

NAVAL AIR TRAINING COMMAND



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CHIEF OF NAVAL AIR TRAINING



UMFO ADVANCED MARITIME COMMAND AND CONTROL (MC2) TRAINING SYSTEM CURRICULUM

2014



DEPARTMENT OF THE NAVY
CHIEF OF NAVAL AIR TRAINING
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CNATRA INSTRUCTION 1542.171

Subj: UNDERGRADUATE MILITARY FLIGHT OFFICER (UMFO) ADVANCED
MARITIME COMMAND AND CONTROL (MC2) TRAINING SYSTEM
CURRICULUM

1. Purpose. To publish the curriculum for training Undergraduate Military Flight Officers (UMFOs) in the Advanced phase of Naval Air Training Command (NATRACOM) flight training.
2. Action. This instruction is effective on receipt. No changes shall be made without written authorization by the Chief of Naval Air Training (CNATRA).
3. 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

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COURSE DATA

1. Course Title. Undergraduate Military Flight Officer (UMFO) Advanced Maritime Command and Control (MC2) Training System Curriculum.
2. Course Identification Numbers. Advanced MC2 Core, Q-2D-0171; Advanced E-2 UMFO, Q-2D-4171; Advanced MPR UMFO, Q-2D-2171; and Advanced E-6 UMFO, Q-2D-3171.
3. Location. Naval Air Station Pensacola.
4. Course Status. Active.
5. Course Mission. The mission of UMFO Advanced MC2 training is to qualify student Naval Flight Officer (NFO) graduates for follow-on Fleet Replacement Squadron (FRS) flight training and prepare them for their future responsibilities as military officers. At the successful completion of this syllabus, the student will be designated a Naval Flight Officer. This requires:
 - a. Ground simulator training to teach the principles and techniques used in multi-crew aircraft in support of national and fleet missions.
 - b. Ground training to supplement and reinforce simulator training.
6. Prerequisite Training. For land-based selectees, successful completion of Primary 1 UMFO (Q-2D-0385), (T-6A) Training. For E-2 selectees, successful completion of Primary 1 UMFO (Q-2D-0385) and Primary 2 UMFO (Q-2D-0485), (T-6A) Training.
7. Security Clearance Requirements. None.
8. Follow-on Training. Upon successful completion of this syllabus and NFO designation, the officer will be ordered to one of the following Fleet Replacement Squadrons (FRS): VAW-120 for E-2 Graduates, VP-30 for Maritime Patrol and Reconnaissance (MPR) Graduates, and VQ-7 for E-6 Graduates.

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

	<u>Training Days</u>	<u>Calendar Weeks</u>
Advanced MC2 Core:	43.2	9.6
Advanced E-2:	69.8	15.5
Advanced MPR:	43.6	9.7
Advanced E-6:	28.6	6.3

10. Class Capacity. Variable.

11. Instructor Requirements. As established by Chief of Naval Operations (CNO) planning factors.

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

13. Quota Management Authority. Chief of Naval Air Training (CNATRA).

14. Quota Control. Chief of Naval Operations.

15. Course Training Subjects. The Advanced MC2 curriculum begins with two types of student NFO (SNFO) selectees: the E-2 selectee and the land-based selectee (Maritime Patrol and Reconnaissance (MPR) and E-6). The Advanced MC2 curriculum graduates three types of winged Naval Flight Officers (NFOs): E-2, MPR (P-3/P-8,EP-3), and E-6. All selectees begin the Advanced MC2 syllabus with the Core stage of training. Upon completion of Core, the E-2 selectee proceeds to E-2 training and the land-based selectee proceeds to either MPR or E-6 specific training.

a. Ground Training

ADMINISTRATION		
Stage	Symbol	Hours
Advanced MC2 Checkout	G0104	2.0
Totals		2.0

GROUND TRAINING (CORE)		
Stage	Symbol	Hours
Advanced MC2 Welcome Aboard, Introduction to Syllabus, and VT-4 Orientation	G0101-3	4.0
Operational Flight Planning, Flight Instruments, and Navigation	C0101-9	25.0
Operational Flight Planning, Flight Instruments, and Navigation Exam and Remediation/Critique	C0110-11	2.5
Communications and Navigation Systems	C0201-6	15.0
Communications and Navigation Systems Exam and Remediation/Critique	C0207-8	2.0
Multi-Crew Simulator (MCS) Familiarization	C0301-6	9.5
MCS EP Boldface Procedures Test and Remediation/Critique	C0307-8	1.5
Sensor and Link Operations	C0401-8	14.5
Sensor and Link Operations Exam and Remediation/Critique	C0409-10	2.0
Fleet Operations	C0501-17	32.5
Fleet Ops Exam and Remediation/Critique	C0518-19	2.0
Totals		110.5

GROUND TRAINING (E-2)		
Stage	Symbol	Hours
Advanced MC2 Welcome Aboard, Introduction to Syllabus, and VT-4 Orientation	G0101-3	4.0
Operational Flight Planning, Flight Instruments, and Navigation	C0101-9	25.0
Operational Flight Planning, Flight Instruments, and Navigation Exam and Remediation/Critique	C0110-11	2.5
Communications and Navigation Systems	C0201-6	15.0
Communications and Navigation Systems Exam and Remediation/Critique	C0207-8	2.0
Multi-Crew Simulator (MCS) Familiarization	C0301-6	9.5
MCS EP Boldface Procedures Test and Remediation/Critique	C0307-8	1.5
Sensor and Link Operations	C0401-8	14.5
Sensor and Link Operations Exam and Remediation/Critique	C0409-10	2.0
Fleet Operations	C0501-17	32.5
Fleet Ops Exam and Remediation/Critique	C0518-19	2.0
Airborne Early Warning (AEW)	E0101-7	18.0
AEW Exam and Remediation/Critique	E0108-9	2.5
Air Intercept Control (AIC)	E0201-5	13.0
AIC Exam and Remediation/Critique	E0206-7	2.0
Totals		146.0

GROUND TRAINING (MPR)		
Stage	Symbol	Hours
Common Navigation (Nav)	N0101-8	22.5
Common Nav Exam and Remediation/Critique	N0109-10	2.0
Surface Search and Littoral Surveillance (SSLS)	P0101-10	20.0
SSLS Exam and Remediation/Critique	P0111-12	2.0
Electronic Warfare and Acoustic Operations (EWAO)	P0201-8	18.0
EWAO Exam and Remediation/Critique	P0209-10	2.0
Maritime Patrol and Reconnaissance (MPR)	P0301-5	13.0
MPR Exam and Remediation/Critique	P0306-7	2.0
Totals		81.5

GROUND TRAINING (E-6)		
Stage	Symbol	Hours
Common Navigation (Nav)	N0101-8	22.5
Common Nav Exam and Remediation/Critique	N0109-10	2.0
E-6 Communications and Operations	T0101-8	15.5
E-6 Communications and Operations Exam and Remediation/Critique	T0109-10	2.0
Totals		42.0

b. Flight Support

FLIGHT SUPPORT (CORE)		
Stage	Symbol	Hours
MCS Familiarization Tour	C1101	1.5
MCS Device Indoctrination (FAM-0)	C1201	1.5
Familiarization and Navigation Flight Support	C1301-3	11.0
Sensor and Link Operations Flight Support	C1401-3	7.5
Fleet Operations Flight Support	C1501-3	9.0
Totals		30.5*

Note: Totals* include 6.0 hours in the MCS without a Contract Simulator Instructor (CSI) or Instructor NFO (INFO), except C1302 will have an INFO available for the training event.

FLIGHT SUPPORT (E-2)		
Stage	Symbol	Hours
MCS Familiarization Tour	C1101	1.5
MCS Device Indoctrination (FAM-0)	C1201	1.5
Familiarization and Navigation Flight Support	C1301-3	11.0
Sensor and Link Operations Flight Support	C1401-3	7.5
Fleet Operations Flight Support	C1501-3	9.0
AEW Flight Support	E1101-3	9.0
AIC Flight Support	E1201-3	9.0
Totals		48.5*

Note: Totals* include 12.0 hours in the MCS without a CSI or INFO, except C1302 will have an INFO available for the training event.

FLIGHT SUPPORT (MPR)		
Stage	Symbol	Hours
Common Nav Flight Support	N1101-3	9.5
SSLS Flight Support	P1101-4	10.0
EWAO Flight Support	P1201-3	9.0
MPR Flight Support	P1301-4	11.0
Totals		39.5*

Note: Totals* include 6.0 hours in the MCS without a CSI or INFO.

FLIGHT SUPPORT (E-6)		
Stage	Symbol	Hours
Common Nav Flight Support	N1101-3	9.5
E-6 Communications and Operations Flight Support	T1101-3	8.5
Totals		18.0*

Note: Totals* include 3.0 hours in the MCS without a CSI or INFO.

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

FLIGHT TRAINING (CORE)			
Flight/Events	Symbol	MCS	
		Flts	Hrs
Self-Study Events	C1302	1	3.0
	C1402	1	1.5
	C1502	1	1.5
Familiarization and Navigation	C3101-4	4	6.0
Sensor and Link Operations	C3201-8	8	12.0
Fleet Operations	C3301-5	5	7.5
Fleet Operations Check Ride	C3490	1	1.5
Totals		21	33.0

Note: Self-study events (6.0 hours) are accomplished in the MCS without a CSI or INFO, except C1302 will have an INFO available for the training event.

FLIGHT TRAINING (E-2)			
Flight/Events	Symbol	MCS	
		Flts	Hrs
Core Self-Study Events	C1302	1	3.0
	C1402	1	1.5
	C1502	1	1.5
Familiarization and Navigation	C3101-4	4	6.0
Sensor and Link Operations	C3201-8	8	12.0
Fleet Operations	C3301-5	5	7.5
Fleet Operations Check Ride	C3490	1	1.5
Self-Study Events	E1102	1	3.0
	E1202	1	3.0
AEW	E3101-5	5	7.5
AEW Check Ride	E3290	1	1.5
AIC	E3301-10	10	15.0
AIC Check Ride	E3490	1	1.5
Totals		40	64.5

Note: Self-study events (12.0 hours) are accomplished in the

MCS without a CSI or INFO, except C1302 will have an INFO available for the training event.

FLIGHT TRAINING (MPR)			
Flight/Events	Symbol	MCS	
		Flts	Hrs
Self-Study Events	N1102	1	1.5
	P1103	1	1.5
	P1202	1	1.5
	P1303	1	1.5
Common Navigation	N3101-4	4	6.0
Common Navigation Check Ride	N3290	1	1.5
SSLS	P3101-8	8	12.0
EW	P3201-2	2	3.0
AO	P3301-2	2	3.0
MPR	P3401-2	2	6.0
MPR Check Ride	P3590	1	3.0
Totals		24	40.5

Note: Self-Study events (6.0 hours) are accomplished in the MCS without a CSI or INFO.

FLIGHT TRAINING (E-6)			
Flight/Events	Symbol	MCS	
		Flts	Hrs
Self-Study Events	N1102	1	1.5
	T1102	1	1.5
Common Navigation	N3101-4	4	6.0
Common Navigation Check Ride	N3290	1	1.5
E-6 Communications and Operations (Ops)	T3101-9	9	22.5
E-6 Communications and Ops Check Ride	T3290	1	3.0
Totals		17	36.0

Note: Self-Study events (3.0 hours) are accomplished without a CSI or INFO.

16. Training Time Analysis. In addition to the hours formally planned for classes and simulators, 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 events, specific brief times will be programmed into the Training Integration Management System (TIMS) and accounted for on the flight schedule, per the following table:

ADDITIONAL FORMAL TRAINING TIME PER CURRICULUM HOUR/EVENT			
Training Area	Brief	Debrief	Total
Simulator Events: C3490; E3490, P3590, and T3290 (INFO)	1.5	1.0	2.5
Core/Common Nav Simulator Events: All Others (CSI*)	1.0	1.0	2.0
E-2/MPR/E-6 Simulator Events: All Others (INFO)	1.0	1.0	2.0

* These events may occasionally be observed or instructed by INFOs with upgraded qualifications for purposes of increasing standardization.

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

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

19. Primary Instruction Methods. Lecture, Mediated Interactive Lecture (MIL), Computer-Assisted Instruction (CAI), self- and group-paced study, and in-simulator instruction.

20. Preceding Curriculum Data. Replaces the undergraduate NFO training curriculum program at the associated FRS.

21. Student Performance Measurement/Application of Standards. The standards outlined in Chapter IX, Course Training Standards (CTS), are used to evaluate performance for all items on all events. Final judgment regarding the satisfactory performance of any item rests with the instructor. Refer to CNATRAINST 1500.4H, Chapter VII, for further guidance.

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

CSI RESOURCE REQUIREMENTS IN THE MCS		
Event	CSI	
	MCS	Hrs
E-2 (All events in blocks E31, E32, E33, and E34)	17	25.5
MPR (P3104, P3107, P3108, all events in blocks P33, P34, and P35)	8	16.5
Totals	25	42.0

ABBREVIATIONS

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

ABCC	- Airborne Battlefield Command and Control
ABNCP	- Airborne Command Post
ACU	- Air Control Unit
ADIZ	- Air Defense Identification Zone
ADMIN	- Administration
AEW	- Airborne Early Warning
AIC	- Air Intercept Control
AIM	- Aeronautical Information Manual
AIMT	- Air Interdiction of Maritime Target
AIS	- Automatic Identification System
ALCS	- Airborne Launch Control System
AN	- Ambient Noise
AO	- Acoustic Operations
ASI	- Aviation Student Indoctrination
ASUW	- Anti-Surface Warfare
ASW	- Anti-Submarine Warfare
ATC	- Air Traffic Control
ATF	- Aviation Training Form
ATJ	- Aviation Training Jacket
AUTODIN	- Automatic Digital Network
BDA	- Battle Damage Assessment
BRAA	- Bearing/Range/Altitude/Aspect
BT	- Bathythermal
CAI	- Computer-Assisted Instruction
CAP	- Combat Air Patrol

CAS	- Close Air Support
CCOI	- Critical Contact of Interest
CDI	- Course Deviation Indicator
CNATRA	- Chief of Naval Air Training
CNAV	- Common Navigation
CO	- Commanding Officer
COI	- Contact of Interest
COMM	- Communications
COMMOPS	- E-6 Communications and Operations
COMSEC	- Communications and Security
CPA	- Closest Point of Approach
CRM	- Crew Resource Management
CTS	- Course Training Standard(s)
CWC	- Composite Warfare Commander
DA	- Decision Altitude
DCA	- Defensive Counter Air
DF	- Direction Finder
DICASS	- Directional Command-Activated Sonobuoy System
DIFAR	- Directional Frequency Analysis and Recording
DOR	- Drop On Request
DR	- Dead Reckoning
DRT	- Dead Reckoning Trace
EAM	- Emergency Action Message
EMP	- Electromagnetic Pulse
EO	- Electro-Optical
EOB	- End of Block
EP	- Emergency Procedure

ES - Electronic Support
ESM - Electronic Support Measure
ET - Extra Training
EW - Electronic Warfare
EWAO - Electronic Warfare and Acoustic Operations
FAA - Federal Aviation Administration
FAM/Fam - Familiarization stage; also abbreviation for Familiarization
FAR - Federal Aviation Regulations
FEZ - Fighter Engagement Zone
FIR - Flight Information Region
FLIP - Flight Information Publication
FLTOPS - Fleet Operations
FMS - Flight Management System
FPC - Final Progress Check
FRS - Fleet Replacement Squadron
FTI - Flight Training Instruction
GPS - Global Positioning System
H/X - Hours per Event
HF - High Frequency
HSI - Horizontal Situation Indicator
IAW - In Accordance With
ICAO - International Civil Aviation Organization
ICS - Intercommunication System
IFF - Identification Friend or Foe
IFR - Instrument Flight Rules
IMS - International Military Student

IMSO - IMS Officer
INFO - Instructor NFO
INS - Inertial Navigation System
IPC - Initial Progress Check
IR - Infrared
ISAR - Inverse Synthetic Aperture RADAR
JEZ - Joint Engagement Zone
KI - Killbox Interdiction
LECT - Lecture
LOFAR - Low Frequency Analysis and Recording
MAD - Magnetic Anomaly Detector
MAP - Missed Approach Point
MAS - Maritime Air Support
MC2 - Maritime Command and Control
MCG - Master Curriculum Guide
MCS - Multi-Crew Simulator
MESA - Minimum Enroute Safe Altitude
MEZ - Missile Engagement Zone
MIF - Maneuver Item File
MIL - Mediated Interactive Lecture
MILSTAR - Military Strategic and Tactical Relay
MOSA - Minimum Operational Safe Altitude
MPR - Maritime Patrol and Reconnaissance
MSA - Minimum Safe Altitude
N/A - Not Applicable
NAV/Nav - Operational Flight Planning, Flight Instruments,
and Navigation; also abbreviation for Navigation

NAVAID	- Navigational Aid
NCA	- National Command Authority
NCI	- Near Collision Intercept
NFO	- Naval Flight Officer
NG	- No Grade
NM	- Nautical Miles
NMU	- Number of Marginals and UNSATs
NORDO	- No Radio
NOTAM	- Notice to Airmen
NSS	- Naval Standard Score
OCA	- Offensive Counter Air
OLQ	- Officer-Like Qualities
OPS	- Operations
OPSO	- Operations Officer
P/P	- Pencil and Paper
PAS	- Phase Aggregate Score
PD	- Pulse Duration
PHID	- Positive Hostile Identification
PRF	- Pulse Repetition Frequency
PRI	- Pulse Repetition Interval
RADAR	- Radio Detection and Ranging
ROE	- Rules of Engagement
RRU	- Ready Room Unsatisfactory
SA	- Situational Awareness
SAC	- Systems Accuracy Check or Scene of Action Commander (ASW)
SAG	- Surface Action Group

SAR - Search and Rescue or Synthetic Aperture RADAR
SATCOM - Satellite Communications
SAU - Search and Attack Unit
SENSFS - Sensor and Link Operations Flight Support
SL_OPS - Sensor and Link Operations
Sim - Simulator
SITREP - Situation Report
SMS - Student Monitoring Status
SNFO - Student NFO
SOP - Standard Operating Procedure
SOSUS - Sound Surveillance System
SS - Self-Study
SSC - Surface Surveillance Coordination
SSLS - Surface Search and Littoral Surveillance
SSR - Special Syllabus Requirement
SURPIC - Surface Picture
SURTASS - Surveillance Towed-Array Sensor System
SYS - Communications and Navigation Systems
TACAMO - Take Charge and Move Out
TACAN - Tactical Air Navigation
TACREP - Tactical Report
TACTAS - Tactical Towed-Array System
TBD - To Be Determined
TRAWING - Training Air Wing
TRB - Training Review Board
TTO - Training Time Out
UMFO - Undergraduate Military Flight Officer

UNSAT - Unsatisfactory
USSTRATCOM - U.S. Strategic Command
V/UHF - Very/Ultra High Frequency
VLF - Very Low Frequency
WSM - Water Space Management
XO - Executive Officer

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GLOSSARY

1. Advancing X. Completed event within the normal syllabus flow. Excludes events with last characters in the range 84-89.
2. Aviation Training Form (ATF). A grade sheet documenting student performance for all categories of training regardless of media, phase, or stage.
3. Aviation Training Jacket (ATJ). The ATJ is the student's training record. It contains ATFs, calendar card, grade reports, and all other associated training information. It is filed in student control and follows the student through all phases of training.
4. Block of Training. A sequential series of lessons within a training stage sharing an identical MIF. The third character in the lesson designator identifies a block.
5. Blue ATF. A standard ATF that is printed on blue paper. The blue ATF is used to denote a Marginal event. Blue ATFs are also used to outline Student Monitoring Status (SMS) requirements.
6. Check Event (SXX90). A check event in any stage of training.
7. Class Advisor. An Instructor NFO assigned to provide counseling and guidance to a specific class throughout the applicable syllabus.
8. Course of Training. The entire program of simulation, academics, and officer development conducted in all media during the programmed training days.
9. Course Training Standard. A description of required behaviors and standards of performance for a specific maneuver. These standards are in Chapter IX.
10. Courseware. The technical data, flight training instructions, audio, video, film, MIL, CAI, instructor guides, student study guides, and other training material developed to support and implement the syllabus of instruction.

11. 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.
12. Deliverables. A CNATRA 1542/1827 TRB Summary Form generated by the TRB that summarizes a specific student's progress in a given syllabus and provides detailed information on the application of UMFO training for that student. Deliverables indicate whether the quality and continuity of training provided was IAW CNATRAINST 1542.171.
13. Drop on Request. A student's voluntary option to request termination of training IAW CNATRAINST 1500.4H.
14. Emergency Procedure. Any degradation of aircraft systems or flight conditions requiring SNFO action or intervention.
15. End of Block. The last event in a block. The student must meet or exceed MIF on all critical items and all optional items attempted in the block to progress past EOB.
16. Extra Training (SXX87). Additional student training flights ordered by the Squadron CO in order to make up for Squadron/Instructor NFO instructional deficiencies.
17. Final Progress Check (SXX89). A special check normally given by the Commanding Officer (CO) or Executive Officer (XO) in the CO's absence. The CO may delegate Final Progress Check (FPC) duty in writing to a qualified O-4 or above, in the event that neither the CO nor XO are qualified or available to instruct in the required stage. A satisfactory FPC returns the student to normal syllabus flow. An UNSAT FPC results in an attrition recommendation to Commander, Training Air Wing SIX, and a TRB.
18. Flight Training Instruction. A CNATRA-approved manual describing flight procedures and techniques for each training stage.
19. Hours per X. The average length for each event in a block, rounded to the nearest tenth of an hour.

20. Initial Progress Check (SXX88). A special check given by an experienced instructor (senior O-3 or above) as designated in writing by the CO. A satisfactory IPC returns the student to normal syllabus flow. An UNSAT IPC results in an FPC.

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

Char	Meaning	Remarks		
1 st	Stage	G-Ground E-E-2	C-Core P-MPR	N-Common Nav T-E-6
2 nd	Media	0-Ground Event	1-Flight Support	2-Not Used 3-Simulator 4- Not Used
3 rd	Block	Sequential, indicating block within stage.		
4 th &	Event/ Check	Sequential, indicating event within block, or other event types as shown below:		
5 th	Identifier	84-Adaptation Events 85-Practice Sim 86-Warmup 87-Extra Training	88-Initial Progress Check 89-Final Progress Check 90-Check Ride	

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

23. Master Syllabus. Chapters I-VIII list all training syllabus activities, prerequisites, and training flow for UMFO Advanced MC2.

24. Outcomes. Potential courses of action following a Progress Check.

- a. Pass - Return to training.
- b. Fail (IPC) - Results in an FPC.
- c. Fail (FPC) - Proceed with the attrition process/attrite.

25. Phase of Training. A major division in the course of training. The UMFO syllabus consists of Primary (Primary 1 and 2), Intermediate, and Advanced (Strike Fighter and Maritime Command and Control) phases of training.

26. 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.
27. Progress Check Instructor. An INFO designated in writing by the CO to administer Initial or Final Progress Checks.
28. Ready Room UNSAT (RRU). An UNSAT grade given for inadequate knowledge of flight procedures, systems, discuss items, emergency procedures, or deficient preflight planning.
29. Special Syllabus Requirement. One time, ungraded demonstration item.
30. Stage of Training. All training of a particular type within a phase. The first letter in the lesson designator identifies the stage of each lesson (Example: E3101 is in the E-2 stage).
31. Standard Operating Procedure. A training wing or squadron directive describing Standard Operating Procedures (SOP) for local aircraft.
32. Student Monitoring Status. SMS is a squadron-initiated status to address substandard student performance. All SMS-related documentation shall be completed on blue paper.
33. Training Media. UMFO media include simulator (2B51), flight support, and ground training. The second character in the lesson identifier designates the training media (example: G0101 is a ground training event and C1101 is a flight support event).
34. Training Review Board. A fact-finding board appointed to conduct an administrative review of circumstances and procedures relative to an FPC recommendation for a student's attrition.
35. Training Time Out. Cessation of any training evolution initiated when a student or instructor expresses concern for personal safety or a condition warrants clarification of procedures or requirements IAW CNATRAINST 1500.4H.

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

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

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Chapter I

General Instructions

1. Syllabus Management

- a. Distribution. Participating squadron personnel.
- b. Interpretation. The syllabus is directive. Should circumstances create situations not covered within the scope of this syllabus, or specific course of action appears to conflict with other directives, consult CNATRA (N71).
- c. Deviations. Document all deviations on the event's ATF.
- d. Changes. Recommended changes shall be submitted IAW CNATRAINST 1550.6E.
- e. Execution. All students execute associated pipeline events for the UMFO Advanced MC2 syllabus.
- f. Syllabus Description. UMFO Advanced MC2 is flown in the 2B51, Multi-Crew Simulator (MCS), training platform and is divided into stages. Stages are grouped by similar flight training regimes such as Contact (Core), Navigation (Common Navigation for MPR and E-6), and Tactical (E-2, MPR, and E-6). Each stage is subdivided into training blocks. The device training blocks consist of a specified number of simulator events. MIFs identify the minimum acceptable level of performance in relation to the CTS that must be achieved at the completion of each training block.
- g. Grade Calculation
 - (1) Phase Aggregate Score (PAS). An SNFO's PAS is a comparative ranking based on the previous population of completers for a specific phase or portion of a phase of aviation training. PAS indicates only SNFO performance relative to a normative population of other recent SNFOs. Under the UMFO system, PAS is not by itself an indication of whether an SNFO has met the criteria necessary for winging or continuation in aviation training.

(2) UMFO SNFO Calculations. From a population of previous SNFOs, an SNFO's PAS is calculated using equation (1), below:

$$SNFO_PAS = 50 + 10 * \left(0.81 * \frac{S - M1}{S1} + 0.1 * \frac{M2 - NMU}{S2} + 0.09 * \frac{Acad - M3}{S3} \right) \quad (1)$$

Where

- S - SNFO Score
- NMU - SNFO Number of Marginals and UNSATs (NMU)
- Acad - SNFO Academic Grades
- M1 - Squadron Average Score
- M2 - Squadron Average NMUs
- M3 - Squadron Average Academic Grades
- S1 - Standard Deviation of Squadron Score
- S2 - Standard Deviation of Squadron NMU
- S3 - Standard Deviation of Squadron Academic Grades

(3) Naval Standard Score (NSS). NSS is calculated to correct for potential non-normality in the distribution of PAS. NSS is calculated for each phase of training. 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

h. Accelerated Students. During the accelerated period, the student may progress to the next block of training once MIF is met within the current block of training. Squadron COs have the authority to tailor the student's accelerated syllabus based on the student's past flying experience. ATFs for the events not flown will be completed with a note in the remarks section stating "ACCELERATED - EVENT NOT FLOWN. ATF COMPLETED FOR ADMINISTRATIVE PURPOSES ONLY IAW CNATRINST 1542.171."

2. Training Management

a. Syllabus Progression. Fly syllabus events within each stage sequentially. Do not start a block without all prerequisites completed. Students must complete all events. System training management is designed to facilitate two graded events (simulator or exam) per student per day.

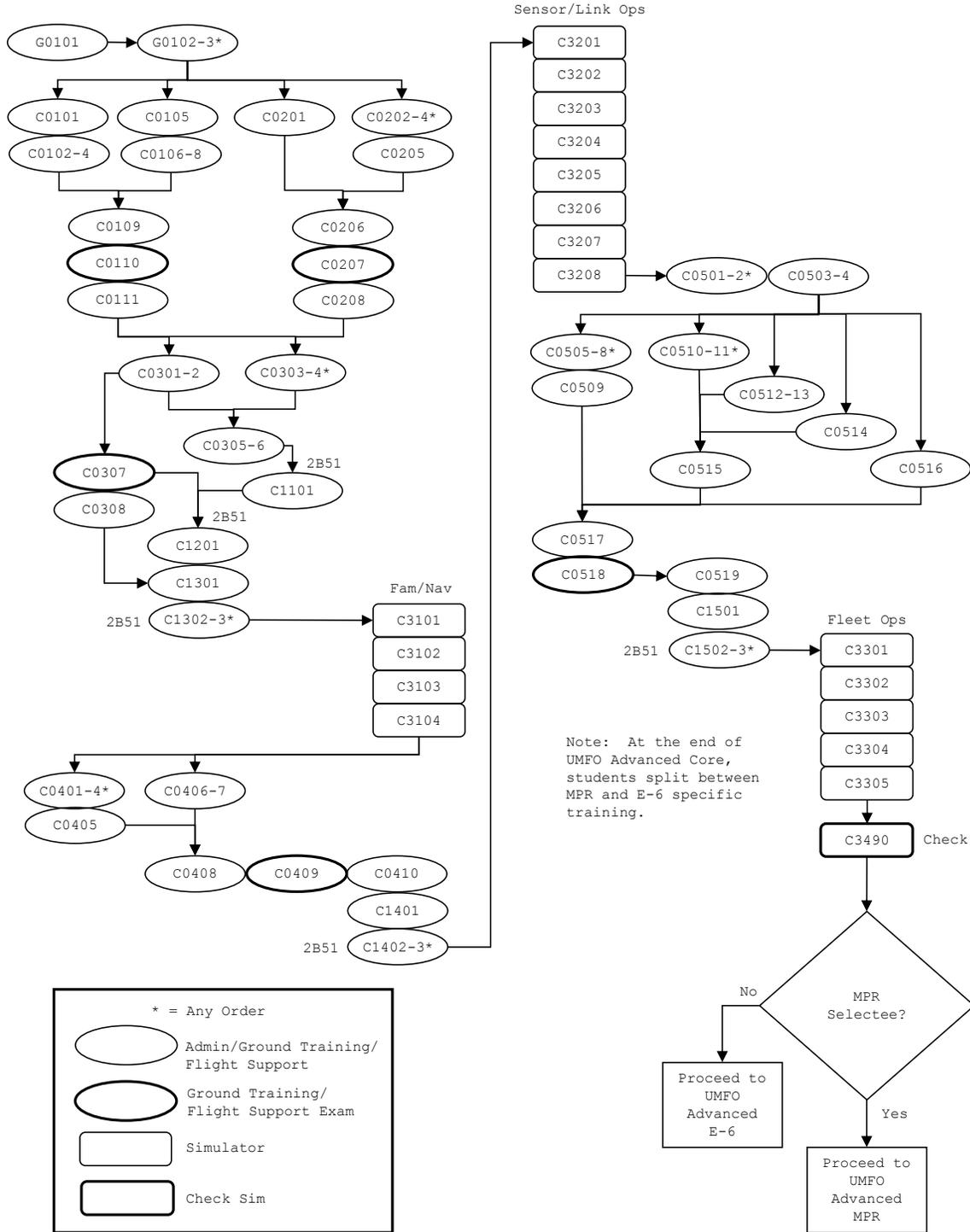
b. Maneuver Continuity. Students shall be allowed to attempt previously graded procedures frequently enough to ensure required proficiency is maintained.

c. Hours per Event (H/X). The instructor 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 hrs (greater or less than), the instructor shall annotate reason(s) in ATF's general comments section.

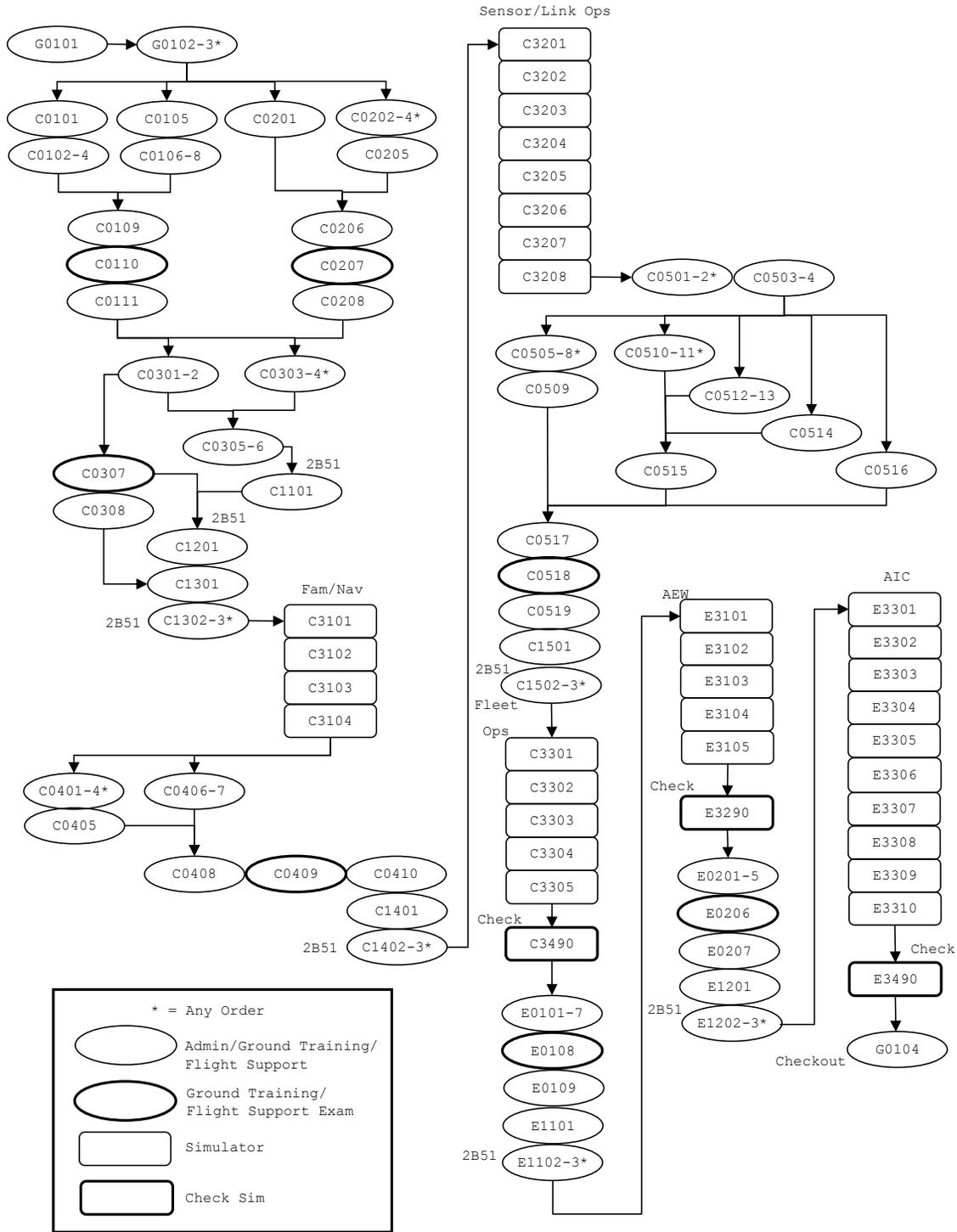
d. Special Syllabus Requirements. SSRs may be allocated to blocks. Unless noted otherwise, instructors may accomplish SSRs on any event within the block. SSRs shall be completed in the specified block. Annotate completed SSRs in the following three places on the ATF: specify the SSR completed in the Comments section, assign NG/1 as the SSR maneuver grade, and date/save SSR exposure on the TIMS SSR tab.

e. Aviation Training Jacket Reviews. Class Advisors shall conduct jacket reviews at least weekly. Additionally, SMS students require weekly ATJ reviews from the Student Control Officer.

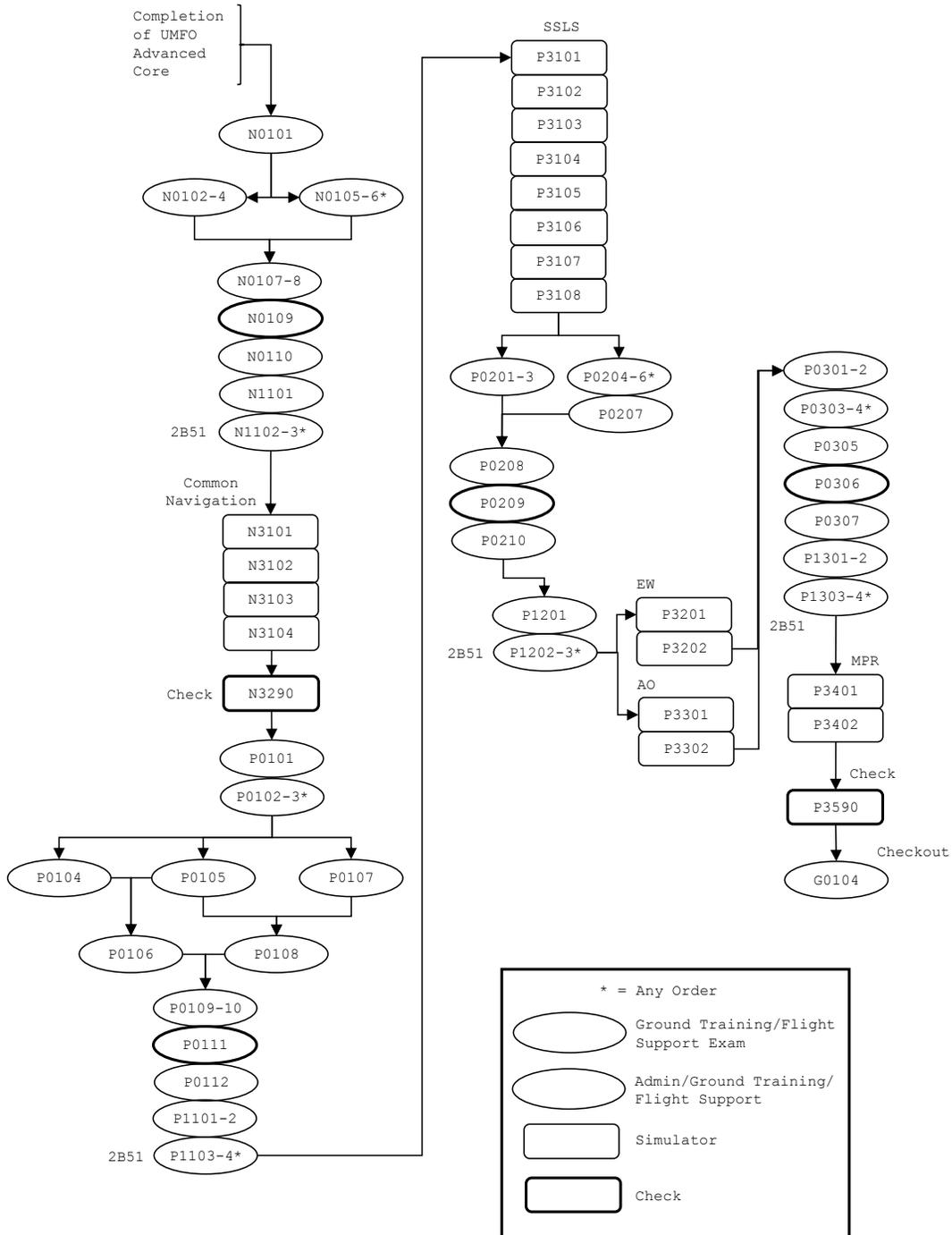
UMFO ADVANCED CORE COURSE FLOW



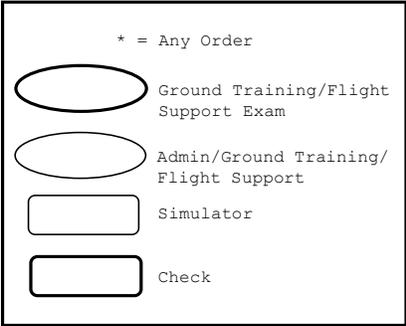
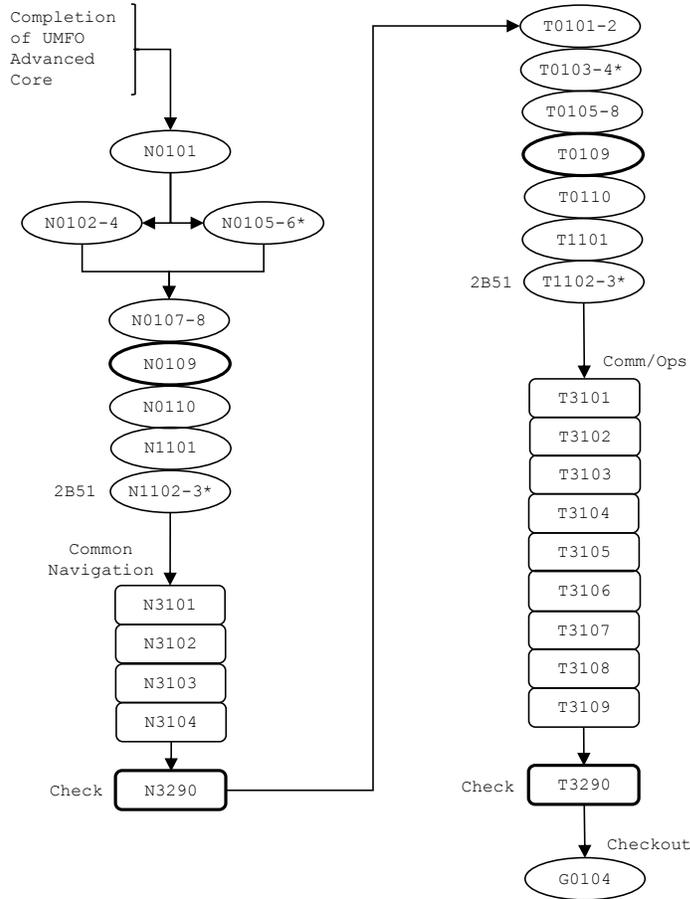
UMFO ADVANCED E-2 COURSE FLOW



UMFO ADVANCED MPR COURSE FLOW



UMFO ADVANCED E-6 COURSE FLOW



3. Unsatisfactory (UNSAT) Performance. See **Progress Check Procedures**, Chapter I, paragraph 9c(3).

a. 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 third cumulative UNSAT in the block.

(3) If the SNFO receives an UNSAT that does not result in an IPC/FPC, the ATF shall be printed on yellow paper.

(4) An UNSAT check ride (SXX90), two consecutive UNSATs in block, three cumulative UNSATs (in the same block), four cumulative UNSATs in phase, or RRU result in a progress check. Document the event that triggered the progress check on a pink ATF for that syllabus event.

b. Ready Room UNSAT (RRU). An RRU is defined as either of the following:

(1) An SNA is inadequately prepared for the scheduled event. The RRU shall be documented on a pink version of the event's ATF. The event will be marked as incomplete with a U/2 grade for "General Knowledge/Procedures." Upon completion of the progress check, the event shall be flown to completion and general knowledge and emergency procedures shall be incorporated into the overall grading solution.

(2) The SNA fails a nonacademic examination (e.g., NATOPS quiz).

(3) For purposes of determining when IPCs or FPCs are required, RRUs and UNSAT flight/simulator events all contribute to the same IPC/FPC process; each SNA may only have one IPC per phase of training.

c. Academic. Two academic examination failures in a phase trigger an FPC. The FPC shall be completed prior to retake.

d. Restrictions. Until remediating the UNSAT:

(1) The student shall not accomplish training in any other stage.

(2) The student may accomplish academic classes, examinations, and ground training missions provided the UNSAT mission was not a prerequisite.

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

5. Break in Training Warmup Events (SXX86). Nonsyllabus warmup events compensate for breaks in training. Eligibility is based on the number of days since the last simulator in the same stage. All warmups shall be instructional (simulator) and coded as an SXX86 (e.g., C3186). Warmup grades do not satisfy block or MIF requirements and shall not be included in the cumulative totals.

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

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

c. Additional Warmup Events. If the period between events is greater than 30 days, the Squadron CO shall determine an appropriate warmup training plan to regain student proficiency IAW CNATRAINST 1500.4H.

CRITERIA FOR AWARDING WARMUP EVENTS IN STAGE		
Break* (Days)	Warmup Events	Remarks
1-6	None	
7-13	1 Optional	<ul style="list-style-type: none"> ● Based on performance. ● Required if overall event grade is Marginal or UNSAT. ● Prohibited if: Performance meets MIF/standard or is adequate to meet MIF by EOB.
14-30	1 Mandatory 1 Optional	<ul style="list-style-type: none"> ● Mandatory warmup is not an advancing "X." ● Optional warmup based on performance. <ul style="list-style-type: none"> ▶ Required if overall event grade is Marginal or UNSAT. ▶ Prohibited if performance meets MIF/standard or is adequate to meet MIF by EOB.

*Break = (Current Julian Date) - (Julian Date last simulator event in stage)

6. Additional Simulators

a. Extra Training (ET) Events (SXX87). All ETs shall be dual and coded as SXX87 (e.g., C3187). ET events include, but are not limited to, IPC/FPC ET events. Award these events to compensate for training deficiencies, e.g., poor event/maneuver continuity or improper instruction.

(1) The CO may authorize one ET prior to an IPC and up to two ETs prior to an FPC.

(2) Authorization for IPC and FPC ET events shall be documented on a Supplementary ATF and shall clearly state the the training deficiency that warrants the ET(s).

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

7. Student Monitoring Status

a. The objective of SMS is to focus supervisory attention to a student's progress in training, address performance deficiencies, and assess the student's potential to complete the program. SMS may also be applied to students who require supervisory attention while trying to resolve personal issues. The intent of SMS is to focus on struggling students to help them overcome their problems, and provide an expedited route to attrition if this focused attention is unsuccessful.

b. A student who receives two UNSATs in a block of training or three UNSATs within a phase of training shall be placed on SMS.

c. The squadron CO is not constrained to the UNSAT-related SMS trigger; a CO may place a student on SMS anytime that the CO perceives a need for focused attention to resolve student difficulties.

d. SMS is intended to be a short-term program to address specific performance deficiencies within a block or stage of training. SMS requires that specific goals be met by the student within a specific time period. Specific performance goals shall be related to training standards rather than relative performance against a student's peers. The time period may reference syllabus events.

e. An SMS training plan should include, but is not limited to, training tailored to correct specific deficiencies or to address personal issues.

f. A student's Flight Leader or Class Advisor shall document placement on and removal from SMS in the student's ATJ via a Supplementary ATF. All SMS-related documentation shall be completed on blue paper. Documentation placing a student on SME shall include:

- (1) The reason the student is being placed on SMS,
- (2) The specific goals to be met for successful removal from SMS,

(3) The period of time the student is to be on SMS in order to achieve the specific goals,

(4) Consequences for not meeting the goals (student shall proceed to FPC),

(5) Specific additional training or extra instruction (if any),

(6) Specific scheduling restrictions (if any), and

(7) Any other applicable requirements or restrictions.

g. Documentation of unsuccessful removal from SMS shall include the specific goal(s) not achieved. For SMS that is triggered by a syllabus event, file the initiating blue SMS Supplementary ATF on the right side of the ATJ, directly above said event's grade sheet. Upon successful completion of SMS, file the closeout blue SMS Supplementary ATF on the right side of the ATJ, and directly above the closeout-event grade sheet. If SMS is not related to a syllabus event (i.e., personal issues, academic failure, etc.), then file the initiating and closeout blue SMS Supplementary ATFs on the left side of the ATJ, below the DOR and TTO policy statements.

h. If a student achieves their SMS goals within the SMS period or when personal issues have been resolved, then the student is returned to the normal syllabus flow. If the student is unable to meet the specific goals of SMS or performance does not improve, the student shall be referred to a Command-Directed FPC.

8. Ground Training and Briefing Requirements

a. Mission Preparation, Briefings, and Debriefings

(1) EOB Events. The instructor shall carefully review the student's previous ATFs 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 event with:

(a) A thorough knowledge of:

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

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

(b) An event profile tailored to training requirements, weak areas, and continuity.

(c) The latest ATF for the stage.

(d) Discuss items from the daily squadron flying schedule.

(3) Briefing. The instructor shall review the SNFO's previous block ATFs before each event. Thoroughly cover the current mission's:

(a) 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 CTS.

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

(c) Debriefing must be detailed and comprehensive. The ATF shall be completed prior to the SNA's next event. Exceptions may be made for out-and-ins and cross-country flights. In such instances, the SNFO will be provided feedback on performance as soon as possible following the event.

b. Emergency Procedures (EP) Briefing and Training

(1) EP training builds the student's confidence. The instructor shall conduct EP training on all events, either during the brief or in the device. Correct procedural deficiencies through additional instruction and study assignments.

(2) Grade the student's overall EP knowledge and performance under "Emergency Procedures" on the ATF.

9. Mission Grading Procedures and Evaluation Policies

a. General Grading and Evaluation Policy. MIFs listed are minimum block completion standards per maneuver. Students who consistently perform at the absolute minimum standard through multiple blocks of training may not possess the skills required to complete follow-on training. MIF is designed to allow for minimum performance in a specific area, with the understanding that performance in other areas above the minimum MIF will offset the weak area.

b. Grading Procedures

(1) Absolute Maneuver Grading. Use the following grading scale to document the student's characteristic performance on maneuvers attempted during each event. This is an absolute grading scale. Judge the student's proficiency only against the item's CTS. Maneuver grades shall be consistent with ATF comments.

(a) Demonstrated (NG/1 Level). Enter NG:

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

2. To indicate accomplishing all SSRs for that block or event. Also specify completed SSRs in the ATF's maneuver item content line and document date of exposure via the SSR button on the ATF menu bar.

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

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

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

(e) Excellent (E/5 Level). Greatly surpasses CTS. Performance is correct, efficient, and skillful. Deviations are very minor. The student initiates corrections, if required, and they are appropriate, smooth, and timely.

(2) Overall Event Grades. Overall event grades represent the student's progression through the syllabus. Grade events "Pass," "Marginal," or "UNSAT." Use the following definitions to characterize event grades. See **Awarding Overall Event Grades** for specific rules defining UNSAT performance.

(a) Pass

1. Prior to EOB: Progress is adequate to meet MIF by EOB.

2. EOB: The student's performance meets or exceeds block MIF.

(b) Marginal. Ability to meet the standards by the EOB is questionable. The ATF shall be printed on blue paper. Instructors shall not award a Marginal on an EOB event, check ride, IPC, or FPC. If performance is Marginal on an optional WU, the instructor shall ensure the event is recoded as a WU (CXX86) prior to ATF completion.

(c) UNSAT. Student exhibits dangerous tendencies, or progress toward meeting EOB standards is insufficient. UNSAT overall is at the instructor's discretion, unless it is triggered by regression rules. It should be noted that an event may be graded UNSAT without any individual maneuvers graded 2/Unable. If the student receives an UNSAT that does not result in an IPC or FPC, the ATF shall be printed on yellow paper. UNSAT Progress Checks and UNSAT events that result in a Progress Check shall be printed on pink paper.

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

(a) EOB MIF Performance. Performance must meet or exceed block MIF by EOB. If the student has previously met MIF in the block, he or she must still meet MIF in the EOB event if the maneuver is reattempted.

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

1. P33XX MIF requires an F/3 for "Operational Record Keeping." P34XX MIF requires a G/4.

2. The student must meet or exceed F/3 for "Operational Record Keeping" to progress out of P33XX.

3. In P34XX, the student must maintain or exceed F/3 on the same item until the last P34XX event, by which time the student must attain G/4.

(c) MIF Performance Maintenance. Students shall maintain or exceed MIF performance from one block to the next within a stage, except as noted below or when MIF on a subsequent block is below the preceding block MIF.

(4) Regression Rules. Regression rules address uneven progress through training. Regression is defined as performance below the previous block MIF. Regression rules do not apply to the first simulator block in each stage. The following specifies allowable regression.

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

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

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

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

b. The instructor shall award an overall UNSAT due to regression rules if:

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

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

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

(5) Maneuver Requirements. For each block:

(a) Critical (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. N/A.

(6) Incomplete Events. In general, instructors should consider an event complete if able to accomplish all mandatory maneuver requirements using the full training period. If unable to complete event due to additional instruction, instructor should grade the event as UNSAT/Incomplete. Assess the event complete if:

(a) The student received the full training period,
and

(b) There are sufficient events remaining in block to allow for completion of all remaining required maneuvers.

(c) Otherwise, assess the event incomplete.

(7) Completion Events

(a) An event may both complete a previous event and count as an advancing event.

(b) For events completed exclusively to clear an incomplete, grades on maneuvers repeated from the incomplete event do not count toward the student's score, except where the grade assigned for the repeated item is lower than the lowest grade previously assigned on that item across all previous attempts at that event.

c. Policies for Evaluation Flights and Ground Evaluations

(1) Authorized Evaluators. The CO will designate check event instructors for each stage.

(2) Check Event (SXX90)

(a) Check Event Progression. Check events are single-event training blocks; therefore, all rules regarding progressing out of a block apply, except:

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 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 ride instructor's discretion.

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

(b) Incomplete Check Event. The check event shall be incomplete when:

1. Any critical (+) item was not completed, or
2. The check event instructor was unable to observe sufficient examples of a given maneuver to assess the student's overall performance. If the flight profile is incomplete because too much time was dedicated to reattempting maneuvers or additional training, it should be graded UNSAT/Incomplete.

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

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

- a. Any critical (+) item is below MIF, or
- b. More than two optional items were graded F/3 where G/4 is required, or
- c. Any maneuver is U/2.

(3) Progress Check Procedures

(a) Progress checks are holistic reviews of a student's proficiency, judgment, situational awareness, and overall ability to complete the mission. The intent of every Progress Check is to determine whether the student has the potential to reach the defined training standards of his/her current phase of training within the designated TTT, while demonstrating the potential to successfully complete remaining undergraduate and, for Advanced students, FRS-level training. All progress checks must meet MIF for the most recently completed block of training. Progress checks shall be full mission profiles emphasizing the student's weak areas and a representative cross section of area and pattern maneuvers. All critical items do not need to be accomplished. Failed Progress Checks shall be documented on a pink ATF for the failed event generating the progress check. Refer to CNATRAININST 1500.4H.

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

1. IPC triggers:

- a. Two consecutive UNSATs in a block.
- b. Three cumulative UNSATs in a block, but not including events coded XX84, XX85, XX86, XX87, or graded Marginal.
- c. An UNSAT check event (CXX90).
- d. A ready-room UNSAT (RRU).
- e. At the discretion of the OPSO or CO when there is doubt regarding the student's potential to successfully complete.

2. IPC outcomes are:

- a. Pass. Returns the student to normal syllabus flow. This will normally return the student to the event that triggered the IPC.
- b. Fail. Results in an FPC.

c. Marginal. Not a possible outcome.

3. IPC INFOs. Shall be senior O-3 or above, and shall be designated in writing by the CO. The IPC is the student's first step in the attrition process, and IPCs should only be performed by experienced instructors who carry the CO's confidence that they have a complete understanding of standards-based grading, MNTS, MIF/CTS requirements of the syllabus, and the IPC/FPC process.

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

1. FPC triggers:

a. Failure of an IPC.

b. In any case where a student has undergone an IPC in phase and subsequently meets any of the IPC triggers listed above.

c. Two academic examination failures in a phase.

d. Four cumulative UNSATs in a phase, including academic failures.

e. Failure to meet SMS goals.

f. At the discretion of the CO when there is doubt regarding the student's potential to successfully complete.

2. FPC outcomes are:

a. Pass. Returns to normal syllabus flow. This will normally return the student to the event that triggered the FPC.

b. Fail. Results in an attrition recommendation to the Commander, Training Air Wing SIX, and a TRB.

c. Marginal. Not a possible outcome.

3. FPC INFOs. Whenever possible, FPCs should be conducted by the CO, or the Executive Officer (XO) in the CO's absence. In the event that neither the CO nor XO is available or qualified to instruct in the required stage, FPC instructors shall be O-4 or above, and shall be designated in writing by the CO. An FPC conducted in a simulator shall be evaluated and graded by a qualified squadron FPC instructor. A qualified contract simulator instructor (CSI) shall be assigned to assist.

d. Progress Check Counseling

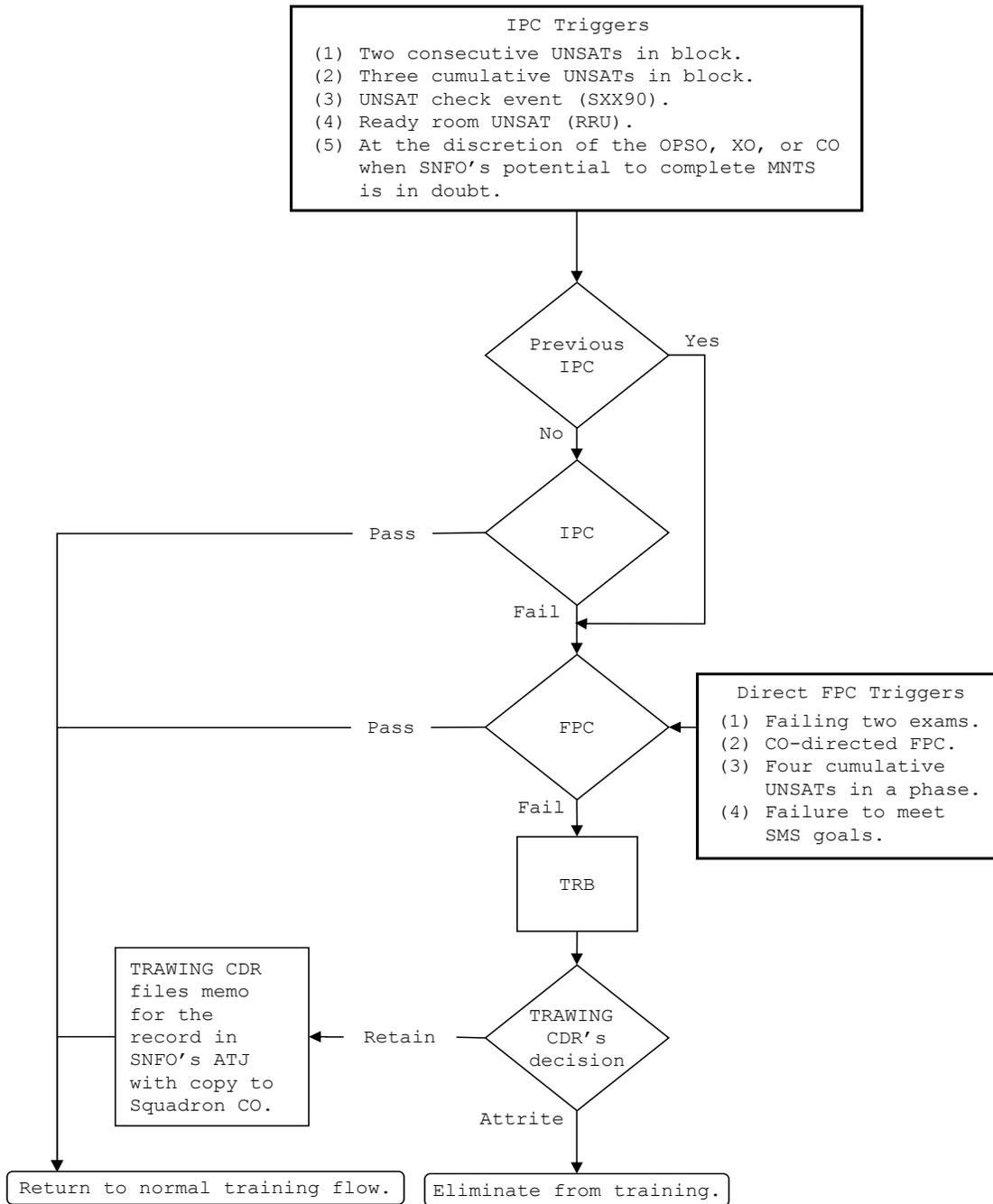
(1) Prior to an IPC. The student's Class Advisor, Student Control Officer, or Operations Officer shall counsel the student on the progress check process and document counseling on a supplemental ATF.

(2) Upon Completion of an IPC. The IPC INFO shall counsel the student on the progress check process, his/her retention/attrition recommendations, and future courses of action. The IPC INFO should also strive to ensure the student is coping with the Progress Check process appropriately and notify appropriate squadron leadership immediately if there are any concerns. Post-IPC counseling shall be documented on the IPC ATF.

(3) Prior to an FPC. The FPC INFO shall counsel the student on the progress check progress. This counseling shall be documented on the FPC ATF.

(4) Upon Completion of an FPC. The CO shall counsel the student. Counseling should consist of the progress check process, attrition/retention recommendations, and future courses of action. The CO shall document counseling on the FPC ATF or on a Supplementary ATF if the CO was not the FPC INFO.

UMFO PROGRESS CHECK TRAINING REVIEW PROCESS



10. Special Instructions and Restrictions

a. Flight Hour/Event Requirements and Restrictions

- (1) Programmed Hours and Events. N/A.
 - (2) Minimum Night Hours. N/A.
 - (3) Minimum Solo Hours. N/A.
 - (4) Minimum Instrument Hours. N/A.
 - (5) Maximum Daily Student Activities (Simulator or Academic). Students shall not exceed two graded activities during one duty day.
 - (6) Minimum Student Turn-Times. The instructor shall ensure at least one hour is allocated between debrief and brief of back-to-back simulator events.
 - (7) 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.
 - (8) Crew Rest. A minimum of 12 hours shall elapse between the conclusion of the student's last scheduled event of the day (including associated debrief) and his first scheduled instructional event (including associated brief) of the following day. After six consecutive scheduled days, students shall receive one day off.
- b. Maneuver Demonstrations. N/A.
- c. Airspace Utilization. N/A.
- d. Aircraft/Simulator Interchangeability. N/A.

Chapter II

Ground Training

1. Use of Preflight Training Time. Hours are available during the ground stage and other stages associated with academic media to schedule briefings, device familiarization, learning center programs, study sessions, or any other activities that will enhance the student's training and preparation for Advanced MC2. These hours may be used for academic training conducted early in each block; however, all prerequisites must be met.

Blk #	Media	Title	Events	Hrs	Blk Name
G01	Class	Administration	4	6.0	ASI

1. Prerequisites

- a. Completion of UMFO Primary 1 (Land-Based Selectee).
- b. Completion of UMFO Primary 2 (E-2 Selectee).
- c. G0101 prior to G0102-3 in any order.
- d. E3490, P3590, or T3290 prior to G0104.

2. Events

G0101	Lect	Advanced MC2 Welcome Aboard	1.0
G0102	Lect	Introduction to Advanced MC2 Syllabus	1.0
G0103	Admin	VT-4 Orientation	2.0
G0104	Admin	Advanced MC2 Checkout	2.0

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C01	Class	Operational Flight Planning, Flight Instruments, and Navigation	11	27.5	NAV

1. Prerequisites

- a. G0102 (Introduction to Advanced MC2 Syllabus) and G0103 (VT-4 Orientation) prior to C0101 and C0105 in any order.
- b. C0101 prior to C0102-4 in order.
- c. C0105 prior to C0106-8 in order.
- d. C0104 and C0108 prior to C0109-11 in order.

2. Events

C0101	CAI	Instrument Publications, Procedures, and Flight Planning 1 (FAA)		3.0	
C0102	CAI	Instrument Publications, Procedures, and Flight Planning 2 (ICAO)		3.0	
C0103	CAI	Flight and Fuel Planning		2.0	
C0104	MIL	Flight Planning Lab		2.0	
C0105	CAI	Basic Nav and Flight Instruments		2.0	
C0106	CAI	Overwater Nav Charts		4.0	
C0107	CAI	Dead Reckoning Nav Procedures		2.0	
C0108	MIL	Overwater Nav Procedures		3.0	
C0109	MIL	Operational Flight Planning, Flight Instruments, and Nav Exam Review		4.0	

2. Events (cont)

C0110	CAI Test	Operational Flight Planning, Flight Instruments, and Nav Exam	2.0
C0111	Lect	Operational Flight Planning, Flight Instruments, and Nav Remediation/Critique	0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C02	Class	Communications and Navigation Systems	8	17.0	SYS

1. Prerequisites

a. G0102 (Introduction to Advanced MC2 Syllabus) and G0103 (VT-4 Orientation) prior to C0201-4 in any order.

b. C0202-4 prior to C0205.

c. C0201 and C0205 prior to C0206-8 in order.

2. Events

C0201	CAI	Comm Systems		2.5
C0202	CAI	INS Theory		2.0
C0203	CAI	GPS Theory		2.0
C0204	CAI	Basic RADAR System Theory		2.5
C0205	MIL	Navigating Using INS, GPS, and RADAR System		4.0
C0206	MIL	Comm and Nav Systems Exam Review		2.0
C0207	CAI Test	Comm and Nav Systems Exam		1.5
C0208	Lect	Comm and Nav Systems Exam Remediation/Critique		0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C03/C11	Class/ 2B51	MCS Familiarization	9	12.5	MCS

1. Prerequisites

a. C0111 (Operational Flight Planning, Flight Instruments, and Nav Remediation/Critique) and C0208 (Comm and Nav Systems Exam Remediation/Critique) prior to C0301 and C0303-4 in any order.

b. C0301 prior to C0302.

c. C0302-4 prior to C0305-6 in order.

d. C0306 prior to C1101.

e. C0302 prior to C0307-8 in order.

2. Events

C0301	MIL	MCS Ops Manual Overview		2.0	
C0302	MIL	MCS System Failures and Emergency Procedures		2.0	
C0303	MIL	MC2 Crew Resource Management		2.0	
C0304	MIL	MCS Operational Risk Management		1.0	
C0305	MIL	Introduction to the MCS Capabilities, Procedures, and Crew Interface		2.0	
C0306	Lect	MCS Tour Introduction		0.5	
C1101	2B51	MCS Capabilities, Procedures, and Crew Interface Tour		1.5	
C0307	P/P Test	MCS EP Boldface Procedures Test		1.0	
C0308	Lect	MCS EP Boldface Procedures Test Remediation/Critique		0.5	

3. Syllabus Notes. All students are required to successfully accomplish a boldface exam, C0307. Successful accomplishment of the boldface exam requires 100-percent accuracy. Less than 100 percent on the boldface exam will result in an UNSAT.
4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C13	Class/ 2B51	Familiarization and Navigation Flight Support	3	11.0	NAV

1. Prerequisites

a. C0308 (MCS EP Boldface Procedures Test Remediation/Critique) and C1201 (FAM-0) prior to C1301.

b. C1301 prior to C1302-3 in any order.

2. Events

C1301	MIL	Fam and Nav Flight Preparation		3.0	
C1302	SS/ 2B51	Fam and Nav Device Study		3.0	
C1303	SS	Fam and Nav Event Rehearsal Study		5.0	

3. Syllabus Note. C1302 will be accomplished in the MCS (2B51) with an INFO available for the training event.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C04	Class	Sensor and Link Operations	10	16.5	SL_OPS

1. Prerequisites

a. C3104 prior to C0401-4 in any order and C0406-7 in order.

b. C0401-4 prior to C0405.

c. C0405 and C0407 prior to C0408-10 in order.

2. Events

C0401	CAI	Airborne RADAR System Theory		2.0	
C0402	CAI	Identification Friend or Foe System Theory		1.0	
C0403	CAI	Electronic Warfare Theory		1.0	
C0404	CAI	Electro-optical and Infrared System Theory		1.0	
C0405	MIL	MCS Sensor Capabilities and Procedures		3.5	
C0406	CAI	Data Link Overview		2.5	
C0407	MIL	Data Link Employment		1.5	
C0408	MIL	Sensor and Link Ops Exam Review		2.0	
C0409	CAI Test	Sensor and Link Ops Exam		1.5	
C0410	Lect	Sensor and Link Ops Exam Remediation/Critique		0.5	

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C14	Class/ 2B51	Sensor and Link Operations Flight Support	3	7.5	SL_OPS

1. Prerequisites

a. C0410 (Sensor and Link Ops Exam Remediation/Critique) prior to C1401.

b. C1401 prior to C1402-3 in any order.

2. Events

C1401	MIL	Sensor and Link Ops Flight Preparation		2.0	
C1402	SS/ 2B51	Sensor and Link Ops Device Study		1.5	
C1403	SS	Sensor and Link Ops Event Rehearsal Study		4.0	

3. Syllabus Note. C1402 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C05	Class	Fleet Operations	19	34.5	FLTOPS

1. Prerequisites

- a. C3208 prior to C0501-2 in any order.
- b. C0501-2 prior to C0503-4 in order.
- c. C0504 prior to C0505-8 in any order, C0510-12 in any order, C0514, and C0516.
- d. C0505-8 prior to C0509.
- e. C0512 prior to C0513.
- f. C0510-11 and C0513-14 prior to C0515.
- g. C0509 and C0515-16 prior to C0517-19 in order.

2. Events

C0501	CAI	Fleet Organization and Command Structure		2.0	
C0502	CAI	U.S. Naval Platforms and Missions Overview		2.0	
C0503	CAI	Tactical Comm and Brevity		2.0	
C0504	MIL	Data Link and Tactical Comm Integration		2.0	
C0505	CAI	Strike Coordination and Asset Management		2.0	
C0506	CAI	Strike Support Operations		1.0	
C0507	CAI	Aircraft Self-Defense Concepts		1.5	
C0508	CAI	Maritime Strike		3.0	
C0509	MIL	Strike and Fleet Support Overview		4.0	

2. Events (cont)

C0510	CAI	Anti-Surface Warfare Concepts	1.0
C0511	CAI	Surface Threats and Missions	1.0
C0512	CAI	ASUW Sensors and Employment	1.0
C0513	CAI	Anti-Surface Search, Localization, and Tracking Methods	2.0
C0514	CAI	ASUW Weapons and Delivery Platforms	1.0
C0515	MIL	ASUW Overview	2.0
C0516	MIL	Search and Rescue	3.0
C0517	MIL	Fleet Ops Exam Review	2.0
C0518	CAI Test	Fleet Ops Exam	1.5
C0519	Lect	Fleet Ops Exam Remediation/Critique	0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
C15	Class/ 2B51	Fleet Operations Flight Support	3	9.0	FLTOPS

1. Prerequisites

a. C0519 (Fleet Ops Exam Remediation/Critique) prior to C1501.

b. C1501 prior to C1502-3 in any order.

2. Events

C1501 MIL Fleet Ops Flight
Preparation 3.5

C1502 SS/
2B51 Fleet Ops Device Study 1.5

C1503 SS Fleet Ops Event Rehearsal
Study 4.0

3. Syllabus Note. C1502 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
E01	Class	Airborne Early Warning	9	20.5	AEW
1.	<u>Prerequisite.</u>	C3490.			
2.	<u>Events</u>				
E0101	CAI	The E-2 Community		2.0	
E0102	CAI	AEW Mission Overview		2.0	
E0103	CAI	Detect-to-Engage Sequence		2.0	
E0104	CAI	AEW Sensors		3.0	
E0105	CAI	Surface Surveillance Coordination		2.0	
E0106	MIL	AEW Procedures Lab		4.0	
E0107	MIL	AEW Exam Review		3.0	
E0108	CAI Test	AEW Exam		2.0	
E0109	Lect	AEW Exam Remediation/ Critique		0.5	
3.	<u>Syllabus Notes.</u>	None.			
4.	<u>Discuss Items.</u>	None.			

Blk #	Media	Title	Events	Hrs	Blk Name
E11	Class/ 2B51	Airborne Early Warning Flight Support	3	9.0	AEW

1. Prerequisites

- a. E0109 (AEW Exam Remediation/Critique) prior to E1101.
- b. E1101 prior to E1102-3 in any order.

2. Events

E1101	MIL	AEW Flight Preparation		2.0	
E1102	SS/ 2B51	AEW Device Study		3.0	
E1103	SS	AEW Event Rehearsal Study		4.0	

3. Syllabus Note. E1102 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
E02	Class	Air Intercept Control	7	15.0	AIC

1. Prerequisite. E3290.

2. Events

E0201	CAI	Introduction to Airborne Battlefield Command and Control		2.0	
E0202	MIL	AIC Comm and Tactics/ Timeline		4.0	
E0203	CAI	Air Defense Techniques		3.0	
E0204	MIL	Strike Techniques		2.0	
E0205	MIL	AIC Exam Review		2.0	
E0206	CAI Test	AIC Exam		1.5	
E0207	Lect	AIC Exam Remediation/ Critique		0.5	

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
E12	Class/ 2B51	Air Intercept Control Flight Support	3	9.0	AIC

1. Prerequisites

- a. E0207 (AIC Exam Remediation/Critique) prior to E1201.
- b. E1201 prior to E1202-3 in any order.

2. Events

E1201	MIL	AIC Flight Preparation		2.0	
E1202	SS/ 2B51	AIC Device Study		3.0	
E1203	SS	AIC Event Rehearsal Study		4.0	

3. Syllabus Note. E1202 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
N01	Class	Common Navigation (MPR and E-6)	10	24.5	CNAV

1. Prerequisites

- a. C3490 prior to N0101.
- b. N0101 prior to N0102-4 in order and N0105-6 in any order.
- c. N0104-6 prior to N0107-10 in order.

2. Events

N0101	MIL	Comm and Nav Review		2.0	
N0102	CAI	Nav Publications, Charts, and Nav Content		3.0	
N0103	MIL	Chart Preparation and Nav Fixing Sources		4.0	
N0104	MIL	Overwater Nav Procedures		4.0	
N0105	MIL	Terrain Avoidance and Standoffs		3.0	
N0106	MIL	Overwater Comm Procedures		3.0	
N0107	MIL	Nav Log Keeping		1.5	
N0108	MIL	Common Nav Review		2.0	
N0109	CAI Test	Common Nav Exam		1.5	
N0110	Lect	Common Nav Exam Remediation/ Critique		0.5	

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
N11	Class/ 2B51	Common Navigation Flight Support (MPR and E-6)	3	9.5	CNAV

1. Prerequisites

a. N0110 (Common Nav Exam Remediation/Critique) prior to N1101.

b. N1101 prior to N1102-3 in any order.

2. Events

N1101	MIL	Common Nav Flight Preparation		4.0	
N1102	SS/ 2B51	Common Nav Device Study		1.5	
N1103	SS	Common Nav Event Rehearsal Study		4.0	

3. Syllabus Note. N1102 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
P01	Class	Surface Search and Littoral Surveillance (MPR)	12	22.0	SSLS

1. Prerequisites

- a. N3290 prior to P0101.
- b. P0101 prior to P0102-3 in any order.
- c. P0102-3 prior to P0104, P0105, and P0107 in any order.
- d. P0104-5 prior to P0106.
- e. P0105 and P0107 prior to P0108.
- f. P0106 and P0108 prior to P0109-12 in order.

2. Events

P0101	CAI	The MPR Community and Mission Overview		3.0	
P0102	CAI	Automatic Identification System Theory		1.0	
P0103	CAI	ISAR and SAR Sensor Theory		2.0	
P0104	CAI	Surface Search Overview		2.0	
P0105	CAI	Surface Target Identification		2.0	
P0106	MIL	Surface Search Sensor Employment and Procedures		2.0	
P0107	CAI	Littoral Surveillance Overview		2.0	
P0108	MIL	Littoral Surveillance Sensor Employment and Procedures		2.0	
P0109	MIL	Mission Log Keeping		1.5	

2. Events (Cont)

P0110	MIL	SSLS Exam Review	2.5
P0111	CAI Test	SSLS Exam	1.5
P0112	Lect	SSLS Exam Remediation/ Critique	0.5

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
P11	Class/ 2B51	Surface Search and Littoral Surveillance Flight Support (MPR)	4	10.0	SSLS

1. Prerequisites

a. P0112 (SSLS Exam Remediation/Critique) prior to P1101-2 in order.

b. P1102 prior to P1103-4 in any order.

2. Events

P1101	CAI	MCS ISAR Identification		1.0	
P1102	MIL	SSLS Flight Preparation		3.5	
P1103	SS/ 2B51	SSLS Device Study		1.5	
P1104	SS	SSLS Event Rehearsal Study		4.0	

3. Syllabus Note. P1103 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
P02	Class	Electronic Warfare and Acoustic Operations (MPR)	10	20.0	EWAO

1. Prerequisites

a. P3108 prior to P0201-3 in order and P0204-6 in any order.

b. P0204-6 prior to P0207.

c. P0203 and P0207 prior to P0208-10 in order.

2. Events

P0201	CAI	Introduction to EW		1.0	
P0202	CAI	RADAR Principles and Application to EW		2.0	
P0203	CAI	ESMs and Emitter Collection Fundamentals		2.0	
P0204	CAI	Oceanography Overview		4.0	
P0205	CAI	Sonobuoy Overview		2.0	
P0206	CAI	Subsurface Target Identification Theory		2.0	
P0207	MIL	Acoustic Sensor Employment and Terminology		2.0	
P0208	MIL	EWAO Exam Review		3.0	
P0209	CAI Test	EWAO Exam		1.5	
P0210	Lect	EWAO Exam Remediation/ Critique		0.5	

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
P12	Class/ 2B51	Electronic Warfare and Acoustic Operations Flight Support (MPR)	3	9.0	EWAO

1. Prerequisites

- a. P0210 (EWAO Exam Remediation/Critique) prior to P1201.
- b. P1201 prior to P1202-3 in any order.

2. Events

P1201	MIL	EWAO Flight Preparation		3.5	
P1202	SS/ 2B51	EWAO Device Study		1.5	
P1203	SS	EWAO Event Rehearsal Study		4.0	

3. Syllabus Note. P1202 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
P03	Class	Maritime Patrol and Reconnaissance (MPR)	7	15.0	MPR

1. Prerequisites

- a. P3202 and P3302 prior to P0301-2 in order.
- b. P0302 prior to P0303-4 in any order.
- c. P0303-4 prior to P0305-7 in order.

2. Events

P0301	CAI	MPR Coordinated Operations		4.0	
P0302	MIL	MPR Coordinated Operations Overview		2.0	
P0303	MIL	SSLS Review		2.0	
P0304	MIL	EWAO Review		2.0	
P0305	MIL	MPR Exam Review		3.0	
P0306	CAI Test	MPR Exam		1.5	
P0307	Lect	MPR Exam Remediation/ Critique		0.5	

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
P13	Class/ 2B51	Maritime Patrol and Reconnaissance Flight Support	4	11.0	MPR

1. Prerequisites

a. P0307 (MPR Exam Remediation/Critique) prior to P1301-2 in order.

b. P1302 prior to P1303-4 in any order.

2. Events

P1301 MIL MPR CRM and Multitasking 2.0

P1302 MIL MPR Flight Preparation 3.5

P1303 SS/
2B51 MPR Device Study 1.5

P1304 SS MPR Event Rehearsal Study 4.0

3. Syllabus Note. P1303 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
T01	Class	E-6 Communications and Operations	10	17.5	COMMOPS

1. Prerequisites

- a. N3290 prior to T0101-2 in order.
- b. T0102 prior to T0103-4 in any order.
- c. T0103-4 prior to T0105-10 in order.

2. Events

T0101	CAI	The E-6 Community		2.0	
T0102	CAI	The E-6 Aircraft, Roles, Mission, and Systems		2.0	
T0103	CAI	Nuclear Triad, Command Structure, and Authentication		1.5	
T0104	CAI	E-6 Comm		2.0	
T0105	CAI	E-6 Comm Security and Alert Conditions		2.0	
T0106	MIL	E-6 Comm Overview		2.0	
T0107	MIL	E-6 Operational Considerations		2.0	
T0108	MIL	E-6 Comm and Ops Exam Review		2.0	
T0109	CAI Test	E-6 Comm and Ops Exam		1.5	
T0110	Lect	E-6 Comm and Ops Exam Remediation/Critique		0.5	

3. Syllabus Notes. None.

4. Discuss Items. None.

Blk #	Media	Title	Events	Hrs	Blk Name
T11	Class/ 2B51	E-6 Communications and Operations Flight Support	3	8.5	COMMOPS

1. Prerequisites

a. T0110 (E-6 Comm and Ops Exam Remediation/Critique) prior to T1101.

b. T1101 prior to T1102-3 in any order.

2. Events

T1101	MIL	E-6 Comm and Ops Flight Preparation		3.0	
T1102	SS/ 2B51	E-6 Comm and Ops Device Study		1.5	
T1103	SS	E-6 Comm and Ops Event Rehearsal Study		4.0	

3. Syllabus Note. T1102 will be accomplished in the MCS (2B51) without a CSI or INFO.

4. Discuss Items. None.

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Chapter III

NATOPS Training

This chapter does not apply to UMFO Advanced MC2 phase of training.

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Chapter IV

Contact Training

1. Seating. Student shall occupy a student MCS station.
2. Matrix. The following matrix is an overview of the Core stage. The purpose of this matrix is to provide the student and instructor the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.
3. Core Stage MIF

Check Ride Event

CORE STAGE MANEUVER ITEM FILE					
CTS REF	MANEUVER	C3104	C3208	C3305	C3490
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+
3	Headwork/Situational Awareness	3+	4+	4+	4+
4	Basic Airwork Recognition	4+	4+	4+	4+
5	System Knowledge	4+	4+	4+	4+
6	Mission Planning (Transit)	3+	4+		
7	Mission Planning (Operations)		3+	4+	4+
8	Brief	3+	3+	4+	4+
9	Ground Operations	4+	4+		
10	Departure	4+	4+		
11	In-Flight Checks	4+	4+		
12	Enroute Procedures	4+	4+		
13	On-Station/Check-In Procedures		3+	4+	4+
14	On-Station Navigation (Core)		3+	4+	4+
15	Equipment Operation	3+	4+	4+	4+
16	Air/Ground RADAR Utilization	3	4+	4+	4+

MIF continued on next page.

CORE STAGE MANEUVER ITEM FILE					
CTS REF	MANEUVER	C3104	C3208	C3305	C3490
17	Air-to-Air RADAR Utilization		3	3	3
18	Electro-Optical/Infrared Utilization		4+	4+	4+
19	ESM Utilization		3+	3+	3+
20	Data Link Utilization		4+	4+	4+
21	Surface Search (Core)			4+	4+
22	Electronic Warfare			3+	3+
23	Battle Space Management			3+	3+
24	Threat Recognition			3+	3+
25	Strike Support			3+	3+
26	Search and Rescue			3+	3
27	Off-Station/Turnover		3+	4+	4+
28	Approach	4+			
29	Checklists	4+	4+	4+	4+
30	Fuel Management/Analysis	4+	4+	4+	4+
31	ATC Radio Procedures	4+	4+		
32	Tactical Radio Procedures		3+	4+	4+
33	Crew Resource Management	3+	3+	3+	3+
34	Mission Ownership	3+	3+	3+	3+
35	Prioritization	3+	3+	3+	3+
36	Scan	3+	3+	4+	4+
37	Debrief	1	3+	3+	3+

Blk #	Media	Title	Events	Hrs	H/X
C31	2B51	Familiarization and Navigation (Core)	4	6.0	1.5

1. Prerequisites. C1302-3 (Fam and Nav Self-Study).
2. Syllabus Notes
 - a. Students will begin the event from aircraft parking.
 - b. Instructor shall demonstrate event debrief on each event in block and assign a "1" on the ATF.
3. Special Syllabus Requirements. None.
4. Discuss Items

C3101

DD-175 requirements, FAA communications review, MCS flight equipment (barometric altimeter, airspeed indicator, vertical speed indicator, RADAR altimeter), HSI, TACAN system, and EPs.

C3102

INS, GPS, FMS, and HF radio.

C3103

DD-1801 requirements and ICAO procedures.

C3104

ADIZ and FIR.

5. Block MIF

CTS REF	MANEUVER	C3104
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	3+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
6	Mission Planning (Transit)	3+
8	Brief	3+
9	Ground Operations	4+
10	Departure	4+
11	In-Flight Checks	4+
12	Enroute Procedures	4+
15	Equipment Operation	3+
16	Air/Ground RADAR Utilization	3
28	Approach	4+
29	Checklists	4+
30	Fuel Management/Analysis	4+
31	ATC Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	3+
37	Debrief	1

Blk #	Media	Title	Events	Hrs	H/X
C32	2B51	Sensor and Link Operations (Core)	8	12.0	1.5

1. Prerequisites. C1402-3 (Sensor and Link Ops Self-Study).
2. Syllabus Note. Students will begin the event on-station.
3. Special Syllabus Requirements. None.
4. Discuss Items

C3201

RADAR system components and operation.

C3202

IFF modes and operation.

C3203

ESM system components and operation and EW.

C3204

EO/IR system components and operation.

C3205

Sensor integration and prioritization.

C3206

Data link system components and operation.

C3207

Data link integration and dissemination.

C3208

Data link and prioritization with supporting sensors.

5. Block MIF

CTS REF	MANEUVER	C3208
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
6	Mission Planning (Transit)	4+
7	Mission Planning (Operations)	3+
8	Brief	3+
9	Ground Operations	4+
10	Departure	4+
11	In-Flight Checks	4+
12	Enroute Procedures	4+
13	On-Station/Check-In Procedures	3+
14	On-Station Navigation (Core)	3+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4+
17	Air-to-Air RADAR Utilization	3
18	Electro-Optical/Infrared Utilization	4+
19	ESM Utilization	3+
20	Data Link Utilization	4+
27	Off-Station/Turnover	3+
29	Checklists	4+
30	Fuel Management/Analysis	4+
31	ATC Radio Procedures	4+
32	Tactical Radio Procedures	3+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	3+
37	Debrief	3+

Blk #	Media	Title	Events	Hrs	H/X
C33	2B51	Fleet Operations (Core)	5	7.5	1.5

1. Prerequisites. C1502-3 (Fleet Ops Self-Study).
2. Syllabus Note. Students will begin the event just prior to on-station.
3. Special Syllabus Requirements. None.
4. Discuss Items

C3301

SATCOM, CWC doctrine, and SSC.

C3302

SAG, ACU, ACU check-in/check-out, weapon/warning status, search area, COI, CCOI, and ASUW operations.

C3303

National/international airspace, law of sea convention, maritime query challenge, turnover procedures, ship standoff, and SURPIC report.

C3304

SAR operations.

C3305

Carrier/expeditionary strike group operations, MEZ, JEZ, FEZ, threat standoff, MAS, sledgehammer/gangplank, AIMT, types of kill (mobility/firepower/catastrophic), and BDA.

5. Block MIF

CTS REF	MANEUVER	C3305
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
13	On-Station/Check-In Procedures	4+
14	On-Station Navigation (Core)	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4+
17	Air-to-Air RADAR Utilization	3
18	Electro-Optical/Infrared Utilization	4+
19	ESM Utilization	3+
20	Data Link Utilization	4+
21	Surface Search (Core)	4+
22	Electronic Warfare	3+
23	Battle Space Management	3+
24	Threat Recognition	3+
25	Strike Support	3+
26	Search and Rescue	3+
27	Off-Station/Turnover	4+
29	Checklists	4+
30	Fuel Management/Analysis	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	4+
37	Debrief	3+

Blk #	Media	Title	Events	Hrs	H/X
C34	2B51	Fleet Operations Check Ride (Core)	1	1.5	1.5

1. Prerequisite. C3305.
2. Syllabus Note. Students will begin the event just prior to on-station.
3. Special Syllabus Requirements. None.
4. Discuss Items. Any discuss items from the Fleet Operations block.
5. Block MIF

CTS REF	MANEUVER	C3490
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
13	On-Station/Check-In Procedures	4+
14	On-Station Navigation (Core)	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4+
17	Air-to-Air RADAR Utilization	3
18	Electro-Optical/Infrared Utilization	4+
19	ESM Utilization	3+
20	Data Link Utilization	4+
21	Surface Search (Core)	4+

MIF continued on next page.

CTS REF	MANEUVER	C3490
22	Electronic Warfare	3+
23	Battle Space Management	3+
24	Threat Recognition	3+
25	Strike Support	3+
26	Search and Rescue	3
27	Off-Station/Turnover	4+
29	Checklists	4+
30	Fuel Management/Analysis	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	4+
37	Debrief	3+

Chapter V

Instrument Training

This chapter does not apply to the UMFO Advanced MC2 phase of training.

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Chapter VI

Navigation Training

1. Seating. Student shall occupy a student MCS station.
2. Matrix. The following matrix is an overview of the Common Navigation stage. E-2 students do not complete this stage. The purpose of this matrix is to provide the student and instructor the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.
3. Common Navigation Stage MIF

Check Ride Event

COMMON NAVIGATION STAGE MANEUVER ITEM FILE			
CTS REF	MANEUVER	N3104	N3290
1	General Knowledge/Procedures	4+	4+
2	Emergency Procedures	4+	4+
3	Headwork/Situational Awareness	4+	4+
4	Basic Airwork Recognition	4+	4+
5	System Knowledge	4+	4+
6	Mission Planning (Transit)	4+	4+
7	Mission Planning (Operations)	4+	4+
8	Brief	4+	4+
9	Ground Operations	4+	4+
10	Departure	4+	4+
11	In-Flight Checks	4+	4+
12	Enroute Procedures	4+	4+
13	On-Station/Check-In Procedures	4+	4+
15	Equipment Operation	4+	4+
20	Data Link Utilization	4+	4+
27	Off-Station/Turnover	4+	4+

MIF continued on next page.

COMMON NAVIGATION STAGE MANEUVER ITEM FILE			
CTS REF	MANEUVER	N3104	N3290
28	Approach	4+	4+
29	Checklists	4+	4+
31	ATC Radio Procedures	4+	4+
32	Tactical Radio Procedures	4+	4+
33	Crew Resource Management	3+	3+
34	Mission Ownership	3+	3+
35	Prioritization	4+	4+
36	Scan	4+	4+
37	Debrief	3+	3+
45	Operational Charts	4+	4+
46	On-Station Navigation (Common Nav and MPR)	4+	4+
47	Terrain Avoidance/Standoffs	4+	4+
48	Operational Record Keeping	4+	4+

Blk #	Media	Title	Events	Hrs	H/X
N31	2B51	Common Navigation	4	6.0	1.5

1. Prerequisites. N1102-3 (Common Nav Self-Study).
2. Syllabus Note. Students will begin the event from aircraft parking.
3. Special Syllabus Requirements. None.
4. Discuss Items

N3101

HF procedures, review DD-1801 and ICAO requirements, position reports, MSA, and MESA.

N3102

Fix procedures, SAC, operational reporting, and MOSA.

N3103

Due regard and territorial standoff.

N3104

Threat standoff.

5. Block MIF

CTS REF	MANEUVER	N3104
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
6	Mission Planning (Transit)	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
9	Ground Operations	4+
10	Departure	4+
11	In-Flight Checks	4+
12	Enroute Procedures	4+
13	On-Station/Check-In Procedures	4+
15	Equipment Operation	4+
20	Data Link Utilization	4+
27	Off-Station/Turnover	4+
28	Approach	4+
29	Checklists	4+
31	ATC Radio Procedures	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	4+
36	Scan	4+
37	Debrief	3+
45	Operational Charts	4+
46	On-Station Navigation (Common Nav and MPR)	4+
47	Terrain Avoidance/Standoffs	4+
48	Operational Record Keeping	4+

Blk #	Media	Title	Events	Hrs	H/X
N32	2B51	Common Navigation Check Ride	1	1.5	1.5

1. Prerequisite. N3104.
2. Syllabus Note. Students will begin the event from aircraft parking.
3. Special Syllabus Requirements. None.
4. Discuss Items. Any discuss items from the Common Navigation block.

5. Block MIF

CTS REF	MANEUVER	N3290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
6	Mission Planning (Transit)	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
9	Ground Operations	4+
10	Departure	4+
11	In-Flight Checks	4+
12	Enroute Procedures	4+
13	On-Station/Check-In Procedures	4+
15	Equipment Operation	4+
20	Data Link Utilization	4+
27	Off-Station/Turnover	4+
28	Approach	4+
29	Checklists	4+
31	ATC Radio Procedures	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	4+
36	Scan	4+
37	Debrief	3+
45	Operational Charts	4+
46	On-Station Navigation (Common Nav and MPR)	4+
47	Terrain Avoidance/Standoffs	4+
48	Operational Record Keeping	4+

Chapter VII

Formation Training

This chapter does not apply to the UMFO Advanced MC2 phase of training.

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Chapter VIII

Tactical Training

1. Seating. Student shall occupy a student MCS station.
2. Matrices. The following matrices are an overview of the E-2, MPR, and E-6 stages. The purpose of these matrices is to provide the student and instructor the easiest way to track progress, regression, and overall status in relation to the MIF. In addition, there is a single matrix following each block description throughout this chapter.
3. E-2 Stage MIF

Check Ride Event

E-2 STAGE MANEUVER ITEM FILE					
CTS REF	MANEUVER	E3105	E3290	E3310	E3490
1	General Knowledge/Procedures	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+
4	Basic Airwork Recognition	4+	4+	4+	4+
5	System Knowledge	4+	4+	4+	4+
7	Mission Planning (Operations)	4+	4+	4+	4+
8	Brief	4+	4+	4+	4+
15	Equipment Operation	4+	4+	4+	4+
16	Air/Ground RADAR Utilization	4	4	4	4
17	Air-to-Air RADAR Utilization	4+	4+	4+	4+
19	ESM Utilization	3	3	3	3
20	Data Link Utilization	4+	4+	4+	4+
22	Electronic Warfare	3	3	3	3
23	Battle Space Management	4+	4+	4+	4+
24	Threat Recognition	3+	3+	4+	4+

MIF continued on next page.

E-2 STAGE MANEUVER ITEM FILE					
CTS REF	MANEUVER	E3105	E3290	E3310	E3490
26	Search and Rescue	3+	3	4+	4
29	Checklists	4+	4+	4+	4+
32	Tactical Radio Procedures	4+	4+	4+	4+
33	Crew Resource Management	3+	3+	4+	4+
34	Mission Ownership	3+	3+	4+	4+
35	Prioritization	3+	3+	4+	4+
36	Scan	4+	4+	4+	4+
37	Debrief	3+	3+	4+	4+
38	AEW Manual Tracking	4+	4+	4+	4+
39	AEW Near Collision Intercepts	4+	4+		
40	On-Station Air Defense			4+	4+
41	Airborne Battlefield Command and Control			3+	3
42	Air Intercept Control			4+	4+
43	Strike			4+	4
44	Multigroup Problems			3+	3+

4. MPR Stage MIF

Check Ride Event

MPR STAGE MANEUVER ITEM FILE						
CTS REF	MANEUVER	P3108	P3202	P3302	P3402	P3590
1	General Knowledge/Procedures	4+	4+	4+	4+	4+
2	Emergency Procedures	4+	4+	4+	4+	4+
3	Headwork/Situational Awareness	4+	4+	4+	4+	4+
4	Basic Airwork Recognition	4+	4+	4+	4+	4+
5	System Knowledge	4+	4+	4+	4+	4+
7	Mission Planning (Operations)	4+	4+	4+	4+	4+
8	Brief	4+	4+	4+	4+	4+
13	On-Station/Check-In Procedures	4+	4+	4+	4+	4+
15	Equipment Operation	4+	4+	4+	4+	4+
16	Air/Ground RADAR Utilization	4+		4	4+	4+
18	Electro-Optical/Infrared Utilization	4+		4	4+	4+
19	ESM Utilization	3+	4+		4+	4+
20	Data Link Utilization	4+	4+	4+	4+	4+
22	Electronic Warfare	3+	4+		4+	4+
23	Battle Space Management	4+	4+	4+	4+	4+
24	Threat Recognition	3+	3+	3+	4+	4+
26	Search and Rescue	4+			4	4
27	Off-Station/Turnover	3+	3+	4+	4+	4+
29	Checklists	4+	4+	4+	4+	4+
32	Tactical Radio Procedures	4+	4+	4+	4+	4+
33	Crew Resource Management	3+	3+	3+	4+	4+
34	Mission Ownership	3+	3+	3+	4+	4+
35	Prioritization	3+	3+	3+	4+	4+
36	Scan	4+	4+	4+	4+	4+
37	Debrief	3+	3+	3+	4+	4+

MIF continued on next page.

MPR STAGE MANEUVER ITEM FILE						
CTS REF	MANEUVER	P3108	P3202	P3302	P3402	P3590
45	Operational Charts	4+	4+	4+	4+	4+
46	On-Station Navigation (Common Nav and MPR)	4+	4	4	4+	4+
47	Terrain Avoidance/Standoffs	4+	4	4	4+	4+
48	Operational Record Keeping	3+	3+	3+	4+	4+
49	ISAR Utilization	4+			4+	4+
50	Surface Search (MPR)	4+			4+	4+
51	SAR Utilization	4+			4+	4+
52	Littoral Surveillance	4+	4+		4+	4+
53	Signal Collection		4+		4+	4+
54	Environmental Data Collection			4+	4+	4+
55	Acoustic Tracking			4+	4+	4+
56	Coordinated Operations				4+	4+

5. E-6 Stage MIF

Check Ride Event

E-6 STAGE MANEUVER ITEM FILE			
CTS REF	MANEUVER	T3109	T3290
1	General Knowledge/Procedures	4+	4+
2	Emergency Procedures	4+	4+
3	Headwork/Situational Awareness	4+	4+
4	Basic Airwork Recognition	4+	4+
5	System Knowledge	4+	4+
7	Mission Planning (Operations)	4+	4+
8	Brief	4+	4+
15	Equipment Operation	4+	4+
29	Checklists	4+	4+
30	Fuel Management/Analysis	4+	4+
32	Tactical Radio Procedures	4+	4+
33	Crew Resource Management	4+	4+
34	Mission Ownership	4+	4+
35	Prioritization	4+	4+
36	Scan	4+	4+
37	Debrief	4+	4+
57	E-6 Equipment Utilization	4+	4+
58	E-6 Communications	4+	4+
59	E-6 Operations	4+	4+
60	Aerial Refueling	4+	4+

Blk #	Media	Title	Events	Hrs	H/X
E31	2B51	Airborne Early Warning (E-2)	5	7.5	1.5

1. Prerequisites. E1102-3 (AEW Self-Study).

2. Syllabus Notes

a. Students will begin the event on-station.

b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS for each event. This additional CSI will not attend the brief or debrief.

3. Special Syllabus Requirements. None.

4. Discuss Items

E3101

AEW, manual tracking (course, speed, altitude), and goals of manual tracking (detect, evaluate, classify, report).

E3102

Link-16 and detect-to-engage sequence.

E3103

Air-to-air specific brevity words, NCI, BRAA, bogey bearing, target aspect, bogey's reciprocal, angle off, fighter heading, near-collision intercept, compute collision course, and bogey heading.

E3104

NCI procedures.

E3105

NCI procedures.

5. Block MIF

CTS REF	MANEUVER	E3105
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4
17	Air-to-Air RADAR Utilization	4+
19	ESM Utilization	3
20	Data Link Utilization	4+
22	Electronic Warfare	3
23	Battle Space Management	4+
24	Threat Recognition	3+
26	Search and Rescue	3+
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	4+
37	Debrief	3+
38	AEW Manual Tracking	4+
39	AEW Near Collision Intercepts	4+

Blk #	Media	Title	Events	Hrs	H/X
E32	2B51	Airborne Early Warning Check Ride (E-2)	1	1.5	1.5

1. Prerequisite. E3105.
2. Syllabus Notes
 - a. Students will begin the event on-station.
 - b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS for this event. This additional CSI will not attend the brief or debrief.
3. Special Syllabus Requirements. None.
4. Discuss Items. Any previously discussed items from the E31 block.

5. Block MIF

CTS REF	MANEUVER	E3290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4
17	Air-to-Air RADAR Utilization	4+
19	ESM Utilization	3
20	Data Link Utilization	4+
22	Electronic Warfare	3
23	Battle Space Management	4+
24	Threat Recognition	3+
26	Search and Rescue	3
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	4+
37	Debrief	3+
38	AEW Manual Tracking	4+
39	AEW Near Collision Intercepts	4+

Blk #	Media	Title	Events	Hrs	H/X
E33	2B51	Air Intercept Control (E-2)	10	15.0	1.5

1. Prerequisite. E1202-3 (AIC Self-Study).

2. Syllabus Notes

a. Students will begin the event on-station.

b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS for each event. This additional CSI will not attend the brief or debrief.

3. Special Syllabus Requirements. None.

4. Discuss Items

E3301

Five components of AIC core information (call sign, number of groups, location of anchor point, altitude, fill-ins), AIC, and CAP.

E3302

Types of control (broadcast/tactical/close), AIC, and CAP.

E3303

Timeline, multigroup labels, brevity, communications format, communications priority, and information priority.

E3304

TOPGUN standard control, timeline critical points, groups, arms, group maneuvers, and amplifier.

E3305

Data link utilization.

E3306

Carrier strike group air defense and DCA.

E3307

Defense in-depth force concentration, OCA, and return to force.

E3308

ABCC, CAS assets, forward line of own troops, fire support coordination line, KI, blue kill box, purple kill box, CAS stack, CAS check-in, time-sensitive target, and high-priority task lists.

E3309

Air defense (DCA).

E3310

Strike package control.

5. Block MIF

CTS REF	MANEUVER	E3310
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4
17	Air-to-Air RADAR Utilization	4+
19	ESM Utilization	3
20	Data Link Utilization	4+
22	Electronic Warfare	3
23	Battle Space Management	4+
24	Threat Recognition	4+
26	Search and Rescue	4+
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	4+
34	Mission Ownership	4+
35	Prioritization	4+
36	Scan	4+
37	Debrief	4+
38	AEW Manual Tracking	4+
40	On-Station Air Defense	4+
41	Airborne Battlefield Command and Control	3+
42	Air Intercept Control	4+
43	Strike	4+
44	Multigroup Problems	3+

Blk #	Media	Title	Events	Hrs	H/X
E34	2B51	Air Intercept Control Check Ride (E-2)	1	1.5	1.5

1. Prerequisite. E3310.
2. Syllabus Notes
 - a. Students will begin the event on-station.
 - b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS for this event. This additional CSI will not attend the brief or debrief.
3. Special Syllabus Requirements. None.
4. Discuss Items. Any previously discussed items from the E-33 block.

5. Block MIF

CTS REF	MANEUVER	E3490
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4
17	Air-to-Air RADAR Utilization	4+
19	ESM Utilization	3
20	Data Link Utilization	4+
22	Electronic Warfare	3
23	Battle Space Management	4+
24	Threat Recognition	4+
26	Search and Rescue	4
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	4+
34	Mission Ownership	4+
35	Prioritization	4+
36	Scan	4+
37	Debrief	4+
38	AEW Manual Tracking	4+
40	On-Station Air Defense	4+
41	Airborne Battlefield Command and Control	3
42	Air Intercept Control	4+
43	Strike	4
44	Multigroup Problems	3+

Blk #	Media	Title	Events	Hrs	H/X
P31	2B51	Surface Search and Littoral Surveillance (MPR)	8	12.0	1.5

1. Prerequisites. P1103-4 (SSLS Self-Study).

2. Syllabus Notes

a. Students will begin the event just prior to on-station.

b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS on P3104, P3107, and P3108. This additional CSI will not attend the brief or debrief.

3. Special Syllabus Requirements. None.

4. Discuss Items

P3101

MPR SSC, review search sensors, determining primary search sensor, review COI and CCOI, classification of ships (category, type, class), and identification (hull number, name, flag).

P3102

Review of U.S. Naval asset capabilities, surface contact reporting (voice and data link), and review SAR procedures.

P3103

AIS, merchant ships, appearance groups, hull types, upright sequence, bow/stern types, and combatant ships.

P3104

RADAR overt/covert and ISAR operations.

P3105

Straits transit, littoral operations, and littoral threats.

P3106

SAR and order of battle.

P3107
Maritime query challenge.

P3108
Rigging procedures.

5. Block MIF

CTS REF	MANEUVER	P3108
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
13	On-Station/Check-In Procedures	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4+
18	Electro-Optical/Infrared Utilization	4+
19	ESM Utilization	3+
20	Data Link Utilization	4+
22	Electronic Warfare	3+
23	Battle Space Management	4+
24	Threat Recognition	3+
26	Search and Rescue	4+
27	Off-Station/Turnover	3+
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	4+

MIF continued on next page.

CTS REF	MANEUVER	P3108
37	Debrief	3+
45	Operational Charts	4+
46	On-Station Navigation (Common Nav and MPR)	4+
47	Terrain Avoidance/Standoffs	4+
48	Operational Record Keeping	3+
49	ISAR Utilization	4+
50	Surface Search (MPR)	4+
51	SAR Utilization	4+
52	Littoral Surveillance	4+

Blk #	Media	Title	Events	Hrs	H/X
P32	2B51	Electronic Warfare (MPR)	2	3.0	1.5

1. Prerequisites. P1202-3 (EWAO Self-Study).
2. Syllabus Note. Students will begin the event just prior to on-station.
3. Special Syllabus Requirements. None.
4. Discuss Items

P3201

EW support, electronic protection, electronic attack, ES phases (search, intercept, locate, identify, report), PRF, PRI, PD, review scan types (Alpha, Bravo, and Charlie), recovery time, duty cycle, boresight, main lobe, range resolution, azimuth angle, and bearing resolution.

P3202

Continuous wave, pulse doppler, frequency modulation, stagger, jitter, dwell, switch, atmospheric conditions effect on RADARs and wave propagation, and RADAR modulation types (intrapulse, interpulse).

5. Block MIF

CTS REF	MANEUVER	P3202
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
13	On-Station/Check-In Procedures	4+
15	Equipment Operation	4+
19	ESM Utilization	4+
20	Data Link Utilization	4+
22	Electronic Warfare	4+
23	Battle Space Management	4+
24	Threat Recognition	3+
27	Off-Station/Turnover	3+
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	4+
37	Debrief	3+
45	Operational Charts	4+
46	On-Station Navigation (Common Nav and MPR)	4
47	Terrain Avoidance/Standoffs	4
48	Operational Record Keeping	3+
52	Littoral Surveillance	4+
53	Signal Collection	4+

Blk #	Media	Title	Events	Hrs	H/X
P33	2B51	Acoustic Operations (MPR)	2	3.0	1.5

1. Prerequisites. P1202-3 (EWA0 Self-Study).

2. Syllabus Notes

a. Students will begin the event just prior to on-station.

b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS for each event. This additional CSI will not attend the brief or debrief.

3. Special Syllabus Requirements. None.

4. Discuss Items

P3301

ASW specific brevity words, MAD, BT sonobuoy, BT trace, AN processing, passive sonobuoys, sonobuoy deployment safety, DRT, sonobuoy drop timing, search patterns, localization patterns, CPA, LOFAR/Doppler tracking, and the 3-minute rule.

P3302

DIFAR/bearing tracking, speed fitting, generating a track, active sonobuoys, and DICASS/active tracking.

5. Block MIF

CTS REF	MANEUVER	P3302
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
13	On-Station/Check-In Procedures	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4
18	Electro-Optical/Infrared Utilization	4
20	Data Link Utilization	4+
23	Battle Space Management	4+
24	Threat Recognition	3+
27	Off-Station/Turnover	4+
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	3+
34	Mission Ownership	3+
35	Prioritization	3+
36	Scan	4+
37	Debrief	3+
45	Operational Charts	4+
46	On-Station Navigation (Common Nav and MPR)	4
47	Terrain Avoidance/Standoffs	4
48	Operational Record Keeping	3+
54	Environmental Data Collection	4+
55	Acoustic Tracking	4+

Blk #	Media	Title	Events	Hrs	H/X
P34	2B51	Maritime Patrol and Reconnaissance (MPR)	2	6.0	3.0

1. Prerequisites. P1303-4 (MPR Self-Study).

2. Syllabus Notes

a. Students will begin the event just prior to on-station.

b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS for each event. This additional CSI will not attend the brief or debrief.

3. Special Syllabus Requirements. None.

4. Discuss Items

P3401

ASW naval platforms, SURTAS, TACTAS, SOSUS, ASW localization, datum, dog box, coordinated operations low-altitude rules, lateral/vertical separation, and ASW turnover.

P3402

ASW SAC, SAU, air plans, contact classifications, ASW attack policy, WSM, compensatory allowance, and vectored attacks.

5. Block MIF

CTS REF	MANEUVER	P3402
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+

MIF continued on next page.

CTS REF	MANEUVER	P3402
13	On-Station/Check-In Procedures	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4+
18	Electro-Optical/Infrared Utilization	4+
19	ESM Utilization	4+
20	Data Link Utilization	4+
22	Electronic Warfare	4+
23	Battle Space Management	4+
24	Threat Recognition	4+
26	Search and Rescue	4
27	Off-Station/Turnover	4+
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	4+
34	Mission Ownership	4+
35	Prioritization	4+
36	Scan	4+
37	Debrief	4+
45	Operational Charts	4+
46	On-Station Navigation (Common Nav and MPR)	4+
47	Terrain Avoidance/Standoffs	4+
48	Operational Record Keeping	4+
49	ISAR Utilization	4+
50	Surface Search (MPR)	4+
51	SAR Utilization	4+
52	Littoral Surveillance	4+
53	Signal Collection	4+
54	Environmental Data Collection	4+
55	Acoustic Tracking	4+
56	Coordinated Operations	4+

Blk #	Media	Title	Events	Hrs	H/X
P35	2B51	Maritime Patrol and Reconnaissance Check Ride (MPR)	1	3.0	3.0

1. Prerequisite. P3402.
2. Syllabus Notes
 - a. Students will begin the event just prior to on-station.
 - b. In addition to the scheduled instructor, a CSI or INFO is required to operate the MCS for this event. This additional CSI will not attend the brief or debrief.
3. Special Syllabus Requirements. None.
4. Discuss Items. Any previously discussed items from the MPR stage.
5. Block MIF

CTS REF	MANEUVER	P3590
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
13	On-Station/Check-In Procedures	4+
15	Equipment Operation	4+
16	Air/Ground RADAR Utilization	4+
18	Electro-Optical/Infrared Utilization	4+
19	ESM Utilization	4+
20	Data Link Utilization	4+

MIF continued on next page.

CTS REF	MANEUVER	P3590
22	Electronic Warfare	4+
23	Battle Space Management	4+
24	Threat Recognition	4+
26	Search and Rescue	4
27	Off-Station/Turnover	4+
29	Checklists	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	4+
34	Mission Ownership	4+
35	Prioritization	4+
36	Scan	4+
37	Debrief	4+
45	Operational Charts	4+
46	On-Station Navigation (Common Nav and MPR)	4+
47	Terrain Avoidance/Standoffs	4+
48	Operational Record Keeping	4+
49	ISAR Utilization	4+
50	Surface Search (MPR)	4+
51	SAR Utilization	4+
52	Littoral Surveillance	4+
53	Signal Collection	4+
54	Environmental Data Collection	4+
55	Acoustic Tracking	4+
56	Coordinated Operations	4+

Blk #	Media	Title	Events	Hrs	H/X
T31	2B51	E-6 Communications and Operations (E-6)	9	22.5	See Syl Note a

1. Prerequisites. T1102-3 (E-6 Comm and Ops Self-Study).
2. Syllabus Notes
 - a. Allow 1.5 H/X for T3101-3 and allow 3.0 H/X for T3104-9.
 - b. Students will begin the event on-station.
3. Special Syllabus Requirements. None.
4. Discuss Items
 - T3101
TACAMO mission, VLF, and MILSTAR.
 - T3102
Due regard, EAM, and AUTODIN.
 - T3103
ABNCP mission and ALCS.
 - T3104
Air refueling procedures.
 - T3105
Long trailing wire antenna, short trailing wire antenna, VLF trail modes, and VLF trail speeds.
 - T3106
Verification and authentication.
 - T3107
Nuclear triad, USSTRATCOM, and NCA.
 - T3108
Electromagnetic pulse.

T3109

Communications security.

5. Block MIF

CTS REF	MANEUVER	T3109
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
15	Equipment Operation	4+
29	Checklists	4+
30	Fuel Management/Analysis	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	4+
34	Mission Ownership	4+
35	Prioritization	4+
36	Scan	4+
37	Debrief	4+
57	E-6 Equipment Utilization	4+
58	E-6 Communications	4+
59	E-6 Operations	4+
60	Aerial Refueling	4+

Blk #	Media	Title	Events	Hrs	H/X
T32	2B51	E-6 Communications and Operations Check Ride (E-6)	1	3.0	3.0

1. Prerequisite. T3109.
2. Syllabus Note. Students will begin the event on-station.
3. Special Syllabus Requirements. None.
4. Discuss Items. Any previously discussed items from the E-6 stage.
5. Block MIF

CTS REF	MANEUVER	T3290
1	General Knowledge/Procedures	4+
2	Emergency Procedures	4+
3	Headwork/Situational Awareness	4+
4	Basic Airwork Recognition	4+
5	System Knowledge	4+
7	Mission Planning (Operations)	4+
8	Brief	4+
15	Equipment Operation	4+
29	Checklists	4+
30	Fuel Management/Analysis	4+
32	Tactical Radio Procedures	4+
33	Crew Resource Management	4+
34	Mission Ownership	4+
35	Prioritization	4+
36	Scan	4+
37	Debrief	4+
57	E-6 Equipment Utilization	4+
58	E-6 Communications	4+
59	E-6 Operations	4+
60	Aerial Refueling	4+

Chapter IX

Course Training Standards

1. Purpose. These standards outline the tasks and proficiency required of SNFOs during the Advanced MC2 phase.
2. Student Duties and Responsibilities
 - a. Plan the mission.
 - b. Ensure the MCS is inspected and configured for the assigned mission.
 - c. Operate the MCS to accomplish the mission using sound judgment and mission ownership.
3. General Standards.
 - a. "Standard" equates to **good** (G/4).
 - b. Momentary deviations outside CTSS that do not compromise flight safety are acceptable if subsequent corrections are timely.
 - c. Procedural knowledge and application must comply with applicable directives and allow efficient mission accomplishment.
4. Execution. The MIF regulates student progression to meet required standards prior to phase completion. Instructors shall evaluate student performance against these standards.
5. Job Tasks. Specific performance and standards required are described as follows:

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

6. Graded Items. The MIF for specific graded items varies for each stage. Several items are graded on all complete syllabus events. The standards for these universally graded items are listed first followed by the Course Training Standards unique to each stage.

7. Course Training Standards

BEHAVIOR STATEMENT	STANDARDS
1. General Knowledge/Procedures	
<ul style="list-style-type: none"> ● Maintain working knowledge of all appropriate flight training instructions and directives. 	<ul style="list-style-type: none"> ● Recites, discusses, and/or performs all applicable items essential to the operation of the aircraft and completion of the mission.
2. Emergency Procedures	
<ul style="list-style-type: none"> ● Maintain in-depth knowledge of all MCS Student Guide emergency procedures. ● Utilize the checklist IAW MCS Student Guide and FTI guidelines. 	<ul style="list-style-type: none"> ● Correctly analyzes situation given scenarios. ● Recognizes the status of an immediate action item within one minute. ● Performs/recites critical action steps from memory with 100 percent accuracy. ● Correctly prioritizes tasks to include aviate, navigate, communicate, and checklists, during simulated abnormal conditions. ● Uses correct checklist to complete procedures when conditions permit. ● Prioritizes and correctly analyzes compound emergencies to a logical conclusion/successful resolution. ● Completes procedures in a timely manner.

BEHAVIOR STATEMENT	STANDARDS
3. Headwork/Situational Awareness	
<ul style="list-style-type: none"> ● Comply with the FTI and MCS Operating Manual while maintaining SA IAW safety-of-flight and mission objectives. 	<ul style="list-style-type: none"> ● Understands instructions, demonstrations, and explanations. ● Foresees and avoids possible difficulties by making recommendations that enhance the situation and/or overall mission effectiveness. ● Remains alert and spatially oriented during all phases of the event. ● Maintains overall awareness with regard to fuel state, aircraft configuration, traffic in vicinity of own ship, and dynamic weather conditions.
4. Basic Airwork Recognition	
<ul style="list-style-type: none"> ● Recognize and direct desired altitude, airspeed, and heading during flight. 	<ul style="list-style-type: none"> ● Monitors aircraft within ± 100 feet of assigned or directed altitude. ● Monitors aircraft within ± 10 knots of assigned or directed airspeed. ● Monitors aircraft within $\pm 5^\circ$ of assigned or directed heading. ● Recognizes deviations within 30 seconds and immediately directs corrections upon recognition.
5. System Knowledge	
<ul style="list-style-type: none"> ● Comply with the FTI and MCS Student Guide while maintaining a working knowledge of directives. 	<ul style="list-style-type: none"> ● Describes the correct nomenclature, purpose, characteristics, functions, and limitations of MCS systems without error.

BEHAVIOR STATEMENT	STANDARDS
6. Mission Planning (Transit)	
<ul style="list-style-type: none"> ● Performs transit mission planning with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Obtains and interprets a valid weather briefing. ● Completes or reviews a DD-1801 or DD-175 without error. ● Completes transit log. ● Reviews FLIP documents, NOTAMs, and other applicable flight information. ● Has all proper in-flight publications and charts for the specified mission. ● Plans an alternate destination based on estimated fuel requirements and observed and forecasted meteorological conditions. ● Plans alternate course of action. ● Identifies appropriate controlling agencies with associated comm frequencies. ● Plans the transit portion of the mission in a timely manner to meet requirements IAW mission tasking.

BEHAVIOR STATEMENT	STANDARDS
7. Mission Planning (Operations)	
<ul style="list-style-type: none"> ● Performs operations mission planning with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Identifies appropriate message traffic to properly plan the mission. ● Acquires appropriate mission and weather data for the operations area. ● Clearly defines the mission overview and mission goals utilizing the appropriate message traffic and mission tasking brief. ● Completes mission log without error. ● Completes mission charts without error. ● Plans the ops portion of the mission in a timely manner to meet all requirements IAW mission tasking brief.
8. Brief	
<ul style="list-style-type: none"> ● Performs a proper mission brief. 	<ul style="list-style-type: none"> ● Is thoroughly prepared for the brief and as applicable, briefs the flight to include specific mission objectives, flight conduct, and contingency planning. ● Conducts an accurate mission and safety brief given a standard mission briefing guide. ● Interacts with instructors and other crewmembers in a professional manner.

BEHAVIOR STATEMENT	STANDARDS
9. Ground Operations	
<ul style="list-style-type: none"> ● Performs/Directs all ground procedure requirements. 	<ul style="list-style-type: none"> ● Performs initialization and ground mission requirements. ● Prepares the tactical display. ● Performs required radio checks. ● Performs a heading check and properly sets up flight instruments and navigation systems. ● Marks the position at the runway numbers and verifies with the known coordinates.
10. Departure	
<ul style="list-style-type: none"> ● Monitors the proper IFR procedures while safely navigating the aircraft during the departure stage of flight. 	<ul style="list-style-type: none"> ● Monitors compliance with departure procedures and ATC instructions. ● Monitors headings to maintain IFR course $\pm 5^\circ$. ● Executes the off-deck call with base and tactical authority.
11. In-Flight Checks	
<ul style="list-style-type: none"> ● Directs flight course and deviations as appropriate for weather, fuel, or emergencies. 	<ul style="list-style-type: none"> ● Adjusts the mission profile for external factors (weather, traffic, etc.). ● Adjusts the mission profile for fuel considerations. ● Identifies nearest suitable landing field during emergency procedures. ● Performs PCL checks as required.

BEHAVIOR STATEMENT	STANDARDS
12. Enroute Procedures	
<ul style="list-style-type: none"> ● Performs the proper IFR procedures while safely navigating the aircraft during the enroute stage of flight. 	<ul style="list-style-type: none"> ● Monitors course while radial tracking $\pm 5^\circ$ or 3 NM (whichever is less). ● Makes appropriate recommendations for enroute flight plan changes given direction of flight, weather, and mission requirements. ● Changes NAVAID and CDI course at the proper switchover point while on an IFR airway. ● Maintains course centerline between all NAVAIDs and fixes, leads turns when required. ● Navigates to fixes within ± 3 NM.
13. On-Station/Check-In Procedures	
<ul style="list-style-type: none"> ● Directs/performs on-station and check-in procedures during ingress to the operations area with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Activates mission sensors IAW the mission tasking brief. ● Directs/performs proper ingress procedures IAW the mission tasking brief. ● Completes on-station checklist before entering the operations area. ● Properly assesses mission equipment status. ● Communicates with the controlling authority IAW checklists and mission tasking brief. ● Directs/performs mission tasking updates received from the controlling authority.

BEHAVIOR STATEMENT	STANDARDS
14. On-Station Navigation (Core)	
<ul style="list-style-type: none">• Directs/performs on-station navigation with the aid of checklists and mission tasking brief.	<ul style="list-style-type: none">• Maintains aircraft inside surface search operating area.• Maintains safe distance from standoffs to include land, weapons, and ships.• Maintains terrain avoidance.• Updates/validates planned time and fuel computations as required to safely and efficiently accomplish the mission.• Executes operations normal reports as required.

BEHAVIOR STATEMENT	STANDARDS
15. Equipment Operation	
<ul style="list-style-type: none"> ● Directs/performs equipment operations with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Properly operates all functions and locates equipment to include the TACAN, INS, GPS, FMS, flight instruments, and computer display. ● Properly operates all functions and locates equipment to include the ICS, V/UHF, HF, and SATCOM. ● Monitors the status of the TACAN and acknowledges degradations within 5 minutes of the malfunction. ● Properly troubleshoots all TACAN malfunctions. ● Monitors the status of the GPS and acknowledges degradations within 5 minutes of the malfunction. ● Properly troubleshoots all GPS malfunctions. ● Monitors the status of the INS and acknowledges degradations within 5 minutes of the malfunction. ● Properly troubleshoots all INS malfunctions. ● Monitors the status of the ICS and radios and acknowledges degradations within 5 minutes of the malfunction. ● Properly troubleshoots all ICS and radios malfunctions.

BEHAVIOR STATEMENT	STANDARDS
16. Air/Ground RADAR Utilization	
<ul style="list-style-type: none"> ● Directs/performs air/ground RADAR operations with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Properly operates all functions of the air/ground RADAR equipment. ● Utilizes the proper RADAR horizon to allow for an effective air/ground RADAR plot. ● Properly operates the air/ground RADAR equipment to determine ground features. ● Properly operates the air/ground RADAR equipment to identify, assess, and avoid weather hazards. ● Properly operates the air/ground RADAR equipment to effectively plot surface contacts. ● Monitors the status of the air/ground RADAR and acknowledges sensor degradations within 5 minutes of the malfunction. ● Properly troubleshoots all air/ground RADAR malfunctions.
17. Air-to-Air RADAR Utilization	
<ul style="list-style-type: none"> ● Directs/performs air-to-air RADAR operations with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Properly operates all functions of the air-to-air RADAR equipment. ● Utilizes the proper RADAR horizon to allow for an effective air-to-air RADAR plot. ● Properly operates the air-to-air RADAR equipment to determine targets. ● Monitors the status of the air-to-air RADAR and acknowledges sensor degradations within 5 minutes of the malfunction. ● Properly troubleshoots all air-to-air RADAR malfunctions.

BEHAVIOR STATEMENT	STANDARDS
18. Electro-Optical/Infrared Utilization	
<ul style="list-style-type: none"> ● Directs/performs EO/IR operations with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Properly operates all functions of the EO/IR equipment. ● Properly operates the EO/IR equipment to determine static and dynamic contacts. ● Monitors the status of the EO/IR equipment and acknowledges sensor degradations within 5 minutes of the malfunction. ● Properly troubleshoots all EO/IR equipment malfunctions.
19. ESM Utilization	
<ul style="list-style-type: none"> ● Directs/performs ESM operations with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Properly operates all functions of the ESM equipment. ● Properly operates the ESM equipment to evaluate the emitter type and platform location/association. ● Monitors the status of the ESM equipment and acknowledges sensor degradations within 5 minutes of the malfunction. ● Properly troubleshoots all ESM equipment malfunctions.

BEHAVIOR STATEMENT	STANDARDS
20. Data Link Utilization	
<ul style="list-style-type: none"> ● Directs/performs data link operations with the aid of checklists, appropriate messages, and mission tasking brief. 	<ul style="list-style-type: none"> ● Properly operates all functions of the data link equipment. ● Describes all nomenclature as it pertains to data link employment. ● Properly operates the data link equipment to transmit and/or receive sensor contacts. ● Inserts sensor contacts into the data link within five minutes of request. ● Monitors status of the data link and acknowledges sensor degradations within 5 minutes of the malfunction. ● Properly troubleshoots all data link malfunctions.
21. Surface Search (Core)	
<ul style="list-style-type: none"> ● Directs/performs surface search procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Completes sensor status checks as it pertains to surface search. ● Completes environmental assessment as it pertains to surface search. ● Directs/performs surface search strategy. ● Identifies surface contacts utilizing sensors available. ● Reports at least 80 percent of the surface contacts of assigned search area via link or voice report (if link degraded). ● Reports COIs and CCOIs IAW the mission tasking brief within 5 minutes of identifying. ● Reports unusual or suspicious surface traffic IAW the mission tasking brief within 5 minutes of the incident. ● Performs proper localization procedures. ● Performs proper tracking procedures.

BEHAVIOR STATEMENT	STANDARDS
22. Electronic Warfare	
<ul style="list-style-type: none"> ● Directs/performs EW procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Correlates EW information with other sensors. ● Prioritizes EW contacts with regard to importance and threat. ● Adjusts aircraft altitude and position for optimal EW reception. ● Clearly and concisely communicates EW threat data to friendly assets utilizing brevity.
23. Battle Space Management	
<ul style="list-style-type: none"> ● Directs/performs battle space management procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Correctly analyzes the tactical situation. ● Demonstrates effective time management. ● Maintains positional awareness with friendly assets. ● Performs and prioritizes transmissions in a multiple communications environment. ● Executes proper Rules of Engagement (ROE) procedures. ● Properly utilizes friendly assets within respective capabilities.

BEHAVIOR STATEMENT	STANDARDS
24. Threat Recognition	
<ul style="list-style-type: none"> ● Directs/performs threat recognition upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Conducts proper self-defense procedures by properly positioning the aircraft to counter threats. ● Performs and utilizes aircraft capabilities and limitations for the most advantageous method to counter a threat. ● Directs the proper search strategy to identify threats. ● Conducts proper analysis of a threat. ● Directs the proper threat localization strategy. ● Directs the proper threat tracking strategy. ● Directs the proper threat attack strategy per the ROE. ● Directs friendly assets to optimal positioning to counter threats. ● Determines status/condition of attacked target. ● Conducts proper BDA procedures.
25. Strike Support	
<ul style="list-style-type: none"> ● Directs/performs strike support procedures. 	<ul style="list-style-type: none"> ● Determines threats and associated parameters. ● Directs friendly assets when appropriate to respond to imminent threat.

BEHAVIOR STATEMENT	STANDARDS
26. Search and Rescue	
<ul style="list-style-type: none"> ● Directs/performs Search and Rescue procedures with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Determines the best known position of the missing entity utilizing all available information to include parachute drift if applicable. ● Determines the proper search altitude based on the type of missing asset, environment, and the best sensor available. ● Determines the proper search pattern based on the missing asset information and environment. ● Directs the proper search strategy. ● Directs search assets to the scene. ● Optimizes search sensors of all participating units. ● Executes appropriate Search and Rescue reports when required.
27. Off-Station/Turnover	
<ul style="list-style-type: none"> ● Directs/performs off-station and turnover procedures during egress from the operations area with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Directs/performs proper egress procedures IAW the mission tasking brief. ● Completes off-station checklist during the exit from the operations area. ● Communicates with the controlling authority and passes turnover to the relieving unit (if applicable) IAW checklists and mission-tasking brief.

BEHAVIOR STATEMENT	STANDARDS
28. Approach	
<ul style="list-style-type: none"> ● Monitors the aircraft, as needed, to properly comply with the published procedures of an approach. 	<ul style="list-style-type: none"> ● Complies with published approach procedures and controller instructions; efficiently makes use of all onboard navigational equipment to maximize SA. ● Briefs missed approach or climbout instructions prior to MAP/DA. ● Conducts appropriate CRM with flight station.
29. Checklists	
<ul style="list-style-type: none"> ● Completes mission specific checklists. 	<ul style="list-style-type: none"> ● Correctly and expeditiously performs all required checklists in accordance with the MCS Student Guide and FTI.
30. Fuel Management/Analysis	
<ul style="list-style-type: none"> ● Maintain fuel awareness throughout flight. 	<ul style="list-style-type: none"> ● Monitors fuel state and directs deviations if needed to accomplish mission and land with adequate fuel reserve. ● Uses groundspeed to update estimated fuel at on-station entry point or IAF within 500 pounds of instructor's calculation. ● Analyzes actual fuel state and correctly states any trend in fuel consumption.

BEHAVIOR STATEMENT	STANDARDS
31. ATC Radio Procedures	
<ul style="list-style-type: none"> ● Communicates/performs with standard terminology IAW directives from the AIM/FAR/ICAO and FTI. ● Performs ATC radio procedures at the MCS crew station and directs via the use of V/UHF/HF radios and ICS. 	<ul style="list-style-type: none"> ● Responds correctly to 90 percent or more of ATC incoming calls. ● Communicates clearly and concisely with appropriate agencies using standard military and FAA terminology. ● Communicates clearly and concisely with appropriate agencies using standard ICAO terminology. ● Transmits position reports in the proper format for overwater navigation. ● Makes timely transmissions without blocking other radio calls. ● Performs no radio (NORDO) procedures, as required.
32. Tactical Radio Procedures	
<ul style="list-style-type: none"> ● Communicates/performs with standard terminology IAW the unclassified tactical aid, checklists, and FTI. ● Performs tactical radio procedures at the MCS crew station and directs via the use of V/UHF/HF/SATCOM radios and ICS. 	<ul style="list-style-type: none"> ● Responds correctly to 90 percent or more of tactical incoming calls. ● Acknowledges all communications. ● Communicates clearly and concisely with appropriate tactical unit using standard tactical radio procedures. ● Makes timely transmissions without blocking other radio calls. ● Communicates using standard terminology and brevity. ● Communicates precise formatted radio transmissions when applicable. ● Communicates properly during secure radio transmissions. ● Properly encrypts sensitive information during an unsecure transmission utilizing the card-of-the-day.

BEHAVIOR STATEMENT	STANDARDS
33. Crew Resource Management	
<ul style="list-style-type: none"> ● Directs aircrew and other resources to minimize workload in order to enhance SA. 	<ul style="list-style-type: none"> ● Directs through standard communications to the aircrew. ● Communicates with brevity to crewmembers and outside agencies. ● Coordinates with crewmembers to conduct mission duties. ● Delegates aircrew tasks as appropriate. ● Makes timely recommendations to maintain aircraft flight parameters through all regimes of flight. ● Uses appropriate interaction between crewmembers with regard to normal aircraft procedures. ● Uses SA-building communications with crewmembers and outside agencies. ● Displays assertive behavior with crewmembers when necessary. ● Demonstrates the use of all CRM skills to effectively use all resources, information, and knowledge to guide the crew to the successful achievement of all tasks in flight.

BEHAVIOR STATEMENT	STANDARDS
34. Mission Ownership	
<ul style="list-style-type: none"> ● Takes charge of the mission in all aspects of planning and execution. ● Exhibit aviation leadership. 	<ul style="list-style-type: none"> ● Leads planning, briefing and execution of the mission. ● Confidently influences aircrew to work in a coordinated effort toward successful task completion within the parameters of the mission objectives. ● Determines actionable solutions to potential problems articulating proactive alternatives/courses of action. ● Takes command of mission execution and provides reasoned alternatives to mission plan due to evolving and dynamic circumstances.
35. Prioritization	
<ul style="list-style-type: none"> ● Manages task loading in the proper order of precedence per FTI-recommended minimum requirements. 	<ul style="list-style-type: none"> ● Effectively prioritizes task loading in descending order of importance (i.e., aviate, navigate, communicate, and checklists).
36. Scan	
<ul style="list-style-type: none"> ● Exhibits proper recognition of system and flight instrumentation. 	<ul style="list-style-type: none"> ● Recognizes any abnormal system indications. ● Recognizes any deviations from desired heading, airspeed, or altitude and makes recommendations for appropriate and timely corrections. ● Makes required altitude calls.

BEHAVIOR STATEMENT	STANDARDS
37. Debrief	
<ul style="list-style-type: none"> ● Performs a proper debrief. 	<ul style="list-style-type: none"> ● If appropriate, report unusual deviations, potential hazardous conditions, or unusual operations to controlling authority. ● Conducts an accurate mission debrief given a standard mission debriefing guide. ● Reports status of mission objectives. ● Updates threat intelligence, on-station weather, status of friendly forces, command and control issues, BDA, and navigation with controlling authority. ● Reconstructs mission for lessons learned purposes. ● Is receptive to constructive feedback, taking responsibility for student errors, and discusses proactive measures to improve performance. ● Recalls specifics of the mission and is able to accurately assess aircrew performance.
38. AEW Manual Tracking	
<ul style="list-style-type: none"> ● Directs/performs AEW manual tracking procedures. 	<ul style="list-style-type: none"> ● Correctly analyzes the target tracks course and speed. ● Correctly labels and reports track into the Link. ● Utilizes voice communications to report track to the Air Warfare Commander.

BEHAVIOR STATEMENT	STANDARDS
39. AEW Near Collision Intercepts	
<ul style="list-style-type: none"> ● Directs/performs AEW near collision procedures. 	<ul style="list-style-type: none"> ● Employs proper RADAR modes and mechanics. ● Directs fighter to a proper intercept course in a timely manner, intercept CPA \pm2 NM. ● Provides updated Bingo information after each intercept. ● 80 percent accurate bearing, range, and altitude information provided. ● Maintains SA to each fighter's fuel state.
40. On-Station Air Defense	
<ul style="list-style-type: none"> ● Directs/performs on-station air defense procedures. 	<ul style="list-style-type: none"> ● Directs friendly assets to optimal intercept geometry, speed, and altitude. ● Maintains proper Air Defense Posture. ● Communicates airborne decisions/posture to the Air Warfare Commander. ● Understands and executes the Air Defense plan according to Daily Intentions Message and Air Warfare instructions.
41. Airborne Battlefield Command and Control	
<ul style="list-style-type: none"> ● Directs/performs ABCC procedures. 	<ul style="list-style-type: none"> ● Correctly analyzes ABCC tactical situation. ● Directs friendly assets to optimal positioning to accomplish specific tasking.

BEHAVIOR STATEMENT	STANDARDS
42. Air Intercept Control	
<ul style="list-style-type: none"> ● Directs/performs AIC procedures. 	<ul style="list-style-type: none"> ● Tactically/safely directs fighter aircraft to a beyond-visual-range weapons employment opportunity. ● Reacts appropriately to established timeline. ● 80 percent accurate AIC calls according to FTI. ● 80 percent accurate spike calls when provided a spike vector. ● 80 percent accurate threat calls to untargeted groups within briefed threat range. ● Utilizes off-board sensors to identify and classify targets. ● Targets all bandits/hostile aircraft that present a threat to mission or meet ROE/PHID.
43. Strike	
<ul style="list-style-type: none"> ● Directs strike procedures. 	<ul style="list-style-type: none"> ● Directs friendly assets to optimal strike positions. ● Determines tactically when an intercept is necessary or should be avoided with regards to established timeline.
44. Multigroup Problems	
<ul style="list-style-type: none"> ● Directs/performs multigroup problems. 	<ul style="list-style-type: none"> ● Detects all contacts and uses correct multigroup labels and names with 80 percent accuracy. ● Reacts appropriately to established timeline. ● 80-percent accurate spike calls when provided a spike vector. ● 80-percent accurate threat calls to untargeted groups within briefed threat range. ● Utilizes off board sensors to identify and classify targets. ● Targets all bandits/hostile aircraft that present a threat to mission or meet ROE/PHID.

BEHAVIOR STATEMENT	STANDARDS
45. Operational Charts	
<ul style="list-style-type: none"> ● Prepares operational charts. 	<ul style="list-style-type: none"> ● Utilizes the proper chart for the terminal and on-station environments. ● Annotates NAVAIDs, magnetic variation, compass rose, and route on the appropriate chart. ● Annotates special use airspace, MSA, MESA, MOSA, and standoffs on the appropriate chart. ● Properly labels each chart.
46. On-Station Navigation (Common Nav and MPR)	
<ul style="list-style-type: none"> ● Directs/performs on-station navigation with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Maintains aircraft inside surface search operating area. ● Maintains safe distance from standoffs to include land, weapons, and ships. ● Maintains terrain avoidance. ● Updates/validates planned time and fuel computations as required to safely and efficiently accomplish the mission. ● Executes fixing within ± 1 NM. ● Performs SAC prior to and upon leaving on-station. ● Performs hourly fixes (Common Nav only). ● Performs 30-minute DRs (Common Nav only).

BEHAVIOR STATEMENT	STANDARDS
47. Terrain Avoidance/Standoffs	
<ul style="list-style-type: none"> ● Directs/performs terrain avoidance procedures. ● Directs/performs standoff procedures. 	<ul style="list-style-type: none"> ● Performs proper MSA calls within 30 NM of the departure/arrival airfield. ● Performs proper MESA calls along the route of flight if applicable. ● Performs proper MOSA calls within 30 NM of a landmass threat. ● Performs proper standoff calls for land, weapons, and ships. ● Coordinates a CPA with the pilot for MSA, MESA, MOSA, and standoff calls. ● Performs 30-minute fixes in a MOSA environment (Common Nav only). ● Performs 15-minute DRs in a MOSA environment (Common Nav only).
48. Operational Record Keeping	
<ul style="list-style-type: none"> ● Performs operational record keeping procedures. 	<ul style="list-style-type: none"> ● Properly fills out the administrative, communications, and preflight data without error. ● Logs 100 percent of all fixes, DRs, and SACs. ● Logs 80 percent of all tactical-related events.

BEHAVIOR STATEMENT	STANDARDS
49. ISAR Utilization	
<ul style="list-style-type: none">• Directs/performs ISAR operations with the aid of checklists and mission tasking brief.	<ul style="list-style-type: none">• Properly operates all functions of the ISAR equipment.• Directs the optimal flight conditions to achieve a proper ISAR image.• Properly identifies the surface contact features utilizing the ISAR mode.• Monitors the status of the ISAR mode and acknowledges sensor degradations within 5 minutes of the malfunction.• Properly troubleshoots all ISAR mode malfunctions.

BEHAVIOR STATEMENT	STANDARDS
50. Surface Search (MPR)	
<ul style="list-style-type: none"> ● Directs/performs surface search procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Completes sensor status checks as it pertains to surface search. ● Completes environmental assessment as it pertains to surface search. ● Directs/performs surface search strategy. ● Performs RADAR plot. ● Updates surface plot every five minutes unless mission tasking prohibits (e.g., ASW prosecution). ● Identifies surface contacts utilizing sensors available. ● Properly identifies hull profiles and features as required. ● Logs 90 percent or more of surface COIs'/CCOIs' position, course/speed, and description. ● Reports 100 percent of the surface contacts via link or voice report (if link degraded). ● Reports COIs and CCOIs IAW the mission tasking brief within five minutes of identifying. ● Reports unusual or suspicious surface traffic IAW the mission tasking brief within five minutes of the incident. ● Performs proper localization procedures. ● Performs proper tracking procedures. ● Directs rigging procedures IAW the mission tasking brief.

BEHAVIOR STATEMENT	STANDARDS
51. SAR Utilization	
<ul style="list-style-type: none"> ● Directs/performs SAR operations with the aid of checklists and mission tasking brief. 	<ul style="list-style-type: none"> ● Properly operates all functions of the SAR equipment. ● Directs the optimal flight conditions to achieve a proper SAR image. ● Properly operates the SAR mode to acquire usable images. ● Monitors the status of the SAR mode and acknowledges sensor degradations within 5 minutes of the malfunction. ● Properly troubleshoots all SAR mode malfunctions.
52. Littoral Surveillance	
<ul style="list-style-type: none"> ● Directs/performs littoral surveillance procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Completes sensor status checks as it pertains to littoral surveillance. ● Completes environmental assessment as it pertains to littoral surveillance. ● Directs/performs littoral surveillance strategy. ● Directs the aircraft altitude and position for optimal coverage. ● Properly compares order of battle imagery of port facilities to the mission tasking brief. ● Reports COIs and CCOIs IAW the mission tasking brief within five minutes of identifying within a port facility. ● Reports unusual or suspicious port facility actions IAW the mission tasking brief within five minutes of the incident.

BEHAVIOR STATEMENT	STANDARDS
53. Signal Collection	
<ul style="list-style-type: none"> ● Determine and act upon signals prioritization and mission requirements. ● Identify signals necessary for successful mission completion and mission requirements. ● Execute ESM reporting procedures and mission profile. 	<ul style="list-style-type: none"> ● Properly locates 80 percent or more of tasked and/or priority signals. ● Completes 80 percent or more of tasked signals. ● Leaves no more than two high-priority signals unprocessed/reported. ● Makes no more than three errors identifying signals. ● Identifies threat signals with no more than two errors. ● Identifies signals in a timely manner so as not to hinder mission accomplishment. ● Makes 80 percent or more of tactical reports (TACREPS) within five minutes of threat recognition. ● Updates 80 percent or more of TACREPS as appropriate for DF location and emitter mode changes. ● Uses the correct brevity codes on 80 percent of reports or greater. ● Correctly annotates 80 percent of TACREP calls on log. No more than eight log errors. ● ESM log entries include emitter name, type, location, TACREPS, SITREPs, and malfunctions.
54. Environmental Data Collection	
<ul style="list-style-type: none"> ● Directs/performs environmental data collection procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Simulates safe deployment of BT and AN sonobuoy in the vicinity of on-station area. ● Properly logs environmental data forms and reports it to other assets as applicable.

BEHAVIOR STATEMENT	STANDARDS
55. Acoustic Tracking	
<ul style="list-style-type: none">• Directs/performs acoustic tracking procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization.	<ul style="list-style-type: none">• Directs all sonobuoy drops with the pilot.• Properly and safely deploys a basic passive sonobuoy search pattern.• Properly and safely deploys a basic passive sonobuoy localization pattern.• Tracks a contact utilizing Doppler contact from passive sonobuoys.• Tracks a contact utilizing passive bearings and develops a track.• Tracks a contact utilizing simulated active contact.

BEHAVIOR STATEMENT	STANDARDS
56. Coordinated Operations	
<ul style="list-style-type: none"> ● Directs/performs coordinated operations procedures upon arriving on-station with the aid of checklists, mission tasking brief, and sensor utilization. 	<ul style="list-style-type: none"> ● Maintains safety of flight as the priority at all times. ● Utilizes all airborne and surface asset sensors to aid in the search of hostile forces. ● Aids mission commander with the proper determination of classification of a subsurface contact. ● Communicates contact reports within two minutes of discovery and updates authority every ten minutes or at each dynamic change. ● Communicates pertinent information to the proper controlling authority in less than five minutes of discovery. ● Properly communicates with other airborne assets and surface assets. ● Coordinates airborne assets and surface assets as directed by tasking authority. ● Maintains SA of water space management. ● Immediately communicates "Dog Box" reports. ● Immediately communicates hostile actions towards a friendly asset.

BEHAVIOR STATEMENT	STANDARDS
57. E-6 Equipment Utilization	
<ul style="list-style-type: none"> ● Directs/performs E-6 equipment utilization. 	<ul style="list-style-type: none"> ● Properly operates all functions and locates the MILSTAR radio. ● Monitors the status of the MILSTAR and acknowledges degradations within ten minutes of the malfunction. ● Properly troubleshoots all MILSTAR malfunctions. ● Properly operates all functions and locates the VLF radio. ● Monitors the status of the VLF and acknowledges degradations within ten minutes of the malfunction. ● Properly troubleshoots all VLF malfunctions. ● Properly monitors the mission computer system.
58. E-6 Communications	
<ul style="list-style-type: none"> ● Directs/performs E-6 comm procedures. 	<ul style="list-style-type: none"> ● Coordinates all comm systems with the proper prioritization in regards to receiving and transmitting. ● Properly prioritizes message traffic. ● Authenticates messages with no mistakes. ● Properly manages time constraints for communication activities.

BEHAVIOR STATEMENT	STANDARDS
59. E-6 Operations	
<ul style="list-style-type: none"> ● Directs/performs E-6 operations procedures. 	<ul style="list-style-type: none"> ● Conducts proper handover for relieved aircraft. ● Properly directs the crew in the operations area. ● Properly directs the flight deck and crew in response to an EAM. ● Coordinates with the flight deck and reel operator during trailing wire operations. ● Properly manages time constraints. ● Conducts proper handover for relief aircraft.
60. Aerial Refueling	
<ul style="list-style-type: none"> ● Directs E-6 aerial refueling procedures. 	<ul style="list-style-type: none"> ● Directs air refueling procedures. ● Directs the flight deck to the air refueling initial point. ● Operates appropriate sensors and comm equipment as it pertains to air refueling. ● Utilizes proper radio procedures as it pertains to air refueling. ● Properly manages time considerations as it pertains to air refueling.

Chapter X

Master Materials List

Individually Issued Materials

<u>NOMENCLATURE</u>	<u>IDENTIFICATION</u>	<u>QTY PER STUDENT</u>
1. UMFO Advanced Maritime Command and Control Master Curriculum Guide	CNATRAINST 1542.171	1
2. Core Flight Training Instruction	CNATRA P-875	1
3. E-2 Flight Training Instruction	CNATRA P-877	1
4. Common Navigation Flight Training Instruction	CNATRA P-876	1
5. MPR Flight Training Instruction	CNATRA P-878	1
6. E-6 Flight Training Instruction	CNATRA P-879	1
7. MC2 Common Core Flight Preparation Guide	CNATRA P-822	1
8. MC2 E-2 Flight Preparation Guide	CNATRA P-829	1
9. MC2 Common Navigation Flight Preparation Guide	CNATRA P-823	1
10. MC2 MPR Flight Preparation Guide	CNATRA P-830	1
11. MC2 E-6 Flight Preparation Guide	CNATRA P-831	1

Aircraft and Major Training Devices

1. Multi-Crew Simulator (2B51) quantity controlled by Naval Air Warfare Center Training Systems Division (NAVAIRWARCENTRASYS DIV), Training Material Management Division, Inventory Control Branch.

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