomplish previously introduced maneuvers frequently enough to ensure maintaining required proficiency.

d. Hours/X. Instructor Pilots shall plan and execute missions to meet H/X as closely as practical. If actual event length varies from H/X by more than 0.3 hours, annotate reason(s) in ATF's general comments section. A student's deficiency is not an acceptable reason to exceed H/X by more than 0.3 hours.

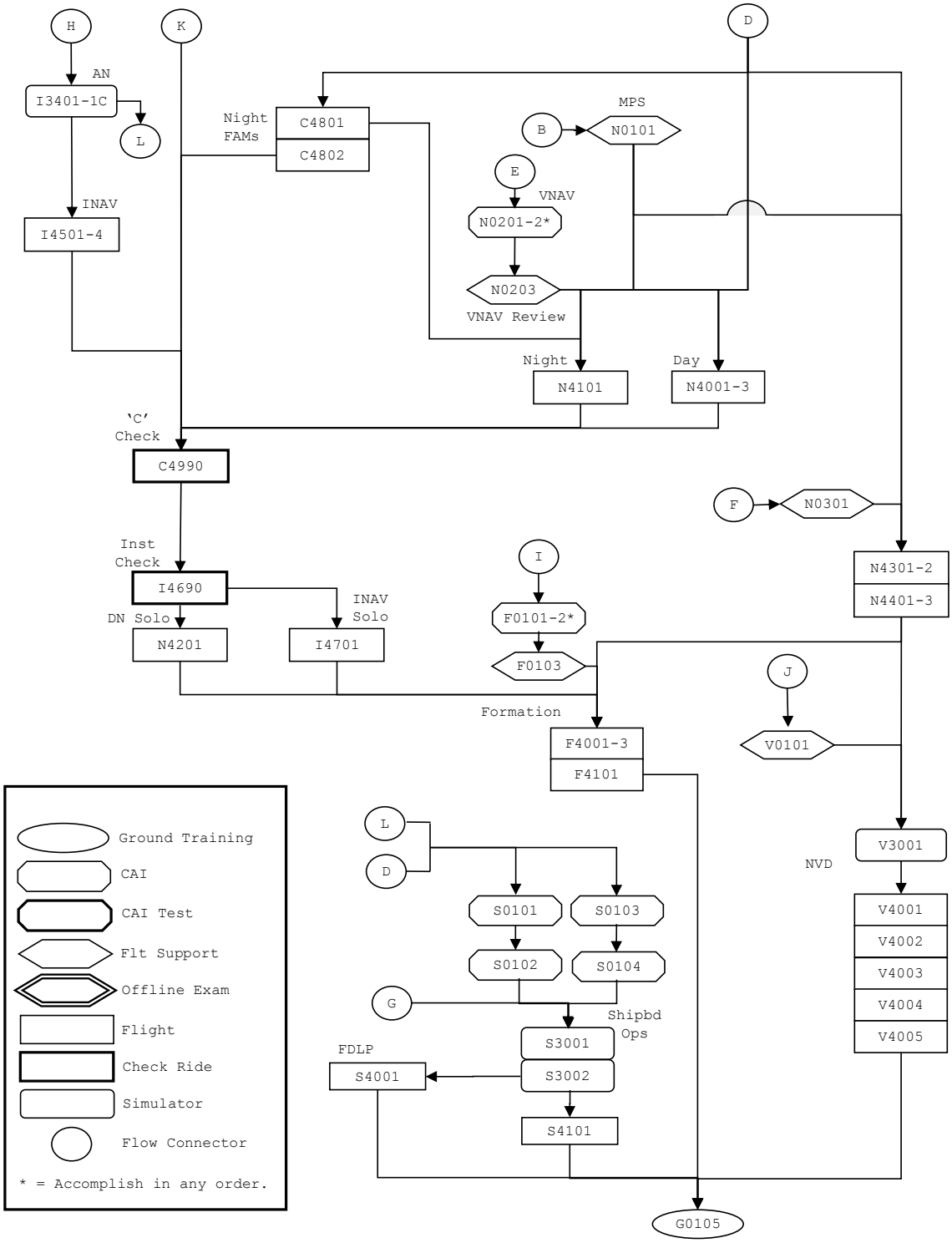
e. Special Syllabus Requirements. SSRs are allocated to flights. Unless noted otherwise, IPs may accomplish SSRs on any flight within the block. SSRs shall be completed in the specified block. Annotate completed SSRs in the ATF's SSR comments section. Assign NG/1 as the SSR maneuver grade.

f. Aviation Training Jacket Reviews. Class Advisors will conduct jacket reviews at least weekly. SMS students require weekly ATJ reviews with Student Control Officer or representative.

ADVANCED HELICOPTER COURSE FLOW (PART 1)



ADVANCED HELICOPTER COURSE FLOW (PART 2)



3. UNSAT Performance. (See ***Progress Check Training Review Process***, page I-21).

a. Flight/Simulator

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

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

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

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

(5) Failing an FPC results in a TRB.

b. Ready Room UNSAT (RRU)

(1) An RRU on any syllabus event will result in an IPC. Document the RRU on a pink ATF for that event. The event will be marked as incomplete with an UNSAT grade in the procedures column. On remediation of UNSAT performance, the event will be flown to completion, and general knowledge and emergency procedures will be incorporated into the overall grading solution. A missed brief does not necessarily constitute a "Ready Room UNSAT" and will be handled by SNA's squadron. Use a supplemental ATF (writeup) to document a missed brief. An IPC triggered by an RRU may be performed as a brief only, or as a complete event. In either case, the NFS must be informed at least the day prior regarding how the IPC will be conducted, and all pre-IPC and post-IPC counseling must be conducted and documented.

(2) A second or subsequent RRU or failed IPC will result in an FPC. Document the failed IPC on a pink ATF generating the Progress Check.

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

c. Academic. Failing any two exams triggers an IPC or FPC as appropriate. All subsequent exam failures will trigger an FPC. The IPC or FPC shall be completed prior to retake.

d. Remediation

(1) A ground evaluation emphasizing the deficient areas may clear an UNSAT check ride or end of block syllabus event caused solely by ground operations.

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

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

(b) The simulator is suited to the failed maneuver.

e. Restrictions. Until remediation of the UNSAT:

(1) The student shall not fly solo.

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

4. Training Review Board. Refer to CNATRAINST 1500.4H.

5. Instructor Continuity. Students shall fly Contact stage events C4001-C4203 with their on-wing. Exceptions:

(a) Students shall fly at least one, but not more than two, of the C4102-C4203 events as an off-wing flight.

(b) Any Contact 'B' Stan IP may substitute as on-wing in the event the student's on-wing is not available and an on-wing change is not prudent.

6. Break in Training Warmup Events (SXX86). Non-syllabus warmup events compensate for breaks in training. Eligibility is based on the number of days since the last flight or simulator in the same stage. All warmups shall be dual and coded as an SXX86, e.g., C4186. Warmup grades do not satisfy block or MIF requirements and shall not be included in the cumulative totals. For all "break in stage" flights, refer to the chart on page I-9, with the following exceptions. A "break in stage" warmup is not warranted on the following events: C3001, C4601-C4990, I3101, I3201, and N4002-N4101. If an SNA has not flown any syllabus event by the 14th day, then they rate a mandatory warmup.

a. Warmups Between Stages. Warmup events shall not be given prior to the first flight in stage unless 14 days have elapsed since any syllabus flight or simulator event.

b. Warmup Event Criteria. Optional warmup events are based on the student's performance. If the student's performance meets MIF, the event shall count as the next syllabus event. If a student's performance is marginal or UNSAT due to the break in training, the flight is a warmup.

(1) Additional Warmup Events

(a) The Operations Officer may direct additional warmup aircraft or simulator/CPT events for extended breaks in training. The Commanding Officer shall determine a training plan if the SNA exceeds 30 days out of the cockpit.

(b) Award a warmup flight if more than five calendar days have elapsed without flying in the aircraft between a check ride (SXX90) and the follow-on solo event or more than one calendar day between C4390 and C4401.

(2) Not Safe for Solo. If the student is not safe for solo:

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

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

(c) An IPC/FPC shall follow failure of the second safe-for-solo.

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

*Break = (Current Julian Date) – (Julian Date of last event, regardless of stage).

7. Additional Flights and Simulators

a. Extra Training Events (SXX87). All ETs shall be dual and coded as SXX87, e.g., C4187. ET events include, but are not limited to IPC/FPC ET events. Only award ET events to compensate for training inadequacies, e.g., poor event/maneuver continuity, or improper instruction.

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

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

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

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

b. Copilot Events. The copilot events shall be documented on separate ATFs that have the event number followed by a "C." For example, the student will fly an I3101 and I3101C, etc. The copilot events shall not count toward the SNA's total number of graded items, except for I3401C; however, UNSAT performance shall trigger the IPC/FPC process. Copilot events may be waived by the OPSO on a case-by-case basis.

c. International Students. The Operations Officer may authorize additional events to international students IAW CNATRAINST 1500.4H.

d. Additional Events to Meet Minimum Syllabus Time. An event flown to meet minimum night or instrument time shall be flown as a C4987 or I4687 and will meet the MIF for the block in which the ET is flown. All critical items need not be completed on this additional event.

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

8. Student Monitoring Status

a. The objective is to focus supervisory attention on a student's progress in training, specific deficiencies, and/or potential to complete the program. It may also be applied to students who require supervisory attention while trying to resolve personal issues.

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

c. SMS is intended as a short-term program. SMS requires the setting of specific goals for removal from SMS or proceeding with the elimination process. SMS goals should be tailored to correct deficiencies as determined by the Flight Leader and/or Class Advisor or to address personal issues as determined by the Operations Officer. The goals and the required period in SMS must be annotated in a supplemental ATF in the student's ATJ.

d. An SNA who receives two UNSATs in a block of training, or three UNSATs within a single stage of training, shall be considered "Marginal" and placed on SMS.

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

9. Ground Training and Briefing Requirements

a. Mission Preparation, Briefings, and Debriefings

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

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

(a) Thorough knowledge of:

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

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

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

(c) The latest ATS for the stage.

(3) Briefing. Thoroughly cover the mission's:

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

(b) Specific objectives.

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

(d) Planned profile and contingencies.

(4) Debriefing

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

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

b. Emergency Procedures Briefing and Training

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

(2) Incorporate emergency procedures training into simulator events when practical; however, instructional block objectives take precedence.

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

10. 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) Absolute Maneuver Grading. Use the following grading scale to document the student's characteristic performance on maneuvers attempted during each dual event. This is an absolute grading scale. Judge the student's proficiency **only** against the item's course training standard.

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

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

2. For solo flights, where an IP cannot observe individual graded items.

3. To indicate accomplishing SSRs for that event. Specify completed SSRs in the ATF's comments section.

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

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

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

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

(2) Solo Events

(a) Assign NG/1 for performed maneuvers.

(b) Any IP may grade maneuvers observed to be either unsafe or exceptional on the solo ATF. These grades shall count toward overall PAS.

(3) Overall Event Grades. Overall event grades represent the student's progression through Undergraduate Helicopter MPTS. Grade events "Pass," "Marginal," or "UNSAT." Use the following definitions to characterize event grades.

(a) Pass

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

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

(b) Marginal. Ability to meet the standards by the end of the block is questionable. IPs may not award a Marginal on an EOB event or check ride.

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

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

(a) EOB. Performance must meet MIF by EOB. If the student has previously met MIF in the block, he must still meet MIF on all attempted maneuvers in the EOB flight.

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

1. C41 MIF requires an F/3 for Hover. C42 MIF requires a G/4.

2. The student must meet or exceed F/3 to progress out of C41.

3. The student must maintain or exceed F/3 until the last C42 event, by which time the student must attain G/4.

(c) Exception. Students shall maintain or exceed MIF performance from one block to the next within stage or between media within stage. The exception is when MIF on a subsequent block is below the preceding block MIF. In this case, the lower MIF applies.

(5) Regression Rules. Regression rules allow for uneven progress through training. Regression rules do not apply to the first simulator or flight block in each stage. The following specifies allowable regression.

(a) The student is allowed up to two maneuver grades of F/3 where a G/4 is required on previous block MIF, and:

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

2. The maneuver was not a check ride/safe-for-solo critical (+) item,

3. The IP is satisfied the student is ready to progress to the next event.

(b) The IP must award an overall UNSAT if:

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

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

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

(6) Maneuver Requirements. For each block:

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

(b) Optional Items. Items with a number, but without a plus (+), are optional. However, if flown, the student must meet the required proficiency by EOB.

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

1. Unnumbered items.

2. Items not in the stage.

3. Exceptions:

a. Weather-driven instrument approaches.

b. Prebriefed maneuvers for IP proficiency.

(7) Incomplete Events. If a student has had ample opportunity to learn a task and subsequently flies a short event, do not incomplete the event solely to provide unwarranted extra training.

(a) Assessment. Assess the event complete if:

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

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

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

4. Otherwise, assess the event incomplete.

(b) Completion Events

1. A single flight can complete a previous event and count as an advancing X.

2. For events flown exclusively to clear an incomplete, grades on maneuvers repeated from the incomplete event do not count towards the student's PAS unless the student performs to a lower standard on repeated maneuvers.

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

c. Policies for Evaluation Flights and Ground Evaluations

(1) Authorized Evaluators. The squadron commander will designate check pilots for each stage.

(2) Check Rides (SXX90)

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

1. Should fly a representative cross section of optional maneuvers.

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

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

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

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

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

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

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

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

a. Any critical item is below MIF, or

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

c. Any maneuver is U/2 where F/3 or G/4 is required.

(c) Instrument Stage Check Failure. If the student fails an Instrument stage check because of an UNSAT pattern/landing not directly related to the stage being evaluated, any subsequent ET event may be flown as a contact event and the resulting progress check may also be a contact event.

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

(3) Progress Check Procedures

(a) The Progress Check Pilot shall consider the student's proficiency, judgment, situational awareness, and overall ability to maneuver the aircraft safely and confidently. The student must also demonstrate the potential to successfully complete MPTS and advanced training. Progress checks shall be full mission profiles emphasizing the student's weak areas and a representative cross section of area and pattern maneuvers. All critical items do not need to be accomplished. Document failed progress checks on the respective pink ATF for the failed event generating the progress check. A student's first flight progress check (in the advanced phase) is an IPC (SXX88) event. Any subsequent progress check is an FPC (SXX89).

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

1. Criteria for an IPC are:

a. Failed check ride (SXX90).

b. Two consecutive or three UNSAT events in a block, not including ET (SXX87) or warmup (SXX86) events.

c. A single Ready-Room UNSAT (RRU) event.

d. Operations Officer or above may direct an IPC when the student's potential to complete MPTS is in doubt. (See paragraph 8e, failure to meet specific goals of SMS.)

2. Outcomes are:

a. Passing returns the student to normal syllabus flow.

b. Failing results in an FPC.

3. IPC IPs. The Operations Officer or his representative designated in writing, usually a STAN pilot, shall administer the IPC. Neither the student's on-wing nor the IP that generated the UNSAT grade resulting in the IPC shall administer the IPC. A qualified IPC IP shall monitor an IPC conducted in a simulator. The Squadron IPC IP is required to make a "return to training" or "continue the attrition process" recommendation to the Squadron CO.

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

1. Criteria for FPC:

a. Following a failed IPC.

b. If the conditions requiring an IPC exist and the SNA has already accomplished an IPC.

c. Failing two exams.

2. Commanding Officer-directed FPC when the student's potential to complete MPTS is in doubt. (See paragraph 8e, failure to meet specific goals of SMS.)

3. Outcomes are:

a. Passing returns the student to normal syllabus flow.

b. Failing results in a TRB.

4. FPC IPs. The CO, XO, or a CO-designated representative administers the FPC. It is the intent of CNATRA that, wherever possible, the CO, or in his absence, the XO, shall conduct FPCs. In the event that neither the CO nor XO is qualified or available to instruct in the required stage, the CO may designate, in writing, a senior officer (O-4 or above) to conduct the FPC by direction. Neither the student's on-wing nor the IP that generated the UNSAT grade resulting in the FPC shall administer the FPC. A qualified FPC IP shall monitor an FPC conducted in the simulator. The FPC IP is responsible for the elimination/retention decision to the COMTRAWING.

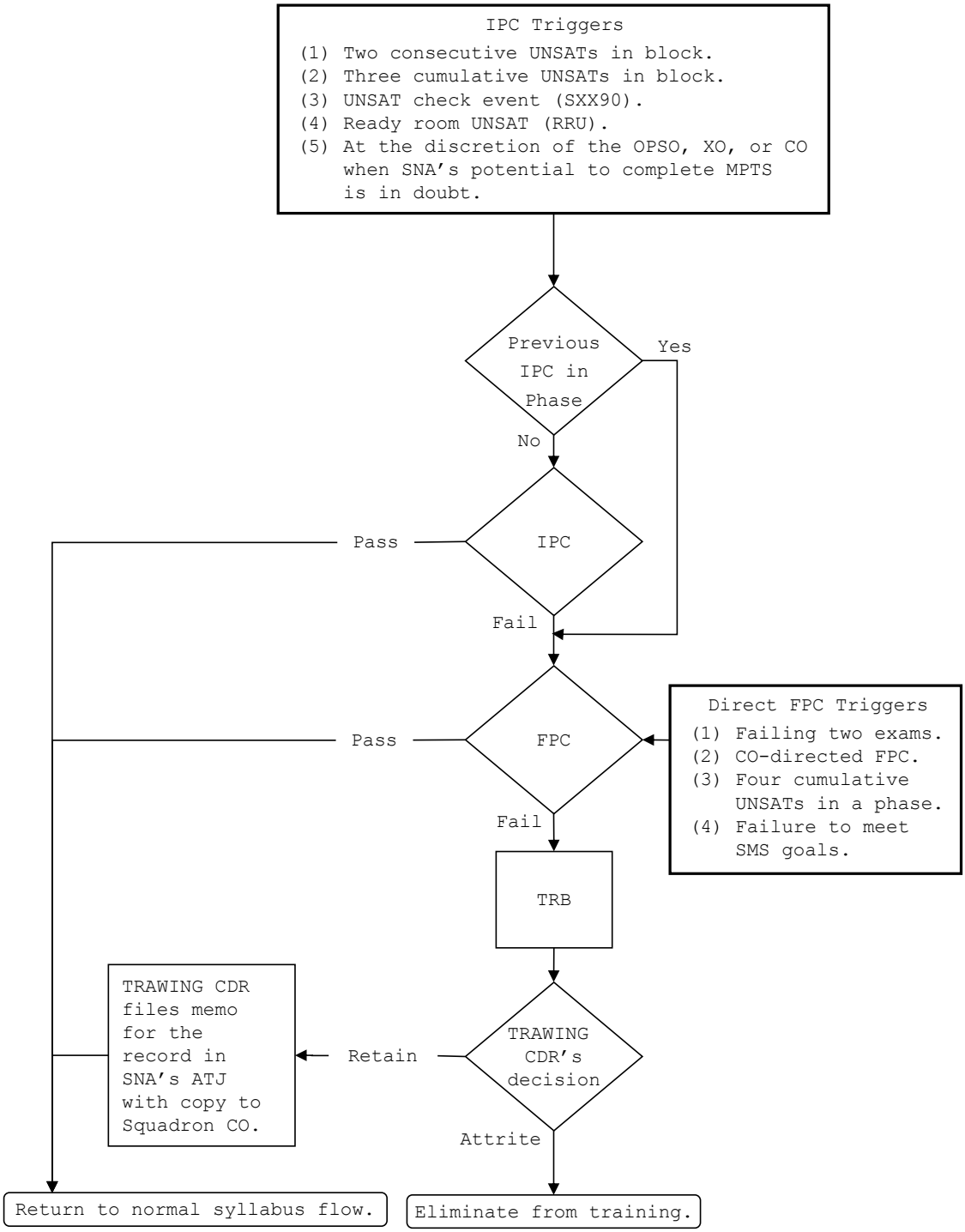
d. Progress Check Counseling

(1) Prior to an Initial Progress Check. The student's Flight Leader or the Operations Officer shall counsel the student on the Progress Check Training Review Process and document counseling on a supplemental ATF.

(2) On Completion of an Initial Progress Check. The IPC IP or Operations Officer shall counsel the student on the Progress Check Training Review Process. When conducted by the IPC IP, document counseling on the IPC ATF. When conducted by the Operations Officer (and the Operations Officer was not the IPC IP), document counseling on a supplemental ATF.

(3) On Satisfactory Completion of a Final Progress Check. The CO or his designated representative will counsel the student. Counseling should consist of, at a minimum, Progress Check Training Review Process, elimination/retention recommendations, and future courses of action. The CO shall document counseling on the FPC ATF. If conducted by a designated representative, document counseling on a supplemental ATF.

MPTS PROGRESS CHECK TRAINING REVIEW PROCESS



11. Special Instructions and Restrictions

a. Flight Hour/Event Requirements and Restrictions

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

(2) Minimum Night Hours. 12.0 hours.

(3) Minimum Solo Hours. At least 75 percent of the H/X for each solo event must be logged to count the event complete.

(4) Maximum Daily Student Activities (Aircraft, Simulator, or Academic). Students shall not exceed two graded activities during one duty day. An exception is made for students completing cross-country navigation flights. For instrument navigation and day/night navigation events, students 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. For student solo navigation events, each student is limited to two graded events and two observer events allowing a total of four legs not to exceed 6.5 hours of total flight time.

(5) Minimum Student Turn-Times. The student must have at least 30 minutes between debriefing one event and briefing a follow-on solo event. One hour is required between debriefing of a dual event and the brief for a follow-on dual event or simulator event. This does not apply to out-and-in or cross-country profiles. However, the instructor shall ensure adequate debrief and brief time is allocated. Minimum turn-time does not apply to flights that are allowed to be double-scheduled or where SNAs are scheduled as pilot and copilot.

(6) Crew Day. The period from the beginning of the student'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.

(7) 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 students. After six consecutive scheduled days, students shall receive one day off. Students shall not be scheduled for a graded event within 12 hours after debrief.

b. Solo Restrictions

(1) Documentation. The ATF for the dual event preceding the solo event must indicate "Safe for Solo" or "Unsafe for Solo."

(2) Solo Not Permitted. The student may not fly solo unless that ATF indicates "Safe for Solo."

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

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

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

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Chapter II

Ground Training

Blk #	Media	Title	Events	Hrs	Blk Name
G01	Sqdn/ Issue	Indoctrination	5	8.5	ASI

1. Prerequisites

   a. G0101 prior to G0102-4 (any order).

   b. All events prior to G0105.

2. Events

G0101	Sqdn	Check-In	2.0
G0102	Issue	Training Publications Issue	0.5
G0103	Sqdn	Curriculum Indoctrination and Flight Leader's Brief	2.0
G0104	Sqdn	Welcome Aboard	3.0
G0105	Sqdn	Checkout	1.0

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. G0102-4.

2. Events

G0201	Lecture/ Pool	HABD Training	4.0

3. Syllabus Notes

a. Conducted at NAS Pensacola, Aviation Water Survival, BLDG 3944.

b. Complete prior to ANY flight in a helicopter.

4. Discuss Items. None.

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

1. Prerequisites. G0102-4.

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. G0102-4 prior to C0101-4 (any order).

   b. G0102-4 prior to C0106.

   c. C0101-4 prior to C0105.

   d. C0106 prior to C0107.

   e. 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. C0190 prior to C0201-5 (any order).

   b. C0201-5 prior to C0206.

   c. C0206 prior to C0207-16 (any order).

   d. C0207-16 prior to C0217.

   e. C0217 prior to C0290.

   f. C0290 prior to C0218-19 (in 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

2. Events (cont)

C0214	MIL	Forward and Climbing Flight	1.5
C0215	MIL	Descending Flight and Autorotations	1.5
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. C0290.

2. Events

C0301	MIL	Preflight and Cockpit Procedures 'B'	2.0

3. Syllabus Notes. None.

4. Discuss Items

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

Blk #	Media	Title	Events	Hrs	Blk Name
C04	MIL	Crew Resource Management – Contact	1	1.0	CRM

1. Prerequisites. G0102-4.

2. Events

C0401	MIL	Crew Resource Management		1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

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

1. Prerequisites. G0102-4.

2. Events

C0501	MIL	Course Rules Flight Procedures	2.0
C0590	CAI Test	Course Rules Exam	1.0

3. Syllabus Notes. None.

4. Discuss Items. None.

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

1. Prerequisite. C0301.

2. Events

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

3. Syllabus Notes

a. Obtain C0601 from squadron NATOPS office and complete in five working days prior to C0690.

b. Take C0690 in squadron spaces prior to C4390.

4. Discuss Items. None.

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

1. Prerequisite. C4390.

2. Events

N0101	Lect/ Lab	MPS Overview/Lab	2.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
T01	CAI	Tactics Flight Procedures	6	1.5	See Below

1. Prerequisites. G0102-4 prior to T0101-6 (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
G04	CAI	Global Positioning System	1	1.0	GPSFP

1. Prerequisite. C4390.

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	CAI/MIL	Systems 'C'	3	3.0	57CSYS

1. Prerequisites

   a. C4390 prior to C0701-2 (any order).

   b. C0701-2 prior to C0703.

2. Events

C0701	CAI	TH-57C Electrical System	0.5
C0702	CAI	TH-57C Ministab System	0.5
C0703	MIL	TH-57C Helicopter Systems TH-57C Electrical System TH-57C Ministab System TH-57C Avionics	2.0

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. C4503 prior to I0101-3 (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 Procedures	0.5

3. Syllabus Notes. None.

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. C4503 prior to N0201-2 (any order).

   b. N0201-2 prior to N0203.

2. Events

N0201	CAI	Day Navigation Flight Procedures	1.0
N0202	CAI	Night 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	VNAVFP

1. Prerequisite. C4601.

2. Events

N0301	MIL	Map Interpretation	2.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
F01	CAI/MIL	Formation Procedures	3	3.0	FORMFP

1. Prerequisites

   a. I4301 prior to F0101-2 (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	2.0

3. Syllabus Notes. None.

4. Discuss Items. None.

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

1. Prerequisites

a. C4602 prior to S0101-2 (in order) and S0103-4 (in order).

b. C0219 prior to S0101-2 (in order) and S0103-4 (in 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
C08	CAI	Emergency Procedures	2	1.5	EMFP

1. Prerequisite. C4004 prior to C0801-2 (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
I02	MIL	Crew Resource Management – Instrument	1	2.0	CRM

1. Prerequisite. C4601.

2. Events

I0201	MIL	Crew Resource Management	2.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
I03	MIL/SS/ Test	Instrument Navigation	4	27.0	INAV

1. Prerequisites

   a. C4601 prior to I0301-3 (any order).

   b. I0301-3 prior to I0390.

2. Events

I0301	MIL	Instrument Flight Rules	5.5
I0302	SS	Instrument Navigation	17.0
I0303	MIL	HELO MET Review	1.5
I0390	CAI Test	Instrument Navigation Exam	3.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
I04	CAI/MIL	Radio Instruments	8	5.0	RIFP

1. Prerequisite. C4601.

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

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
V01	Lab	Night Vision Device Training	1	8.0	NVD

1. Prerequisite. I4304.

2. Events

V0101	LAB	Night Vision Device Training	8.0

3. Syllabus Notes

a. SNAs shall bring their NVG modified helmet, one set of NVGs, and their NATOPS jacket to the NVD lab.

b. NVGs will be checked out from the paraloft.

4. Discuss Items. None.

Chapter III

NATOPS Training

This chapter does not apply to Advanced Helicopter Multi-Service Pilot students.

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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 SNA and IP 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**	**C2005**	**C4004**	**C4103**	**C4203**	**C4390**	**C4401**	**C4503**	**C3001**	**C3101**	**C4602**	**C4702**	**C4802**	**C4990**
1	General Knowledge/ Procedures	3+	3+	4+	4+	4+	4	4+	4+	4+	4+	4+	4+	4+
2	Emergency Procedures/ System Failures		2+	3+	4+	4+	4	4+	4+		4+	4+	4+	4+
2	Contact Stage Checklists	3+												
2	RPM Beep Control	3+												
2	Normal Start Procedures	3+												
2	Abnormal Starts	3+								4+				
2	Anti-Ice Operation	3+												
2	Postshutdown Fire/Internal	3+												

MIF continued on next page.

CONTACT STAGE MANEUVER ITEM FILE														
CTS REF	**MANEUVER**	**C2005**	**C4004**	**C4103**	**C4203**	**C4390**	**C4401**	**C4503**	**C3001**	**C3101**	**C4602**	**C4702**	**C4802**	**C4990**
2	Emergency Engine Shutdown	3+												
2	Engine Oil System	3+												
2	Transmission Oil System	3+												
2	Tac/Gen Malfunction	3+												
2	TOT Malfunction	3+												
2	Overtorque/ Overtemp/ Overspeed	3+												
2	Torque Malfunction	3+												
2	Smoke and Fume Elimination	3+												
2	Suspected Fuel Leakage	3+												
2	Generator/ Electrical	3+												
2	Hydraulic System	3+												
2	Chip Lights	3+												
2	Fuel System Malfunctions	3+												
2	Engine Fire in Flight	3+												
2	Battery System Malfunctions	3+												

MIF continued on next page.

CONTACT STAGE MANEUVER ITEM FILE														
CTS REF	**MANEUVER**	**C2005**	**C4004**	**C4103**	**C4203**	**C4390**	**C4401**	**C4503**	**C3001**	**C3101**	**C4602**	**C4702**	**C4802**	**C4990**
2	Normal Shutdown Procedures	3+												
2	Engine Overspeed	3+								3+				
2	Engine Underspeed	3+												
2	Sprag Clutch Slippage									3+				
2	Hydraulic System Failure									4+				
2	Hydraulic Power Cylinder Malfunction									3+				
2	Compressor Stall	3+								3+				
2	Engine Failure	3+								3+				
2	Engine Restart	3+								3+				
2	Electrical Fire	3+												
2	Main Drive Shaft Failure	3+								3+				
2	Torquemeter Malfunction									4+				
2	Loss of Tail Rotor Thrust									3+				
2	Vibration Analysis									3+				
2	Fuel Control Malfunction									3+				
2	Autorotation									3+				

MIF continued on next page.

CONTACT STAGE MANEUVER ITEM FILE														
CTS REF	**MANEUVER**	**C2005**	**C4004**	**C4103**	**C4203**	**C4390**	**C4401**	**C4503**	**C3001**	**C3101**	**C4602**	**C4702**	**C4802**	**C4990**
3	Headwork/ Situational Awareness	2+	2+	3+	4+	4+	4	4+	4+	3+	4+	4+	4+	4+
4	Basic Air Work		3+	3+	4+	4+	4	4+		3+	4+	4+	3+	4+
5	Flight Planning		3	3+	4+	4+	4	4+			4+	4+	3+	4+
7	Ground Operations		3+	3+	4+	4+	4	4+			4+	4+	3+	4+
7	Preflight Inspection					4+					4+			
8	CRM	3+	3	3+	4+	4+	4	4+	4+	3+	3+	4+	3+	4+
9	Cockpit Management	3+	3	3+	4+	4+	4	4+		4+	3+	4+	3	4+
9	COMM/NAV Checklist								3+		4+	4		
10	Blindfold Cockpit Check	3+							3+					
11	Radio Procedures	3+	3+	3+	4+	4+	4	4+	3+		4+	4+	4+	4+
13	Vertical Takeoff		3+	3+	4+									
15	No-Hover Takeoff							3+						
17	Transition to Forward Flight		3+	3+	4+	4+	4	4+			4+		4+	
19	Course Rules		3+	3+	4+	4+	4	4+			4+	4+	3+	4+
21	Hover		3+	3+	4+									
22	Turn on the Spot/Clearing Turn		3+	3+	4+									
23	Low Work					4+	4	4+			4+	4+	3+	4+
25	Hover Taxi		3+	3+	4+									
26	Max Load Takeoff		2	2+	3+	3		4+			4+	4+		4+

MIF continued on next page.

CONTACT STAGE MANEUVER ITEM FILE														
CTS REF	**MANEUVER**	**C2005**	**C4004**	**C4103**	**C4203**	**C4390**	**C4401**	**C4503**	**C3001**	**C3101**	**C4602**	**C4702**	**C4802**	**C4990**
29	Normal Approach		2+	3+	4+	4+	4	4+			4+	4+	3+	4+
29 39	Normal Approach, Stab-off Flight										3+	3+		3+
31	Steep Approach				2	2		4+			3+	4+	3+	4+
32	Hydraulic Boost Off Approach			3+	4+	4		4+			3+	4+		4+
33	High-Speed Approach							3						
37	Sliding Landing		2	2+	3+	3		4+			3+	4+		4+
38	No-Hover Landing		2	2+	3+	3		4+			3+	4+	3+	4+
40	Waveoff (Power On)		2	3+	4+	4+	4	4+			4+	4+	4	4+
41	Waveoff (Power Off)		2	3+	4+	4+		4+		4+	4+	4+	4	4+
42	Power Recovery Autorotations		2	3+	4+	4+		4+			3+	4+		4+
43	Full Autorotation		2	2+	3+	3+		3+						
45	Square Patterns		3+											
46	Simulated Engine Failure @ Altitude		2+	3+	4+	4+		4+			4+	4+		4+
47	Simulated Engine Failure in a Hover		2+	3+	4+	4+		4+			4+	4+		4+
48	Simulated Engine Failure in a Hover Taxi		2+	3+	4+	4+		4+			4+	4+		4+
49	Quick Stop From a Hover		2	3+	4+	4+	4	4+						

MIF continued on next page.

CONTACT STAGE MANEUVER ITEM FILE														
CTS REF	**MANEUVER**	**C2005**	**C4004**	**C4103**	**C4203**	**C4390**	**C4401**	**C4503**	**C3001**	**C3101**	**C4602**	**C4702**	**C4802**	**C4990**
51	LSC/Contact		3+											
54	Turn Pattern/ Contact		3+								4			
56	Quick Stop							3						
94	Vertical Landing		3+	3+	4+									
98	Spatial Disorientation Awareness									4+				
	Special Syllabus Requirements	1	1	1	1								1	

Blk #	Media	Title	Events	Hrs	H/X
C20	2C67	Cockpit Procedures Trainer	5	6.5	1.3

1. Prerequisites

a. G0102 (Training Publications Issue).

b. G0103 (Curriculum Indoctrination and Flight Leader's Brief).

c. G0104 (Welcome Aboard).

d. C0401 (Crew Resource Management).

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

C2001
Contact stage checklists and voice reports, RPM beep control, normal start procedures, abnormal starts, anti-ice operation, postshutdown fire/internal, emergency shutdown.

C2002
Blindfold cockpit check, Contact stage checklists and voice reports, normal start procedures, abnormal starts, emergency engine shutdown, anti-ice operation, engine oil system malfunctions, transmission oil system malfunctions, imminent transmission failure, tach/gen malfunction, turbine outlet temperature (TOT) malfunction, overtorque/overtemp/ overspeed, torque malfunction, smoke and fume elimination, suspected fuel leakage, postshutdown fire/internal.

C2003
Contact stage checklists and voice reports, normal start procedures, abnormal starts, engine oil system malfunctions, transmission oil system malfunctions, tach/gen malfunction, TOT malfunction, overtorque/overtemp/overspeed, torque malfunction, generator/electrical malfunctions, hydraulic system malfunctions, chip lights, fuel system malfunctions, engine fire in flight, battery system malfunctions, normal shutdown procedures.

C2004
Contact stage checklists and voice reports, normal start procedures, abnormal starts, generator/electrical malfunctions, hydraulic system malfunctions, chip lights, engine overspeed, engine underspeed, compressor stall, engine failure, engine restart, electrical fire, main drive shaft failure, postshutdown fire/internal.

C2005
Contact stage checklists and voice reports, normal start procedures, abnormal starts, engine overspeed, engine underspeed, compressor stall, engine failure, engine restart, engine fire, electrical fire, smoke and fume elimination, suspected fuel leakage, main drive shaft failure, fuel system malfunctions, postshutdown fire/internal.

3. Special Syllabus Requirements

C2001
Location, function, and operation of cockpit gauges, radios, switches, and engine/rotor controls. Demonstrate CPT console operation.

4. Discuss Items

C2001
Student responsibilities for block C20; 2C67 scheduling; curriculum introduction and general information; use of limits; starter limits; use of checklists/voice reports; location, function, and operation of cockpit gauges, radios, switches, and engine/rotor controls; APU start; RPM beep control; abnormal starts; postshutdown fire (internal); CRM (aircraft start and shutdown, flight control check, ground emergencies).

C2002
Limitations, cold weather limitations, power source for cockpit gauges, single instrument indications, in-flight emergencies and procedures, CRM (in-flight emergencies).

C2003
Caution system, hydraulic system, PAN/Mayday reports, autorotation into the trees.

C2004
Main drive shaft failure, engine restart in flight, vibration identification, mast bumping, ditching.

C2005
Dynamic rollover, rotor blade stall, vortex ring state, power required exceeds power available, sprag clutch malfunctions.

5. Block MIF

CTS REF	MANEUVER	C2005
1	General Knowledge/Procedures	3+
2	Contact Stage Checklists	3+
2	RPM Beep Control	3+
2	Normal Start Procedures	3+
2	Abnormal Starts	3+
2	Anti-Ice Operation	3+
2	Postshutdown Fire/Internal	3+
2	Emergency Engine Shutdown	3+
2	Engine Oil System	3+
2	Transmission Oil System	3+
2	Tac/Gen Malfunction	3+
2	TOT Malfunction	3+
2	Overtorque/Overtemp/Overspeed	3+
2	Torque Malfunction	3+
2	Smoke and Fume Elimination	3+
2	Suspected Fuel Leakage	3+
2	Generator/Electrical	3+
2	Hydraulic System	3+

MIF continued on next page.

CTS REF	MANEUVER	C2005
2	Chip Lights	3+
2	Fuel System Malfunctions	3+
2	Engine Fire in Flight	3+
2	Battery System Malfunctions	3+
2	Normal Shutdown Procedures	3+
2	Engine Overspeed	3+
2	Engine Underspeed	3+
2	Compressor Stall	3+
2	Engine Failure	3+
2	Engine Restart	3+
2	Electrical Fire	3+
2	Main Drive Shaft Failure	3+
3	Headwork/Situational Awareness	2+
8	CRM	3+
9	Cockpit Management	3+
10	Blindfold Cockpit Check	3+
11	Radio Procedures	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
C40	TH-57B	Contact 'B'	4	6.0	1.5

1. Prerequisites

a. C2005.

b. G0201 (HABD).

c. G0301 (Aviation Safety).

d. C0301 (Preflight and Cockpit Procedures 'B').

e. C0590 (Course Rules Exam) must be completed prior to C4004.

2. Syllabus Notes

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

b. All C40 flights will be flown with on-wing pilot.

c. C40XX block does not factor into PAS.

3. Special Syllabus Requirements

C4001

a. Egress drill shall be conducted.

b. 5-foot hover trainer shall be utilized.

C4003
IP shall demo 1,000 foot straight in autorotation profile.

4. Discuss Items

C4001
Student responsibilities, ORM checklist, CRM, NATOPS brief, passing flight controls, takeoff, landing, hover, hover taxi, flight line operations, taxi signals, course rules, local training area, OPNAVINST 3710.7U, NATOPS, TW-5 SOP (RWOP), squadron SOP, aircraft discrepancy book, VFR integrated scan, ground effect, entering and exiting the rotor arc, trim techniques.

C4002
Flight control system, jammed flight controls, abort start for abnormal starts (hot start, hung start, igniter failure), engine fire (external), emergency shutdown, postshutdown fire (internal), dynamic rollover, CRM, decision making, special VFR course rules.

C4003
Electrical system, generator failure, DC load meter and voltmeter, overheated battery, electrical fire, smoke and fume elimination, fuselage fire, blowback, trim techniques, CRM, assertiveness.

C4004
Landing criteria for emergencies, definitions, aircraft limitations (NATOPS chapter 4), caution system and associated responses, single instrument indications, autorotation into the trees, blade element diagram, autorotative aerodynamics.

5. Block MIF

CTS REF	MANEUVER	C4004
1	General Knowledge/Procedures	3+
2	Emergency Procedures/System Failures	2+
3	Headwork/Situational Awareness	2+
4	Basic Air Work	3+

MIF continued on next page.

CTS REF	MANEUVER	C4004
5	Flight Planning	3
7	Ground Operations	3+
8	CRM	3
9	Cockpit Management	3
11	Radio Procedures	3+
13	Vertical Takeoff	3+
17	Transition to Forward Flight	3+
19	Course Rules	3+
21	Hover	3+
22	Turn on the Spot/Clearing Turn	3+
25	Hover Taxi	3+
26	Max Load Takeoff	2
29	Normal Approach	2+
37	Sliding Landing	2
38	No-Hover Landing	2
40	Waveoff (Power On)	2
41	Waveoff (Power Off)	2
42	Power Recovery Autorotations	2
43	Full Autorotation	2
45	Square Patterns	3+
46	Simulated Engine Failure @ Altitude	2+
47	Simulated Engine Failure in a Hover	2+
48	Simulated Engine Failure in a Hover Taxi	2+
49	Quick Stop From a Hover	2
51	LSC/Contact	3+
54	Turn Pattern/Contact	3+
94	Vertical Landing	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
C41	TH-57B	Contact 'B'	3	6.0	2.0

1. Prerequisite. C4004.

2. Syllabus Notes

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

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

c. SNA shall fly off-wing for at least one, but no more than two flights between C4102-C4203.

d. First SNA-flown autorotation in each event shall be a 1,000 foot straight in autorotation.

3. Special Syllabus Requirements

C4102
Maximum glide autorotation demonstration.

C4103
Simulated engine failure on takeoff demonstration.

4. Discuss Items

C4101
Engine system, engine failures (NATOPS, FTI), engine restart in flight, engine chip clearing procedures, compressor stall, rotor droop, CRM, communications, mission analysis.

C4102
Hydraulic system, hydraulic system failure, hydraulic power system malfunction, mast bumping, CRM, situational awareness.

C4103
Transmission system, sprag clutch slippage, sprag clutch seizure, main drive shaft failure, imminent transmission failure, overtorque, icing, ground vortex, simulated engine failure on takeoff, CRM, adaptability/flexibility.

5. Block MIF

CTS REF	MANEUVER	C4103
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	3+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	3+
5	Flight Planning	3+
7	Ground Operations	3+
8	CRM	3+
9	Cockpit Management	3+
11	Radio Procedures	3+
13	Vertical Takeoff	3+
17	Transition to Forward Flight	3+
19	Course Rules	3+
21	Hover	3+
22	Turn on the Spot/Clearing Turn	3+
25	Hover Taxi	3+
26	Max Load Takeoff	2+
29	Normal Approach	3+
32	Hydraulic Boost Off Approach	3+
37	Sliding Landing	2+
38	No-Hover Landing	2+
40	Waveoff (Power On)	3+
41	Waveoff (Power Off)	3+

MIF continued on next page.

CTS REF	MANEUVER	C4103
42	Power Recovery Autorotations	3+
43	Full Autorotation	2+
46	Simulated Engine Failure @ Altitude	3+
47	Simulated Engine Failure in a Hover	3+
48	Simulated Engine Failure in a Hover Taxi	3+
49	Quick Stop From a Hover	3+
94	Vertical Landing	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
C42	TH-57B	Contact 'B'	3	6.0	2.0

1. Prerequisite. C4103.

2. Syllabus Notes

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

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

c. SNA shall fly off-wing for at least one, but no more than two flights between C4102-C4203.

3. Special Syllabus Requirements

C4202
Demonstrate tail rotor malfunctions: fixed pitch right pedal applied, in a hover and at altitude; fixed pitch left pedal applied, in a hover and at altitude; complete loss of tail rotor thrust, in a hover.

4. Discuss Items

C4201
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, CRM, leadership.

C4202
Tail rotor malfunctions and failures, loss of tail rotor effectiveness.

C4203
Vortex ring state, control feedback, any previously briefed emergency procedure or aircraft limitation, solo guidelines, RWOP/SOP.

5. Block MIF

CTS REF	MANEUVER	C4203
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+
17	Transition to Forward Flight	4+
19	Course Rules	4+
21	Hover	4+
22	Turn on the Spot/Clearing Turn	4+
25	Hover Taxi	4+
26	Max Load Takeoff	3+
29	Normal Approach	4+
31	Steep Approach	2
32	Hydraulic Boost Off Approach	4+
37	Sliding Landing	3+
38	No-Hover Landing	3+
40	Waveoff (Power On)	4+
41	Waveoff (Power Off)	4+
42	Power Recovery Autorotations	4+
43	Full Autorotation	3+
46	Simulated Engine Failure @ Altitude	4+

MIF continued on next page.

CTS REF	MANEUVER	C4203
47	Simulated Engine Failure in a Hover	4+
48	Simulated Engine Failure in a Hover Taxi	4+
49	Quick Stop From a Hover	4+
94	Vertical Landing	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
C43	TH-57B	Contact 'B' Safe-for-Solo Check Ride	1	1.2	1.2

1. Prerequisites

a. C0690 (NATOPS Closed-Book Exam).

b. C4203.

2. Syllabus Notes

a. The purpose of this block is to evaluate the student's BAW skills requisite for a solo flight. Emphasize the maneuvers that the student will fly on the solo flight, emergencies, and autorotations.

b. Evaluate CRM for the student's ability to act as Aircraft Commander.

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

3. Special Syllabus Requirements. None.

4. Discuss Items

C4390
Any previously discussed system, limitation, or emergency procedure; special VFR course rules; prohibited maneuvers (RWOP/SOP); hot seat procedures; Site Watch procedures; solo observer requirements and responsibilities; lost plane procedures; and high wind recovery procedures.

5. Block MIF

CTS REF	MANEUVER	C4390
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+
7	Preflight Inspection	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
17	Transition to Forward Flight	4+
19	Course Rules	4+
23	Low Work	4+
26	Max Load Takeoff	3
29	Normal Approach	4+
31	Steep Approach	2
32	Hydraulic Boost Off Approach	4
37	Sliding Landing	3
38	No-Hover Landing	3
40	Waveoff (Power On)	4+
41	Waveoff (Power Off)	4+
42	Power Recovery Autorotations	4+
43	Full Autorotation	3+
46	Simulated Engine Failure @ Altitude	4+
47	Simulated Engine Failure in a Hover	4+
48	Simulated Engine Failure in a Hover Taxi	4+
49	Quick Stop From a Hover	4+

Blk #	Media	Title	Events	Hrs	H/X
C44	TH-57B	Contact 'B' Solo	1	1.0	1.0

1. Prerequisite. C4390.

2. Syllabus Notes

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

b. Crew resource management is essential while the student performs the duties as Aircraft Commander.

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

3. Special Syllabus Requirements. None.

4. Discuss Items

C4401
CRM, maneuver procedures and techniques, conduct of flight, specific crew duties.

5. Block MIF

CTS REF	MANEUVER	C4401
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
17	Transition to Forward Flight	4
19	Course Rules	4
23	Low Work	4
29	Normal Approach	4
40	Waveoff (Power On)	4
49	Quick Stop From a Hover	4

Blk #	Media	Title	Events	Hrs	H/X
C45	TH-57B	Contact 'B'	3	5.1	1.7

1. Prerequisite. C4401.

2. Syllabus Notes

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

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

3. Special Syllabus Requirements. None.

4. Discuss Items

C4501
Performance data from NATOPS, Part XI, power required exceeds power available, course rules for Site 8 and Santa Rosa OLFs.

C4502
Mechanical versus virtual axis, dissymmetry of lift, blowback, geometric imbalance, phase lag.

C4503
Retreating blade stall, vibration identification/high frequency vibration, rotor RPM droop, uncommanded right roll during flight below 1 G, tail rotor malfunctions.

5. Block MIF

CTS REF	MANEUVER	C4503
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+

MIF continued on next page.

CTS REF	MANEUVER	C4503
4	Basic Air Work	4+
5	Flight Planning	4+
7	Ground Operations	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
15	No-Hover Takeoff	3+
17	Transition to Forward Flight	4+
19	Course Rules	4+
23	Low Work	4+
26	Max Load Takeoff	4+
29	Normal Approach	4+
31	Steep Approach	4+
32	Hydraulic Boost Off Approach	4+
33	High-Speed Approach	3
37	Sliding Landing	4+
38	No-Hover Landing	4+
40	Waveoff (Power On)	4+
41	Waveoff (Power Off)	4+
42	Power Recovery Autorotations	4+
43	Full Autorotation	3+
46	Simulated Engine Failure @ Altitude	4+
47	Simulated Engine Failure in a Hover	4+
48	Simulated Engine Failure in a Hover Taxi	4+
49	Quick Stop From a Hover	4+
56	Quick Stop	3

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

1. Prerequisites

a. C0703 (Systems 'C').

b. C4503.

2. Syllabus Notes

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

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

3. Special Syllabus Requirements. None.

4. Discuss Items

C3001
Basic Instrument syllabus, pubs carried on BI flights, checklists (prestart, start, instrument takeoff (ITO), shutdown, hot refuel, hot seat), COMM/NAV checklist, cockpit crew coordination brief, angle of bank for standard-rate turns (SRTs).

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
C31	2B42A	Emergency Procedures	1	1.3	1.3

1. Prerequisite. C3001.

2. Syllabus Note. Requires execution of the following emergency procedures: abnormal starts, engine overspeed, sprag clutch slippage, main driveshaft failure, hydraulic system failure, hydraulic power cylinder malfunction, engine failure, engine restart, compressor stall, torquemeter malfunction, loss of tail rotor thrust, vibration analysis, Fuel Control Malfunction, and autorotation.

3. Special Syllabus Requirements. None.

4. Discuss Items

C3101
Land as soon as possible, land as soon as practicable, MAYDAY/PAN report, landing site selection, single instrument indications, powered and unpowered flight decision making, in-flight malfunctions when VMC, and crew coordination during emergencies.

5. Block MIF

CTS REF	MANEUVER	C3101
1	General Knowledge/Procedures	4+
2	Abnormal Starts	4+
2	Engine Overspeed	3+
2	Sprag Clutch Slippage	3+
2	Hydraulic System Failure	4+
2	Hydraulic Power Cylinder Malfunction	3+
2	Compressor Stall	3+
2	Engine Failure	3+
2	Engine Restart	3+
2	Main Driveshaft Failure	3+
2	Torquemeter Malfunction	4+
2	Loss of Tail Rotor Thrust	3+
2	Vibration Analysis	3+
2	Fuel Control Malfunction	3+
2	Autorotation	3+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	3+
8	CRM	3+
9	Cockpit Management	4+
41	Waveoff (Power Off)	4+
98	Spatial Disorientation Awareness	4+

Blk #	Media	Title	Events	Hrs	H/X
C46	TH-57C	Contact 'C'	2	3.0	1.5

1. Prerequisites

a. C3101.

b. T4003.

c. G0401 (Global Positioning System).

2. Syllabus Notes

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

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

3. Special Syllabus Requirements. None.

4. Discuss Items

C4601
TH-57C electrical system, flight maneuvers in the TH-57C, weather brief requirements, course rules (Site 8 and Santa Rosa), torque limitations, preflight differences between 'C' and 'B' model aircraft, abnormal starts (igniter failure, hot start, hung start), fire on start, emergency shutdown, and engine failure in flight.

C4602
AFCS failure, hydraulic system failure, hydraulic power cylinder malfunction, transmission chip light, sprag clutch slippage, and post-refuel/hot seat checklist.

5. Block MIF

CTS REF	MANEUVER	C4602
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+
7	Preflight Inspection	4+
8	CRM	3+
9	Cockpit Management	3+
9	COMM/NAV Checklist	4+
11	Radio Procedures	4+
17	Transition to Forward Flight	4+
19	Course Rules	4+
23	Low Work	4+
26	Max Load Takeoff	4+
29	Normal Approach	4+
29,39	Normal Approach, Stab-Off Flight	3+
31	Steep Approach	3+
32	Hydraulic Boost Off Approach	3+
37	Sliding Landing	3+
38	No-Hover Landing	3+
40	Waveoff (Power On)	4+
41	Waveoff (Power Off)	4+
42	Power Recovery Autorotations	3+
46	Simulated Engine Failure @ Altitude	4+

MIF continued on next page.

CTS REF	MANEUVER	C4602
47	Simulated Engine Failure in a Hover	4+
48	Simulated Engine Failure in a Hover Taxi	4+
54	Turn Pattern/Contact	4

Blk #	Media	Title	Events	Hrs	H/X
C47	TH-57C	Contact 'C'	2	3.0	1.5

1. Prerequisites

a. I3401-1C.

b. I4304.

2. Syllabus Notes

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

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

c. C4702 should be flown after C4701.

3. Special Syllabus Requirements. None.

4. Discuss Items

C4701
Loss of tail rotor effectiveness, complete loss of tail rotor thrust, fixed pitch left pedal, fixed pitch right pedal.

C4702
Fuselage fire, postshutdown fire (internal), single instrument indications, engine chip light, aircraft discrepancy book (ADB).

5. Block MIF

CTS REF	MANEUVER	C4702
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+
9	COMM/NAV Checklist	4
11	Radio Procedures	4+
19	Course Rules	4+
23	Low Work	4+
26	Max Load Takeoff	4+
29	Normal Approach	4+
29,39	Normal Approach, Stab-Off Flight	3+
31	Steep Approach	4+
32	Hydraulic Boost Off Approach	4+
37	Sliding Landing	4+
38	No-Hover Landing	4+
40	Waveoff (Power On)	4+
41	Waveoff (Power Off)	4+
42	Power Recovery Autorotations	4+
46	Simulated Engine Failure @ Altitude	4+
47	Simulated Engine Failure in a Hover	4+
48	Simulated Engine Failure in a Hover Taxi	4+

Blk #	Media	Title	Events	Hrs	H/X
C48	TH-57C	Night Contact 'C'	2	3.0	1.5

1. Prerequisite. C4602.

2. Syllabus Notes

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

b. Emphasize basic skills and night operations.

c. Perform only 90-degree or straight-in power recovery autorotations in this block.

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

4. Discuss Items

C4801
Dark adaptation, night hover scan, night visual scan techniques, vertigo, use of lights, visual approach slope indicator (VASI)/precision approach path indicator (PAPI), helicopter procedures at night, night course rules (Whiting, Santa Rosa, Duke, Choctaw), emergency procedures, landing site evaluation at night, engine failures at night.

C4802
Landing zone lighting, use of lights, aircraft emergencies at night, night vision.

5. Block MIF

CTS REF	MANEUVER	C4802
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	3+
5	Flight Planning	3+
7	Ground Operations	3+
8	CRM	3+
9	Cockpit Management	3
11	Radio Procedures	4+
17	Transition to Forward Flight	4+
19	Course Rules	3+
23	Low Work	3+
29	Normal Approach	3+
31	Steep Approach	3+
38	No-Hover Landing	3+
40	Waveoff (Power On)	4
41	Waveoff (Power Off)	4
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
C49	TH-57C	Contact 'C' Check Ride	1	1.2	1.2

1. Prerequisites

a. C4802.

b. N4003.

c. N4101.

d. I4404.

e. I4504.

2. Syllabus Notes

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

b. Emphasize maneuvers previously performed and flight leadership.

c. Flight shall be flown with a standardization instructor.

3. Special Syllabus Requirements. None.

4. Discuss Items

C4990
Any aircraft system, limitation, or emergency procedure, course rules, special VFR course rules, solo weather minimums for N4201 and I4701, squadron SOP, hot seat procedures, lost plane procedures, and high wind recovery 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+
19	Course Rules	4+
23	Low Work	4+
26	Max Load Takeoff	4+
29	Normal Approach	4+
29,39	Normal Approach, Stab-Off Flight	3+
31	Steep Approach	4+
32	Hydraulic Boost Off Approach	4+
37	Sliding Landing	4+
38	No-Hover Landing	4+
40	Waveoff (Power On)	4+
41	Waveoff (Power Off)	4+
42	Power Recovery Autorotations	4+
46	Simulated Engine Failure @ Altitude	4+
47	Simulated Engine Failure in a Hover	4+
48	Simulated Engine Failure in a Hover Taxi	4+

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 SNA and IP 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/Device Event
Check Ride Event

INSTRUMENT STAGE MANEUVER ITEM FILE																	
CTS REF	**MANEUVER**	**I3005**	**I4003**	**I4103**	**I4290**	**I3101**	**I3101C**	**I3204**	**I3204C**	**I3305**	**I3305C**	**I3401**	**I3401C**	**I4304**	**I4404**	**I4504**	**I4690**	**I4701**
1	General Knowledge/ Procedures	4+	4+	4+	4+	4+	3	4+	3	4+	3	4+	3+	4+	4+	4+	4+	4
2	Emergency Proce-dures/ System Failures	3+	3+	4+	4+			4+		4+		4+		4+	4+	4+	4+	4
2	Abnormal Starts					4+												
2	Engine Overspeed					3+												
2	Main Driveshaft Failure					3+												
2	Hydraulic Power Cylinder Malfunc-tion					3+												

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE																		
CTS REF	**MANEUVER**	**I3005**	**I4003**	**I4103**	**I4290**	**I3101**	**I3101C**	**I3204**	**I3204C**	**I3305**	**I3305C**	**I3401**	**I3401C**	**I4304**	**I4404**	**I4504**	**I4690**	**I4701**
2	Engine Failure					3+												
2	Engine Restart					3+												
2	Compressor Stall					3+												
2	Torque-meter Malfunc-tion					4												
2	Vibration Analysis					3+												
2	Generator Failure					3+												
2	Fuel Boost Pump Failure					3+												
2	Electrical Fire					3+												
2	Fuel Control Mal-function					3+												
3	Headwork/ Situa-tional Awareness	3+	3+	4+	4+	3+	3	3+	3	3+	3	3+	3+	4+	4+	4+	4+	4
4	Basic Air Work	3+	3+	4+	4+	3+		3+		4+		4+		4+	4+	4+	4+	4
4	Straight and Level	3+	4+	4+	4+													
4	Level Standard-Rate Turns	3+	3+	4+	4+													

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE																	
CTS REF	**MANEUVER**	**I3005**	**I4003**	**I4103**	**I4290**	**I3101**	**I3101C**	**I3204**	**I3204C**	**I3305**	**I3305C**	**I3401**	**I3401C**	**I4304**	**I4404**	**I4504**	**I4690**	**I4701**
5	Flight Planning		4+	4+	4+									4+	4+	4+	4+	4
7	Ground Operations															4+		4
7	Preflight/ Postflight															4+		4
7 20	Filing/ Closing Flight Plans															4+		4
8	CRM	3+	3+	4+	4+	3+	3	3+	3	4+	3	4+	3+	3+	4+	4+	4+	4
8	Copilot Duties							3+		4+								
9	Cockpit Management	3+	3+	3+	3+	4+		4+		4+		4+		3+	4+	4+	4+	4
9	COMM/NAV Checklist																	4
9	ITO Check-list			4+	4+													
9	Level-Off Checklist			4+	4+													
9	Instrument Checklist													4+	4+		4+	
11	Radio Procedures	3	4+	4+	4+			3+		4+		4+		3+	4+	4+	4+	4
13	Vertical Takeoff																	4
14	Instrument Takeoff	3+	3+	4+	4+	3+								4+	4		4	
17	Transition to Forward Flight											4+		4+	4+	4+	4+	
18	Departure Procedures	3+	3+	4+	4+							3+		4+	4+	4+	4+	4

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE																	
CTS REF	**MANEUVER**	**I3005**	**I4003**	**I4103**	**I4290**	**I3101**	**I3101C**	**I3204**	**I3204C**	**I3305**	**I3305C**	**I3401**	**I3401C**	**I4304**	**I4404**	**I4504**	**I4690**	**I4701**
20	Ground-speed/ Fuel Checks											4+				4+	4+	4
20	Enroute Procedures											3+				4+	4+	4
20	Use of Flight Watch/ Metro/FSS															4+		4
20	Enroute Nav/Fuel Consump-tion Checks													4+	4+		4+	
20	Tracking							3+		4+								
30	Modified Normal Approach		4	4	4									4+	4+	4+	4+	4
39	Stab-Off Flight			4+	4+													
39	Stab-Off Flight (Partial Panel)			4+	4+													
41	Waveoff (Power Off)	3+				3+		3+		3+								
50	LSC	3+	3+	4+	4+													
52	Vertical S-1 Pattern	3+	3+	4+	4+													
53	Turn Pattern	3+	3+	4+	4+													
55	Oscar Pattern	3+	3+	4+	4+													

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE																		
CTS REF	**MANEUVER**	**I3005**	**I4003**	**I4103**	**I4290**	**I3101**	**I3101C**	**I3204**	**I3204C**	**I3305**	**I3305C**	**I3401**	**I3401C**	**I4304**	**I4404**	**I4504**	**I4690**	**I4701**
57	Unusual Attitude Recovery (Full Panel)	3+	3+	4+	4+													
57 60	Unusual Attitude Recovery (Partial Panel)			4+	4+													
58	Instrument Autorota-tion	3+				3+		3+		4+								
59	Magnetic Compass Turns	3+	3+	4+	4+													
60	Partial Panel Air Work	3+	3+	4+	4+													
60 64	Partial Panel ASR Approach									3+								
61	Radial/ Bearing Intercepts							3+										
62	TACAN Point-to-Point Navigation		3	3	3			3+		4+				4+	4		4	
63	Terminal Procedures													4+	4+	4+	4+	4
63	Option Approach													4+	4		4	
64	TACAN/ VOR/NDB Approach	3+	3+	3+	3+			3+		4+				4+	4+		4+	

MIF continued on next page.

INSTRUMENT STAGE MANEUVER ITEM FILE																		
CTS REF	**MANEUVER**	**I3005**	**I4003**	**I4103**	**I4290**	**I3101**	**I3101C**	**I3204**	**I3204C**	**I3305**	**I3305C**	**I3401**	**I3401C**	**I4304**	**I4404**	**I4504**	**I4690**	**I4701**
64	Localizer Approach									3+				4+	4		4	
64	ASR Approach									3+				4+	4		4	
64	RNAV/GPS Approach							3+		3+				3+	4+		4	
64	Non-Precision Approach											4				4+		
65	Precision Approach											4				4		4
65	PAR Approach									4+				4+	4+		4	
65	ILS Approach									3+				4+	4+		4	
66	TACAN/VOR/ NDB Failed Dir Gyro Approach									3+				3+	3		3	
66	PAR/ASR Failed Dir Gyro Approach									3+				3+	3+		3	
67	Holding							3+		4+				4+	4+		4+	
68	Missed Approach							3+		4+				4	4		4	
	Special Syllabus Require-ments		1															

Blk #	Media	Title	Events	Hrs	H/X
I30	2B42A	Basic Instruments	5	6.5	1.3

1. Prerequisites

a. C4602.

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

2. Syllabus Notes

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

b. COMM/NAV checklist items shall be practiced on I3001, I3002, and I3003.

3. Special Syllabus Requirements. None.

4. Discuss Items

I3001
Attitude instrument flight/trim/scan, approximate power settings, communication procedures, level-off checklist, maneuver completion report, straight-and-level flight, level speed changes, standard-rate turns, standard-rate climbs and descents, turn pattern, magnetic compass turns.

I3002
Vertical S-1 pattern, instrument auto, main generator failure, standby generator failure.

I3003
Instrument takeoff, departure, preparing for an instrument approach, approach, missed approach, Oscar pattern, battery temp light, battery hot light, emergency descent.

I3004
Full panel unusual attitude recovery, pitot-static instrument failure, environmental control system (ECS) malfunctions, heater malfunction.

I3005
Partial panel straight-and-level, partial panel turns, partial panel climbs and descents, full panel unusual attitude recovery, electrical fire during IMC flight, engine fire during IMC, fuselage fire during IMC.

5. Block MIF

CTS REF	MANEUVER	I3005
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	3+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	3+
4	Straight and Level	3+
4	Level Standard-Rate Turns	3+
8	CRM	3+
9	Cockpit Management	3+
11	Radio Procedures	3
14	Instrument Takeoff	3+
18	Departure Procedures	3+
41	Waveoff (Power Off)	3+
50	LSC	3+
52	Vertical S-1 Pattern	3+
53	Turn Pattern	3+
55	Oscar Pattern	3+
57	Unusual Attitude Recovery (Full Panel)	3+
58	Instrument Autorotation	3+
59	Magnetic Compass Turns	3+
60	Partial Panel Air Work	3+
64	TACAN/VOR/NDB Approach	3+

Blk #	Media	Title	Events	Hrs	H/X
I40	TH-57C	Basic Instruments	3	5.1	1.7

1. Prerequisite. I3005.

2. Syllabus Notes. Students shall fly a minimum of three ITOs on I4001.

3. Special Syllabus Requirements

I4001
IP will demonstrate a TACAN/VOR-DME approach as well as proper use of crew coordination.

I4002
IP will give a vertigo demonstration as well as proper use of the two-challenge rule.

4. Discuss Items

I4001
Weather requirements for BI flights, attitude instrument flight/trim/scan, observer brief, approach brief, Instrument CRM (crew responsibilities), publications carried on instrument flights, and ministab operation.

I4002
Types of spatial disorientation, inner ear illusions, visual illusions, spatial disorientation prevention/recognition, spatial disorientation recovery, NATOPS vertigo parameters, and two-challenge rule.

I4003
Required equipment for IMC flight, NDZ “on top” weather briefing, and NDZ stereo-type flight plans.

5. Block MIF

CTS REF	MANEUVER	I4003
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	3+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	3+
4	Straight and Level	4+
4	Level Standard-Rate Turns	3+
5	Flight Planning	4+
8	CRM	3+
9	Cockpit Management	3+
11	Radio Procedures	4+
14	Instrument Takeoff	3+
18	Departure Procedures	3+
30	Modified Normal Approach	4
50	LSC	3+
52	Vertical S-1 Pattern	3+
53	Turn Pattern	3+
55	Oscar Pattern	3+
57	Unusual Attitude Recovery (Full Panel)	3+
59	Magnetic Compass Turns	3+
60	Partial Panel Air Work	3+
62	TACAN Point-to-Point Navigation	3
64	TACAN/VOR/NDB Approach	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
I41	TH-57C	Basic Instruments	3	5.1	1.7

1. Prerequisite. I4003.

2. Syllabus Notes. None.

3. Special Syllabus Requirements. None.

4. Discuss Items

I4101
Required equipment for IMC, battery relay light, types of NOTAMS, GPS NOTAMS, NOTAM codes, Flight Information Handbook (FIH), temporary flight restriction (TFR), lost communications – NDZ "on top."

I4102
Icing, weather watch (WW)/CNATRA aviation weather watch (CAWW)/convective SIGMET/SIGMET/AIRMET, sources of weather information.

I4103
Airspeed limits, standby generator minimum airspeed, altimeter error, attitude gyro malfunction (IMC), standby battery, turbulence penetration.

5. Block MIF

CTS REF	MANEUVER	I4103
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+
14	Instrument Takeoff	4+
18	Departure Procedures	4+
30	Modified Normal Approach	4
39	Stab-Off Flight	4+
39	Stab-Off Flight (Partial Panel)	4+
50	LSC	4+
52	Vertical S-1 Pattern	4+
53	Turn Pattern	4+
55	Oscar Pattern	4+
57	Unusual Attitude Recovery (Full Panel)	4+
57 60	Unusual Attitude Recovery (Partial Panel)	4+
59	Magnetic Compass Turns	4+
60	Partial Panel Air Work	4+
62	TACAN Point-to-Point Navigation	3
64	TACAN/VOR/NDB Approach	3+

Blk #	Media	Title	Events	Hrs	H/X
I42	TH-57C	Basic Instrument Check Ride	1	1.5	1.5

1. Prerequisite. I4103.

2. Syllabus Notes

a. This event will be an evaluation of Basic Instrument skills and abilities involving a representative cross section of maneuvers previously presented and/or discussed in the Basic Instrument syllabus.

b. Flight shall be flown with a standardization instructor.

3. Special Syllabus Requirements. None.

4. Discuss Items

I4290
Any emergency procedure or aircraft limitation.

5. Block MIF

CTS REF	MANEUVER	I4290
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+
14	Instrument Takeoff	4+
18	Departure Procedures	4+
30	Modified Normal Approach	4
39	Stab-Off Flight	4+
39	Stab-Off Flight (Partial Panel)	4+
50	LSC	4+
52	Vertical S-1 Pattern	4+
53	Turn Pattern	4+
55	Oscar Pattern	4+
57	Unusual Attitude Recovery (Full Panel)	4+
57 60	Unusual Attitude Recovery (Partial Panel)	4+
59	Magnetic Compass Turns	4+
60	Partial Panel Air Work	4+
62	TACAN Point-to-Point Navigation	3
64	TACAN/VOR/NDB Approach	3+

Blk #	Media	Title	Events	Hrs	H/X
I31	2B42A	Emergency Procedures	2	2.6	1.3

1. Prerequisites

   a. C0801 (In-Flight Emergencies).

   b. C0802 (Tail Rotor Emergencies).

   c. I0201 (CRM – Instrument).

   d. I4290.

2. Syllabus Note. Requires execution of the following emergency procedures: abnormal starts, engine overspeed, main driveshaft failure, hydraulic power cylinder malfunction, engine failure, engine restart, compressor stall, vibration analysis, generator failure, fuel boost pump failure, electrical fire, and fuel control malfunction.

3. Special Syllabus Requirements. None.

4. Discuss Items

   I3101
   Land as soon as possible, land as soon as practicable, MAYDAY/PAN report, landing site selection, single instrument indications, in-flight malfunctions when IMC, crew coordination during emergencies, and RI syllabus.

5. Block MIF (Pilot)

CTS REF	MANEUVER	I3101
1	General Knowledge/Procedures	4+
2	Abnormal Starts	4+
2	Engine Overspeed	3+
2	Main Driveshaft Failure	3+
2	Hydraulic Power Cylinder Malfunction	3+
2	Engine Failure	3+
2	Engine Restart	3+
2	Compressor Stall	3+
2	Torquemeter Malfunction	4
2	Vibration Analysis	3+
2	Generator Failure	3+
2	Fuel Boost Pump Failure	3+
2	Electrical Fire	3+
2	Fuel Control Malfunction	3+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	3+
8	CRM	3+
9	Cockpit Management	4+
14	Instrument Takeoff	3+
41	Waveoff (Power Off)	3+
58	Instrument Autorotation	3+

6. Block MIF (Copilot)

CTS REF	MANEUVER	I3101C
1	General Knowledge/Procedures	3
3	Headwork/Situational Awareness	3
8	CRM	3

Blk #	Media	Title	Events	Hrs	H/X
I32	2B42A	Radio Instruments	8	10.4	1.3

1. Prerequisites

a. I0301 (Instrument Flight Rules).

b. I0303 (HELO MET Review).

c. I3101 and I3101C.

d. I0408 (Radio Instrument Flight Procedures).

2. Syllabus Notes

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

b. SNAs shall fly a minimum of three GPS approaches with at least one being a full procedure approach.

3. Special Syllabus Requirements. None.

4. Discuss Items

I3201
TACAN procedures, TACAN holding, use of course deviation indicator (CDI) and horizontal situation indicator (HSI), 40-degree lock-off, cone of confusion, cockpit setup, groundspeed check, instrument autorotation to touchdown, required voice reports, initial radio contact with ATC, cockpit/COMM/NAV organization.

I3202
VOR procedures, VOR holding, intersection holding, cockpit setup, backup NAVAIDS, approach plate symbols, computing timing from final approach fix (FAF) to MAP, VOR ground and airborne checkpoint, sprag clutch seizure, sprag clutch slippage.

I3203
ADF procedures, characteristics, and limitations; NAVAID voice capability; tracking versus homing; compressor stall; engine underspeed; engine overspeed.

I3204
GPS procedures, flight plans, enroute procedures, approach (omnibearing selector (OBS)/Leg, Arm/Active), and missed approach.

5. Block MIF (Pilot)

CTS REF	MANEUVER	I3204
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	3+
8	CRM	3+
8	Copilot Duties	3+
9	Cockpit Management	4+
11	Radio Procedures	3+
20	Tracking	3+
41	Waveoff (Power Off)	3+
58	Instrument Autorotation	3+
61	Radial/Bearing Intercepts	3+
62	TACAN Point-to-Point Navigation	3+
64	TACAN/VOR/NDB Approach	3+
64	RNAV/GPS Approach	3+
67	Holding	3+
68	Missed Approach	3+

6. Block MIF (Copilot)

CTS REF	MANEUVER	I3204C
1	General Knowledge/Procedures	3
3	Headwork/Situational Awareness	3
8	CRM	3

Blk #	Media	Title	Events	Hrs	H/X
I33	2B42A	Radio Instruments	10	13.0	1.3

1. Prerequisites. I3204 and I3204C.

2. Syllabus Notes

a. I3305 requires a visual simulator.

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

3. Special Syllabus Requirements. None.

4. Discuss Items

I3301
Failed directional gyro TACAN approach, lost communication while being radar vectored, engine fire in flight.

I3302
Failed directional gyro NDB procedures, Flight Information Handbook, fuel control malfunctions, engine restart in flight.

I3303
GCA procedures, GCA lost communications, AFCS requirements for IMC flight, low fuel state during IMC, hydraulic system malfunctions.

I3304
Localizer, back course localizer and ILS procedures, marker beacons, compass locators, reverse sensing (CDI and HSI), main drive shaft failure.

I3305
Expected further clearance, equipment malfunction reports, CRM.

5. Block MIF (Pilot)

CTS REF	MANEUVER	I3305
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	4+
8	CRM	4+
8	Copilot Duties	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
20	Tracking	4+
41	Waveoff (Power Off)	3+
58	Instrument Autorotation	4+
60,64	Partial Panel ASR Approach	3+
62	TACAN Point-to-Point Navigation	4+
64	TACAN/VOR/NDB Approach	4+
64	Localizer Approach	3+
64	ASR Approach	3+
64	RNAV/GPS Approach	3+
65	PAR Approach	4+
65	ILS Approach	3+
66	TACAN/VOR/NDB Failed Dir Gyro Approach	3+
66	PAR/ASR Failed Dir Gyro Approach	3+
67	Holding	4+
68	Missed Approach	4+

6. Block MIF (Copilot)

CTS REF	MANEUVER	I3305C
1	General Knowledge/Procedures	3
3	Headwork/Situational Awareness	3
8	CRM	3

Blk #	Media	Title	Events	Hrs	H/X
I34	2B42A	Airways Navigation	2	2.6	1.3

1. Prerequisites. I3305 and I3305C.

2. Syllabus Note. I3401-1C require a visual simulator.

3. Special Syllabus Requirements. None.

4. Discuss Items

I3401
Lost communications enroute, enroute emergency divert fields, enroute low altitude chart symbols, closing flight plans (military and civilian fields), CRM.

5. Block MIF (Pilot)

CTS REF	MANEUVER	I3401
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
17	Transition to Forward Flight	4+
18	Departure Procedures	3+
20	Groundspeed/Fuel Checks	4+
20	Enroute Procedures	3+
64	Non-Precision Approach	4
65	Precision Approach	4

6. Block MIF (Copilot)

CTS REF	MANEUVER	I3401C
1	General Knowledge/Procedures	3+
3	Headwork/Situational Awareness	3+
8	CRM	3+

Blk #	Media	Title	Events	Hrs	H/X
I43	TH-57C	Radio Instruments	4	7.2	1.8

1. Prerequisites

a. I3305 and I3305C.

b. I0390 (Instrument Navigation Exam).

2. Syllabus Notes

a. Flights in this block should consist of a minimum of three approaches and holding.

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

c. SNA shall prepare Jet Log and DD-175 (using INAV class standards) appropriate for conditions and remaining maneuvers in the block.

3. Special Syllabus Requirements. None.

4. Discuss Items

I4301
TACAN procedures, NDB procedures, copter approach procedures, publications carried on RI flights, NDZ stereotype flight plans, altitude restrictions when cleared for the approach, weather requirements for RI flights (RWOP, 3710.7U), approach brief, cockpit/COMNAV organization, required equipment for instrument flight (NATOPS, 3710.7U).

I4302
VOR procedures, ILS/localizer procedures, glideslope failure, course receiver failure, CAT II/III ILS, takeoff/approach/landing minimums (RWOP/3710.7U), precision minima, straight-in/circle to land/sidestep minimums, option approach, lost comm on NDZ stereotype flight plans, HAA/HAT/HAL.

I4303
Failed directional gyro VOR/TACAN procedures, practice approaches VFR/IFR, Obstacle Departure Procedures, diverse departure, nonstandard takeoff mins (Trouble T), nonstandard alternate mins (Delta A), and Airport Surface Hot Spot.

I4304
GPS procedures, helicopter GPS procedures, terminal arrival area (TAA), fly-by versus fly-over waypoints, HSI or CDI failure, practice approaches VFR/IFR, voice reports (required/additional), criteria for continuing an instrument approach to landing, requirements for runway environment, engine malfunctions while IMC.

5. Block MIF

CTS REF	MANEUVER	I4304
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+
8	CRM	3+
9	Cockpit Management	3+
9	Instrument Checklist	4+
11	Radio Procedures	3+
14	Instrument Takeoff	4+
17	Transition to Forward Flight	4+
18	Departure Procedures	4+
20	Enroute Nav/Fuel Consumption Checks	4+
30	Modified Normal Approach	4+
62	TACAN Point-to-Point Navigation	4+
63	Terminal Procedures	4+

MIF continued on next page.

CTS REF	MANEUVER	I4304
63	Option Approach	4+
64	TACAN/VOR/NDB Approach	4+
64	Localizer Approach	4+
64	ASR Approach	4+
64	RNAV/GPS Approach	3+
65	PAR Approach	4+
65	ILS Approach	4+
66	TACAN/VOR/NDB Failed Dir Gyro Approach	3+
66	PAR/ASR Failed Dir Gyro Approach	3+
67	Holding	4+
68	Missed Approach	4

Blk #	Media	Title	Events	Hrs	H/X
I44	TH-57C	Radio Instruments	4	8.0	2.0

1. Prerequisite. C4702.

2. Syllabus Notes

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

b. SNA shall call the instructor the night prior for route of flight/details. SNA shall show up to the brief with a completed DD 175 and Jet Log (using INAV class standards).

c. I44 block flights should originate or terminate at airfields other than South Whiting to the maximum extent possible.

3. Special Syllabus Requirements. None.

4. Discuss Items

I4401
Required equipment for night flight, electrical system malfunctions while IMC, flight control malfunctions while IMC, enroute/feeder routes, minimum safe altitudes/emergency safe altitudes, MOCA/MCA/MRA, DD 175 and DD 175-1.

I4402
Airspace (controlled, uncontrolled, special use, A through G designations), GCA lost comm, airport approach/runway lighting, inoperative components or visual aids table, helicopter point-in-space approach, types of NOTAMS, NOTAM codes.

I4403
"Execute missed approach," missed approach from DH/MDA/circling, instrument approach/communications at an uncontrolled airport, lost communications procedures on an IFR flight plan, weather sources, standard instrument rating requirements.

I4404
Visual approach, contact approach, standard terminal arrival (STAR), OPNAVINST 3710.7U, Flight Information Handbook, minimum vectoring altitude, flight rules and regulations, (FAR/AIM), any aircraft limitation/emergency procedures, any previously briefed item in the Instrument stage.

5. Block MIF

CTS REF	MANEUVER	I4404
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+
8	CRM	4+
9	Cockpit Management	4+
9	Instrument Checklist	4+
11	Radio Procedures	4+
14	Instrument Takeoff	4
17	Transition to Forward Flight	4+
18	Departure Procedures	4+
20	Enroute Nav/Fuel Consumption Checks	4+
30	Modified Normal Approach	4+
62	TACAN Point-to-Point Navigation	4
63	Terminal Procedures	4+
63	Option Approach	4
64	TACAN/VOR/NDB Approach	4+
64	Localizer Approach	4
64	ASR Approach	4
64	RNAV/GPS Approach	4+

MIF continued on next page.

CTS REF	MANEUVER	I4404
65	PAR Approach	4+
65	ILS Approach	4+
66	TACAN/VOR/NDB Failed Dir Gyro Approach	3
66	PAR/ASR Failed Dir Gyro Approach	3+
67	Holding	4+
68	Missed Approach	4

Blk #	Media	Title	Events	Hrs	H/X
I45	TH-57C	Instrument Navigation	4	8.0	2.0

1. Prerequisite. I3401-1C.

2. Syllabus Notes

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

b. SNA shall develop a jet log and flight plan based on 100 KIAS and forecast winds at altitude.

3. Special Syllabus Requirements. None.

4. Discuss Items

I4501
Airfield information in IFR Enroute Supplement, preflight and in-flight fuel planning, weather briefing, weather minimums, flight plan (DD 175 and FAA Form 7233-1), Metro, FSS, flight watch, terminal procedures, air taxi versus hover taxi, airport diagram.

I4502
Any emergency procedure.

I4503
Any emergency procedure.

I4504
Any emergency procedure.

5. Block MIF

CTS REF	MANEUVER	I4504
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+
7	Preflight/Postflight	4+
7,20	Filing/Closing Flight Plans	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
17	Transition to Forward Flight	4+
18	Departure Procedures	4+
20	Groundspeed/Fuel Checks	4+
20	Enroute Procedures	4+
20	Use of Flight Watch/Metro/FSS	4+
30	Modified Normal Approach	4+
63	Terminal Procedures	4+
64	Non-Precision Approach	4+
65	Precision Approach	4

Blk #	Media	Title	Events	Hrs	H/X
I46	TH-57C	Instrument Check Ride "Safe for Solo"	1	1.8	1.8

1. Prerequisites. C4990.

2. Syllabus Notes

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

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

c. SNA shall call the instructor the night prior for route of flight/details. SNA shall show up to the brief with a completed DD 175 and Jet Log.

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

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

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

3. Special Syllabus Requirements. None.

4. Discuss Items

I4690
Any previously briefed item in the instrument syllabus with a heavy emphasis on FAR/AIM, OPNAVINST 3710.7U, and emergency procedures.

5. Block MIF

CTS REF	MANEUVER	I4690
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+
8	CRM	4+
9	Cockpit Management	4+
9	Instrument Checklist	4+
11	Radio Procedures	4+
14	Instrument Takeoff	4
17	Transition to Forward Flight	4+
18	Departure Procedures	4+
20	Groundspeed/Fuel Checks	4+
20	Enroute Procedures	4+
20	Enroute Nav/Fuel Consumption Checks	4+
30	Modified Normal Approach	4+
62	TACAN Point-to-Point Navigation	4
63	Terminal Procedures	4+
63	Option Approach	4
64	TACAN/VOR/NDB Approach	4+
64	Localizer Approach	4
64	ASR Approach	4
64	RNAV/GPS Approach	4
65	PAR Approach	4
65	ILS Approach	4

MIF continued on next page.

CTS REF	MANEUVER	I4690
66	TACAN/VOR/NDB Failed Dir Gyro Approach	3
66	PAR/ASR Failed Dir Gyro Approach	3
67	Holding	4+
68	Missed Approach	4

Blk #	Media	Title	Events	Hrs	H/X
I47	TH-57C	Instrument Navigation Solo	1	2.0	2.0

1. Prerequisite. I4690.

2. Syllabus Notes

a. Flight shall be flown to a destination greater than 50 NM straight-line distance. Aircraft shall be shut down.

b. Flight shall be flown with another student who has completed I4690.

c. SNA shall bring a completed DD 175, jet log, and prepped map to the ODO at scheduled brief time.

d. Flight shall be flown within five days of the I4690. If this is not possible, an I4686 event shall be flown with a minimum of one precision approach, one non-precision approach, one power-recovery autorotation, and one simulated emergency.

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	I4701
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
7	Preflight/Postflight	4
7,20	Filing/Closing Flight Plans	4
8	CRM	4
9	Cockpit Management	4
9	COMM/NAV Checklist	4
11	Radio Procedures	4
13	Vertical Takeoff	4
18	Departure Procedures	4
20	Groundspeed/Fuel Checks	4
20	Enroute Procedures	4
20	Use of Flight Watch/Metro/FSS	4
30	Modified Normal Approach	4
63	Terminal Procedures	4
65	Precision Approach	4

Chapter VI

Navigation Training

1. Matrices. The following matrix is an overview of the entire Navigation Stage. The purpose of this matrix is to provide the SNA and IP 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

NAVIGATION STAGE MANEUVER ITEM FILE						
CTS REF	**MANEUVER**	**N4003**	**N4101**	**N4201**	**N4302**	**N4403**
1	General Knowledge/Procedures	4+	4+	4	4+	4+
2	Emergency Procedures/System Failures	4+	4+	4	4+	4+
3	Headwork/Situational Awareness	4+	4+	4	4+	4+
4	Basic Air Work	4+	4+	4	4+	4+
5	Flight Planning	4+	4+	4	4+	4+
7	Ground Operations	4+	4+	4	4+	4+
7	Preflight/Postflight	4+	4+	4		
7 20	Filing/Closing Flight Plans	4+	4+	4		
8	CRM	4+	4+	4	4+	4+
9	Cockpit Management	4+	4+	4	4+	4+
9	COMM/NAV Checklist			4		
11	Radio Procedures	4+	4+	4	4+	4+
13	Vertical Takeoff			4	4+	4+
15	No-Hover Takeoff				4+	4+
17	Transition to Forward Flight	4+	4		4+	4+

MIF continued on next page.

NAVIGATION STAGE MANEUVER ITEM FILE						
CTS REF	**MANEUVER**	**N4003**	**N4101**	**N4201**	**N4302**	**N4403**
18	Departure Procedures	4+	4+	4		
20	Enroute Procedures	4+	4+	4		
20 2	Lost Aircraft Procedures	4+	4+			
20	Groundspeed/Fuel Checks	4+	4+	4	4+	4+
20	Use of Flight Watch/Metro/FSS	4+	4+	4		
29	Normal Approach	4+	4	4	4+	4+
34 35 36	360-, 180-, 90-Degree Approach				3+	3
63	Terminal Procedures	4+	4+			
78	VFR Navigation	4+	3+	4		
78 1	Flight Rules and Regulations	4+	4+			
78 1	Sectional Symbology	4+	4+			
79	Low-Level Navigation				3+	4+
80	Timing				4+	4+
94	Vertical Landing				4+	4+
	Special Syllabus Requirements				1	

Blk #	Media	Title	Events	Hrs	H/X
N40	TH-57C	Day Navigation	3	5.1	1.7

1. Prerequisites

a. C4602.

b. N0203 (VFR Navigation Review).

c. N0101 (MPS Overview/Lab).

2. Syllabus Notes

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

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

c. SNA shall bring a completed DD 175 Flight Plan and/or FAA Form 7233-1 Flight Plan.

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

3. Special Syllabus Requirements. None.

4. Discuss Items

N4001
VFR filing and flight procedures, special visual flight rules (SVFR), course rules, sectional/aeronautical charts, CRM, airspace (A,B,C,D,E,G, controlled, uncontrolled, special use, etc.), fuel planning/computation, lost aircraft procedures.

N4002
Use of GPS, wake turbulence, land and hold-short operations (LAHSO), air/hover taxi, airport operations with and without control tower.

N4003
Any items previously discussed in N4001 and N4002.

5. Block MIF

CTS REF	MANEUVER	N4003
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+
7	Preflight/Postflight	4+
7,20	Filing/Closing Flight Plans	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
17	Transition to Forward Flight	4+
18	Departure Procedures	4+
20	Enroute Procedures	4+
20,2	Lost Aircraft Procedures	4+
20	Groundspeed/Fuel Checks	4+
20	Use of Flight Watch/Metro/FSS	4+
29	Normal Approach	4+
63	Terminal Procedures	4+
78	VFR Navigation	4+
78,1	Flight Rules and Regulations	4+
78,1	Sectional Symbology	4+

Blk #	Media	Title	Events	Hrs	H/X
N41	TH-57C	Night Navigation	1	1.7	1.7

1. Prerequisites

a. C4602.

b. C4801.

c. N0203 (VFR Navigation Review).

d. N0101 (MPS Overview/Lab).

2. Syllabus Notes

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

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

c. SNA shall bring a completed DD 175 Flight Plan and/or FAA Form 7233-1 Flight Plan.

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

3. Special Syllabus Requirements. None.

4. Discuss Items

N4101
Night navigation techniques, night in-flight emergencies, night emergency landing site evaluation, airport lighting, inadvertent IMC.

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+
7	Preflight/Postflight	4+
7,20	Filing/Closing Flight Plans	4+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	4+
17	Transition to Forward Flight	4
18	Departure Procedures	4+
20	Enroute Procedures	4+
20,2	Lost Aircraft Procedures	4+
20	Groundspeed/Fuel Checks	4+
20	Use of Flight Watch/Metro/FSS	4+
29	Normal Approach	4
63	Terminal Procedures	4+
78	VFR Navigation	3+
78,1	Flight Rules and Regulations	4+
78,1	Sectional Symbology	4+

Blk #	Media	Title	Events	Hrs	H/X
N42	TH-57C	Day Navigation Solo	1	1.7	1.7

1. Prerequisite. I4690.

2. Syllabus Notes

a. Flight shall be flown to a destination greater than 50 nautical miles (NM) straight-line distance. Aircraft shall be shut down.

b. Flight shall be flown with another student that has completed I4690.

c. SNA shall bring a completed DD 175, jet log, and prepped map to the ODO at scheduled brief time.

3. Special Syllabus Requirements. None.

4. Discuss Items. None.

5. Block MIF

CTS REF	MANEUVER	N4201
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
7	Preflight/Postflight	4
7,20	Filing/Closing Flight Plans	4
8	CRM	4
9	Cockpit Management	4
9	COMM/NAV Checklist	4
11	Radio Procedures	4
13	Vertical Takeoff	4
18	Departure Procedures	4
20	Enroute Procedures	4
20	Groundspeed/Fuel Checks	4
20	Use of Flight Watch/Metro/FSS	4
29	Normal Approach	4
78	VFR Navigation	4

Blk #	Media	Title	Events	Hrs	H/X
N43	TH-57C	Low-Level Navigation	2	3.6	1.8

1. Prerequisites

a. C4602.

b. N0301 (Map Interpretation).

c. N0101 (MPS Overview/Lab).

2. Syllabus Notes

a. Routes shall be flown using 1:250,000 charts.

b. Routes shall be planned using 90 knots groundspeed.

c. N4301-2 shall be flown no lower than 500 feet AGL.

d. SNA shall prepare a route card using MPS as well as prepare the route on the proper chart.

e. Students should use GPS as navigation backup on N4302.

3. Special Syllabus Requirements

N4301
IP shall demonstrate the first low-level navigation brief and navigate the first four checkpoints.

4. Discuss Items

N4301 GREEN ROUTE, 1:250,000
Techniques for low-level navigation to be briefed by the IP (to include funneling and limiting features, effects of wind), map interpretation, visual scanning, pilotage, dead reckoning, timing, use of GPS as backup, checkpoints, hazards, CHUM (Chart Updating Manual), low-level navigation charts, map preparation, route cards/MPS.

N4302 GREEN ROUTE REVERSE, 1:250,000
Precision navigation using the global positioning system (GPS), crew comfort levels, emergencies at low altitude, environmental conditions encountered in landing zones (sand, dust, and snow), TERF profiles.

5. Block MIF

CTS REF	MANEUVER	N4302
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+
15	No-Hover Takeoff	4+
17	Transition to Forward Flight	4+
20	Groundspeed/Fuel Checks	4+
29	Normal Approach	4+
34,35, 36	360-, 180-, 90-Degree Approach	3+
79	Low-Level Navigation	3+
80	Timing	4+
94	Vertical Landing	4+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
N44	TH-57C	Low-Level Navigation	3	3.9	1.3

1. Prerequisite. N4302.

2. Syllabus Notes

a. Routes shall be flown using 1:50,000 charts.

b. Routes shall be planned using 90 knots groundspeed.

c. N4401 shall be flown no lower than 500 feet AGL. N4402-3 shall be flown no lower than 200 feet AGL.

d. SNA shall prepare a route card using MPS as well as prepare the route on the proper chart.

3. Special Syllabus Requirements. None.

4. Discuss Items

N4401 ORANGE ROUTE, 1:50,000
Techniques for tactical route selection to be briefed by IP, map changeover points, no-hover takeoff.

N4402 PURPLE ROUTE, 1:50,000
Disorientation procedures, bingo fuel, effects of adverse weather on mission planning.

N4403 PURPLE ROUTE REVERSE, 1:50,000
Any emergency procedure or aircraft limitation.

5. Block MIF

CTS REF	MANEUVER	N4403
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+
15	No-Hover Takeoff	4+
17	Transition to Forward Flight	4+
20	Groundspeed/Fuel Checks	4+
29	Normal Approach	4+
34,35, 36	360-, 180-, 90-Degree Approach	3
79	Low-Level Navigation	4+
80	Timing	4+
94	Vertical Landing	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 SNA and IP 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

FORMATION STAGE MANEUVER ITEM FILE			
CTS REF	**MANEUVER**	**F4003**	**F4101**
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+
6	Formation NATOPS/Mission Brief	4+	4+
8	CRM	4+	4+
9	Cockpit Management	4+	4+
16	Section Takeoffs	3+	
69	Crossover	4+	
70	Cruise Turns	3+	
71	Cruise Climbs and Descents	3+	
72	Breakup and Rendezvous	4+	
73	Overrun	3+	
74	Lead Change	4+	
75	Section Cruise	4+	4+
76	Section Landings	3+	
77	Combat Cruise Flight		3+
80	Timing		4+
84	Section Low-Level Flight/Navigation		4+
87	Section High-Speed Approach	3+	4+
91	Section Waveoff	3+	
	Special Syllabus Requirements	1	

Blk #	Media	Title	Events	Hrs	H/X
F40	TH-57C	Formation	3	6.9	2.3

1. Prerequisites

   a. F0103 (Formation).

   b. N4403.

   c. N4201.

   d. I4701.

2. Syllabus Notes

   a. Emphasize CRM during all flights.

   b. Complete section waveoffs on F4002.

   c. F4003 and F4101 may be flown together.

3. Special Syllabus Requirements

   F4001
   Demonstrate section parade and home-field break.

   F4002
   Demonstrate inadvertent IMC and lost communication items.

4. Discuss Items

   F4001
   CRM and inter-aircraft communication, relative motion and radius of turn relationships, Lead and Wing aircraft responsibilities and considerations, cruise position/cruise maneuvers/brevity codes, overtorque, and formation course rules (Eastern Formation Area/Harold/Santa Rosa).

   F4002
   Wing awareness/lookout doctrine, IIMC, lost communications, high-speed approach, and down plane procedures.

F4003
Any emergency procedure or aircraft limitation.

5. Block MIF

CTS REF	MANEUVER	F4003
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+
16	Section Takeoffs	3+
69	Crossover	4+
70	Cruise Turns	3+
71	Cruise Climbs and Descents	3+
72	Breakup and Rendezvous	4+
73	Overrun	3+
74	Lead Change	4+
75	Section Cruise	4+
76	Section Landings	3+
87	Section High-Speed Approach	3+
91	Section Waveoff	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
F41	TH-57C	Combat Cruise Formation	1	1.8	1.8

1. Prerequisite. F4003.

2. Syllabus Notes

a. Event should be flown using the LLNAV PURPLE ROUTE, 1:50,000.

b. SNA shall prepare the route on the proper chart.

c. Route shall be planned using 90 knots groundspeed. SNA shall prepare a route card using MPS.

d. Route shall be flown no lower than 200 feet AGL.

e. Emphasize CRM during flight.

f. F4003 and F4101 may be flown together.

3. Special Syllabus Requirements. None.

4. Discuss Items

F4101
Combat cruise; effects of adverse weather on mission planning; inadvertent IMC at low level; JOG AIR preparation; checkpoint selection criteria; lead and wing considerations and responsibilities along the route; fuel management/planning; any previous discuss item, emergency procedure, or aircraft limitation.

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+
75	Section Cruise	4+
77	Combat Cruise Flight	3+
80	Timing	4+
84	Section Low-Level Flight/ Navigation	4+
87	Section High-Speed Approach	4+

Chapter VIII

Tactical Training

1. Matrices. The following matrices are an overview of the single-block Tactics Stage, Shipboard/Search and Rescue Stage, and Night Vision Device Stage. The purpose of these matrices is to provide the SNA and IP 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**	**T4003**
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+
15	No-Hover Takeoff	3+
24	Power Checks	3+
27	Confined Area Operations	3+
28	Pinnacle Operations	3+
29	Normal Approach	4+
31	Steep Approach	4+
33	High-Speed Approach	3+
34	360-Degree Overhead Approach	3+
35	180-Degree Offset Approach	3+
36	90-Degree Offset Approach	3+

MIF continued on next page.

TACTICS STAGE MANEUVER ITEM FILE		
CTS REF	**MANEUVER**	**T4003**
38	No-Hover Landing	4+
42	Power Recovery Autorotation	4+
43	Full Autorotation	3
44	External Load Operations	3+
56	Quick Stop	3+
	Special Syllabus Requirements	1

3. Shipboard/Search and Rescue Stage MIF

Simulator/Device Event

SHIPBOARD/SEARCH AND RESCUE STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**S3002**	**S4001**	**S4101**
1	General Knowledge/Procedures	3+	4+	4+
2	Emergency Procedures/System Failures	4+	4+	4+
3	Headwork/Situational Awareness	3+	4+	4+
4	Basic Air Work	4+	4+	4+
8	CRM	4+	4+	4+
9	Cockpit Management	4+	4+	4+
12	Shipboard Radio Procedures		3+	
20	Groundspeed/Fuel Checks			4+
31	Steep Approach			4+
81 82 83	LLBI	3+		3+

MIF continued on next page.

SHIPBOARD/SEARCH AND RESCUE STAGE MANEUVER ITEM FILE				
CTS REF	**MANEUVER**	**S3002**	**S4001**	**S4101**
85	SAR Patterns/Scenarios	3+		3+
86	Windline Rescue Pattern	3+		3+
88	ELVA	3+		3
89	Shipboard TACAN/NDB Approach	3+		3
90	Field Deck Landing Practice (TO/LDG)		3+	
92	Field Deck Landing Practice Waveoff		3+	
93	Response to LSE		3+	
98	Spatial Disorientation Awareness	4+		
99	Hospital Pad Identification/Landing Zone Evaluation			3+

4. Night Vision Device Stage MIF

Simulator/Device Event

NIGHT VISION DEVICE STAGE MANEUVER ITEM FILE			
CTS REF	**MANEUVER**	**V3001**	**V4005**
1	General Knowledge/Procedures	4+	4+
2	Emergency Procedures/System Failures	4+	4+
3	Headwork/Situational Awareness	4+	4+
4	Basic Air Work	3+	4+
5	Flight Planning	3+	4+
7	Ground Operations	3+	4+
8	CRM	4+	4+

MIF continued on next page.

NIGHT VISION DEVICE STAGE MANEUVER ITEM FILE			
CTS REF	**MANEUVER**	**V3001**	**V4005**
9	Cockpit Management	4+	4+
11	Radio Procedures	3+	4+
13	Vertical Takeoff		4+
15	No-Hover Takeoff		4+
17	Transition to Forward Flight	3+	4+
18	Departure Procedures	3+	4+
21	Hover		4+
22	Turn on the Spot/Clearing Turn		4+
25	Hover Taxi		4+
29	Normal Approach	3+	4+
31	Steep Approach		3+
38	No-Hover Landing		3+
40	Waveoff (Power On)	3	4
63	Terminal Procedures		4+
78	VFR Navigation		4+
94	Vertical Landing		4+
95	NVD Knowledge	3+	4+
96	Goggle/De-goggle Procedures	3+	4+
97	NVD Emergency Procedures	3+	4+
	Special Syllabus Requirements		1

Blk #	Media	Title	Events	Hrs	H/X
T40	TH-57B	Tactics	3	4.5	1.5

1. Prerequisites

a. T0101-6 (Tactics Flight Procedures).

b. C0218 (Special Mission Considerations I).

c. C4503.

2. Syllabus Notes

a. Emphasize CRM during all flights.

b. Fly all block flights in TH-57B model aircraft with an aircrewman.

3. Special Syllabus Requirements

T4001
Demonstrate the high-speed, low-level autorotation.

4. Discuss Items

T4001
Dynamic rollover, mast bumping, use of radar altimeter, course rules for Harold OLF, low-level lookout doctrine, engine failure at high-speed and low-level.

T4002
CRM, power checks, hover in-ground effect (HIGE)/hover out-of-ground effect (HOGE), vortex ring state, waveoff during CALs.

T4003
Power checks, crew coordination, aircrew brief, power required exceeds power available, engine failure with external load, weight and balance, and waveoff during CALs/externals.

5. Block MIF

CTS REF	MANEUVER	T4003
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+
15	No-Hover Takeoff	3+
24	Power Checks	3+
27	Confined Area Operations	3+
28	Pinnacle Operations	3+
29	Normal Approach	4+
31	Steep Approach	4+
33	High-Speed Approach	3+
34	360-Degree Overhead Approach	3+
35	180-Degree Offset Approach	3+
36	90-Degree Offset Approach	3+
38	No-Hover Landing	4+
42	Power Recovery Autorotation	4+
43	Full Autorotation	3
44	External Load Operations	3+
56	Quick Stop	3+
	Special Syllabus Requirements	1

Blk #	Media	Title	Events	Hrs	H/X
S30	2B42A	Shipboard Operations	2	2.6	1.3

1. Prerequisites

a. S0102 and S0104 (Shipboard Operations/Search and Rescue).

b. I4290.

2. Syllabus Notes

a. Students should fly the Expanding Square, Creeping Line, Sector Search, and the Windline Rescue pattern on S3001.

b. Students should fly the TACAN LHD/CV, Air Capable Ship, ELVA, and a SAR pattern with the Windline Rescue on S3002.

c. S30 block events require a visual simulator.

d. These events require a copilot, but the copilot is not graded.

3. Special Syllabus Requirements. None.

4. Discuss Items

S3001
Instrument takeoff, shipboard terminology, SAR patterns, Windline Rescue pattern, low-level scan using radar altimeter, vertigo, use of GPS during SAR.

S3002
Ship NAVAIDS, Shipboard Aviation Facilities Resume, base recovery course (BRC)/wind direction and speed, radio discipline, shipboard instrument approaches.

5. Block MIF

CTS REF	MANEUVER	S3002
1	General Knowledge/Procedures	3+
2	Emergency Procedures/ System Failures	4+
3	Headwork/Situational Awareness	3+
4	Basic Air Work	4+
8	CRM	4+
9	Cockpit Management	4+
81,82, 83	LLBI	3+
85	SAR Patterns/Scenarios	3+
86	Windline Rescue Pattern	3+
88	ELVA	3+
89	Shipboard TACAN/NDB Approach	3+
98	Spatial Disorientation Awareness	4+

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

1. Prerequisite. S3002.

2. Syllabus Notes

   a. S4001 and S4101 may be flown together.

   b. Complete FDLP requirements IAW TH-57 NATOPS.

3. Special Syllabus Requirements. None.

4. Discuss Items

   S4001
   Field deck landing practice (FDLP) pattern and airspeeds, LSE signals, shipboard terminology/signals, lost communication procedures, NAVAIR 00-80T-122, course rules—Santa Rosa/Spencer.

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	3+
90	Field Deck Landing Practice (TO/LDG)	3+
92	Field Deck Landing Practice Waveoff	3+
93	Response to LSE	3+

Blk #	Media	Title	Events	Hrs	H/X
S41	TH-57C	SAR/LLBI	1	1.5	1.5

1. Prerequisite. S3002.

2. Syllabus Note. Emphasize CRM during flight.

3. Special Syllabus Requirements. None.

4. Discuss Items

S4101
SAR planning and organization, communication, SAR TACAID, SAR patterns, On-Scene Commander Checklist and responsibilities, ditching, underwater egress, required equipment for over water and shipboard operations, rescue helicopters operating over water, authorized landings areas (helicopter), hospital pad identification/landing zone evaluation, anti-exposure suits (OPNAV, RWOP, SOP), crew coordination/responsibilities, fuel management/planning, stab/trim failure at low altitude, use of GPS during SAR, flight in restricted visibility over water, radar altimeter failure, and inadvertent IMC over water.

5. Block MIF

CTS REF	MANEUVER	S4101
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+
20	Groundspeed/Fuel Checks	4+
31	Steep Approach	4+
81,82, 83	LLBI	3+
85	SAR Patterns/Scenarios	3+
86	Windline Rescue Pattern	3+
88	ELVA	3
89	Shipboard TACAN/NDB Approach	3
99	Hospital Pad Identification/ Landing Zone Evaluation	3+

Blk #	Media	Title	Events	Hrs	H/X
V30	2B42A	Night Vision Device Simulator	1	1.3	1.3

1. Prerequisites

a. V0101 (Night Vision Device Training).

b. N4403.

2. Syllabus Notes

a. Focus should be on goggle/de-goggle procedures and familiarization with basic scan and BAW while on night vision devices.

b. Due to lack of visual cues in the simulator, low work will not be graded.

c. Student shall check out a pair of NVGs from the paraloft and bring them to the brief, along with an NVG-configured helmet.

3. Special Syllabus Requirements. None.

4. Discuss Items

V3001
NVG preflight, NVG adjustment and assessment procedures, goggle/de-goggle procedures, NVG failures, NVG scan pattern.

5. Block MIF

CTS REF	MANEUVER	V3001
1	General Knowledge/Procedures	4+
2	Emergency Procedures/System Failures	4+
3	Headwork/Situational Awareness	4+
4	Basic Air Work	3+
5	Flight Planning	3+
7	Ground Operations	3+
8	CRM	4+
9	Cockpit Management	4+
11	Radio Procedures	3+
17	Transition to Forward Flight	3+
18	Departure Procedures	3+
29	Normal Approach	3+
40	Waveoff (Power On)	3
95	NVD Knowledge	3+
96	Goggle/De-goggle Procedures	3+
97	NVD Emergency Procedures	3+

Blk #	Media	Title	Events	Hrs	H/X
V40	TH-57C	Night Vision Device Flight	5	8.5	1.7

1. Prerequisite. V3001.

2. Syllabus Notes

a. This block is broken down into two phases. The first two flights should concentrate on basic familiarization maneuvers using NVGs. The last three flights should emphasize NVG considerations and NVG navigation/terminal area procedures.

b. Student shall check out a pair of NVGs from the paraloft and bring them to the brief along with an NVG-configured helmet.

c. Student shall contact instructor prior to V4003-05 flights for navigation route.

d. V4003 should be flown on the Green Route forward.

3. Special Syllabus Requirements

V4001
Power recovery autorotations shall be demonstrated by the instructor during this block.

4. Discuss Items

V4001
NVG preflight, NVG adjustment and assessment procedures, ANV-20/20 (Hoffman Box), goggle/de-goggle procedures, NVG failures, NVG maneuvers, NVG scan pattern, NVG crew coordination, RWOP NVG procedures, SLAP, NVG brief.

V4002
Night vision goggles and accessories, NVG performance factors, aircraft NVG compatibility, emergency and safety considerations, engine failure at night.

V4003
NVG scene interpretation/descriptions, terrain assessment, atmospheric impact on NVG performance, low light level considerations, NVG navigation, route/checkpoint selection, NVG map preparation.

V4004
NVG human factors, visual performance, fatigue, complacency/overconfidence, flight operations with NVDs (OPNAV).

V4005
Any previously discussed item and tactical application of NVDs.

5. Block MIF

CTS REF	MANEUVER	V4005
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+
15	No-Hover Takeoff	4+
17	Transition to Forward Flight	4+
18	Departure Procedures	4+
21	Hover	4+
22	Turn on the Spot/Clearing Turn	4+
25	Hover Taxi	4+

MIF continued on next page.

CTS REF	MANEUVER	V4005
29	Normal Approach	4+
31	Steep Approach	3+
38	No-Hover Landing	3+
40	Waveoff (Power On)	4
63	Terminal Procedures	4+
78	VFR Navigation	4+
94	Vertical Landing	4+
95	NVD Knowledge	4+
96	Goggle/De-goggle Procedures	4+
97	NVD Emergency Procedures	4+
	Special Syllabus Requirements	1

Chapter IX

Course Training Standards

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

2. Student Duties and Responsibilities

a. Plan the mission.

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

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

3. General Standards

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

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

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

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

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

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

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

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

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

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

7. Course Training Standards

BEHAVIOR STATEMENT	STANDARDS
1. General Knowledge/Procedures	
• Maintain working knowledge of all appropriate flight training instructions and directives.	• Recites, discusses, and/or performs all applicable items essential to the operation of the aircraft.

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 IP. • End when IP 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	
• Completes 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; resolves conflict in a positive manner. • Provides positive leadership to the crew; encourages crew participation in the decision making process. • Adapts to meet new situational demands. • Demonstrates the ability to maintain awareness of what is happening on the ground, in the air, and with other crewmembers; copes with any subsequent mission impact as a result of these happenings. • As a copilot, performs duties IAW NATOPS, FTI, and checklist. • Performs all duties in a timely manner.

BEHAVIOR STATEMENT	STANDARDS
9. Cockpit Management	
• Prioritizes and manages crew tasks during mission profile. • Ensures complete checklist discipline and the following of all standard operating procedures.	• Correctly prioritizes multiple tasks; uses all available resources to manage workload. • Accomplishes all required normal and emergency checklists for each phase of flight; completes checklists in a timely manner with all items addressed.
10. Blindfold Cockpit Check	
• Conducted in CPTs and the simulator as a cockpit orientation drill.	• Without aid of visual cues, SNA is expected to positively identify all items in the cockpit requested by the IP.
11. Radio Procedures	
• Performs 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	
• Begins when adding power for takeoff. • Ends 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. Instrument Takeoff	
• Begins when increasing power for takeoff. • Ends 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.
15. No-Hover Takeoff	
• Transitions to forward flight while avoiding environmental hazards.	• Executes procedures IAW FTI.
16. 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.
17. Transition to Forward Flight	
• Begins with forward cyclic input. • Ends 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.

BEHAVIOR STATEMENT	STANDARDS
18. 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.
19. Course Rules	
• Begin from takeoff. • End when flight event is complete.	• Executes procedures IAW RWOP.
20. 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.
21. Hover	
• Begins 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.

BEHAVIOR STATEMENT	STANDARDS
22. Turn on the Spot/Clearing Turn	
• Begins with pedal application to affect rate of turn. • Ends 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.
23. Low Work	
• Governs the handling of the aircraft under conditions in close proximity to the ground when not specifically covered by another course training standard.	• 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.
24. 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
25. Hover Taxi	
• Begins from a hover with cyclic displacement • Ends 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.
26. Maximum Load Takeoff	
• Begins in a hover when checking N_g for simulated maximum allowable power. • Ends 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.
27. 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
28. 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.
29. Normal Approach	
• Begins with initial power reduction at 500 feet AGL at 70 KIAS. • Ends 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.
30. Modified Normal Approach	
• Begins with initial power reduction from MDA at 90 KIAS to intercept normal approach profile. • Ends when stable in a hover or transitioning to affect a no hover or sliding landing.	• Executes maneuver IAW FTI. • Maintains landing spot, intercepts normal approach, maintains desired profile ±50 feet, ±10 KIAS, and 10-20° glideslope. • Executes profile with minimal corrections to power and near constant angle of bank.

BEHAVIOR STATEMENT	STANDARDS
31. Steep Approach	
• Begins with initial power reduction at 500 feet AGL at 70 KIAS. • Ends 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.
32. Hydraulic Boost Off Approach	
• Begins when initiated by IP. • Ends when IP assumes controls.	• Executes maneuver IAW NATOPS and FTI. • Identifies safe landing speed and stabilizes in a hover taxi.
33. High-Speed Approach	
• Begins when accelerating from normal pattern downwind to 100 KIAS. • Ends in a hover or no hover landing.	• Executes maneuver IAW NATOPS and FTI.
34. 360-Degree Overhead Approach	
• Begins at 200 feet AGL and 80 KIAS over the intended point of landing. • Ends in a hover or no hover landing.	• Executes maneuver IAW NATOPS and FTI.
35. 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.

BEHAVIOR STATEMENT	STANDARDS
36. 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.
37. Sliding Landing	
• Begins when on final approach. • Ends 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.
38. No-Hover Landing	
• Begins when on final approach. • Ends when stopped and collective is fully 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.
39. Stab-Off Flight	
• Begins when automatic flight control system (AFCS) is secured. • Ends 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.

BEHAVIOR STATEMENT	STANDARDS
40. Waveoff (Power On)	
• Begins when called for by tower or instructor, or announced by PAC. • Ends when stable at desired altitude, heading, and airspeed.	• Executes maneuver IAW NATOPS, RWOP, and FTI. • Adds power smoothly without exceeding continuous operation limitations.
41. Waveoff (Power Off)	
• Begins when called for by tower or instructor, or announced by PAC. • Ends when stable at desired altitude, heading, and airspeed.	• Executes maneuver IAW NATOPS, RWOP, and FTI. • Adds power smoothly without exceeding continuous operation limitations.
42. 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 wind speed and direction, and ensures crew is set prior to initiating maneuver. • Executes maneuver IAW NATOPS and FTI.
43. Full Autorotation	
• Begins at 600 feet AGL and in position for a safe landing on the runway or otherwise suitable landing site. • Ends when aircraft is stopped and collective is fully down.	• Clears intended point of landing, checks wind speed and direction, and ensures crew is set prior to initiating maneuver. • Executes maneuver IAW NATOPS and FTI.

BEHAVIOR STATEMENT	STANDARDS
44. 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.
45. 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.
46. Simulated Engine Failure at Altitude	
• Begins with the introduction of the engine failure by the IP. • Ends when the IP takes the controls for waveoff or with a power recovery autorotation (at the site).	• Maintains positive control of the aircraft. • Executes maneuver IAW NATOPS and FTI.
47. Simulated Engine Failure in a Hover (Hover Cut Gun)	
• Begins when the instructor rotates the twist grip to flight idle. • Ends when the aircraft is safely on deck and collective is full down.	• Instructor ensures aircraft is in a stable 5-foot hover into the wind and over suitable landing surface. • Executes maneuver IAW NATOPS and FTI. • Lands with minimal drift and skids level.

BEHAVIOR STATEMENT	STANDARDS
48. Simulated Engine Failure in a Hover Taxi (Taxi Cut Gun)	
• Begins when instructor rotates the twist grip to flight idle. • Ends when the aircraft is safely on deck and collective is full down.	• Instructor ensures aircraft is in a stable 5-foot/5-knot forward hover taxi into the wind and over a suitable landing surface. • Executes maneuver IAW NATOPS and FTI. • Lands with minimal lateral drift and skids aligned with direction of travel.
49. Quick Stop From a Hover	
• Begins when transitioning from a hover. • Ends when reestablished on normal climb parameters.	• Executes maneuver IAW NATOPS and FTI. • Maintains altitude –10/+15 feet. • Maintains desired ground track.
50. Level Speed Change (LSC)	
• Begins with initial power change or turn. • Ends 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°.
51. Level Speed Change (LSC)/Contact	
• Begins when established at assigned altitude, heading, and airspeed. • Ends 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
52. Vertical S-1 Pattern	
• Begins with initial power change or turn. • Ends 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°.
53. Turn Pattern	
• Begins with initial power change or turn. • Ends 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.
54. Turn Pattern/Contact	
• Begins when established at assigned altitude, heading, and airspeed. • Ends with return to that heading.	• Clears area before commencing. • Executes maneuver IAW FTI.
55. Oscar Pattern	
• Begins with initial power change or turn. • Ends 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
56. Quick Stop	
• Begins when accelerating from normal pattern downwind to 100 KIAS. • Ends when established in a normal climb.	• Executes maneuver IAW NATOPS and FTI.
57. Unusual Attitude Recovery	
• Begins when unusual attitude is recognized. • Ends 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.
58. Instrument Autorotation	
• Begins when twist grip is reduced to flight idle. • Ends 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.
59. Magnetic Compass Turns	
• Apply during all failed directional gyro scenarios.	• Executes procedures IAW current FTI. • Constantly updates headings and air work.

BEHAVIOR STATEMENT	STANDARDS
60. 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.
61. Radial/Bearing Intercepts	
• Begin when given an assigned radial/ bearing by the IP. • End once established on that radial/ bearing.	• Executes procedure and intercepts assigned radial/bearing IAW the FTI.
62. 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.

BEHAVIOR STATEMENT	STANDARDS
63. 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.
64. Non-Precision Approach	
• Begins when established on a published portion of approach or cleared for the approach, or on radar vectors to final. • Ends 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 ±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 +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
65. Precision Approach	
• Begins when established on a published portion of approach or cleared for the approach, or on radar vectors to final. • Ends 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.
66. 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
67. Holding	
• Begins when crossing the holding fix. • Ends 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.
68. 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.
69. Crossover	
• Begins 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.
70. 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.

BEHAVIOR STATEMENT	STANDARDS
71. 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.
72. Breakup and Rendezvous	
• Begins when flight separates. • Ends when flight returns to section cruise formation.	• Executes procedures IAW current FTI. • Maintains ±5° AOB. • Wing maintains step-up and avoids ±10° of bearing.
73. Overrun	
• Begins when Wing maneuvers to discontinue join-up due to excessive closure rate. • Ends with Wing stabilized in section cruise.	• Wing recognizes requirement for overrun in time to safely execute procedures IAW the current FTI.
74. Lead Change	
• Transfers control of the formation from Lead to Wing.	• Executes procedures IAW current FTI and NATOPS.
75. Section Cruise	
• Allows 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.
76. Section Landings	
• Perform landing in close formation.	• Executes procedures IAW current FTI. • Lead maintains normal approach profile IAW CTS. • Wing maintains ±10° of bearing.

BEHAVIOR STATEMENT	STANDARDS
77. Combat Cruise Flight	
• Allows maximum flight flexibility and maneuverability while retaining control and flight discipline.	• Executes procedures IAW current FTI.
78. VFR Navigation	
• Begins at start of visual navigation route. • Ends 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.
79. Low-Level Navigation	
• Navigate at low level with appropriate charts.	• Executes procedures IAW current FTI. • Positively identifies chart information in conjunction with terrain.
80. Timing	
• Begin at first checkpoint on route. • End at last checkpoint on route.	• Executes procedures IAW current FTI.

BEHAVIOR STATEMENT	STANDARDS
81. Low-Level Basic Instruments (LLBI)	
• Execute basic instrument procedures while at low level.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet.
82. Stab-Off LLBI	
• Execute basic instrument procedures under diminished stabilization.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet.
83. Partial Panel LLBI	
• Execute basic instrument procedures with partial instrumentation.	• Executes procedures IAW current FTI. • Maintains altitude ±50 feet.
84. 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.
85. Search and Rescue Patterns/Scenarios	
• Begin with instructor-driven scenario and student 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.

BEHAVIOR STATEMENT	STANDARDS
86. Windline Rescue Pattern	
• Begins with the completion of a selected SAR pattern or locating survivor, and student 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.
87. Section High-Speed Approach	
• Allows 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.
88. Emergency Low Visibility Approach (ELVA)	
• Approach required for emergency weather conditions.	• Executes procedures IAW current FTI.
89. 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.
90. 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°.

BEHAVIOR STATEMENT	STANDARDS
91. Section Waveoff	
• Begins with either aircraft, individually or collectively, discontinuing an approach.	• Executes procedures IAW current FTI. • Lead/Wing makes appropriate waveoff transmission(s).
92. Field Deck Landing Practice Waveoff	
• Begins when approach terminates which is deemed unsafe or uncomfortable.	• Executes procedures IAW current FTI.
93. Response to LSE	
• Operate aircraft under LSE direction.	• Recognizes information given by LSE and follows direction properly.
94. Vertical Landing	
• Begins when established over desired landing spot. • Ends when aircraft is safely on deck and collective is full down.	• Executes maneuver IAW NATOPS and FTI. • Continues descent without intermediate stops.
95. 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.

BEHAVIOR STATEMENT	STANDARDS
96. 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.
97. 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.
98. Spatial Disorientation Awareness	
• Begins with recognition of disorientation. • Ends when aircraft is stabilized with pilots reoriented.	• Backs up flying pilot to prevent disorientation. • Recognizes potential for SD and employs appropriate CRM to prevent. • Recovers aircraft IAW FTI unusual attitude recovery procedures as required.

BEHAVIOR STATEMENT	STANDARDS
99. Hospital Pad Identification/Landing Zone Evaluation	
• Begins at altitude prior to executing an approach to pick up or drop off the survivor. • Ends when over flight of the landing area is complete.	• Complies with NATOPs and FTI procedures. • Determines correct entry, exit, and waveoff directions. • Utilizes crew for greater situational awareness.

Chapter X

Master Materials List

Individually Issued Materials

NOMENCLATURE	IDENTIFICATION	QTY PER STUDENT
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. Instrument Navigation Workbook	CNATRA P-403	1
d. Flight Planning Workbook	CNATRA P-404	1

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