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From: Commandant of the Marine Corps
To: Distribution List

Subj: METEOROLOGICAL AND OCEANOGRAPHIC TRAINING AND READINESS MANUAL

Ref: (a) NAVMC 3500.14C

Encl: (1) METOC T&R Manual

1. Purpose. In accordance with reference (a), revise standards and regulations regarding the training of Meteorology and Oceanography Analyst Forecaster Marines.

2. Cancellation. NAVMC 3500.38.

3. Scope. Highlights of major training and readiness (T&R) planning considerations included in this Meteorological and Oceanographic (METOC) T&R Manual are as follows:

a. Updated T&R Manual (enclosure (1))to align with reference (a) in format and content.

b. Restructured stages and events to present training in a more logical building block manner. This initiative will effectively produce trained METOC Marines capable of accomplishing the unit's Mission Essential Tasks.

c. The changes incorporated allow for the METOC section to effectively train after the transfer from Marine Wing Support Squadrons to the Marine Air Traffic Control Detachments within the Marine Air Control Squadrons.

4. Information. Recommended changes to this manual should be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General (CG), Training and Education

Command (TECOM), Marine Air Ground Task Force Training and Education Standards Division (MTESD) (C 465), Aviation Standards Branch using standard Naval correspondence or the Automated Message Handling System plain language address: CG TECOM MTESD.

5. Command. This manual is applicable to the Marine Corps Total Force.

6. Certification. Reviewed and approved this date.

T. M. MURRAY
By direction

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CHAPTER 1
METEOROLOGICAL AND OCEANOGRAPHIC (METOC) SERVICES TRAINING AND READINESS UNIT REQUIREMENTS

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CHAPTER 1
METEOROLOGICAL AND OCEANOGRAPHIC (METOC) SERVICES TRAINING AND READINESS UNIT REQUIREMENTS

1.0 TRAINING AND READINESS REQUIREMENTS. This manual serves as the Training and Readiness Manual for 68XX MOS. The METOC Community plays a crucial role in the MAGTF's ability to conduct Maneuver Warfare. The goal of Marine METOC is to attain the highest possible combat readiness to support Expeditionary Maneuver Warfare while preserving and conserving our Marines and equipment. Embedded within our combat readiness is the ability to rapidly, effectively, and efficiently deploy on short notice and to quickly and effectively plan for crises and/or contingency operations thereby ensuring the MAGTF remains ready for combat when and where the need arises. The T&R Program represents the collaborative effort of METOC Subject Matter Experts (SMEs) who designed training standards to maximize combat capabilities. These standards, intrinsic in the core competency readiness metric, describe and define unit capabilities and requirements necessary to maintain like-unit proficiency in core skills and combat leadership. Training events are based on specific requirements and performance standards that ensure METOC Marines maintain a common base of training and depth of combat capabilities. The T&R comprises a building block approach to ensure trained METOC personnel remain ready, relevant, and fully capable of supporting the MAGTF Commander.

1.1 MISSION. The mission of the Marine Air Traffic Control Detachment (MATCD) is to support the MAGTF Commander by providing continuous all-weather, RADAR/Non-RADAR approach, departure, enroute, tower air traffic control, and meteorological services to friendly aircraft. Within this mission, the Meteorological Section of the MATCD is responsible for providing meteorological surface sensing, meteorological upper air sensing, meteorological satellite receiving and meteorological product generations and information dissemination systems.

1.2 TABLE OF ORGANIZATION (T/O). Refer to Marine Corps Total Force Division, CD&I, for current authorized organizational structure and personnel strength. Table 1-1 depicts the METOC T/O as of the date of this directive. The following paragraphs encompass a brief summary of each METOC unit mission requirements falling under three (3) broad categories: METOC support to the Marine Air Ground Task Force (MAGTF) and Installations.

1.2.1 TABLE OF ORGANIZATION

T/O for MAGTF Support
Marine Expeditionary Force (MEF M20146, M20133, M20129) Officer - 1 (6802) Enlisted - 1 (6842)
Marine Aircraft Wing (MAW M00102, M00203, M00319) Officer - 1 (6802) Enlisted - 1 (6842)
Marine Division (MARDIV M11015, M12002, M13004) Enlisted - 1 (6842)
Marine Logistics Group (MLG M28315, M27115, M29017) Enlisted - 1 (6842)
1st & 2nd Intel Battalions (INTEL M20736, M20368) Officer - 1 (6802) Enlisted - 25(6842)
3rd Intel Battalion (INTEL M20782) Officer - 1 (6802) Enlisted - 21(6842)
Marine Aviation Control Group (MACG 18 M00618) Enlisted - 1 (6842)
Marine Air Control Group (MACG 28/38 M00628, M00638) Enlisted - 1(6842)
Marine Air Control Squadron ATC Detachments (MACS ATC Det M00863, M00864, M00874, M00875, M00876, M00877, M00882, M00883, M00884, M00887) Officer - 1 (6802) Enlisted - 12(6842)
T/O for Installation Support
Regional METOC Production Center (RMC M02213, M02209) Officer - 1 (6802) Enlisted - 17(6842)
Station Detachments (M02205, M02206, M02208, M00262) Enlisted - 5 (6842)
MCAS Yuma (M02212) Enlisted - 6 (6842)
OCONUS METOC Office (Kaneohe Bay M02211) Officer - 1 (6802) Enlisted - 16(6842)
OCONUS METOC Office (Futenma M02204) Officer - 1 (6802) Enlisted - 8 (6842)
OCONUS METOC Office (Iwakuni M02203) Officer - 1 (6802) Enlisted - 6 (6842)

1.3 SIX FUNCTIONS OF MARINE AVIATION

SIX FUNCTIONS OF MARINE AVIATION		
FUNCTION	**ABBREVIATION**	**DESCRIPTION**
Offensive Air Support	**OAS**	OAS involves air operations that are conducted against enemy installations, facilities, and personnel in order to directly assist in the attainment of MAGTF objectives by destroying enemy resources or isolating enemy military forces. Its primary support of the warfighting functions is to provide fires and force protection through CAS and DAS.
Assault Support	**ASPT**	ASPT contributes to the warfighting functions of maneuver and logistics. Maneuver warfare demands rapid, flexible maneuverability to achieve a decision. Assault support uses aircraft to provide tactical mobility and logistic support to the MAGTF for the movement of high priority personnel and cargo within the immediate area of operations (or the evacuation of personnel and cargo).
Anti-Air Warfare	**AAW**	AAW is the actions used to destroy or reduce the enemy air and missile threat to an acceptable level The primary purpose of AAW is to gain and maintain whatever degree of air superiority is required; this permits the conduct of operations without prohibitive interference by opposing air and missile forces. AAW's other purpose is force protection.
Electronic Warfare	**EW**	EW is any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. EW supports the warfighting functions of fires, command and control, and intelligence through the three major subdivisions: electronic attack, electronic protection, and electronic warfare support.
Control of Aircraft & Missiles	**CoA&M**	The control of aircraft and missiles supports the warfighting function of Command and Control. The ACE commander maintains centralized command, while control is decentralized and executed through the Marine Air Command and Control System (MACCS). CoA&M integrates the other five functions of Marine Aviation by providing the commander with the ability to exercise Command and Control authority over Marine Aviation assets.
Aerial Reconnaissance	**AerRec**	AerRec employs visual observation and/or sensors in aerial vehicles to acquire intelligence information. It supports the intelligence warfighting function and is employed tactically, operationally, and strategically. The three types of air reconnaissance are visual, multi-sensor imagery, and electronic.

1.4 ABBREVIATIONS.

METOC	
CORE/MISSION/CORE PLUS SKILL ABBREVIATIONS	
CORE SKILLS (2000 PHASE)	
ACAD	ACADEMICS
AMS	Applied Meteorological Sciences
MPB	METOC Product Briefing
MDR	Meteorological Doppler Radar
MSO	Meteorological Surface Observing
UAS	Upper Atmospheric Sensing
MSAT	Meteorological Satellite
MDA	METOC Data Analysis
MCS	Climatological/Astronomical
WWA	Warnings, Watches, and Advisories
MISSION SKILLS (3000 PHASE)	
OFS	Oceanographic/Littoral Forecast Support
METF	Meteorological Forecast Support
ME	METOC Equipment
MDN	METOC Doctrine
CORE PLUS SKILLS (4000 PHASE)	
MIA	METOC Impact Assessment
MPC	METOC Planning/Coordination

1.5 MISSION ESSENTIAL TASK LIST (METL). The METL is a list of specified tasks a specific unit designed to perform. Core METs are drawn from the Marine Corps Task List (MCTL), are standardized by type unit, and are used for unit readiness. Core Plus METs are additional METs that are theater specific and/or have a low likelihood of occurrence. Core Plus METs may be included in readiness reporting when contained within an Assigned Mission METL. An Assigned Mission METL consists of only the selected METs (drawn from the MCTL, Core, or Core Plus METs) necessary for that Assigned Mission.

The METL consists of Mission Essential Tasks (METs). Shading indicates Core Plus METs.

METOC		
MISSION ESSENTIAL TASK LIST (METL)		
CORE		
MET	ABBREVIATION	MCT DESCRIPTION
MCT 2.1.2.7	CCMA	CONDUCT CLIMATIC/METEOROLOGICAL ANALYSIS
MCT 4.6.3.10	AVWX	PROVIDE AVIATION WEATHER SERVICES

1.6 MISSION ESSENTIAL TASK (MET) TO SIX FUNCTIONS OF MARINE AVIATION.

METOC OPERATIONS							
MISSION ESSENTIAL TASK LIST (METL)							
CORE							
MET	ABBREVIATION	SIX FUNCTIONS OF MARINE AVIATION					
		OAS	ASPT	AAW	EW	CoA&M	AerRec
MCT 2.1.2.7	CCMA	X	X	X	X	X	X
MCT 4.6.3.10	AVWX	X	X	X	X	X	X

1.7 MISSION ESSENTIAL TASK (MET) OUTPUT STANDARDS.

CORE MET OUTPUT STANDARDS					
			OUTPUT HOURS (PER DAY SUSTAINED FOR 90 DAYS)		
MET	ABBREVIATION	OUTPUT STANDARDS	MAX HRS PER CREW	HRS PER DAY	TOTAL NUMBER OF CREWS
MCT 2.1.2.7	CCMA	COMPLETE A TACTICAL DECISION AID WITH 80% ACCURACY COMPLETE A CLIMATE REQUEST WITH 95% ACCURACY COMPLETE AN INTEL BRIEF WITH 80% ACCURACY MAINTAIN METEOROLOGICAL MOBILE FACILITY (METMF) DURING SUSTAINED OPERATIONS	12	24	4 METOC CREWS
MCT 4.6.3.10	AVWX	COMPLETE AN HOURLY OBSERVATION WITH 95% ACCURACY COMPLETE A 24 HOUR TERMINAL AERODROME FORECAST (TAF) WITH 80% ACCURACY ISSUE A WARNING/ADVISORY IN A TIMELY MANNER WITH 80% ACCURACY COMPLETE A 96 HOUR FORECAST WITH 80% ACCURACY	12	24	4 METOC CREWS

1.8 MET TO CORE/MISSION/CORE PLUS SKILL MATRIX. Provides a pictorial view of the relationship between the Core MCT (Marine Corps Task) and each Core/Mission/Core Plus skill associated with the MCT. Shading indicates Core Plus.

METOC															
MISSION ESSENTIAL TASK (MET) TO CORE/MISSION/CORE PLUS SKILL MATRIX															
MET	CORE SKILLS										MISSION SKILLS		CORE PLUS		
	2000 PHASE										3000 PHASE		4000 PHASE		
	ACAD	AMS	MPB	MDR	MSO	UAS	MSAT	MDA	MCS	WWA	CCMA	AVWX	ACAD	MIA	MPC
MCT 2.1.2.7	X	X	X	X	X	X	X	X	X	X	X		X	X	X
MCT 4.6.3.10	X	X	X	X	X	X	X		X	X		X	X	X	X

1.9 CORE MODEL MINIMUM REQUIREMENT (CMMR) SKILLS PROFICIENCY REQUIREMENTS. The CMMR is the minimum number of crew members, per crew position, to be trained per skill as detailed below.

METOC	
CORE MODEL MINIMUM REQUIREMENTS (CMMR)	
CORE/MISSION/CORE PLUS SKILLS CREW POSITION PROFICIENCY REQUIREMENTS	
CORE SKILLS (2000 PHASE)	
	6842
AMS	8
MPB	8
MDR	8
MSO	8
UAS	8
MSAT	8
MDA	8
MCS	8
WWA	8
MISSION SKILLS (3000 PHASE)	
CCMA	4
AVWX	4
CORE PLUS SKILLS (4000 PHASE)	
MIA	1
MPC	1

1.10 READINESS REPORTING. The paragraphs and tables below delineate the minimum crew qualifications and designations required to contribute to unit readiness. Chapter 7 of the Aviation T&R Program Manual provides additional guidance and a detailed description of readiness reporting using the Defense Readiness Reporting System—Marine Corps (DRRS—MC) and the Current Readiness program.

1.10.1 Combat Leadership requirements for readiness reporting are per paragraph 1.12.

1.11 INSTRUCTOR DESIGNATIONS (5000 Phase)

Unit CMMR Instructors									
INSTRUCTOR DESIGNATION	MEF	MAW	MARDIV	MLG	INTEL BN	MACG	MACS	RMC	OCONUS
BI	0	0	-	-	1	-	6	3	1
SI	0	0	1	1	1	-	3	2	1
WTI	1	1	-	-	1	-	3	1	1

1.12 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, DESIGNATIONS (RCQD) (6000 Phase)

METOC	
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) (6000 PHASE)	
CMMR (T-2)	
RCQD	6842
APPRENTICE METOC ANALYST	4
JOURNEYMAN METOC ANALYST	2
MASTER METOC ANALYST	1

1.13 METOC EXTERNAL SYLLABUS RESOURCE REQUIREMENTS. NONE

CHAPTER 2
METEOROLOGICAL AND OCEANOGRAPHIC (METOC) SERVICES ENLISTED INDIVIDUAL TRAINING AND READINESS REQUIREMENTS

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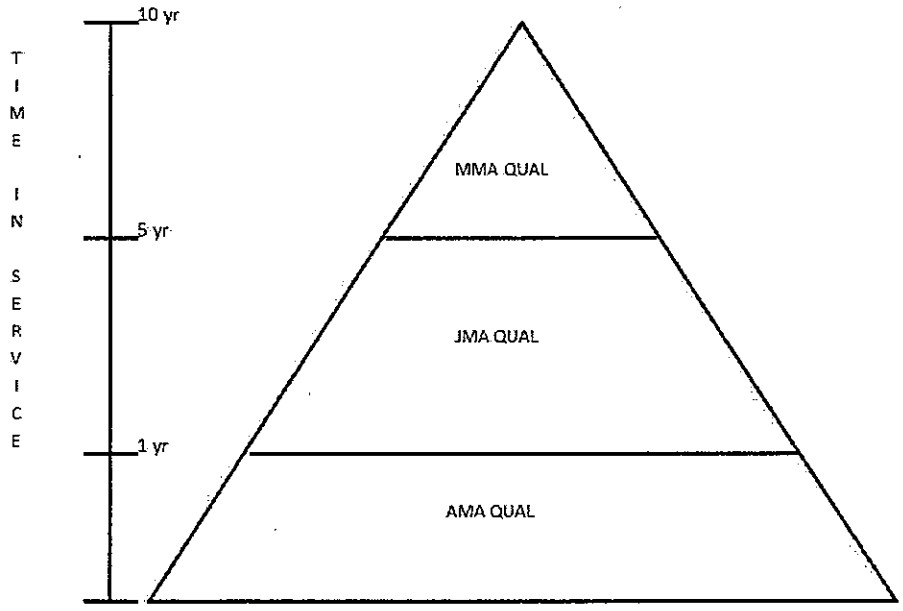
CHAPTER 2
METOC SERVICES
INDIVIDUAL TRAINING AND READINESS REQUIREMENTS

2.0 METOC ANALYST FORECASTER/6842 INDIVIDUAL TRAINING AND READINESS REQUIREMENTS. The METOC training progression model represents training progression. This T&R Syllabus is based on specific goals and performance standards designed to ensure individual proficiency in Core, Mission, and Core Plus Skills. The goal of this chapter is to develop individual and unit warfighting capabilities.

2.1 MOS 6842 TRAINING PROGRESSION MODEL. This model represents the recommended training progression for the average 6842 METOC Analyst Forecaster. Units should use the model as a point of departure to generate individual training plans.



2.2 ABBREVIATIONS

METOC ANALYST FORECASTER (6842)	
CORE/MISSION/CORE PLUS SKILL ABBREVIATIONS	
CORE SKILL (2000 PHASE)	
ACAD	ACADEMICS
AMS	APPLIED METEOROLOGICAL SCIENCES
MPB	METOC PRODUCT BRIEFING
MDR	METEOROLOGICAL DOPPLER RADAR
MSO	METEOROLOGICAL SURFACE OBSERVING
UAS	UPPER ATMOSPHERIC SENSING
MSAT	METEOROLOGICAL SATELLITE
MDA	METOC DATA ANALYSIS
MCS	CLIMATOLOGICAL/ASTRONOMICAL
WWA	WARNINGS, WATCHES, AND ADVISORIES
MISSION SKILLS (3000 PHASE)	
OFS	OCEANOGRAPHIC/LITTORAL FORECAST SUPPORT
METF	METEOROLOGICAL FORECAST SUPPORT
ME	METOC EQUIPMENT
MDN	METOC DOCTRINE
CORE PLUS SKILLS (4000 PHASE)	
MIA	METOC IMPACT ASSESSMENT
MPC	METOC PLANNING/COORDINATION
INSTRUCTOR (5000 PHASE)	
BI	BASIC INSTRUCTOR
SI	SENIOR INSTRUCTOR
WTI	WEAPONS AND TACTICS INSTRUCTOR
CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (6000 PHASE)	
AMA	APPRENTICE METOC ANALYST FORECASTER
JMA	JOURNEYMAN METOC ANALYST FORECASTER
MMA	MASTER METOC ANALYST FORECASTER

2.3 DEFINITIONS

TERM	DEFINITION
Core Model	The Core Model is the basic foundation or standardized format by which all T&Rs are constructed. The Core model provides the capability of quantifying both unit and individual training requirements and measuring readiness. This is accomplished by linking community Mission Statements, Mission Essential Task Lists, Output Standards, Core Skill Proficiency Requirements and Combat Leadership Matrices
Core Skill	Fundamental, environmental, or conditional capabilities required to perform basic functions. These basic functions serve as tactical enablers that allow crews to progress to the more complex Mission Skills. Primarily 2000 Phase events but may be introduced in the 1000 Phase.
Mission Skill	Mission Skills enable a unit to execute a specific MET. They are comprised of advanced event(s) that are focused on MET performance and draw upon the knowledge, aeronautical abilities, and situational awareness developed during Core Skill training. 3000 Phase events.
Core Plus Skill	Training events that can be theater specific or that have a low likelihood of occurrence. They may be Fundamental, environmental, or conditional capabilities required to perform basic functions. 4000 Phase events.
Core Plus Mission	Training events that can be theater specific or that have a low likelihood of occurrence. They are comprised of advanced event(s) that are focused on Core Plus MET performance and draw upon the knowledge, aeronautical abilities, and situational awareness. 4000 Phase events.
Core Skill Proficiency (CSP)	CSP is a measure of training completion for 2000 Phase events. CSP is attained by executing all events listed in the Attain Table for each Core Skill. The individual must be simultaneously proficient in all events within that Core Skill to attain CSP.
Mission Skill Proficiency (MSP)	MSP is a measure of training completion for 3000 Phase events. MSP is attained by executing all events listed in the Attain Table for each Mission Skill. The individual must be simultaneously proficient in all events within that Mission Skill to attain MSP. MSP is directly related to Training Readiness.
Core Plus Skill Proficiency (CPSP)	CPSP is a measure of training completion for 4000 Phase "Skill" events. CPSP is attained by executing all events listed in the Attain Table for each Core Plus Skill. The individual must be simultaneously proficient in all events within that Core Plus Skill to attain CPSP
Core Plus Mission Proficiency (CPMP)	CPMP is a measure of training completion for 4000 Phase "Mission" events. CPMP is attained by executing all events listed in the Attain Table for each Core Plus Mission. The individual must be simultaneously proficient in all events within that Core Plus Mission to attain CPMP

2.4 INDIVIDUAL CORE/MISSION/CORE PLUS SKILL PROFICIENCY REQUIREMENTS

2.4.1 Management of individual CSP/MSP/CPSP/CPMP serves as a foundation for developing proficiency requirements in DRRS-MC.

2.4.2 Individual CSP is a "Yes/No" status assigned to an individual by Core Skill. When an individual attains and maintains CSP in a Core Skill, the individual counts towards CMMR Unit CSP requirements for that Core Skill.

2.4.3 Proficiency is attained by individual Core/Mission/Core Plus skill where the training events for each skill are determined by POI assignment.

2.4.4 Once proficiency has been attained by Core/Mission/Core Plus Skill (by any POI assignment) then the individual maintains proficiency by executing those events noted in the maintain table and in the "Maintain POI" column of the T&R syllabus matrix. An individual maintains proficiency by individual Core/Mission/Core Plus Skill.

Note

Individuals may be attaining proficiency in some Core/Mission/Core Plus Skills while maintinaing proficiency in other Core/Mission/Core Plus Skills.

2.4.5 Once proficiency has been attained, should one lose proficiency in an event in the "Maintain POI" column, proficiency can be re-attained by demonstrating proficiency in the delinquent event. Should an individual lose proficiency in all events in the "Maintain POI" column by Core/Mission/Core Plus Skill, the individual will be assigned to the Refresher POI for that skill. To regain proficiency for that Core/Mission/Core Plus Skill the individual must demonstrate proficiency in all R-coded events for that skill.

Note

See Chapter 2 of the Aviation Program Manual for amplifying information on POI updating.

METOC 6842					
ATTAIN AND MAINTAIN CORE/MISSION/CORE PLUS PROFICIENCY MATRIX BY POI					
ATTAIN PROFICIENCY				MAINTAIN	
BASIC POI		REFRESHER POI		PROFICIENCY	
STAGE	CODE	STAGE	CODE	STAGE	CODE
CORE SKILL (2000 Phase)					
ACAD	2000				
	2001				
	2002				
	2003				
	2004				
	2005				
	2006				
	2007				
	2008				
	2009				
	2010				
	2011				
	2012				
	2013				
	2014				
	2015				
	2016				
	2017				
	2018				

METOC 6842					
ATTAIN AND MAINTAIN CORE/MISSION/CORE PLUS PROFICIENCY MATRIX BY POI					
ATTAIN PROFICIENCY				MAINTAIN	
BASIC POI		REFRESHER POI		PROFICIENCY	
STAGE	CODE	STAGE	CODE	STAGE	CODE
	2019				
	2020				
	2021				
	2022				
	2023				
	2024				
	2025				
	2026				
	2027				
	2028				
	2029				
	2030				
	2031				
	2032				
	2033				
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	2042				
	2043				
	2044				
	2045				
	2046				
	2047				
	2048				
	2049				
	2100				
	2101				
	2102				
	2103				
AMS	2104	AMS		AMS	
	2105				
	2106				
	2106				
	2107				

METOC 6842					
ATTAIN AND MAINTAIN CORE/MISSION/CORE PLUS PROFICIENCY MATRIX BY POI					
ATTAIN PROFICIENCY				MAINTAIN	
BASIC POI		REFRESHER POI		PROFICIENCY	
STAGE	CODE	STAGE	CODE	STAGE	CODE
MPB	2200	MPB		MPB	
MDR	2300	MDR		MDR	
	2301				
MSO	2400	MSO		MSO	
	2401				
	2402R		2402R		2402R
UAS	2500	UAS		UAS	
	2501R		2501R		2501R
	2502R		2502R		2502R
	2503R		2503R		2503R
	2504R		2504R		2504R
MSAT	2600R	MSAT	2600R	MSAT	2600R
MDA	2700R	MDA	2700R	MDA	2700R
	2701R		2701R		2701R
	2702R		2702R		2702R
	2703R		2703R		2703R
	2704R		2704R		2704R
MCS	2800R	MCS	2800R	MCS	2800R
WWA	2900R	WWA	2900R	WWA	2900R
MISSION SKILL (3000 Phase)					
STAGE	CODE	STAGE	CODE	STAGE	CODE
CCMA	ACAD-3000	CCMA		CCMA	
	ACAD-3001				
	ACAD-3002				
	ACAD-3003				
	ACAD-3004				
	ACAD-3005				
	ACAD-3006				
	ACAD-3007				
	ACAD-3008				
	ACAD-3009				
	ACAD-3010				
	ACAD-3011				
	ACAD-3012				
	ACAD-3013				
	ACAD-3014				
	ACAD-3015				
	ACAD-3016				
	ACAD-3017				
	ACAD-3018				
	ACAD-3019				

METOC 6842					
ATTAIN AND MAINTAIN CORE/MISSION/CORE PLUS PROFICIENCY MATRIX BY POI					
ATTAIN PROFICIENCY				MAINTAIN	
BASIC POI		REFRESHER POI		PROFICIENCY	
STAGE	CODE	STAGE	CODE	STAGE	CODE
	ACAD-3020				
	ACAD-3021				
	ACAD-3022				
	OFS-3100R		OFS-3100R		OFS-3100R
	OFS-3101R		OFS-3101R		OFS-3101R
	OFS-3102R		OFS-3102R		OFS-3102R
	OFS-3103				
	OFS-3104R		OFS-3104R		OFS-3104R
	METF-3300R		METF-3300R		METF-3300R
	METF-3301R		METF-3301R		METF-3301R
	METF-3302R		METF-3302R		METF-3302R
	METF-3303R		METF-3303R		METF-3303R
	METF-3304				
	METF-3305R		METF-3305R		METF-3305R
	METF-3306				
	ME-3400R		ME-3400R		ME-3400R
	ME-3401R		ME-3401R		ME-3401R
	ME-3402R		ME-3402R		ME-3402R
	ME-3403				
	ME-3404R		ME-3404R		ME-3404R
	ME-3405R		ME-3405R		ME-3405R
	ME-3406R		ME-3406R		ME-3406R
	ME-3407R		ME-3407R		ME-3407R
	ME-3408R		ME-3408R		ME-3408R
	ME-3409R		ME-3409R		ME-3409R
	MDN-3600				
	MDN-3601R		MDN-3601R		MDN-3601R
AVWX	ACAD-3000	AVWX		AVWX	
	ACAD-3001				
	ACAD-3002				
	ACAD-3003				
	ACAD-3004				
	ACAD-3005				
	ACAD-3006				
	ACAD-3007				
	ACAD-3008				
	ACAD-3009				
	ACAD-3010				
	ACAD-3011				
	ACAD-3012				
	ACAD-3013				

METOC 6842					
ATTAIN AND MAINTAIN CORE/MISSION/CORE PLUS PROFICIENCY MATRIX BY POI					
ATTAIN PROFICIENCY				MAINTAIN	
BASIC POI		REFRESHER POI		PROFICIENCY	
STAGE	CODE	STAGE	CODE	STAGE	CODE
	ACAD-3014				
	ACAD-3015				
	ACAD-3016				
	ACAD-3017				
	ACAD-3018				
	ACAD-3019				
	ACAD-3020				
	ACAD-3021				
	ACAD-3022				
	OFS-3100R		OFS-3100R		OFS-3100R
	OFS-3101R		OFS-3101R		OFS-3101R
	OFS-3102R		OFS-3102R		OFS-3102R
	OFS-3103				
	OFS-3104R		OFS-3104R		OFS-3104R
	METF-3300R		METF-3300R		METF-3300R
	METF-3301R		METF-3301R		METF-3301R
	METF-3302R		METF-3302R		METF-3302R
	METF-3303R		METF-3303R		METF-3303R
	METF-3304				
	METF-3305R		METF-3305R		METF-3305R
	METF-3306				
	ME-3400R		ME-3400R		ME-3400R
	ME-3401R		ME-3401R		ME-3401R
	ME-3402R		ME-3402R		ME-3402R
	ME-3403				
	ME-3403R		ME-3403R		ME-3403R
	ME-3405R		ME-3405R		ME-3405R
	ME-3406R		ME-3406R		ME-3406R
	ME-3407R		ME-3407R		ME-3407R
	ME-3408R		ME-3408R		ME-3408R
	ME-3409R		ME-3409R		ME-3409R
	MDN-3600				
	MDN-3601R		MDN-3601R		MDN-3601R
CORE PLUS (4000 Phase)					
STAGE	CODE	STAGE	CODE	STAGE	CODE
ACAD	4000	ACAD		ACAD	
	4001				
	4002				
	4003				
	4004				
	4005				

METOC 6842					
ATTAIN AND MAINTAIN CORE/MISSION/CORE PLUS PROFICIENCY MATRIX BY POI					
ATTAIN PROFICIENCY				MAINTAIN	
BASIC POI		REFRESHER POI		PROFICIENCY	
STAGE	CODE	STAGE	CODE	STAGE	CODE
	4006				
MIA	4100	MIA		MIA	
	4101				
	4102				
	4103R		4103R		4103R
	4104				
MPC	4200	MPC		MPC	
	4201				
	4202				
"S" PREFIX AND BLUE FONT = SIMULATOR EVENT					
"R" SUFFIX AND GRAY HIGHLIGHT = R-CODED "REFRESHER" EVENT					

2.5 REQUIREMENT, CERTIFICATION, QUALIFICATION AND DESIGNATION TABLES. The tables below delineate T&R events required to be completed to attain proficiency for select certifications, qualifications, and designations. In addition to event requirements, all required stage lectures, briefs, squadron training, prerequisites, and other criteria shall be completed prior to completing final events. Certification, qualification and designation letters signed by the commanding officer shall be placed in training Performance Records. See Chapter 6 of the Aviation T&R Program Manual on regaining lost qualifications.

2.5.1 Instructor Designations

METOC (6842) INSTRUCTOR DESIGNATIONS (5000 PHASE)		
INSTRUCTOR DESIGNATION	TRACKING CODE	EVENTS
BASIC INSTRUCTOR (BI)	6320	5000, 5010, 5020
SENIOR INSTRUCTOR (SI)	6321	5100, 5110, 5120, 5130, 6320
WEAPONS AND TACTICS INSTRUCTOR (WTI)	6322	6000

2.5.2 Requirements, Certifications, Qualifications, and Designations

METOC ANALYST FORECASTER 6842	
REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS, AND DESIGNATIONS (RCQD) (6000 Phase)	
RCQD	EVENTS
QUALIFY AS APPRENTICE METOC ANALYST FORECASTER (AMA)	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401, 2402, 2500, 2501, 2502, 2503, 2504, 2600, 2700, 2701, 2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003

QUALIFY AS JOURNEYMAN METOC ANALYST FORECASTER (JMA)	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401, 2402, 2500, 2501, 2502, 2503, 2504, 2600, 2700, 2701, 2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003, 3004, 3005, 3007, 3008, 3009, 3012, 3013, 3100, 3101, 3102, 3103, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 6200
QUALIFY AS MASTER METOC ANALYST FORECASTER (MMA)	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401, 2402, 2500, 2501, 2502, 2503, 2504, 2600, 2700, 2701, 2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003, 3004, 3005, 3007, 3008, 3009, 3012, 3013, 3100, 3101, 3102, 3103, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3600, 3601, 6200, 6201
DESIGNATE AS APPRENTICE METOC ANALYST FORECASTER (AMA)	6200
DESIGNATE AS JOURNEYMAN METOC ANALYST FORECASTER (JMA)	6201
DESIGNATE AS MASTER METOC ANALYST FORECASTER (MMA)	6202
DESIGNATE AS A BASIC INSTRUCTOR (BI)	5010,5020, 5020
DESIGNATE AS A SENIOR INSTRUCTOR (SI)	5010, 5020, 5020, 5100, 5110, 5120, 5130, 6320
DESIGNATE AS A WEAPONS AND TACTICS INSTRUCTOR (WTI)	6000

2.6 6842 PROGRAMS OF INSTRUCTION (POI). These tables reflect average time-to-train versus the minimum to maximum time-to-train parameters in the Training Progression Model.

2.6.1 Basic POI

METOC ANALYST FORECASTER 6842 BASIC POI		
WEEKS[1]	PHASE OF INSTRUCTION	UNIT RESPONSIBLE
1-32	METOC ANALYST FORECASTER FORECASTER COURSE	KEESLER AFB, MS
33-64	CORE SKILL TRAINING	FMF UNIT
65-116	MISSION SKILL TRAINING	FMF UNIT
AS REQ	CORE PLUS TRAINING	FMF UNIT

2.6.2 Refresher POI

METOC ANALYST FORECASTER 6842 REFRESHER POI		
WEEKS[1]	PHASE OF INSTRUCTION	UNIT RESPONSIBLE
VARIES	CORE SKILL TRAINING	FMF UNIT
VARIES	MISSION SKILL TRAINING	FMF UNIT
VARIES	CORE PLUS	FMF UNIT

NOTE 1: TRAINING DURATIONS VARIES BY POSITION BEING TRAINED. SEE PROGRESSION MODEL FOR NOTIONAL TRAINING TIMES.

2.7 SYLLABUS NOTES.

2.7.1 Environmental Conditions Matrix.

Environmental Conditions	
Code	**Meaning**
D	Shall be conducted during hours of daylight: (by exception - there is no use of a symbol)
N	Shall be conducted during hours of darkness, may be aided or unaided
N*	Shall be conducted during hours of darkness must be flown unaided
(N*)	May be conducted during hours of darkness - If conducted during hours of darkness must be flown unaided
(N)	May be conducted during darkness - If conducted during hours of darkness; may be flown aided or unaided
NS	Shall be conducted during hours of darkness - Mandatory use of Night Vision Devices
(NS)	May be conducted during darkness - If conducted during hours of darkness; must be flown with Night Vision Devices
Note - If the event is to be conducted in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

2.7.2 Device Matrix.

DEVICE	
Symbol	**Meaning**
L	Event shall be conducted live (conducted in the field/garrison, during an exercise, etc). Requires live (non-simulated) execution of the event.
L/S	Event performed live preferred/simulator optional.
S/L	Event performed in simulator preferred/live optional.
G	Ground/academic training. May include Distance Learning, CBT, lectures, self paced.
CBT	Computer Based Training
LAB	Laboratory
LEC	Lecture
CP	Command Post
TEN	Tactical Environment Network. Events designated as TEN require an approved tactical environment simulation capable of introducing both semi-autonomous threats and moving models controllable from the tactical operator station.

TEN+	Enhanced Tactical Environment Network. Events designated as TEN+ require an approved tactical environment simulation and at least one additional, networked, man-in-the-loop simulator to meet the training objectives. A moving model controlled from the operator station does not satisfy the man-in-the-loop requirement.
Note - If the event is to be flown in the simulator the Simulator Instructor shall set the desired environmental conditions for the event.	

2.7.3 Program of Instruction Matrix.

PROGRAM OF INSTRUCTION MATRIX		
Program of Instruction (POI)	**Symbol**	**Aviation Ground**
Basic	B	Initial MOS Training
Refresher	R	Return to community from non (MOS/Skill) associated tour
Maintain	M	All individuals who have attained CSP/MSP/CPP by initial POI assignment are re-assigned to the M POI to maintain proficiency.

2.7.4 Event Terms

EVENT TERMS	
TERM	**DESCRIPTION**
Discuss	An explanation of systems, procedures, or tactics during the brief, exercise, or debrief. Student is responsible for knowledge of procedures.
Demonstrate	The description and performance of a particular event by the instructor, observed by the student. The student is responsible for knowledge of the procedures prior to the demonstration of a required event.
Introduce	The instructor may demonstrate a procedure or event to a student, or may coach the student through the maneuver without demonstration. The student performs the procedures or maneuver with coaching as necessary. The student is responsible for knowledge of the procedures.
Practice	The performance of a maneuver or procedure by the student that may have been previously introduced in order to attain a specified level of performance.
Review	Demonstrated proficiency of an event by the student.
Evaluate	Any event designed to evaluate team/crew standardization that does not fit another category.
E-Coded	This term means an event evaluation form is required each time the event is logged. Requires evaluation by a certified standardization instructor (NATOPS I, WTI, INST Evaluator etc.)

2.8 CORE SKILL INTRODUCTION PHASE (1000 PHASE)

2.8.1 Purpose. To provide entry-level instruction to develop the basic skills necessary for a Marine to meet the requirements to be assigned MOS 6842, METOC Analyst Forecaster forecaster. This training includes meteorology, computers, satellite, meteorological reports, chart analysis, air mass sounding (Skew-T) analysis, space environment, and climatology. Upon graduation from the Meteorological and Oceanographic Analyst Forecaster Course (MOAF), the Marine is designated with the MOS 6842.

2.8.2 General.

2.8.2.1 Prerequisite. Meet the requirements delineated in the MCO 1200.17 (MOS Manual).

2.8.2.2 Admin Notes. MOAF(CID F02WAK1) located at Keesler AFB, MS.

2.8.2.3 Stage. The following stage is included in the Core Skill Introduction Phase of training.

PAR NO.	STAGE NAME
2.8.3	METEOROLOGY AND OCEANOGRAPHY ANALYST FORECASTER (MOAF)

2.8.3 METEOROLOGY AND OCEANOGRAPHY ANALYST FORECASTER (MOAF) STAGE

2.8.3.1 Purpose. To teach the Marine in the required skills to perform as a basic Meteorology and Oceanography Analyst Forecaster, MOS 6842.

2.8.3.2 General

Prerequisite. IAW MOS Manual (MCO 1200.17_)

Admin Notes. NONE

Crew Requirements. NONE

MOAF-1000 2.0 * B E G

Goal. Conduct orientation.

Requirement. Discuss:

(1) Course overview and administration
(2) Community College of the Air Force (CCAF) benefits and credits
(3) Effective study techniques
(4) Sexual harassment and assault reporting, professional relationships, and hazing
(5) Air Force Fraud, Waste, and Abuse (FWA) prevention and detection
(6) Instructional material types and uses
(7) Training material, resource, and energy conservation
(8) Student feedback program

(9) AETC Form 736
(10) Training Evaluation Program (TEP)
(11) Training environment safety
(12) Computer security (COMPUSEC) training
(13) Military core values

Performance Standard. Understand the orientation to a satisfactory level.

Reference
1. AETC 36-2203

MOAF-1001 12.0 * B E G

Goal. Identify facts about space environment

Requirement. Describe fundamental principles of:

(1) Space environment
(2) Impacts to operations
(3) Solar network

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFSPCPAM 15-2
2. USAFETAC/ TN-90/001
3. USAFETAC TN 91/006
4. AFMAN 15-129
5. AFWAMAN 15-1
6. FYI 37 & 51
7. Space Weather CBT

MOAF-1002 12.0 * B E G

Goal. Identify facts about the elements of a weather observation.

Requirement. Describe fundamental principles of:

(1) Sky condition
(2) Visibility
(3) Atmospheric phenomenon
(4) Temperature
(5) Wind
(6) Atmospheric pressure

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-111
2. Cloud Types for Observers
3. COMOCNOPSINST 3141.2

MOAF-1003 14.0 * B E G

Goal. Relate principles about the Earth and its atmosphere.

Requirement. Describe fundamental principles of:

(1) Meteorology
(2) Geography
(3) Oceanography
(4) Climatology

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFWA/TN-98/002
2. AFCCC 14WS website https://notus2.14WS.af.mil
3. AFH 11-203(v1)
4. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
5. Meteorology for Scientests and Engineers 2nd Edition By: Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7
6. Aerographers' Mate, 1 & C, 1995
7. Aerographers' Mate, 2, 1995
8. Oceanic and Riverine Applications QTP

MOAF-1004 21.0 * B E G

Goal. Relate principles about atmospheric physics.

Requirement. Describe fundamentals of atmospheric motion.

(1) Standard units of measure
(2) Fundamental concepts
(3) Atmospheric pressure
(4) Parcel pressure
(5) Atmospheric heating
(6) Atmospheric temperature
(7) Water vapor/moisture0
(8) Energy
(9) Hydrologic cycle
(10) Meteorological processes

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFWA/TN-98/002
2. AFH 11-203(v1)
3. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738

4. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1005 20.0 * B E G

Goal. Relate principles about atmospheric dynamics.

Requirement. Describe fundamentals of:

(1) Newton's three laws of motion
(2) Buys Ballot's Law
(3) Forces affecting parcel movement
(4) Momentum and winds
(5) Vorticity
(6) Dynamic processes
(7) Principles of global circulation
(8) Three cell model - Northern Hemisphere
(9) Jet streams

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFWA/TN-98/002
2. AFH 11-203(v1)
3. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
4. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1006 15.0 * B E G

Goal. Relate principles about hemispheric weather features.

Requirement. Discuss the fundamental of:

(1) Definitions and basic concepts
(2) Hemispheric features
(3) Other barotropic circulations

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFWA/TN-98/002
2. AFH 11-203(v1)
3. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
4. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7
5. COMET Skew-T Mastery CBT

MOAF-1007 30.0 * B E G

Goal. Relate principles about continental weather features.

Requirement. Discuss the fundamentals of:

(1) Definitions and basic concepts
(2) Continental features

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFWA/TN-98/002
2. AFH 11-203(v1)
3. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
4. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1008 22.0 * B E G

Goal. Relate principles about regional weather features.

Requirement. Discuss the fundamentals of:

(1) Tertiary circulations
(2) Thunderstorm basic concepts
(3) Hazardous weather elements

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFWA/TN-98/002
2. AFH 11-203(v1)
3. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
4. Meteorology for Scientests and Engineers 2nd Edition By: Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1009 9.0 * B E G

Goal. Relate principles about tropical weather features.

Requirement. Discuss the fundamentals of:

(1) Tropics
(2) Hemispheric features
(3) Continental features
(4) Regional features - tropical waves

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference

1. AFWA/TN-98/002
2. AFH 11-203(v1)
3. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
4. Meteorology for Scientests and Engineers 2nd Edition By: Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7
5. National Hurricane Center

MOAF-1010 95.0 * B E G

Goal. Perform basic computer operations.

Requirement. Given a computer, perform the following functions:

(1) Log-on/log-off procedures
(2) Lock/unlock procedures
(3) Microsoft PowerPoint

Performance Standards. Given a desktop computer, operate the computer with at least 70% accuracy.

Reference
1. Operator's Handbooks/Manuals

MOAF-1011 7.0 * B E G

Goal. Relate principles about the types of meteorological satellite systems.

Requirement. Discuss the fundamentals of:

(1) Meteorological satellite systems
(2) Detection process
(3) Advantages and limitations
(4) Imagery colorization
(5) Imagery types
(6) Image resolution
(7) Interpretation considerations

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. GOES Users Guide
3. SSM/I Interpretation Guide
4. WRTA 80-15

MOAF-1012 7.0 * B E G

Goal. Relate principles about microwave satellite products and multispectral imagery.

Requirement. Discuss the fundamentals of:

(1) Microwave satellite products

(2) Multispectral imagery (MSI)

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. GOES Users Guide
3. SSM/I Interpretation Guide
4. WRTA 80-15

MOAF-1013 22.5 * B E G

Goal. Relate satellite imagery to meteorological and non-meteorological features or events.

Requirement. Discuss the fundamentals of:

(1) Non-cloud features
(2) Cloud features
(3) Meteorological events

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. GOES Users Guide
3. SSM/I Interpretation Guide
4. WRTA 80-15

MOAF-1014 13.5 * B E G

Goal. Decode a METAR observation

Requirement. Given canned observations, decode:

(1) Symbolic format
(2) Observation type
(3) Station identifier
(4) Date and time of observation
(5) Modifier
(6) Wind
(7) Variable wind direction
(8) Prevailing visibility
(9) Runway visual range (RVR)
(10) Present weather
(11) Sky condition
(12) Temperatures
(13) Pressure
(14) Remarks

Performance Standard. Using applicable data, decode a METAR

observation with at least 70% accuracy.

Reference
1. AFMAN 15-111
2. Cloud Types for Observers
3. COMOCNOPSINST 3141.2

MOAF-1015 4.0 * B E G

Goal. Decode pilot reports (PIREPS).

Requirement. Given canned data, decode:

(1) Time
(2) Flight level
(3) Type
(4) Aircraft
(5) Height
(6) Location
(7) Event description
(8) Remarks

Performance Standard. Using applicable data, decode pilot reports with at least 70% accuracy.

Reference
1. FMH-12
2. NAVMETOCCOMINST 3142.1
3. NMOC FORM 3140/10 (Rev. 7/96)

MOAF-1016 6.0 * B E G

Goal. Encode Pilot Reports (PIREPS).

Requirement. Given a report from a pilot, encode:

(1) Mandatory entries
(2) Weather data entries
(3) Remarks

Performance Standard. Using applicable data, encode pilot reports with at least 70% accuracy. One instructor assist is allowed.

Reference
1. FMH-12
2. NAVMETOCCOMINST 3142.1
3. NMOC FORM 3140/10 (Rev. 7/96)

MOAF-1017 10.0 * B E G

Goal. Decode land and ship synoptic data.

Requirement. Given canned data, in Land and/or ship symbolic

format, decode the observation.

Performance Standard. Given FCM-T1, Surface Synoptic Code Tables, and applicable data, decode Land and Ship Synoptic observations with at least 70% accuracy. Two instructor assists are allowed.

Reference
1. FMH-2
2. FM 13-XI
3. AFVA 15-117
4. FM 12-XI

MOAF-1018 10.0 * B E G

Goal. Decode a Rawinsonde observation

Requirement. Given a coded rawinsonde observation, decode:

(1) Symbolic format
(2) Decode TTAA
(3) Decode TTBB
(4) Decode PPBB

Performance Standard. Using applicable data, decode a Rawinsonde observation with at least 70% accuracy with two instructor assists.

Reference
1. AFWA/TN-98/002
2. COMET Skew-T Mastery CBT
3. Plotting and Analyzing a Skew-T Log-P Diagram by: Cyclogenesis, Inc. ISBN# 1-881877-14-0

MOAF-1019 9.0 * B E G

Goal. Decode a plotted Skew-T/Log-P diagram

Requirement. Given a plotted Skew-T/Log P diagram, analyze:

(1) Chart features
(2) Basic analysis techniques

Performance Standard. Using applicable data, decode a Skew-T/Log-P diagram with at least 70% accuracy with two instructor assists.

Reference
1. AFWA/TN-98/002
2. COMET Skew-T Mastery CBT
3. Plotting and Analyzing a Skew-T Log-P Diagram by: Cyclogenesis, Inc. ISBN# 1-881877-14-0

MOAF-1020 8.0 * B E G

Goal. Derive wind flow from satellite imagery.

Requirement. Utillzing visual, infared and water vapor satellite imagery, analyze winds.

Performance Standard. Given a satellite image, depict wind flow with at least 70% accuracy. One instructor assist is allowed.

Reference
1. AFMAN 15-129
2. GOES Users Guide
3. SSM/I Interpretation Guide
4. WRTA 80-15

MOAF-1021 54.0 * B E G

Goal. Analyze upper-air and surface charts

Requirement. Discuss, then analyze the following basic features given canned upper-air and surface charts:

(1) Purpose of chart analysis
(2) Three step analysis process
(3) Basic analysis charts
(4) Standard plot models
(5) General chart preparation requirements
(6) 300 mb chart requirements
(7) 500 mb and 700 mb chart requirements
(8) 850 mb chart requirements
(9) Surface analysis chart requirements

Performance Standard. Given appropriate chart sets, analyze upper-air and surface charts with at least 70% accuracy with one instructor assist.

Reference
1. WRTA 81-14
2. CRTA 91-19
3. AFWA/TN 98-002
4. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
5. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1022 2.0 * B E G

Goal. Select effective quality assurance program procedures.

Requirement. Discuss the fundamentals of the following:

(1) Quality assurance
(2) Verification programs
(3) Quality control (QC) procedures

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFH 33-337

MOAF-1023 3.0 * B E G

Goal. Identify facts about the components of an effective regime forecast process.

Requirement. Discuss the fundamentals of:

(1) Regimes
(2) Macroscale regimes
(3) The Regime Forecast Process

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFWA/TN 98-002

MOAF-1024 30.0 * B E G

Goal. Relate principles about macroscale weather analysis techniques.

Requirement. Discuss the fundamentals of:

(1) Atmospheric motion
(2) Atmospheric dynamics
(3) Characteristics of long waves
(4) Long-wave patterns - two types
(5) Special case - blocking systems
(6) Jet streams
(7) Analysis Tools
(8) Interpreting Models

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. WRTA 81-14
2. AFWA/TN 98-002

MOAF-1025 24.0 * B E G

Goal. Analyze macroscale weather features

Requirement. Utilizing the following METOC products, identify macroscale atmospheric features:

(1) Satellite imagery - water vapor and infrared
(2) 500-mb Wave Hemispheric chart
(3) Model chart analysis requirements
(4) Initialize model products

Performance Standard. Given hemispheric weather charts and satellite imagery, analyze macroscale weather features with at least 70% accuracy with one instructor assist.

Reference
1. WRTA 81-14
2. AFWA/TN 98-002

MOAF-1026 58.0 * B E G

Goal. Relate principles about synoptic scale weather analysis techniques.

Requirement. Discuss the fundamentals of:

(1) Physics
(2) Dynamics
(3) Upper atmospheric weather features
(4) Lower atmospheric weather features
(5) Surface layer weather features
(6) Vertical interactions
(7) Analysis process
(8) Analysis tools
(9) Model interpretation
(10) Tropical weather

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1027 8.0 * B E G

Goal. Identify facts about synoptic weather regimes.

Requirement. Discuss the fundamentals of:

(1) Weather regime characteristics
(2) Dependent on macroscale environment
(3) Barotropic regime (4) Baroclinic regimes

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129

2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1028 75.0 * B E G

Goal. Analyze synoptic scale weather features.

Requirement. Utilizing satellite imagery, upper air charts and surface charts, discuss and identify the following:

(1) Chart descriptions
(2) Analysis process
(3) Analyze the hemispheric satellite image
(4) Analyze the 500-mb hemispheric chart
(5) Streamline CONUS water vapor image
(6) Analyze CONUS IR image
(7) Analyze 300 mb chart
(8) Analyze 500 mb and 700 mb charts
(9) Analyze 850 mb chart
(10) Analyze surface chart
(11) 1,000-500-mb Thickness chart
(12) 500-mb Heights and Vorticity chart
(13) Initialize model products
(14) Regime analysis briefing

Performance Standard. Given satellite imagery, upper air charts and surface charts for the United States, analyze synoptic scale weather features with at least 70% accuracy with one instructor assist.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1029 29.0 * B E G

Goal. Encode METAR observations.

Requirement. Given a scenario, perform he following functions:

(1) State general information
(2) Identify service specific information
(3) Identify form entries
(4) State required entries on every METAR observation

Performance Standard. Given applicable regulations and an observation scenario, encode three METAR observations with at least 70% accuracy. One instructor assist is allowed.

Reference
1. AFMAN 15-111
2. COMOCNOPSINST 3142.2
3. CNMOC 3140/12

MOAF-1030 31.0 * B E G

Goal. Relate principles about mesoscale weather analysis techniques.

Requirement. Discuss the fundamentals of:

(1) Atmospheric stability
(2) Mass continuity theory
(3) Convective severe weather
(4) Non-convective severe weather

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1031 6.0 * B E G

Goal. Identify facts about radar theory and radar system components.

Requirement. Discuss the fundamentals of:

(1) National weather radar network
(2) System user classifications
(3) Major components
(4) Volume coverage pattern
(5) Electromagnetic energy
(6) Beam characteristics
(7) Pulse characteristics
(8) Atmospheric interactions
(9) Velocity

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. FMH-11
2. WSR-88D Operating Instructions

MOAF-1032 2.0 * B E G

Goal. Relate principles about weather radar products.

Requirement. Discuss the fundamentals of:

(1) Single Polarization Base Products
(2) Dual Polarization Base Products

Performance Standard. In accordance with the POI, complete the

knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. FMH-11
2. WSR-88D Operating Instructions

MOAF-1033 24.0 * B E G

Goal. Interrogate WSR-88D information to identify radar products

Requirement. Discuss and define the following as they pertain to radar information and procducts:

(1) Volumetric Products
(2) Radar Features
(3) Radar Overlays
(4) Common Desktop Environment (CDE)
(5) Product display
(6) Product manipulation
(7) Product Interrogation

Performance Standard. Given an OPUP workstation, interrogate WSR-88D information to identify radar products with at least 70% accuracy with one instructor assist.

Reference
1. FMH-11
2. WSR-88D Operating Instructions

MOAF-1034 35.5 * B E G

Goal. Analyze mesoscale weather features

Requirement. Perform the following:

(1) State general requirements
(2) Streamline low-level features
(3) Analyze 300-mb chart
(4) Analyze 500-mb chart
(5) Analyze 700-mb chart
(6) Analyze 850-mb chart
(7) Analyze surface features on a local area work chart
(8) Analyze Skew-T/Log-P diagram

Performance Standard. Given a Skew-T diagram, upper air and surface charts, and satellite imagery, analyze mesoscale weather features with at least 70% accuracy and one instructor assist.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1035 6.0 * B E G

Goal. Encode METAR observations

Requirement. Utilizing service specific references and form entry requirement, encode METAR observations.

Performance Standard. Given applicable regulations and an observation scenario, encode three METAR observations with at least 70% accuracy and one instructor assist.

Reference
1. AFMAN 15-111
2. COMOCNOPSINST 3142.2
3. CNMOC 3140/12

MOAF-1036 11.0 * B E G

Goal. Relate principles about macroscale weather forecast techniques.

Requirement. Discuss the fundamentals of:

(1) The forecast regime process - forecast phase
(2) Macroscale weather features
(3) Macroscale regimes
(4) Long-wave patterns
(5) Prognosis rules and forecast techniques
(6) Numerical weather model types

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. WRTA 81-14
2. AFWA/TN 98-002

MOAF-1037 3.0 * B E G

Goal. Identify facts about numerical model processes.

Requirement. Discuss the the fundamentals of:

(1) Definitions
(2) Deterministic models
(3) Stochastic model
(4) Deterministic and stochastic examples

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFWA/TN 98-002

MOAF-1038 8.0 * B E G

Goal. Relate principles about flight hazard forecast techniques

Requirement. Discuss the following fundamentals:

(1) Turbulence
(2) Icing

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1039 34.0 * B E G

Goal. Relate principles about synoptic scale weather forecast techniques.

Requirement. Discuss the fundamentals of:

(1) Synoptic weather features
(2) Vertical consistency
(3) Prognosis rules and forecast techniques
(4) Using models to produce forecast

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1040 8.0 * B E G

Goal. Take a surface observation.

Requirement. Utilizing the METAR code, take and record a surface observation:

(1) Evaluate outside weather elements
(2) Evaluate inside weather elements

Performance Standard. Given appropriate weather data, references and equipment, encode a METAR observation with at least 70% accuracy and one instructor assist.

Reference
1. AFMAN 15-111

2. COMOCNOPSINST 3142.2
3. CNMOC 3140/12

MOAF-1041 4.0 * B E G

Goal. Forecast tropical weather elements.

Requirement. Perform the following functions:

(1) Identify tropical weather features
(2) Apply tropical forecast techniques
(3) Identify tropical cyclones and other tropical weather elements

Performance Standard. Given analyzed charts and diagrams, forecast tropical weather elements with at least 70% accuracy and two instructor assists.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1042 75.0 * B E G

Goal. Forecast macroscale and synoptic scale weather features.

Requirement. Perform the following functions:

(1) Review climatology and continuity
(2) Perform analysis features
(3) Apply prognosis rules and forecast techniques
(4) Initialize and verify models
(5) Produce a 24-hour forecast of macroscale and synoptic scale features on forecast charts
(6) Provide briefing of analysis and forecast products
(7) Compare new analysis chart to previous forecast chart
(8) Chart analysis software - Leading Environmental Analysis and Display System (LEADS)
(9) Build presentation using PowerPoint - Format

Performance Standard. Given a computer to display appropriate weather charts and references, forecast macroscale and synoptic scale weather features with at least 70% accuracy and one instructor assist.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1043 23.0 * B E G

Goal. Relate principles about mesoscale and microscale weather forecast techniques.

Requirement. Discuss the fundamentals of:

(1) Precipitation forecast techniques
(2) Obstructions forecast techniques
(3) Low-level turbulence forecast techniques
(4) Pressure forecast techniques

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1044 21.0 * B E G

Goal. Relate principles about mesoscale and microscale weather forecast techniques

Requirement. Discuss the fundamentals of:

(1) Temperature forecast techniques
(2) Cloud forecast techniques
(3) Icing forecast techniques
(4) Wind forecast techniques

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1045 2.0 * B E G

Goal. Relate principles about JET system configuration.

Requirement. Discuss the fundamentals of:

(1) System overview
(2) Architectural overview
(3) Hardware
(4) Software

Performance Standard. In accordance with the POI, complete the knowledge based objective measurement to a minimum of 70% accuracy in a time limit of 50 minutes.

Reference
1. AFMAN 15-129
2. Operator's Handbook

MOAF-1046 5.0 * B E G

Goal. Encode a METAR observation.

Requirement. Utilize JET to record a surface weather observation in METAR format.

Performance Standard. Given appropriate weather data, references and equipment, encode a METAR observation with at least 70% accuracy and one instructor assist.

Reference
1. AFMAN 15-111
2. COMOCNOPSINST 3142.2
3. CNMOC 3140/12

MOAF-1047 9.0 * B E G

Goal. Identify meteorological parameters from microscale numerical weather prediction text products.

Requirement. Utilizing the products below, identify METOC parameters:

(1) Numerical weather prediction products
(2) Numerical guidance
(3) Model output statistic (MOS) products

Performance Standard. Using appropriate weather data, select meteorological parameters from microscale numerical weather prediction text products with at least 70% accuracy and one instructor assist.

Reference
1. AFWA/TN 98-002

MOAF-1048 45.0 * B E G

Goal. Forecast mesoscale and microscale weather features

Requirement. Perform the following functions:

(1) Evaluate synoptic scale
(2) Determine predominant synoptic regimes
(3) Evaluate meteogram
(4) Evaluate current and forecast Skew-Ts
(5) Apply mesoscale/microscale forecast techniques

Performance Standard. Given a computer to display appropriate weather data and references, forecast mesoscale and microscale weather features with at least 70% accuracy and one instructor

assist.

Reference
1. AFMAN 15-129
2. AFWATN/98-002
3. NWS Forecaster Handbook No. 1

MOAF-1049 9.0 * B E G

Goal. Prepare a Terminal Aerodome Forecast (TAF).

Requirement. Perform the following functions:

(1) Describe Terminal Aerodrome Forecast (TAF) code
(2) Complete TAF worksheet
(3) Accomplish a TAF using JET

Performance Standard.Using appropriate weather data and a computer, prepare a terminal aerodrome forecast with at least 70% accuracy and one instructor assist.

Reference
1. NAVMETOCCOMINST 3143.1G
2. AFMAN 15-124
3. FM51-XII TAF Code

MOAF-1050 42.0 * B E G

Goal. Perform duties related to the synoptic forecaster position

Requirement. Complete the following tasks:

(1) Computer analyzed products
(2) Upper-air reanalysis steps
(3) Surface reanalysis steps
(4) 500-mb Vorticity analysis
(5) Thickness Chart
(6) Satellite imagery
(7) Models
(8) Weather discussion bulletins

Performance Standard. Given appropriate weather data, references, and equipment, perform duties related to the synoptic forecaster position with at least 70% accuracy and one instructor assist.

Reference
1. AFI 11-202(v3)
2. AFMAN 15-129
3. AR 95-1

MOAF-1051 50.0 * B E G

Goal. Perform duties related to the mission briefer position.

Requirement. Complete the following tasks:

(1) Continuity of operations
(2) General information
(3) Solar effects on military operations
(4) DD Form 175-1 Flight Weather Briefing
(5) Mission Execution Forecast (MEF)
(6) Military Operational Area Forecast (MOAF)
(7) PMSV - Pilot to Metro Service
(8) PIREP form
(9) METAR Observations

Performance Standard. Given appropriate weather data, references, and equipment, perform duties related to the mission briefer position with at least 70% accuracy and one instructor assist.

Reference
1. AFI 11-202(v3)
2. AFMAN 15-129
3. AR 95-1

MOAF-1052 48.0 * B E G

Goal. Perform duties related to the forecaster position

Requirement. Perfrom the following tasks:

(1) Forecast preparation
(2) Terminal Aerodrome Forecast (TAF) preparation
(3) Military TAF code
(4) National weather service (NWS) TAF
(5) TAF worksheet
(6) Continuity of operations
(7) METWATCH program concept
(8) Special notices

Performance Standard. Given appropriate weather data, references, and equipment, perform duties related to the forecaster position with at least 70% accuracy. One instructor assist.

Reference
1. AFI 11-202(v3)
2. AFMAN 15-129
3. AR 95-1

MOAF-1053 14.0 * B E G

Goal. Prepare and present a shift change briefing.

Requirement. Perform the following tasks:

(1) Purpose
(2) Secondary advantages

(3) Procedures
(4) Format

Performance Standard. Using appropriate weather data, prepare and present a shift change briefing with at least 70% accuracy and one instructor assist.

Reference
1. AFI 11-202(v3)
2. AFMAN 15-129
3. AR 95-1

MOAF-1054 15.0 * B E G

Goal. Demonstrate proficiency of atmospheric physics.

Requirement. Demonstrate knowledge of fundamental concepts of the following subjects:

(1) Atmospheric structure.
(2) Atmospheric variables.
(3) Pressure.
(4) Temperature and moisture.
(5) Fundamentals of atmospheric concepts.
(6) Advection.
(7) Thickness values.
(8) Cloud formation and dissipation.
(9) Precipitation types.

Performance Standard: With 70% accuracy, define the subjects listed and determine how each subject affects the other.

References.
1. UCAR CoMet In-Depth Physics Lessons
2. UCAR CoMet S290 Unit 4: Basic Weather Processes
3. UCAR CoMet S-290 Unit: 5 Temperature and Relative Humidity Relationships
4. UCAR CoMet Topics in Precipitation Type Forecasting
5. UCAR CoMet Principles of Convection 1: Buoyancy and CAPE
6. UCAR CoMet Frongenetical Circulations and Stability (*Dr. James Moore*)
7. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738 AFWA TN 98-002 (revised Feb. 2012)
8. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1055 15.0 * B E G

Goal. Describe the dynamic atmospheric principles.

Requirement. Describe fundamental concepts of the following subjects:

(1) Rotational and circular motion.
(2) Atmospheric forces.

(3) Divergence/convergence (speed & directional).
(4) Vorticity.
(5) Jet streams.
(6) Atmospheric wave terminology.
(7) Vertical motions.
(8) Air masses.
(9) Frontal systems.
(10) Evolution of frontal systems.
(11) Synoptic scale systems.
(12) Evolution of synoptic scale baroclinic systems.
(13) Local modification to large-scale circulations.

Performance Standard. Explain each of the concepts listed and state the development and dissipation processes, where applicable to a 70% accuracy.

References.
1. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
2. AFWA TN 98-002 (revised Feb. 2012), Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1056 3.0 * B E G

Goal. Brief synoptic chart set.

Requirement. Utilizing an analyzed chart set, brief meteorological features from the following products:

(1) Surface chart.
(2) Constant pressure charts.
(3) 0-5 Hemispheric Wave chart
(3) Support charts:
(a) Satellite Imagery.
(b) Vorticity.
(c) 1000-500mb Thickness.

Performance Standard. Conduct brief until individual demonstrates mastery of sound atmospheric fundamentals.

Reference.
1. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
2. AFWA TN 98-002 (revised Feb. 2012)
3. Air Force Weather Training Package, Analysis and Prognosis, Trainee Booklet, Trainer's Guide, Evaluation Package,
4. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1057 14.0 * B E G

Goal. Identify meteorological features on satellite imagery.

Requirement. Correctly identify synoptic and/or mesoscale meteorological features on IR, Visual, Water Vapor, and Multi-spectral satellite imagery (SSMI):

(1) Areas of high pressure.
(2) Areas of low pressure.
(3) Frontal boundaries.
(4) Thunderstorms.
(5) Basic and significant cloud elements.
(6) Jet streams.
(7) Land/terrain features.
(8) Non-cloud features (i.e. smoke, dust).
(9) Significant weather phenomena.
(10) Tropical features.
  (a) Tropical cyclones.
  (b) Tropical upper tropospheric troughs.

Performance Standard. Given the satellite image, identify and discuss the features within a70% accuracy

Reference.
1. UCAR CoMet recognition and Impact of vorticity maxima and minima in satellite imagery
2. UCAR CoMet Satellite feature identification: Blocking Patterns, UCAR CoMet Creating meteorological products from satellite images
3. UCAR CoMet Dynamic feature identification: the satellite palette
4. UCAR CoMet Dynamic feature identification: Deformation zone analysis
5. UCAR CoMet Dynamic feature identification: Deformation zone diagnosis
6. UCAR CoMet Dynamic feature identification: Deformation zone distribution
7. UCAR CoMet visible and infrared dust detection techniques
8. UCAR CoMet Feature identification using environmental satellites, Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
9. AFWA TN 98-002 (revised Feb. 2012), Air Force Weather Training Package, Analysis and Prognosis, Trainee Booklet, Trainer's Guide, Evaluation Package
10. The Cloud Book: How to Understand the Skies Publication Date 2008, ISBN-10: 0-7153-2808, Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1058 .5 * B E G

Goal. Analyze and interpret a thickness chart.

Requirement. Given a SFC-500mb thickness chart, analyze and depict the features listed:

(1) Warm/cold air advection.
(2) High and low pressure centers.

(3) Fronts.
(4) 540 Dam line.
(5) Troughs.
(6) Label air masses.
(7) Jet stream.

Performance Standard. Complete requirement within 30 minutes of chart receipt. Discuss meteorological reasoning for placement of features to an 70% accuracy.

External Syllabus Support. None

Reference.
1. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
2. AFWA TN 98-002 (revised Feb. 2012), Air Force Weather Training Package
3. Analysis and Prognosis, Trainee Booklet, Trainer's Guide, Evaluation Package, Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1059 .5 * B E G

Goal. Analyze and interpret a vorticity chart.

Requirement. Given a 500mb vorticity chart, analyze and depict the following features:

(1) Positive/negative vorticity advection areas.
(2) Shear lobes.
(3) Advection lobes.
(4) Jet stream.
(5) X-N distribution.

Performance Standard. Complete requirement within 30 minutes of chart receipt. Explain meteorological reasoning for placement of features to an 70% accuracy.

External Syllabus Support. None

Reference.
1. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738, AFWA TN 98-002 (revised Feb. 2012)
2. Air Force Weather Training Package, Analysis and Prognosis, Trainee Booklet, Trainer's Guide, Evaluation Package
3. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1060 6.0 * B E G

Goal. (Re)Analyze and interpret upper atmospheric weather charts.

Requirement. Provided standard level chart set (850mb, 700mb, 500mb, 300mb, and 200mb) analyze the mandatory level constant pressure charts for features listed below (as applicable):

(1) Isoheights.
(2) Isotherms.
(3) Areas of significant moisture.
(4) Major short wave axis, troughs and ridges.
(5) Minor short wave axis, troughs and ridges.
(6) High and low height centers.
(7) Warm and cold pockets.
(8) Upper fronts.
(9) Jet stream features.

Performance Standard. Within 6 hours, complete an analysis and explain meteorological reasoning for placement of features to an 70% accuracy.

References.
1. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
2. AFWA TN 98-002 (revised Feb. 2012)
3. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

MOAF-1061 1.0 * B E G

Goal. Analyze and interpret a surface chart.

Requirement. Given a surface chart, depict the following features:

(1) Isobars.
(2) High and low pressure centers.
(3) Fronts.
(4) Highlight weather symbols.
(5) Troughs.
(6) Label air masses.
(7) Dry lines.
(8) Isallobars.
(9) Isodrosotherms.
(10) Identify outflow boundaries.
(11) Nephanalysis.

Performance Standard. Complete requirement within 45 minutes of chart receipt and explain meteorological reasoning for placement of features with a 70% accuracy.

Reference.
1. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738,
2. AFWA TN 98-002 (revised Feb. 2012), Air Force Weather Training Package, Analysis and Prognosis, Trainee Booklet, Trainer's Guide, Evaluation Package, Unified Surface Analysis Manual

3. Meteorology for Scientests and Engineers 2nd Edition
By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

2.9 CORE SKILL PHASE (2000 PHASE)

2.9.1 Purpose. To train METOC Analyst Forecaster in the skills necessary to master the core competency of meteorology (operational atmospheric forecasting). This phase of training also introduces follow-on skills to broaden individual skill beyond that of atmospheric forecasting. Core skills and supporting events are specific mission-related task areas that support METOC METLs. Core skills are grouped into T&R events and are appropriately labeled as stages of training. The core model requires individual and unit proficiency in 2000 level core skills in order to perform all tasks in the unit METL and to execute the unit core capability. This phase is essential to wartime employment of the unit. Individuals should normally complete this phase of training within the first year of assignment to a unit (approximately 12-18 months).

2.9.2 General

2.9.2.1 Prerequisite. None

2.9.2.2 Stages. The following stages are included in the Core Skill Phase of training.

PAR NO.	STAGE NAME
2.9.3	ACADEMIC (ACAD)
2.9.4	APPLIED METEOROLOGICAL SCIENCE (AMS)
2.9.5	METOC PRODUCT BRIEFING (MPB)
2.9.6	METEOROLOGICAL DOPPLER RADAR (MDR)
2.9.7	METEOROLOGICAL SURFACE OBSERVATIONS (MSO)
2.9.8	UPPER ATMOSPHERIC SENSING (UAS)
2.9.9	METOC SATELLITE (MSAT)
2.9.10	METOC DATA ANALYSIS (MDA)
2.9.11	METOC CLIMATOLOGICAL/ASTRONOMICAL SERVICES (MCS)
2.9.12	WARNINGS, WATCHES, AND ADVISORIES (WWA)

2.9.3 ACADEMICS (ACAD) STAGE

2.9.3.1 Purpose. The stage outlines all relevant computer based training modules, correspondence courses, instructor-led distance learning courses, and formal resident courses to assist in the completion of events within the 2000 level phase of training.

2.9.3.2 General.

Prerequisite. None

Admin Notes. None

Crew Requirements. None

ACAD-2000 16.0 * B E G

Goal. Complete '*Aerographer's Mate Third Class METOC Training Manual (AG3)*' Module (METOC-045-841-609-001).

Requirement. Perform the module requirements of the '*Aerographer's Mate Third Class METOC Training Manual*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/NKO
https://wwwa.nko.navy.mil/portal/home/home/Home?cacLogin=true

References.
1. Ocean Studies, 2nd Edition, 2008, American Meteorological Society
2. Weather Studies, 3rd Edition, 2006, American Meteorological Society
3. www.theweatherprediction.com , Professor Jeff Haby

ACAD 2001 7.0 * B E G

Goal. Complete '*Skew-T Mastery*' Module.

Requirement. Perform the module requirements of the '*Skew-T Mastery*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

References.
1. All references for module can be found at https://www.meted.ucar.edu/index.ph

ACAD 2002 2.0 * B E G

Goal. Complete '*Fog: Its Processes and Impacts to Aviation and Aviation Forecasting*' Module.

Requirement. Perform the module requirements of the '*Fog: Its Processes and Impacts to Aviation and Aviation Forecasting*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

References.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2003 2.0 * B E G

Goal. Complete *'Forecasting Radiation Fog'* Module.

Requirement. Perform the module requirements of the *'Forecasting Radiation Fog'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2004 3.0 * B E G

Goal. Complete *'Dynamically Forced Fog'* Module.

Requirement. Perform the module requirements of the *'Dynamically Forced Fog'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2005 3.0 * B E G

Goal. Complete the *'Local Influences on Fog and Low Stratus'* Module.

Requirement. Perform the module requirements of the *'Local Influences on Fog and Low Stratus'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.

1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2006 1.0 * B E G

Goal. Complete *'Thermally-Forced Circulation I: Sea Breezes'* Module.

Requirement. Perform the module requirements of the *'Thermally-Forced Circulation I: Sea Breezes'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2007 1.0 * B E G

Goal. Complete 'Thermally-Forced Circulation II: *Mountain Valley Winds'* Module.

Requirement. Perform the module requirements of the *'Thermally-Forced Circulation I: Mountain Valley Winds'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2008 1.5 * B E G

Goal. Complete *'Cold Air Damming'* Module.

Requirement. Perform the module requirements of the *'Cold Air Damming'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2009 2.0 * B E G

Goal. Complete *'Coastally Trapped Wind Reversals'* Module.

Requirement. Perform the module requirements of the *'Coastally Trapped Wind Reversals'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2010 2.0 * B E G

Goal. Complete *'Gap Winds'* Module.

Requirement. Perform the module requirements of the *'Gap Winds'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2011 .5 * B E G

Goal. Complete *'Flow Interaction with Topography'* Module.

Requirement. Perform the module requirements of the *'Flow Interaction with Topography'* Module (Course Code: NMOPDC-FIWT-2.0).

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.

1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2012 3.0 * B E G

Goal. Complete '*Mountain Waves and Downslope Winds*' Module

Requirement. Perform the module requirements of the '*Mountain Waves and Downslope Winds*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2013 3.0 * B E G

Goal. Complete '*Atmospheric Dust*' Module

Requirement. Perform the module requirements of the '*Atmospheric Dust*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2014 2.0 * B E G

Goal. Complete '*Forecasting Dust Storms Version 2*' Module

Requirement. Perform the module requirements of the '*Forecasting Dust Storms Version 2*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2015 2.0 * B E G

Goal. Complete '*Low-Level Coastal Jets*' Module.

Requirement. Perform the module requirements of the '*Low-Level Coastal Jets*' Module)

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2016 .5 * B E G

Goal. Complete the '*Jet Streak Circulations*' Module.

Requirement. Perform the module requirements of the '*Jet Streak Circulations*' Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/ COMET UCAR, http://www.meted.ucar.edu.

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2017 .5 * B E G

Goal. Complete the '*Vorticity Maxima and Comma Patterns*' Module.

Requirement. Perform the module requirements of the '*Vorticity Maxima and Comma Patterns*' Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/ COMET UCAR, http://www.meted.ucar.edu.

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2018 .4 * B E G

Goal. Complete the 'Dynamic Feature Identification: *Vorticity Minima and Anticomma Patterns*' Module

Requirement. Perform the module requirements of the '*Dynamic Feature Identification: Vorticity Minima and Anticomma Patterns*' Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/ COMET UCAR, http://www.meted.ucar.edu.

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2019 .5 * B E G

Goal. Complete the 'Recognition and Impact of *Vorticity Maxima and Minima in Satellite Imagery'* Module.

Requirement. Perform the module requirements of the 'Recognition and Impact of *Vorticity Maxima and Minima in Satellite Imagery'* Module..

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/ COMET UCAR, http://www.meted.ucar.edu.

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2020 1.0 * B E G

Goal. Complete *'Principles of Convection I: Buoyancy and CAPE'* Module.

Requirement. Perform the requirements within the *'Principles of Convection I: Buoyancy and CAPE'* Module

Performance Standard. Complete the end of module quiz

Instructor. Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2021 1.0 * B E G

Goal. Complete 'Principles of Convection II: *Using Hodographs'* Module

Requirement. Perform the module requirements of the 'Principles of Convection II: *Using Hodographs'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.:

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2022 1.0 * B E G

Goal. Complete 'Principles of Convection III: Shear and Convective Storms' Module

Requirement. Perform the module requirements of the 'Principles of Convection III: Shear and Convective Storms' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.:

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2023 8.0 * B E G

Goal. Complete the 'Lectures on Radar Applications in Mesoscale Meteorology' Module

Requirement. Perform the module requirements of the *'Lectures on Radar Applications in Mesoscale Meteorology'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.:

Instructor. Web Based/ COMET UCAR, http://www.meted.ucar.edu.

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2024 1.5 * B E G

Goal. Complete *'Landfalling Fronts and Cyclones'* Module.

Requirement. Perform the module requirements of the *'Landfalling Fronts and Cyclones'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.:

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2025 .5 * B E G

Goal. Complete '*How Mesoscale Models Work*' Module

Requirement. Perform the module requirements of the '*How Mesoscale Models Work*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.:

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2026 .5 * B E G

Goal. Complete '*Definition of the Mesoscale*' Module.

Requirement. Perform the module requirements of the '*Definition of the Mesoscale*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2027 1.0 * B E G

Goal. Complete '*Introduction to Ensemble Prediction*' Module

Requirement. Perform the module requirements of the '*Introduction to Ensemble Prediction*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.:

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2028 1.5 * B E G

Goal. Complete '*Ten Common NWP Misconceptions*' Module.

Requirements. Perform the module requirements of the '*Ten Common*

NWP Misconceptions' Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2029 5.0 * B E G

Goal. Complete *'Mesoscale Convective Systems: Squall Lines and Bow Echoes'* Module

Requirement. Perform the module requirements of the *'Mesoscale Convective Systems: Squall Lines and Bow Echoes'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2030 3.0 * B E G

Goal. Complete *'Mesoscale Banded Precipitation'* Module.

Requirement. Perform the module requirements of the *'Mesoscale Banded Precipitation'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2031 1.5 * B E G

Goal. Complete *'Intelligent Use of Model-Derived Products - Version 2'* Module

Requirements. Perform the module requirements of the *'Intelligent Use of Model-Derived Products -Version 2'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2032 .5 * B E G

Goal. Complete *'Effective Use of NWP in the Forecast Process: Introduction'* Module

Requirement. Read the *'Effective Use of NWP in the Forecast Process: Introduction'*.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. 1 references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2033 .5 * B E G

Goal. Complete *'Topics in Tropical Meteorology' module.*

Requirement. Read the *'Topics in Tropical Meteorology'* module.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2034 2.0 * B E G

Goal. Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 1: Introduction' module.*

Requirement. Read the *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 1: Introduction'* module.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2035 1.5 * B E G

Goal. Complete '*Introduction to Tropical Meteorology, 2nd Edition, Chapter 2: Tropical Remote Sensing Applications' module.*

Requirement. Read the '*Introduction to Tropical Meteorology, 2nd Edition, Chapter 2: Tropical Remote Sensing Applications'* module.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2036 2.0 * B E G

Goal. Complete '*Introduction to Tropical Meteorology, 2nd Edition, Chapter 3: Global Circulation' module.*

Requirement. Read the '*Introduction to Tropical Meteorology, 2nd Edition, Chapter 3: Global Circulation'* module.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2037 3.0 * B E G

Goal. Complete '*Introduction to Tropical Meteorology, 2nd Edition, Chapter 4: Tropical Variability' module.*

Requirement. Read the '*Introduction to Tropical Meteorology, 2nd Edition, Chapter 4: Tropical Variability'* module.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2038 2.0 * B E G

Goal. Complete '*Introduction to Tropical Meteorology, 2nd Edition, Chapter 5: The Distribution of Moisture and Precipiation' module.*

Requirement. Read the *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 5: The Distribution of Moisture and Precipiation'* module.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2039 .5 * B E G

Goal. Complete *'Conceptual Models of Tropical Waves' module.*

Requirement. Read the *'Conceptual Models of Tropical Waves'* module.

Performance Standard. Complete the end of module quiz with 80%

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2040 1.0 * B E G

Goal. Complete *'Polar Satellite Products for the Operational Forecaster: Microwave Analysis of Tropical Cyclones'* Module

Requirement. Perform the module requirements of the *'Polar Satellite Products for the Operational Forecaster: Microwave Analysis of Tropical Cyclones'* Module (Course Code: METOC-51T-0602).

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2041 1.5 * B E G

Goal. Complete the *'Influence of Model Physics on NWP Forecasts-Version 2'* Module.

Requirement. Perform the module requirements of the *'Influence of Model Physics on NWP Forecasts- Version 2'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2042 1.0 * B E G

Goal. Complete the *'Introduction to Climatology'* Module.

Requirement. Perform the module requirements of the *'Introduction to Climatology'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2043 1.0 * B E G

Goal. Complete the *'Isentropic Analysis'* Module.

Requirement. Perform the module requirements of the 'Isentropic Analysis' Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2044 1.0 * B E G

Goal. Complete the *'PBL in Complex Terrain - Part 1'* Module.

Requirements. Perform the module requirements of the *'PBL in Complex Terrain - Part 1'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Reference.

1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2045 1.2 * B E G

Goal. Complete the *'PBL in Complex Terrain - Part 2'* Module.

Requirement. Perform the module requirements of the *'PBL in Complex Terrain - Part 2'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2046 1.0 * B E G

Goal. Complete the *'Mesoscale Aspects of Winter Weather Forecasting Topics'* Module.

Requirement. Perform the module requirements of the *'Mesoscale Aspects of Winter Weather Forecasting Topics'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2047 3.5 * B E G

Goal. Complete *'Forecasting Aviation Icing: Icing Type and Severity'* Module.

Requirement. Perform the module requirements of the *'Forecasting Aviation Icing: Icing Type and Severity'* Module (Course Number: METOC-045-816-106-003).

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor.
Web Based/COMET UCAR http://www.meted.ucar.edu

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 2048 9.0 * B E G

Goal. Complete *'Aerographer's Mate Second (AG2) Class Vol I METOC Training Manual'* Module (METOC-045-841-610-002).

Requirement. Perform the module requirements of the *'Aerographer's Mate Second Class Vol I METOC Training Manual'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy

Instructor.
Web Based/NKO
https://wwwa.nko.navy.mil/portal/home/home/Home?cacLogin=true

Reference.
1. Ocean Studies, 2nd Edition, 2008, American Meteorological Society
2. Weather Studies, 3rd Edition, 2006, American Meteorological Society
3. www.theweatherprediction.com , Professor Jeff Haby

ACAD 2049 12.0 * B E G

Goal. Complete *'Aerographer's Mate Second (AG2) Class Vol II METOC Training Manual'* Module (METOC-045-841-611-003).

Requirement. Perform the module requirements of the *'Aerographer's Mate Second Class Vol II METOC Training Manual'* Module

Performance Standard. Complete the end of module quiz with 80% accuracy

Instructor.
Web Based/NKO
https://wwwa.nko.navy.mil/portal/home/home/Home?cacLogin=true

Reference.
1. Ocean Studies, 2nd Edition, 2008, American Meteorological Society
2. Weather Studies, 3rd Edition, 2006, American Meteorological Society
3. www.theweatherprediction.com , Professor Jeff Haby

2.9.4 APPLIED METEOROLOGICAL SCIENCE (AMS) STAGE

2.9.4.1 Purpose. To introduce the fundamental principles of the atmosphere required to produce mission specific products. Upon completion of this stage of training, METOC personnel shall possess and demonstrate proficiency in meteorological fundamentals

2.9.4.2 General

Prerequisite. ACAD-2000, ACAD-2001

Admin Notes. None

Crew Requirements. None

AMS-2100 15.0 * B E G

Goal. Demonstrate knowledge of atmospheric physics.

Requirement. Demonstrate knowledge of fundamental concepts of the following subjects:

(1) Atmospheric structure.
(2) Atmospheric variables.
(3) Vectors.
(4) Pressure.
(5) Temperature and moisture.
(6) Fundamentals of atmospheric concepts.
(7) Advection.
(8) Thermal winds.
(9) Thickness values.
(10) Heat transfer.
(11) Cloud formation and dissipation.
(12) Precipitation types.

Performance Standard. With an 80% accuracy, define the subjects listed and state how each subject affects the other.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2001.

Reference.
1. UCAR CoMet In-Depth Physics Lessons
2. UCAR CoMet S290 Unit 4: Basic Weather Processes
3. UCAR CoMet S-290 Unit: 5 Temperature and Relative Humidity Relationships
4. UCAR CoMet Topics in Precipitation Type Forecasting
5. UCAR CoMet Principles of Convection 1: Buoyancy and CAPE
6. UCAR CoMet Frongenetical Circulations and Stability (*Dr. James Moore*)
7. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738 AFWA TN 98-002 (revised Feb. 2012)
8. Meteorology for Scientist and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

AMS-2101 15.0 * B E G

Goal. Describe the dynamic atmospheric principles.

Requirement. Describe fundamental concepts of the following subjects:

(1) Rotational and circular motion.
(2) Atmospheric forces.

(3) Divergence/convergence (speed & directional).
(4) Vorticity.
(5) Jet streams.
(6) Atmospheric wave terminology.
(7) Vertical motions.
(8) Air masses.
(9) Frontal systems.
(10) Evolution of frontal systems.
(11) Synoptic scale systems.
(12) Evolution of synoptic scale baroclinic systems.
(13) Local modification to large-scale circulations.

Performance Standard. Explain each of the concepts listed and state the development and dissipation processes, where applicable to an 80% accuracy.

Instructor. BI, SI

Prerequisite. AMS-2100.

External Syllabus. None.

Reference.
1. AFWA/TN-98/002
2. AFH 11-203(v1)
3. Meteorology Today 9th Edition By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
4. Meteorology for Scientists and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7
5. Atmospheric Science: An Introductory Survey 2nd Edition Ch. 7 By: John M. Wallace and Peter V. Hobbs Publication Date: 15 February 2006 ISBN-10: 0-12-732951-X
6. An Introduction to Atmospheric Physics 2nd Edition Ch. 2,4,5 By: David G. Andrews Publication Date: 2010 ISBN: 978-0-521-87220-1
7. Atmosphere, Ocean, and Climate Dynamics: An Introductory Text By: John Marshall and R. Alan Plumb Publication Date: 2008 ISBN 13: 978-0-12-558691-7

AMS-2102 5.0 * B E G

Goal. Describe atmospheric fundamentals.

Requirement. Verbally define and discuss the atmospheric fundamentals listed below during a technical discussion with qualified METOC personnel.

(1) Long/short wave trough/ridges.
  (a) Deepening/building/intensifying.
  (b) Filling/weakening.
  (c) Cyclogenesis/frontogenesis.
  (d) Cyclolysis/frontolysis.
(2) Pressure systems.
  (a) Baroclinic/barotropic.
(3) Frontal systems.
  (a) Active/inactive cold fronts.
  (b) Active/inactive warm fronts.

(c) Stationary fronts.
(d) Warm/Cold occlusions.
(e) Type "A"/"B" occlusions.
(f) Warm/cold air advection.
(g) Dry/moist air advection.

(4) Jet properties of:
(a) Polar front jet stream.
(b) Arctic jet stream.
(c) Subtropical jet stream.
(d) Low-level jets.

(5) Vorticity.
(6) Thickness.
(7) Condensation/evaporation/sublimation.
(8) Convergence/confluence.
(9) Divergence/diffluence.
(10) Pressure gradient.
(11) Gradient / Geostrophic / Ageostrophic / Cyclostrophic winds.
(12) Relative/absolute/specific humidity.
(13) Cloud identification/formation.

Performance Standard. Demonstrate proficiency in the topics listed in the requirement and respond to questions posed.

Instructor. BI, SI

Prerequisite. AMS-2100, AMS-2101

External Syllabus Support. None..

Reference.
1. Meteorology Today 9th Edition Ch. 8-11 By: C. Donald Ahrens Publication Date 02 July 2008 ISBN-10: 0495555738
2. Meteorology for Scientests and Engineers 2nd Edition By:Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7
3. Atmospheric Science: An Introductory Survey 2nd Edition Ch. 7-8 By: John M. Wallace and Peter V. Hobbs Publication Date: 15 February 2006 ISBN-10: 0-12-732951-X
4. An Introduction to Atmospheric Physics 2nd Edition Ch. 2,4,5 By: David G. Andrews Publication Date: 2010 ISBN: 978-0-521-87220-1
5. Atmosphere, Ocean, and Climate Dynamics: An Introductory Text By: John Marshall and R. Alan Plumb Publication Date: 2008 ISBN 13: 978-0-12-558691-7

AMS-2103 2.0 * B E G

Goal. Initialize and verify meteorological model output.

Requirement. Verify meteorological model output and identify strengths and weaknesses of global, regional, and mesoscale numerical models.

Performance Standard. Through practical application, initialize and verify model output to specified timeframe.

Instructor. BI, SI

Prerequisite. ACAD-2026, ACAD-2027, ACAD-2028, ACAD-2029, ACAD-2033, AMS-2100, AMS-2101, AMS-2102

Reference.
1. An Introduction to Atmospheric Physics 2nd Edition Ch. 1,9 By: David G. Andrews Publication Date: 2010 ISBN: 978-0-521-87220-1
2. Numerical Weather and Climate Prediction By: Thomas Tomkins Warner Publication Date: 2011 ISBN: 978-0-521-51389-0
3. Atmospheric Modeling, Data Assimilation and Predictability By: Eugenia Kalnay Publication Date: 2010 ISBN: 978-0-521-79179-3
4. Fundamentals of Atmospheric Modeling 2nd Edition By: Mark Z. Jacobson Publication Date: 2005 ISBN: 978-0-521-83970-9
5. Meteorology for Scientests and Engineers 2nd Edition Ch. 14 By: Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7

AMS-2104 20.0 * B E G

Goal. Utilize Graphical METOC products

Requirement. Utilize the following to assist in the forecast process:

(1) Horizontal/vertical weather depiction.
(2) Satellite imagery.
(3) Radar imagery.
(4) Surface chart.
(5) Constant pressure charts.
(6) Oceanographic charts.
(8) Vorticity charts.
(9) Thickness charts.
(10) SKEW-T LOG P Diagram.

Performance Standard. Define the use of each chart/product listed above. Identify and explain the various meteorological features

Instructor. BI, SI

Prerequisite. AMS-2100, AMS-2101, AMS-2102, AMS-2103

External Syllabus Support. None

Reference.
1. Weather Analysis and Forecasting By: Patrick Santurette and Christo G. Georgiev Publication Date: 2005 ISBN: 0-12-619262-6
2. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X

AMS-2105 2.0 * B E G

Goal. Forecast macro/synoptic scale features.

Requirement. Given charts, forecast intensity and movement of surface and upper-level features listed for the following:

(1) Major short wave troughs/ridges.
(2) High and low pressure system(s).
(3) Moisture.
(4) Frontal systems.
(5) Weather elements.
(6) Long wave patterns.
(7) Jet streams.

Performance Standard. Provide meteorological justification for forecast placement.

Instructor. BI, SI

Prerequisite. ACAD-2013, ACAD-2016, ACAD-2017, ACAD-2018, ACAD-2019, ACAD-2020, AMS-2100, AMS-2102, AMS-2103, AMS-2104

Reference.
1. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X
2. Weather Analysis and Forecasting Handbook By: Tim Vasquez Publication Date: 2011 ISBN-10: 0-978-0-9832533-0-3

AMS-2106 1.0 * B E G

Goal. Forecast severe weather.

Requirement. Given METOC data and a designated Area Of Responsibility (AOR), analyze and forecast for the severe weather elements listed and provide meteorological reasoning for each:

(1) Convective phenomena.
(2) Non-convective phenomena.

Performance Standard. Derived forecast must display sound meteorological reasoning.

Instructor. BI, SI

Prerequisite. ACAD-2021, ACAD-2022, ACAD-2023, AMS-2100, AMS-2102, AMS-2103, AMS-2104

External Syllabus Support. None.

Reference.
1. Weather Analysis and Forecasting Handbook Ch. 9 By: Tim Vasquez Publication Date: 2011 ISBN-10: 0-978-0-9832533-0-3
2. Meteorology for Scientests and Engineers 2nd Edition Ch. 15 By: Roland B. Stull Publication Date: 2000 ISBN: 0-534-37214-7
3. Atmosphere, Ocean, and Climate Dynamics: An Introductory Text By: John Marshall and R. Alan Plumb Publication Date: 2008 ISBN 13: 978-0-12-558691-7

AMS-2107 .5 * B E G

Goal. Forecast local area (mesoscale/microscale) meteorological elements and phenomenon.

Requirement. Utilizing available resources assess and forecast meteorological elements. Prepare a local area forecast for a 96-hour period. At a minimum, forecast for the following:

(1) Cloud types, height and coverage.
(2) Precipitation types, intensity and duration.
(3) Surface visibility.
(4) Weather and obstruction(s) to visibility.
(5) Maximum/Minimum temperatures.
(6) Wind Speed, Direction, and character.
(7) Icing type, height, and intensity.
(8) Turbulence type, height, and intensity.
(9) Atmospheric pressure.

Performance Standard. Derived forecast must display sound meteorological reasoning.

Instructor. BI, SI

Prerequisite. AMS-2105

External Syllabus Support. None.

Reference.
1. Weather Analysis and Forecasting Handbook By: Tim Vasquez Publication Date: 2011 ISBN-10: 0-978-0-9832533-0-3
2. Weather Analysis and Forecasting By: Patrick Santurette and Christo G. Georgiev Publication Date: 2005 ISBN: 0-12-619262-6
3. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X

2.9.5 METOC PRODUCT BRIEFING (MPB) STAGE

2.9.5.1 Purpose. To develop proficiency in the techniques and tactics used to verbally present current and future states of the atmosphere. Upon completion of this stage of training, METOC personnel shall be competent at conducting METOC briefings in support of mission requirements.

2.9.5 General

Prerequisite. ACAD-2000, MDA-2700, MDA-2701, MDA-2702, MDA-2703, MDA-2704

Admin Notes. None

Crew Requirements. None

MPB-2200 3.0 * B E G

Goal. Brief synoptic chart set.

Requirement. Utilizing an analyzed chart set or model charts, brief meteorological features from the following products:

(1) Surface chart.
(2) Constant pressure charts.
(3) Support charts:
    (a) Satellite Imagery.
    (b) Vorticity.
    (c) 1000-500mb Thickness.

Performance Standard. Conduct brief until individual demonstrates mastery of sound atmospheric fundamentals.

Instructor. BI, SI

Prerequisite. MDA-2700, MDA-2701, MDA-2702, MDA-2703, MDA-2704

Reference.
1. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X
2. The Art of Public Speaking 11th Edition By: Stephen E. Lucas Publication Date: 2011 ISBN13: 978-0073406732

2.9.6 METEOROLOGICAL DOPPLER RADAR (MDR) STAGE

2.9.6.1 Purpose. To become proficient in the basic operation of the Doppler weather radar and the ability to recognize atmospheric features from open-architecture Doppler products in support of force protection and Marine Corps operations.

2.9.6.2 General. Upon completion of this stage of training, METOC personnel shall be proficient at analyzing and interpreting radar products while demonstrating basic radar operations.

Prerequisite. ACAD-2000, ACAD-2023

Admin Notes. None

Crew Requirements. None

MDR-2300 3.0 * B E G

Goal. Complete 'Weather Radar Fundamentals' module.

Requirement. Perform the requirements within the 'Weather Radar Fundamentals' Module

Performance Standard. Complete the end of module quiz

Instructor. Web Based/COMET UCAR http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. ACAD-2000, ACAD-2023

Reference.

All references for module can be found at https://www.meted.ucar.edu/index.php

MDR-2301 6.0 * B E G

Goal. Perform basic radar imagery interpretation.

Requirement. Utilizing live or archived base radar products, identify the following features:

(1) Base reflectivity:
    (a) Precipitation.
    (b) Thunderstorms.
    (c) Outflow boundaries.
(2) Base velocity:
    (a) Convergence and divergence.
    (b) Cyclonic and anti-cyclonic rotation.
(3) Base spectrum width products:
    (a) Significant motion.
    (b) Turbulence.

Performance Standard. Retrieve specified product and identify, at a minimum, the features designated by the requirement.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2023, MDR-2300

External Syllabus Support. None.

Reference.
1. Doppler Radar Meteorological Observations Part D By: Office Of The Federal Coordinator For Meteorological Services (OFCM) Publication Date: February 2006
2. Doppler Radar Meteorological Observations Part B By: Office Of The Federal Coordinator For Meteorological Services (OFCM) Publication Date: December 2005

2.9.7 METEOROLOGICAL SURFACE OBSERVATIONS (MSO) STAGE

2.9.7.1 Purpose. To develop proficiency in observing, recording and disseminating meteorological elements that comprise the surface meteorological reports (observations).

2.9.7.2 General. Upon completion of this stage of training, METOC personnel shall be competent at observing atmospheric phenomenon, units of measurement, quality control procedures and dissemination of parameters.

Prerequisite. ACAD-2000, ACAD-2001

Admin Notes. None

Crew Requirements. None

MSO-2400 2.0 * B E G

Goal. Define the fundamentals of surface observations.

Requirement. Discuss, in detail, the elements that comprise a METAR surface observation. Discussion will include rules governing the taking and observing of elements, conversion or computation (as required), and encoding.

(1) Sky condition.
(2) Visibility.
(3) Weather and obstructions to vision.
(4) Pressure.
(5) Temperature.
(6) Wind.
(7) Remarks/additive data.
(8) Special Criteria.
(9) Local Criteria.

Performance Standard. Describe in detail, the elements that comprise a METAR surface observation.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2001

Reference.
1. NAVMETOCCOMINST 3141.2
2. Federal Meteorological Handbook No. 1 - Surface Weather Observations and Reports, September 2005, FCM-H1-2005, http://www.ofcm.gov/homepage/text/pubs.htm

MSO-2401 2.0 * B E G

Goal. Compute meteorological values.

Requirement. Compute the following values:

(1) Pressure altitude.
(2) Density altitude.
(3) Altimeter.
(4) Wet Bulb Globe Temperature Index.
(5) Wind Chill Temperature.
(6) Fahrenheit to Celsius.
(7) Relative Humidity.
(8) Knots to Miles per hour.
(9) Dew point.

Performance Standard. List parameters required for computations and state the computation procedures without error.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2001, MSO-2400

External Syllabus Support. None

Reference.
1. A World of Weather 5th Edition Ch. 1 By: Lee M. Grenci and Jon M. Nese Published: 2010 ISBN: 978-0-7575-9426-7

MSO-2402 30.0 365 B,R,M E G

Goal. Take, record and disseminate a surface meteorological observation.

Requirement. Evaluate, record and decode elements from automated sensing equipment under supervision. Perform the following:

(1) Determine type of observation
(2) Record type of observation.
(3) Record time of observation.
(4) Verify and record wind direction, speed, character, and significant wind events.
(5) Evaluate, verify and record visibility.
    (a) Types and direction of obscuring phenomena.
    (b) Types and intensity of weather.
(6) Determine and record sky condition.
    (a) Cloud type.
    (b) Cloud height.
    (c) Cloud direction and movement.
    (d) Cloud amount.
(7) Read and record dry bulb and dew point temperatures.
(8) Read and record current altimeter setting.
(9) Encode and record applicable remarks.
(10) Read and record station pressure.
(11) Read and record sea level pressure.
(12) Proof read recorded elements.
(13) Initial observation, confirming accuracy of report.
(14) Record summary of the day.

Performance Standard. Record a minimum of 30 surface weather observations with an accuracy rate of 97.0%; 50% of the total observations must take place in a nighttime environment.

Instructor. BI, SI

Prerequisite. ACAD-2000, MSO-2400, MSO-2401

External Syllabus Support. None

Reference.
1. NAVMETOCCOMINST 3141.2
2. Federal Meteorological Handbook No. 1 - Surface Weather Observations and Reports, September 2005, FCM-H1-2005, http://www.ofcm.gov/homepage/text/pubs.htm
3. Federal Meteorological Handbook No. 2 - Surface Synoptic Codes, December 1988, FCM-H2-1988, http://www.ofcm.gov/homepage/text/pubs.htm

2.9.8 UPPER ATMOSPHERIC SENSING (UAS) STAGE

2.9.8.1 Purpose. To develop proficiency sensing and collecting data above the Earth's surface.

2.9.8.2 General. Upon completion of this stage of training, METOC personnel shall be competent at the analyzation of upper atmospheric soundings and upper-air observational equipment.

Prerequisite. ACAD-2001

Admin Notes. None

Crew Requirements. None

UAS-2500 30.0 * B E G

Goal. Identify upper air observational equipment and procedures.

Requirement. Identify use of the components and apply procedures required for taking an upper air observation.

(1) Identify the following components:
    (a) Upper air sensing equipment and antennas.
    (b) Upper air sensor /transmitter.
    (c) Required weight sets if applicable.
(2) State the use of the following components:
    (a) Upper air sensing equipment and antennas.
    (b) Upper air sensor /transmitter.
    (c) Required weight sets if applicable.
(3) Read and comprehend procedures for conducting upper air observations.

Performance Standard. Successful launch and data retrieval

Instructor. BI, SI

Prerequisite. ACAD-2001

External Syllabus Support. None

Reference.
1. Federal Meteorological Handbook No. 3 - Rawinsonde and Pibal Observations, May 1997, FCM-H3-1997, http://www.ofcm.gov/homepage/text/pubs.htm

UAS-2501 1.0 365 B,R,M E G

Goal. Decode upper air messages.

Requirement. Decode upper atmospheric soundings and exhibit an understanding of the scales and features of a Skew-T, Log P diagram.

(1) Decode upper atmospheric sounding per applicable references.
(2) Identify scales and use of scales located on the Skew-T, Log P diagram.

Performance Standard. Identify components and their applicable use within an 80% accuracy.

Instructor. BI, SI

Prerequisite. ACAD-2001, UAS-2500

External Syllabus Support. ACAD-2002

Reference.
1. Federal Meteorological Handbook No. 3 - Rawinsonde and Pibal Observations, May 1997, FCM-H3-1997,http://www.ofcm.gov/homepage/text/pubs.htm

UAS-2502 1.0 365 B,R,M E G

Goal. Plot and analyze a Skew-T Log P diagram.

Requirement. Utilizing a blank Skew-T diagram and/or appropriate software and upper air sounding, plot and analyze upper-air data. Perform the following:

(1) Obtain Upper Air Observation Data.
(2) Plot mandatory levels, significant levels, and significant wind data.
(3) Analyze the following:
    (a) CCL.
    (b) LCL.
    (c) LFC.
    (d) PEA.
    (e) NEA.
    (f) SSI.
    (g) T1.
    (h) T2.
    (i) Forecasted maximum temperature.
    (j) Forecasted minimum temperature.
    (k) Freezing level.
    (l) Contrails.
    (m) Tropopause.

Performance Standard. Within a 60-minute period, plot and analyze a Skew-T Log P diagram without error.

Instructor. BI, SI

Prerequisite. ACAD-2001, UAS-2500, UAS-2501

External Syllabus Support. None.

Reference.
1. Federal Meteorological Handbook No. 3 - Rawinsonde and Pibal Observations, May 1997, FCM-H3-1997, http://www.ofcm.gov/homepage/text/pubs.htm

UAS-2503 2.0 365 B,R,M E G

Goal. Analyze atmospheric conditions from the Skew-T, Log P diagram.

Requirement. Analyze a Skew-T, Log P diagram for elements listed:

(1) Compute following stability indices (at a minimum).
  (a) Lifted index.
  (b) K index.
  (c) Sweat index.
  (d) Showalter's index.
  (e) Total totals.
(2) Analyze negative/positive energy areas.
(3) Analyze for equilibrium levels.
(4) Compute turbulent areas.
(5) Analyze Potential temperature.
(6) Compute contrails.
(7) Compute icing types and levels.
(8) Compute maximum and minimum temperatures.
(9) Compute hail.
(10) Compute thunderstorm gusts.
(11) Analyze freezing level.
(12) Analyze for areas of moisture.
(13) Compute D-Values.
(14) Compute relative humidity.

Performance Standard. Computations of indices without error. State how derived values and/or elements apply to forecasting atmospheric conditions.

Instructor. BI, SI

Prerequisite. ACAD-2001, UAS-2500, UAS-2501, UAS-2502

External Syllabus Support. None

Reference.
1. Federal Meteorological Handbook No. 3 - Rawinsonde and Pibal Observations, May 1997, FCM-H3-1997, http://www.ofcm.gov/homepage/text/pubs.htm

UAS-2504 2.0 365 B,R,M E G

Goal. Analyze elements from a plotted Skew-T, Log P Diagram.

Requirement. Analyze the following:

(1) Severe weather probability.
(2) Maximum and minimum temperatures.
(3) Turbulence.
(4) Icing.
(5) Hail size.
(6) Convective gusts.
(7) Fog dissipation.
(8) Contrails.

(9) Cloud height, types and coverage.
(10) Precipitation.

Performance Standard. Within a 20-minute period, analyze the required parameters on the Skew-T, Log P Diagram without error.

Instructor. BI, SI

Prerequisite. ACAD-2001, UAS-2500, UAS-2501, UAS-2502, UAS-2503

External Syllabus Support. None

Reference.
1. Federal Meteorological Handbook No. 3 - Rawinsonde and Pibal Observations, May 1997, FCM-H3-1997, http://www.ofcm.gov/homepage/text/pubs.htm
2. AWS/TR-79/006

2.9.9 METOC SATELLITE (MSAT) STAGE

2.9.9.1 Purpose. To become proficient in the analysis, interpretation and manipulation of the available weather satellite imagery.

2.9.9.2 General. Upon completion of this stage of training, METOC personnel shall be proficient at analyzing, interpreting and manipulating satellite imagery products.

Prerequisite. ACAD-2000, ACAD-2011, ACAD-2013, ACAD-2014, ACAD-2015, ACAD-2016, ACAD-2019, ACAD-2033

Admin Notes. None

Crew Requirements. None

MSAT-2600 14.0 365 B,R,M E G

Goal. Analyze meteorological features on satellite imagery.

Requirement. Correctly analyze synoptic and/or mesoscale meteorological features on IR, Visual, Water Vapor, and Multi-spectral satellite imagery (SSMI):

(1) Areas of high pressure.
(2) Areas of low pressure.
(3) Frontal boundaries.
(4) Thunderstorms.
(5) Basic and significant cloud elements.
(6) Jet streams.
(7) Land/terrain features.
(8) Non-cloud features (i.e. smoke, dust).
(9) Significant weather phenomena.
(10) Tropical features.
  (a) Tropical cyclones.
  (b) Tropical upper tropospheric troughs.

Performance Standard. Given the satellite image, identify and discuss the features

Instructor. BI, SI

Prerequisite.
ACAD-2000, ACAD-2011, ACAD-2013, ACAD-2014, ACAD-2015, ACAD-2016, ACAD-2019, ACAD-2033

External Syllabus Support. None.

Reference.
1. An Introduction to Satellite Image Interpretation By: Eric D. Conway and The Maryland Space Grant Corporation Published 1997 ISBN: 0-8018-5576-4
2. Weather Analysis and Forecasting By: Patrick Santurette and Christo G. Georgiev Publication Date: 2005 ISBN: 0-12-619262-6
3. Images in Weather Forecasting: A Practical Guide for Interpreting Satellite and Radar Imagery By: M. J. Bader, G. S. Forbes, J. R. Grant, R. B. E. Lilley, A. J. Waters Publication Date: 10 July 1997 ISBN: 9780521629157

2.9.10 METOC DATA ANALYSIS (MDA) STAGE

2.9.10.1 Purpose. To develop proficiency in the analysis of basic atmospheric features on surface and upper-level atmospheric data.

2.9.10.2 General. Upon completion of this stage of training, METOC personnel shall be competent at analyzing and interpreting surface and atmospheric phenomena.

Prerequisite. ACAD-2000, ACAD-2001

Admin Notes. None

Crew Requirements. None

MDA-2700	.5	365	B,R,M		E	G

Goal. Analyze and interpret a thickness chart.

Requirement. Given a SFC-500mb thickness chart, analyze and depict the features listed:

(1) Warm/cold air advection.
(2) High and low pressure centers.
(3) Fronts.
(4) 540 Dam line.
(5) Troughs.
(6) Label air masses.
(7) Jet stream.

Performance Standard. Complete requirement within 30 minutes of chart receipt. Discuss meteorological reasoning for placement of features.

Instructor. BI, SI

Prerequisite. ACAD-2000

External Syllabus Support. None

Reference.
1. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X
2. Weather Maps : How to Read and Interpret All the Basic Weather Charts 3rd Edition By: Peter R. Chaston Publication Date: 2002 ISBN 13: 9780964517271

MDA-2701 .5 365 B,R,M E G

Goal. Analyze and interpret a vorticity chart.

Requirement. Given a 500mb vorticity chart, analyze and depict the following features:

(1) Positive/negative vorticity advection areas.
(2) Shear lobes.
(3) Advection lobes.
(4) Jet stream.
(5) X-N distribution.

Performance Standard. Complete requirement within 30 minutes of chart receipt. Explain meteorological reasoning for placement of features.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2017, ACAD-2018, MDA-2700

External Syllabus Support. None

Reference.
1. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X
2. Weather Analysis and Forecasting By: Patrick Santurette and Christo G. Georgiev Publication Date: 2005 ISBN: 0-12-619262-6
3. Weather Maps : How to Read and Interpret All the Basic Weather Charts 3rd Edition By: Peter R. Chaston Publication Date: 2002 ISBN 13: 9780964517271

MDA-2702 6.0 365 B,R,M E G

Goal. Analyze and interpret upper atmospheric weather charts.

Requirement. Provided standard level chart set (850mb, 700mb, 500mb, 300mb, and 200mb) analyze the mandatory level constant pressure charts for features listed below (as applicable):

(1) Isoheights.
(2) Isotherms.
(3) Areas of significant moisture.

(4) Major short wave axis, troughs and ridges.
(5) Minor short wave axis, troughs and ridges.
(6) High and low height centers.
(7) Warm and cold pockets.
(8) Upper fronts.
(9) Jet stream features.

Performance Standard. Within 6 hours, complete an analysis and explain meteorological reasoning for placement of features.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2001, ACAD-2017, ACAD-2018, MDA-2700

External Syllabus Support. None.

Reference.
1. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X
2. Weather Analysis By: Dusan Djuric Date: 2 February 1994 ISBN-10: 0135011493
3. Weather Maps : How to Read and Interpret All the Basic Weather Charts 3rd Edition By: Peter R. Chaston Publication Date: 2002 ISBN 13: 9780964517271

MDA-2703 1.0 365 B,R,M E G

Goal. Analyze and interpret a surface chart.

Requirement. Given a surface chart, depict the following features:

(1) Isobars.
(2) High and low pressure centers.
(3) Fronts.
(4) Highlight weather symbols.
(5) Troughs.
(6) Label air masses.
(7) Dry lines.
(8) Isallobars.
(9) Isodrosotherms.
(10) Identify outflow boundaries.
(11) Nephanalysis.

Performance Standard. Complete requirement within 45 minutes of chart receipt and explain meteorological reasoning for placement of features.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2001, ACAD-2017, ACAD-2018, MDA-2700

External Syllabus Support. None

Reference.
1. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X
2. Weather Analysis By: Dusan Djuric Date: 2 February 1994 ISBN-10: 0135011493
3. Weather Maps : How to Read and Interpret All the Basic Weather Charts 3rd Edition By: Peter R. Chaston Publication Date: 2002 ISBN 13: 9780964517271

MDA-2704 10.0 365 B,R,M E G

Goal. Develop synoptic scale forecast using prognosis techniques.

Requirement. Analyze centrally prepared products, apply academic principles, and forecast synoptic scale features by completing the listed items:

(1) Initialize model data.
(2) Analyze or re-analyze:
  (a) Surface chart.
  (b) Thickness chart.
  (c) Vorticity.
  (d) Standard Upper Air chart set.
  (e) Satellite imagery.
  (f) Radar imagery.
(3) Develop forecasted intensity and location of weather features.
(4) Discuss meteorological reasoning for forecasted elements.

Performance Standard. Identify, depict and provide dynamically sound reasoning for a synoptic forecast.

Instructor. BI, SI

Prerequisite. ACAD-2001, ACAD-2017, ACAD-2018, MDA-2700, MDA-2700, MDA-2701, MDA-2702, MDA-2703

External Syllabus Support. None

Reference.
1. Weather Analysis and Forecasting Handbook By: Tim Vasquez Publication Date: 2011 ISBN-10: 0-978-0-9832533-0-3
2. Weather Analysis and Forecasting By: Patrick Santurette and Christo G. Georgiev Publication Date: 2005 ISBN: 0-12-619262-6
3. Weather Map Handbook 2nd Edition By: Tim Vasquez Publication Date: 2008 ISBN: 0-9706840-7-X
4. Weather Maps : How to Read and Interpret All the Basic Weather Charts 3rd Edition By: Peter R. Chaston Publication Date: 2002 ISBN 13: 9780964517271

2.9.11 METOC Climatological / Astronomical Services (MCS)

2.9.11.1 Purpose. To develop proficiency at deriving climatological and astronomical data.

2.9.11.2 General. Upon completion of this stage of training, METOC personnel shall be able to compute or retrieve astronomical or climatological data.

Prerequisite. ACAD-2000, ACAD-2043

Admin Notes. None

Crew Requirements. None

MCS-2800 12.0 365 B,R,M E G

Goal. Generate and conduct a climatology brief.

Requirement. Research and prepare a three-month climatology brief for a specified location. Elements to be included in the brief include, but are not limited to, the following:

(1) Overview.
(2) Geography.
(3) Terrain.
(4) Oceanography.
(5) Astronomical.
(6) Specific weather elements, if applicable:
    (a) Relative humidity.
    (b) Temperature.
    (c) Thunderstorms/precipitation.
    (d) Prevailing winds.
    (e) Sky condition.
    (f) IFR/VFR/Marginal VFR percentages.

Performance Standard. Presentation shall be completed within 6 hours. It is recommended that the designated location or AOR for the climatology presentation be located in a foreign and/or unfamiliar country.

Instructor. BI, SI

Prerequisite. ACAD-2000, ACAD-2043

External Syllabus Support. None.

Reference.
1. Global Physical Climatology Volume 56 By: Dennis L. Hartmann Published on 14 June 1994 ISBN-10: 0123285305
2. MCWP 3-35.7

2.9.12 WARNINGS, WATCHES AND ADVISORIES (WWA) STAGE

2.9.12.1 Purpose. To acquire proficiency in obtaining and disseminating weather warnings, watches, or advisories as mandated by requirements.

2.9.12.2 General. Upon completion of this stage of training, METOC personnel shall be competent at disseminating appropriate METOC warnings and advisories.

Prerequisite. ACAD-2000, ACAD-2021, ACAD-2022, ACAD-2023, ACAD-2030, AMS-2106

Admin Notes. None

Crew Requirements. None

WWA-2900 2.0 180 B,R,M E G

Goal. Disseminate weather warnings and advisories.

Requirement. Complete the following to include:

(1) Define criteria for setting weather warnings and advisories.
(2) State processes for issuing weather warnings and advisories.
(3) disseminate per local SOP.

Performance Standard. Complete the requirement per reference and local operating procedures.

Instructor. BI, SI

Prerequisite.
ACAD-2000, ACAD-2021, ACAD-2022, ACAD-2023, ACAD-2030, AMS-2106

External Syllabus Support. None

Reference.
1. OPNAVINST 3140.24_ / Local Destructive Wx Order

2.10 MISSION SKILL PHASE (3000)

2.10.1 Purpose.

(1) To provide standardized training standards for individuals performing advanced level forecasting techniques.

(2) To evaluate the METOC Marine for the qualification as a JMA once all core skill training requirements have been completed. Mission skill training consists of events required to be recommended for position qualification. Upon qualification, the individual has achieved the mission skill proficiency to support the unit MET(s) and counts towards CMMR.

2.10.2 General.

2.10.2.1 Admin Notes. This level contains advanced Core Skill training. It increases proficiency in basic Core Skills and develops mission-specific knowledge, skills and leadership that leads to combat qualifications and leadership designations. Individuals proficient in this phase of training should be capable of planning/leading/directing METOC support requirements in a contingency operation or personnel within command and control or MEF support agencies.

2.10.2.2 Stages.

PAR NO.	STAGE NAME
2.10.3	ACADEMICS (ACAD)
2.10.4	OCEANOGRAPHIC/LITTORAL FORECAST SUPPORT (OFS)
2.10.5	METEOROLOGICAL FORECASTING (METF)
2.10.6	METOC EQUIPMENT (ME)
2.10.7	METOC DOCTRINE (MDN)

2.10.3 ACADEMIC (ACAD) STAGE

2.10.3.1 Purpose. The stage outlines all relevant computer based training modules, correspondence courses, instructor-led distance learning courses, and formal resident courses to assist in the completion of events within the 3000 level phase of training.

2.10.3.2 General

(1) Each event specifies the location of the training materials.

(2) Upon completion of academic events, personnel should print completion certificates for entry into M-SHARP and Performance Record. Copies of completion certificates shall be placed within and maintained in individual training jackets.

(3) A general description of each type of training materials is as follows:

- Correspondence Course - A written publication that may or may not include testing materials.
- Computer Based Training - Self-paced learning modules that may be accessed via a CD-ROM/DVD or website.
- Instructor-Led Distance Learning - Formal courses of instruction that are accessed and facilitated via the internet (NIPRNET or SIPRNET)
- Resident Courses - Formal courses of instruction in which the student physically attends, normally at another location.

Prerequisite. Core Skill complete for the Mission Skill attempting to attain.

Crew Requirements. None.

ACAD-3000 2.0 * B E G

Goal. Complete the *'Writing Effective TAFS'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Writing Effective TAFS'* Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3001 2.0 * B E G

Goal. Complete the *'Writing TAFS for Convective Weather'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Writing TAFS for Convective Weather'* Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. ACAD-3000

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3002 3.0 * B E G

Goal. Complete the *'Writing TAFS for Winds and LLWS'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Writing TAFS for Winds and LLWS'* Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. ACAD-3000, ACAD-3001

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3003 2.0 * B E G

Goal. Complete the *'Writing TAFs for Ceiling and Visibility'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Writing TAFs for Ceiling and Visibility'* Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. ACAD-3000

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3004 1.0 * B E G

Goal. Complete the '*Introduction to Distributed Hydrologic Modeling*' Module

Requirement. Complete the end of module quiz
Performance Standard. Perform the module requirements of the 'Introduction to Distributed Hydrologic Modeling' Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3005 2.0 * B E G

Goal. Complete the 'Understanding the Hydrologic Cycle' Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the 'Understanding the Hydrologic Cycle' Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. ACAD-3004

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3006 1.5 * B E G

Goal. Complete the '*Operational Use of Wave Watch III*' Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Operational Use of Wave Watch III'* Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3007 1.5 * B E G

Goal. Complete *'Wave Types and Characteristics'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Wave Types and Characteristics'* Module

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3008 1.0 * B E G

Goal. Complete 'Rip Currents: *Nearshore Fundamentals'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Rip Currents: Nearshore Fundamentals'* Module

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. ACAD-3007

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3009 2.0 * B E G

Goal. Complete '*Introduction to Ocean Models'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Introduction to Ocean Models'* Module

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3010 1.5 * B E G

Goal. Complete *'Shallow-Water Waves'* Module.

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Shallow Water Waves'* Module

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3011 0.6 * B E G

Goal. Complete *'Remote Sensing of Ocean Wind Speed and Direction: An Introduction to Scatterometry'* Module.

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Remote Sensing of Ocean Wind Speed and Direction: An Introduction to Scatterometry'* Module

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3012 0.6 * B E G

Goal. Complete *'Introduction to Ocean Tides'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Introduction to Ocean Tides'* Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3013 2.0 * B E G

Goal. Complete *'Rip Currents: Forecasting'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Rip Currents: Forecasting'* Module

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3014 2.0 * B E G

Goal. Complete the *'Introduction to Ocean Currents'* Module

Requirement. Complete the end of module quiz

Performance Standard. Perform the module requirements of the *'Introduction to Ocean Currents'* Module.

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3015 24.0 * B E G

Goal. Complete the *'METOC Support for Strike Warfare'* resident course.

Requirement. Complete and pass the end of course test.

Performance Standard. Complete the course requirements in accordance with the established POI. (Course Code: C-5B-0014)

Instructor. local Navy PDD

Prerequisite. None

External Syllabus Support. None

Reference. All references for this course are maintained at the local navy PDD.

ACAD-3016 8.0 * B E G

Goal. Complete the *'METOC Support for Search and Rescue'* resident course.

Requirement. Complete and pass the end of course test.

Performance Standard. Complete the course requirements in accordance with the established POI.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. NTTP 3-50.1 (APR 2009), NAVY SEARCH AND RESCUE (SAR) MANUAL

ACAD-3017 2.0 * B E G

Goal. Complete the *'Introduction to the Verification of Hydrologic Forecasts'* Module

Requirement. Perform the module requirements of the *'Introduction to the Verification of Hydrologic Forecasts'* Module.

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.

1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3018 2.0 * B E G

Goal. Complete '*Unit Hydrograph Theory*' Module

Requirement. Perform the module requirements of the '*Unit Hydrograph Theory*' Module (Course Code: METOC-045-809-106-015).

Performance Standard. Complete the end of module quiz with 80% accuracy

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD-3019 2.0 * B E G

Goal. Complete '*Understanding the Hydrologic Cycle*' Module

Requirement. Perform the module requirements of the '*Understanding the Hydrologic Cycle*' Module

Performance Standard. Complete the end of module quiz with 80% accuracy

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. All references for module can be found at https://www.meted.ucar.edu/index.php

ACAD 3020 78.0 * B E G

Goal. Complete the '*Applied Environmental Sciences*' (AES) Course.

Requirements. Perform the requirements of the '*Applied Environmental Sciences*' Course (Course Code: distance learning, WxAESA or resident, CID N66EB52).

Performance Standard. Complete knowledge based assessments with 80% accuracy.

Instructor. NAVMETOCPRODEVCEN, Gulfport, MS

Reference. All references are held at the school house administering the course.

ACAD-3021 60.5 * B E G

Goal. Complete the *'METOC Impacts Analyst Course (MIAC)'* course.

Requirement. Complete the course.

Performance Standard. Complete the course requirements in accordance with the established POI. (Distance Learning Course Code: WxMIAA or resident course, CID: N66WAL2)

Instructor. MarineNet or NAVMETOCPRODEVCEN, Gulfport, MS

Prerequisite. Complete AES

External Syllabus Support. None

Reference. All references are held at the school house administering the course.

ACAD 3022 21.0 * B E G

Goal. Complete the *'NITES Basic User'* resident course.

Requirement. Complete the course requirements in accordance with the established POI. (Course Code: C-5B-0016).

Performance Standard. Complete the end of module quiz with 80% accuracy.

Instructor. NAVMETOCPRODEVCEN, Gulfport, MS

Prerequisite. None

Reference.
1. References located at website: https://wwwa.nko.navy.mil/portal/enterpriseengineering/eedprojects/home/nitesiv

2.10.4 Oceanographic / Littoral Forecast Support (OFS)

2.10.4.1 Purpose. To acquire proficiency in collecting, analyzing and forecasting oceanographic and littoral parameters.

2.10.4.2 General.

Admin Notes. Upon completion of this stage of training, METOC personnel shall be competent at forecasting and disseminating METOC information in support of mission requirements.

Prerequisite. None.

Crew Requirements. None.

OFS-3100 1.5 180 B,R,M E G

Goal. Certify proficiency at calculating tidal data.

Requirement. Gain familiarity with the content and orders/directives governing the preparation and use of the following oceanographic/littoral warfare products:

(1) Sea Surface Temperature Charts.
(2) Current and Tidal Charts.
(3) Modified Surf Index.
(4) Beach Survey Charts.
(5) Specialized Analyzed Image Littoral (SAIL) charts.
(6) Specialized Tactical Oceanographic Information (STOIC) chart.
(7) Rapid Environmental Assessment Chart Tactical (REACT).
(8) Riverine Survey Charts.

Performance Standard. Identify, describe and gather each product listed above with applicable references.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. MCWP 3-35.7

OFS-3101 30.0 180 B,R,M E G

Goal. Conduct surf observations.

Requirement. Utilize appropriate equipment to observe and annotate a surf observation. Perform the following:

(1) Determine point of observations.
(2) Determine and annotate:
    (a) Significant breaker height.
    (b) Maximum breaker height.
    (c) Breaker period.
    (d) Breaker types.
    (e) Angle of breaker relative to beach.
    (f) Littoral current.
    (g) Surf zone.
    (h) Additional remarks.

Performance Standard. Complete requirement 3 times per applicable reference.

Instructor. SI, WTI

Prerequisite. OFS-3100

External Syllabus Support. None

Reference.
1. Joint Surf Manual COMNAVSURFPAC/LANT 3840.1_.

OFS-3102 5.0 180 B,R,M E G

Goal. Demonstrate knowledge of surf forecasting.

Requirement. Define and explain:

(1) Significant breaker height.
(2) Maximum breaker height.
(3) Breaker period.
(4) Breaker types.
(5) Angle of breaker relative to beach.
(6) Littoral current.
(7) Modified surf index.
(8) Wind direction in surf zone.
(9) Obtain/develop beach profile data.

Performance Standard. Per the reference define and explain the significance of the listed subjects

Instructor. SI, WTI

Prerequisite. OFS-3100, OFS-3101

External Syllabus Support. None

Reference.
1. Joint Surf Manual COMNAVSURFPAC/LANT 3840.1_.

OFS-3103 1.0 * B E G

Goal. Compute Modified Surf Index (MSI).

Requirement. Given mission parameters, observed/forecasted conditions/parameters and appropriate software or forms, generate MSI for three separate locations.

Performance Standard. Per the reference define and explain the significance of the listed subjects

Instructor. SI, WTI

Prerequisite. OFS-3100, OFS-3101, OFS-3102

External Syllabus Support. None

Reference.
1. Joint Surf Manual COMNAVSURFPAC/LANT 3840.1_.

OFS-3104 24.0 180 B,R,M E G

Goal. Create a surf forecast.

Requirement. Utilizing appropriate program and requirements for operations, generate a surf forecast that contains the listed components:

(1) Beach survey.
(2) Significant breaker height.
(3) Maximum breaker height.
(4) Breaker period.
(5) Breaker type.
(6) Breaker angle.
(7) Littoral current speed and direction.
(8) Modified surf index.
(9) Wind direction in surf zone.
(10) Beach profile data.

Performance Standard. Forecast must meet mission requirements and contain the above listed elements.

Instructor. SI, WTI

Prerequisite. OFS-3100, OFS-3101, OFS-3102, OFS-3103

External Syllabus Support. None

Reference.
1. Joint Surf Manual COMNAVSURFPAC/LANT 3840.1_.

2.10.5 METEOROLOGICAL FORECASTING (METF) STAGE

2.10.5.1 Purpose. To apply proficiency in meteorological forecasting and mission specific equipment, elements and products.

2.10.5.2 General.

Admin Notes. Upon completion of this stage of training, METOC personnel shall be proficient in meteorological forecasting and mission specific support requirements.

Prerequisite. None.

Crew Requirements. None.

METF-3300 1.5 180 B,R,M E G

Goal. Encode and disseminate pilot reports (PIREPs).

Requirement. Given a PIREP and appropriate forms, correctly encode and disseminate the PIREP within 10 minutes of receipt. Perform the following:

(1) Receive PIREP via available communication device.
(2) Annotate the data on the correct form.
(3) Disseminate the PIREP.

Performance Standard. Conduct the requirement a minimum of 10 times per reference.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. NAVMETOCCOMINST 3142.1, Procedures Governing Pilot Weather Reports (PIREPS) AT WEBSITE http://meteorologytraining.tpub.com/14270/css/14270_77.htm

METF-3301 26.0 365 B,R,M E G

Goal. Produce Terminal Aerodrome Forecast (TAF).

Requirement. Use available meteorological data to assess and interpret meteorological conditions to produce a TAF.

Performance Standard. Complete requirement a minimum of 6 times with 50% of the TAFS for other than their current location.

Instructor. SI, WTI

Prerequisite. METMF-3300

External Syllabus Support. None.

Reference.
1. NAVMETOCCOMINST 3143.1, Aerodrome Forecast (TAF) Code AT WEBSITE http://meteorologytraining.tpub.com/14269/index.htm

METF-3302 3.5 365 B,R,M E G

Goal. Demonstrate proficiency in flight weather briefings.

Requirement. Complete 10 DD-175-1's with the following minimum accuracy requirements:

(1) Sky conditions (within 500 feet of actual arrival conditions).
(2) Visibility (within 1 mile of the actual arrival conditions).
(3) Type and character of precipitation or obstruction to visibility.
(4) Wind direction (within 30 degrees if wind speed greater than six knots of actual arrival conditions).
(5) Wind speed (within 5 knots of actual conditions).
(6) Altimeter setting (within 2 in. of mercury of actual arrival conditions).

Performance Standard. Each brief must be completed within 20 minutes and elements of the forecast shall be verified

Instructor. SI, WTI

Prerequisite. METF-3300, METF-3301

External Syllabus Support. None.

Reference.
1. Flight Weather Briefing Manual, NAVMETOCCOMINST 3140.14F, May 2011.
2. NATOPS General Flight and Operating Instructions, OPNAV Instruction 3710.7U, November 2009.
3. Terminal Aerodrome Forecast (TAF) Code, NAVMETOCCOMINST 3143.1H, June 2011.

METF-3303 2.0 180 B,R,M E G

Goal. Produce flight weather packets.

Requirement. Given a flight weather packet request, prepare and brief a flight weather packet.

Performance Standard. Flight weather packet must be in accordance with NAVMETOCCOMINST 3140.14_, be completed within 2 hours, and be accomplished a minimum of two times.

Instructor. SI, WTI

Prerequisite. METF-3300, METF-3301, METF-3302

External Syllabus Support. None

Reference.
1. Flight Weather Briefing Manual, NAVMETOCCOMINST 3140.14F, May 2011.
2. NATOPS General Flight and Operating Instructions, OPNAV Instruction 3710.7U, November 2009.
3. Terminal Aerodrome Forecast (TAF) Code, NAVMETOCCOMINST 3143.1H, June 2011.

METF-3304 3.0 * B E G

Goal. Conduct an Aviation Strike Brief.

Requirement. Prepare and conduct an aviation (mission specific) strike weather brief within 3-hours. Include the following information:

(1) Nephanalysis.
(2) Enroute weather.
  (a) Sky condition.
  (b) Weather.
  (c) Visibility/Slant range visibility (NM).
  (d) Sea surface temperature/in-water survival time.
  (e) Winds.
  (f) Temperatures.

(g) Turbulence.
(h) Icing.
(i) Contrail formation.
(j) Ditch heading.

(3) Target Area Weather (repeat for each area).
(a) Sky condition.
(b) Weather.
(c) Visibility/slant range visibility (NM).
(d) Surface winds.
(e) Maximum/minimum temperatures.
(f) Cloud tops/ceilings.
(g) Freezing level.
(h) D-Values.

(4) Astronomical Data.
(a) Sunrise/Sunset.
(b) Sun elevation angles/azimuth.
(c) Beginning/ending civil/nautical twilights.
(d) Moonrise/moonset.
(e) Lunar illumination.
(f) Moon angles elevation/azimuth.
(g) Lux values.
(h) Shadow forecast.

(5) 48-hour outlook.
(6) Tactical assessment.
(7) Electro-Optical sensor performance predictions.

Performance Standard. Complete briefing within 24 hours of receipt of RFI.

Instructor. SI, WTI

Prerequisite. METF-3300, METF-3301, METF-3302, METF-3303

External Syllabus Support. None.

Reference.
1. MCWP 3-35.7

METF-3305 6.0 365 B,R,M E G

Goal. Conduct a pre-deployment brief.

Requirement. Prepare and conduct a mission specific deployment brief. Bri shall include, but is not limited to:

(1) Basic meteorological parameters.
(2) Aviation impacts and hazards.
(3) Types, amounts, coverage of severe weather to include localized effects.
(4) Climatological summary.
(5) Astronomical brief.
(6) METOC support capabilities.
(7) Type of terrain in area of interest and influence of METOC parameters
(8) Beach surveys as applicable.

Performance Standard. Complete briefing within 6 hours of receipt of RFI per MCWP 3-35.7.

Instructor. SI, WTI

Prerequisite. METF-3300, METF-3301, METF-3302, MCS-2800

External Syllabus Support. None

Reference.
1. MCWP 3-35.7

METF-3306 0.5 * B E G

Goal. Perform ceiling balloon operations.

Requirement. In accordance with reference, successfully determine ceiling heights.

Performance Standard. Practical application without error.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. NAVMETOCCOMINST 3141.2_

2.10.6 METOC EQUIPMENT (ME) STAGE

2.10.6.1 Purpose. To introduce academic or practical application of garrison METOC equipment.

2.10.6.2 General.

Admin Notes.

(1) These events are related to mission skill proficiency readiness, and assist in core skill training.

(2) Local mission and operating procedures will dictate academic training required to support events. Local METOC officers and/or qualified METOC personnel shall review academic POIs for applicability and content and utilize Academic Support Packages (ASP) when appropriate.

ME-3400 3.0 180 B,R,M E G

Goal. Operate handheld meteorological devices.

Requirement. Operate all handheld sensing devices indigenous to the unit. Conduct sensing of environmental elements utilizing devices like those listed below. Devices may vary from site to site, unit commanders shall identify devices to be evaluated.

1) Wind sensing devices.
2) Pressure sensing devices.
3) Temperature sensing devices.

Performance Standard. Conduct sensing of environmental elements utilizing the handheld device(s) without error.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. PMQ http://meteorologytraining.tpub.com/14269/css/14269_105.htm
2. Kestrel http://www.kestrelmeters.com/

ME-3401 2.0 365 B,R,M E G

Goal. Operate the Automated Surface Observing System (ASOS).

Requirement. Operate the ASOS to retrieve, archive, and adjust weather elements in order to ensure accurate weather information is displayed.

1) Power on the ASOS.
2) Log on as user.
3) Manipulate software to display desired screens.
4) Manipulate software to alter automated readings as required.
5) Archive ASOS data.

Performance Standard. Operate the ASOS without error.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
3. Information regarding ASOS operations can be found at http://www.nws.noaa.gov/asos/

ME-3402 24.0 365 B,R,M E G

Goal. Operate garrison METOC equipment in order to provide support to base operations.

Requirement. Configure, operate, and conduct operator level troubleshooting of the following METOC systems:

1) Lightning Tracking System 2005 (LTS2005).
2) Pilot Metro Voice Frequency (PMSV) Radio.

3) Weather Vision.
4) Hand Held equipment (PMQ-3, psychrometers).
5) Kestrel
6) Automated Surface Observing System (ASOS).

Performance Standard. Configure, operate, and conduct operations on the selected equipment in order to support base operations as required.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. ASOS reference http://www.nws.noaa.gov/asos/
4. LTS 2005 reference http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/LTS2005.aspx
5. PMSV http://navyflightmanuals.tpub.com/P-806/P-8060103.htm
6. PMQ http://meteorologytraining.tpub.com/14269/css/14269_105.htm
7. Kestrel http://www.kestrelmeters.com/

ME-3403 6.0 * B E G

Goal. Conduct management operations for the meteorological radar system.

Requirement. Given a Doppler radar system, applicable operating manuals and understanding the configurations, limitations, and capabilities of Doppler radar systems, display a working knowledge of Doppler radar management functions. Configuration should allow for ingest, analysis, manipulation, and production of derived radar products. Perform, at a minimum, the following tasks:

(1) Ensure configuration is commensurate with desired product generation.
(a) Pulse repetition frequency.
(b) Sample rates.
(b) Gate width.
(c) Beam width.
(d) Operating frequency.
(e) Scanning speeds.
(2) Archive generated products.
(3) Discuss Doppler radar product algorithms and products derived from them.
(4) Ensure Doppler radar products are available through electronic means to the end customer.
(5) Ensure hazards of electromagnetic radiation to fuels (HERF) procedures are implemented and adhered to.

(6) Ensure hazards of electromagnetic radiation to personnel (HERP) procedures are implemented and adhered to.
(7) Ensure hazards of electromagnetic radiation to ordnance (HERO) procedures are implemented and adhered to.

Performance Standard. Conduct the above listed tasks with

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.

1. METMFR SYSTEMS MANUAL EM000-AX-OMI-E10.
2. METMFR RADAR SUPPLEMENTAL MANUAL EM000-AX-SUP-B10.
3. EEC RADAR PUB SUPPLEMENTAL WEATHER RADAR SYSTEM SWR-250C (T) VOLUME 2 TECHNICAL MANUAL.

ME-3404 6.0 365 B,R,M E G

Goal. Manage meteorological radar operations.

Requirement. Complete tasks listed below to gain proficiency in management of radar techniques:

(1) Establish and coordinate background maps.
(2) Coordinate Doppler radar maintenance.
(3) Identify and implement software and hardware configurations.
(4) Establish radar regular and limited access adaptation data.
(5) Establish radar alerts and thresholds.
(6) Establish radar product set lists.
(7) Set radar system clock.

Performance Standard. Completion of requirement must not violate local or RDA system integrity.

Instructor. None

Prerequisite. ME-3403

External Syllabus Support. None

Reference.
1. METMFR SYSTEMS MANUAL EM000-AX-OMI-E10.
2. METMFR RADAR SUPPLEMENTAL MANUAL EM000-AX-SUP-B10.
3. EEC RADAR PUB SUPPLEMENTAL WEATHER RADAR SYSTEM SWR-250C (T) VOLUME 2 TECHNICAL MANUAL.

ME-3405 2.0 365 B,R,M E G

Goal. Perform advanced operations on tactical satellite system.

Requirement. Given a tactical satellite system, applicable operating manuals, and understanding limitations and capabilities of satellite imagery acquisition and enhancements, display a working knowledge of satellite system operations.

(1) Conduct log on/log off functions.
(2) Schedule receipt of imagery.
(3) Update of Ephemeris Data.
(4) Archive imagery for later retrieval.

Performance Standard. Demonstrate completion using practical application.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.

1. METMFR SYSTEMS MANUAL EM000-AX-OMI-E10.
2. METMFR SYSTEM ADMINISTRATOR GUIDE EM000-AX-SAM-C10.

ME-3406 2.0 180 B,R,M E G

Goal. Conduct an upper-atmospheric sounding.

Requirement. Utilizing upper air sensing equipment, the appropriate balloon, and mini-rawinsonde if applicable, successfully receive and process data.

(1) Energize upper air sensing equipment.
(2) Prepare balloon and sonde if applicable.
(3) Enter the surface observation and coefficients.
(4) Tune radiosonde or equivalent.
(5) Compare readings with current surface observation.
(6) Ensure adequate satellite synchronization.
(7) Obtain clearance and launch sounding.
(8) Post process sounding.
(9) Save data to appropriate location.
(10) Encode and disseminate alphanumeric data as appropriate.

Performance Standard. Complete requirement in accordance with FMH #3 - Rawinsonde and PIBAL Observations, a minimum of three times.

Instructor. None.

Prerequisite. UAS-2500, UAS-2501, UAS-2502, UAS-2503, UAS-2504

External Syllabus Support. None

Reference.

1. METMFR SYSTEMS MANUAL EM000-AX-OMI-E10.
2. METMFR SYSTEM ADMINISTRATOR GUIDE EM000-AX-SAM-C10.

ME-3407 8.0 180 B,R,M E G

Goal. Conduct operational checks of each subsystem inherent to the METMF(R)/NEXGEN.

Requirement. At designated area and per the reference, perform the following:

(1) Processing Subsystems (PCS).
Log on to the applicable system software of the PCS.
Test network connectivity for each component.
(2) Meteorological Radar Subsystem (MRS).
Log on to the system.
Ensure desired processes are scheduled.
(3) Meteorological Satellite Subsystem (MSS).
Log on to system.
Generate satellite prediction schedule.
(4) Ensure data capture is achieved, to include proper keying of crypto gear (as applicable).
(5) Communications Subsystem (CSS).
Load Crypto gear as applicable.
Conduct communications checks.
(6) Portable Meteorological Subsystem (PMS).
Log on to system.
Establish required network or workgroup.
Ensure receipt of products.
(7) Local Sensor Subsystem (LSS).
Log on to system.
Open applicable software.
Ensure receipt of data.
(8) Remote Sensor Subsystem (RSS).
Log on to system.
Open applicable software.
Ensure receipt of data.
(9) Rawinsonde subsystem (RWS).
Enter coefficients and local data.
Launch sounding.
Ensure receipt of data.

Performance Standard. Actions shall not violate system or software integrity and must be in compliance with applicable references.

Instructor. None

Prerequisite. None.

External Syllabus Support.. None.

Reference.

1. METMFR SYSTEMS MANUAL EM000-AX-OMI-E10.
2. METMFR SYSTEM ADMINISTRATOR GUIDE EM000-AX-SAM-C10.

ME-3408 24.0 365 B,R,M E G

Goal. Operate the METMF(R)/NEXGEN.

Requirement. In a simulated or actual deployed environment, perform the following actions:

(1) Provide secured and unsecured pilot to METRO communications.
(2) Provide tower to METRO communications.
(3) Respond to requests for information (RFIs).
(4) Conduct METOC impact assessments to operations in Area of interest.
(5) Conduct data transmission and reception operations.
(6) Conduct data transfer to and from the common operating picture to determine and provide relevant tactical METOC pictures.
(7) Conduct secured and unsecured voice communications.
(8) Acquire and analyze all satellite imagery for the production of forecasts and assessment of impacts to MAGTF operations.
(9) Acquire and analyze all radar imagery for the production of forecasts/warnings, advisories and assessment of impacts to MAGTF operations.
(10) Acquire and analyze synoptic, mesoscale and microscale METOC model output for the production of forecasts and assessment of impacts to MAGTF operations.
(11) Acquire, analyze, encode and disseminate local and remotely sensed surface observations for the production of forecasts and assessment of impacts to MAGTF operations.
(12) Conduct upper atmospheric observations for the production of forecasts and assessment of impacts to MAGTF operations.
(13) Acquire and analyze all lightning data for the production of forecasts/warnings, advisories and assessment of impacts to MAGTF operations.
(14) Develop impact assessment briefing, for applicable MAGTF components, for large-scale dissemination via oral, electronic,or remote means.

Performance Standard. Perform all tasks without supervision. The MMA shall evaluate performance of the event for completion per applicable references.

Instructor. None

Prerequisite. ME-3407

External Syllabus Support. None.

Reference.

1. METMFR SYSTEMS MANUAL EM000-AX-OMI-E10.
2. METMFR SYSTEM ADMINISTRATOR GUIDE EM000-AX-SAM-C10.

ME-3409 48.0 180 B,R,M E G

Goal. Operate the NITES IV.

Requirement. In a simulated or actual deployed environment, perform the following actions:

(1) Deploy and setup of NITES IV.
(2) Utilize directed means to provide METOC impact assessment to supported element.
(3) Conduct satellite communications operations (if available) for data receipt and communications.
(4) Conduct data receipt operations.
(5) Conduct data transfer to and from the common operating picture via predetermined software to determine and provide relevant tactical METOC impact assessments.
(6) Conduct graphical data retrieval and analyzation in support of impact assessment.
(7) Conduct analyzation of locally sensed data for METOC impact assessment.
(8) Develop impact assessment briefing for applicable MAGTF component for large-scale dissemination via oral, electronic and remote video means.
(9) Demonstrate how to send and receive e-mail's with the STRATOS Software.

Performance Standard. Perform all tasks with no supervision. The instructor shall evaluate performance of the event for completion per applicable references.

Instructor. None

Prerequisite. None

External Syllabus Support. None.

Reference.
1. NITES SYSTEM MANUAL EE100-FF-OMI-010.
2. NITES SYSTEM ADMINISTRATOR MANUAL EE100-PR-SAM-010.

2.10.7 METOC Doctrine (MDN) STAGE

2.10.7.1 Purpose. To demonstrate familiarity with the Marine Corps METOC support architecture, missions and local operating procedures.

2.10.7.2 General.

Admin Notes.

(1) All personnel shall be assigned this stage of training upon completion of the Core Skill Introduction phase and prior to assignment to any other stage.

(2) Academic training syllabus shall be developed and approved by the TMSG METOC officer prior to implementation. Checklists

contained within this Manual are provided to ensure comprehensive and cohesive training within the METOC community. Local mission and operating procedures will dictate the academic training in support of the events. Local mission and operating procedures will dictate academic training required to support events. Local METOC officers and/or qualified METOC personnel shall review academic POIs for applicability and content and utilize Academic Support Packages (ASP) when appropriate.

MDN-3600 1.0 * B D S/L

Goal. Discuss MAGTF operations.

Requirement. Identify the roles and missions of each element of the MAGTF:

(1) Air Combat Element (ACE).
(2) Ground Combat Element (GCE).
(3) Command Element (CE).
(4) Logistics Combat Element (LCE).

Performance Standard. Stated roles and missions shall be verified by applicable references to an 80% accuracy.

Instructor. None

Prerequisite. None

External Syllabus Support. None

Reference.
1. http://www.globalsecurity.org/military/agency/usmc/magtf.htm

MDN-3601 2.0 365 B,R,M D S/L

Goal. Discuss local area policies and procedures.

Requirement. Define and discuss the listed local area knowledge:

1) Airfield/Location description.
2) SOP procedures.
3) Command support structure.
4) Destructive weather procedures.
5) Security requirements.
6) Watch composition and schedule.
7) Watch procedures.
8) Local forms.
9) Reference and technical library procedures.
10) Local area forecaster handbook.
11) Weather regimes.
12) Local security procedures.
13) Watch routine.
14) METOC equipment.
15) Command structure.

16) Warning criteria/procedures.
17) Quality Assurance Programs.
18) Communication configurations and procedures.
19) Administrative Reports.

Performance Standard. Without the aid of references, respond to questions, either verbally or in writing, to an 80 % proficiency.

Instructor. None

Prerequisite. None

External Syllabus Support. None

Reference.
1. Local SOP
2. Forecasters Handbook

2.11 CORE PLUS SKILL PHASE (4000)

2.11.1 Purpose. This level contains core skill training associated with low probability of execution and/or theater specific operations. Although Core Plus training events may provide valuable training opportunities, they are not considered essential to achieve unit Core Competency. Core Plus training is conducted at the discretion of operational commanders and allows unit training flexibility. Upon completion of the Core Plus Phase, an individual is considered core skill proficient and one-hundred percent combat ready. Core Competency for operational units resides in the 2000-3000 training levels (considered 'Core' at the operational echelon). Mastery of 2000-3000 level Core Skills results in highly trained personnel who contribute to the unit's overall warfighting capability and enables a combat unit to accomplish its assigned mission. Therefore, operational units shall emphasize individual proficiency in 2000-3000 level Core Skills. In some instances, certain Core Plus skills may be deemed essential depending on mission requirements and therefore may be considered Core Skills for pre-deployment readiness determination. Only the MAW or MAGTF commander may "re-designate" a Core Plus Skill to the Core Skill level for readiness reporting purposes.

2.11.2 General

2.11.2.1 Admin Notes. A comprehensive brief and debrief will be conducted for each mission per squadron SOPs.

2.11.2.2 Stages. The following stages are included in the Core Plus Skill Phase of training.

PAR NO.	STAGE NAME
2.11.3	ACADEMIC TRAINING(ACAD)
2.11.4	METOC IMPACT ASSESSMENT (MIA)
2.11.5	METOC PLANNING COORDINATION (MPC)

2.11.3 ACADEMIC TRAINING (ACAD)

2.11.3.1 Purpose. The stage outlines all relevant computer based training modules, correspondence courses, instructor-led distance learning courses, and formal resident courses to assist in the completion of events within the 2000 level phase of training.

2.11.3.2 General

Admin Notes.

(1) Each event specifies the location of the training materials.

(2) Upon completion of academic events, personnel should print completion certificates for entry into Basic Training Records (BTR). Copies of completion certificates shall be placed within and maintained in individual training jackets.

(3) A general description of each type of training materials is as follows:

- Correspondence Course - A written publication that may or may not include testing materials.
- Computer Based Training - Self-paced learning modules that may be accessed via a CD-ROM/DVD or website.
- Instructor-Led Distance Learning - Formal courses of instruction that are accessed and facilitated via the internet (NIPRNET or SIPRNET)
- Resident Courses - Formal courses of instruction in which the student physically attends, normally at another location.

ACAD-4000 2.0 * B E G

Goal. Complete '*In-Depth Physics Lessons*' Module

Requirement. Complete the module.

Performance Standard. Perform the module requirements of the '*In-Depth Physics Lessons*' Module

Instructor. Web Based/COMET UCAR, http://www.meted.ucar.edu

Prerequisite. None

External Syllabus Support. None

Reference.
1. Web Based/COMET UCAR, http://www.meted.ucar.edu

ACAD-4001 8.0 * B E G

Goal. Complete the '*METOC Support for Amphibious Warfare*' resident course.

Requirement. Complete the resident course.

Performance Standard. Complete the course requirements in accordance with the established POI. (Course Code: C-5B-0017)

Instructor. Local Navy PDD

Prerequisite. None

External Syllabus Support. None

Reference.
1. Joint Pub 3-02, Joint Doctrine for Amphibious Operations
2. Joint Pub 3-02.1 Joint Tactics, Techniques, and Procedures for Landing Force Operations
3. Joint Operations Military Historical Collection [1997 (Ch II)]
4. MCRP 5-12(Series) Organization of Marine Corps Forces
5. MCWP 3-35.7 MAGTF Meteorological and Oceanographic Support
6. MCWP 5-1 Marine Corps Planning Process
7. MCO 3120.9B Policy for Marine Expeditionary Unit [SOC),(MEU-SOC)] Expeditionary Warfare Training Group Staff Planning Primer
8. NAVMETOCCOMINST 3140.1
9. NWP 3-59.3 Surf zone Operations
10. COMNAVSURFPAC / NAVSURFLANT INST 3840.1
11. COMLANTFLTOPORD 2000

ACAD-4002 8.0 * B E G

Goal. Complete the *'METOC Support for Chemical, Biological, Radiological, and Nuclear Environment (CBRNE)'* resident course.

Requirement. Complete the resident course.

Performance Standard. Complete the course requirements in accordance with the established POI.(Course Code: C-5B-0020)

Instructor. Local Navy PDD

Prerequisite. None

External Syllabus Support. None

Reference.
1. ATP-45
2. HPAC User's Manual
3. HPAC NBC Primer
4. METOC Considerations for Chemical, Biological, and Nuclear WMD Analysis
5. Military Forces Guidebook SIPR Website
6. ATHENA-S WMO Share Counter-Proliferations Information Space
7. NBC Analysis Warning System
8. DTRA Website

ACAD-4003 8.0 * B E G

Goal. Complete the *'Target Acquisitions Weapons Software (TAWS) Primer'* resident course.

Requirement. Complete the resident course.

Performance Standard. Complete the course requirements in accordance with the established POI. (Course Code: S-5B-0001)

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. Local NMOPDD

ACAD-4004 8.0 * B E G

Goal. Complete the *'Advanced Refractive Effects Prediction System (AREPS) Primer'* resident course.

Requirement. Complete the resident course.

Performance Standard. Complete the course requirements in accordance with the established POI. (Course Code: S-5B-0012)

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. Local NMOPDD

ACAD-4005 2.0 * B E G

Goal. Conduct a Search and Rescue (SAR) brief.

Requirement. Prepare and conduct the following:

(1) Current and forecast weather information for predetermined areas of operation.
(2) Provide mission planning forecasts to include, but not limited to:

(a) Water temperatures.
(b) Drift data.
(c) Survival times.
(d) Current speed and direction.

Performance Standard. Complete the briefing within 2 hours of receipt of RFI.

Instructor. BI, SI

Prerequisite. None

External Syllabus Support. None

Reference.
1. MCWP 3-35.7

ACAD-4006 8.0 * B E G

Goal. Complete the *'Riverine Analysis and Forecasting Course'* resident course.

Requirement. Complete the resident course.

Performance Standard. Complete the course requirements in accordance with the established POI.

Instructor. Naval Meteorology and Oceanography Professional Development Center, NCBC, Gulfport, MS

Prerequisite. None

External Syllabus Support. None

Reference.
1. Local NMOPDD

2.11.4 METOC IMPACT ASSESSMENT (MIA) STAGE

2.11.4.1 Purpose. To demonstrate core plus proficiency on the processes and products that assist in providing assessment of atmospheric conditions to mission specific support requirements.

2.11.4.2 General

Admin Notes.

(1) The Core Skill Advanced phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at providing commanders an accurate assessment of METOC impacts to MAGTF, Joint, and Coalition operations.

MIA-4100 3.0 * B E S/L

Goal. Assess METOC impacts on Chemical, Biological, Radiological and Nuclear Environment (CBRNE) defensive operations.

Requirement. Assess and brief METOC impacts on CBRNE operations. The assessment will consider, at a minimum, the following:

(1) Meteorological Forecast and/or Observation to include at a minimum:
(a) Sky condition.
(b) Humidity.

(c) Wind.
(d) Temperature.
(e) Atmospheric stability.
(f) Precipitation.
(2) Plume Forecast.

Performance Standard. Complete the briefing within 3 hours of receipt of mission.

Instructor. SI, WTI

Prerequisite. ACAD-4002

External Syllabus Support. None

Reference.
1. MCWP 3-35.7

MIA-4101 3.0 * B E S/L

Goal. Produce METOC impacts on command and control operations.

Requirement. Assess and brief the METOC impacts on communication operations. The assessment will consider, at a minimum, the following:

(1) Space weather.
(2) Temperature profile.
(3) Precipitation.
(4) Snow depth and coverage.
(5) EM propagation.
(6) Hazardous weather.

Performance Standard. Complete the briefing within 1 hour of receipt of scenario.

Instructor. SI, WTI

Prerequisite. None.

External Syllabus Support. None.

Reference.
1. MCWP 3-35.7

MIA-4102 3.0 * B E S/L

Goal. Produce METOC impacts on MAGTF operations.

Requirement. After conducting a thorough mission analysis, utilize METOC equipment to assess and brief METOC impacts on MAGTF operations. The assessment shall include, at a minimum, the following essential elements:

(1) Mission weather.
(2) Tactical Decision Aids.
(3) Astronomical data.

Performance Standard. Complete briefing within 3 hours of receipt of scenario.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None.

Reference.
1. MCWP 3-35.7

MIA-4103 8.0 180 B,R,M E S/L

Goal. Conduct an amphibious warfare brief.

Requirement. Prepare and present an amphibious warfare brief that contains the listed items:

(1) Current weather information.
(2) 24-hour weather forecast.
(3) Aviation parameters.
(4) Surf/MSI observation/forecast.
(5) Sea conditions observation/forecast.
(6) Tactical assessment.
(7) Atmospheric refractive summary.
(8) Astronomical data.

Performance Standard. Complete the briefing within 6 hours of receipt of request.

Instructor. SI, WTI

Prerequisite. ACAD-4001

External Syllabus Support. None

Reference.
1. MCWP 3-35.7

MIA-4104 24.0 * B E S/L

Goal. Produce METOC impact products to support planning and execution of joint and/or coalition operations and missions.

Requirement. Produce mission specific impact assessments for the listed missions. Exhibit a comprehensive knowledge of METOC element impacts on the major platforms and support activities of the following:

(1) Humanitarian aid missions.
(2) Deep strike missions.
(3) Force on force missions.
(4) Over the horizon missions.

(5) Counterinsurgency missions.
(6) Tactical Decision Aids.
(a) Weapons of mass destruction.
(b) Laser guided munitions.
(c) Infrared guided munitions.
(d) Visual guided munitions.
(e) GPS guided munitions.
(7) Communications.
(a) Satellite.
(b) UHF/VHF.
(8) Trafficability.

Performance Standard. Complete the briefing within 6 hours of receipt of mission.

Instructor. SI, WTI

Prerequisite. None.

External Syllabus Support. None

Reference.
1. MCWP 3-35.7
2. Applicable Joint Pubs

2.11.5 METOC PLANNING COORDINATION (MPC) STAGE

2.11.5.1 Purpose. Demonstrate familiarity in coordinating METOC support in support of missions.

2.11.5.2 General

Admin Notes.

(1) The Core Skill Advanced phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be proficient in METOC planning and coordination as it relates to mission support requirements.

MPC-4200 24.0 * B E S/L

Goal. Introduce joint operation METOC functions.

Requirement. Be familiar with the following tasks:

(1) Coordinate joint METOC support.
(2) Liaison with component METOC units/commands.
(3) Identify and correct joint METOC support deficiencies.
(4) Provide operational planning products in support of the IPB process.

Performance Standard. Ensure Marine METOC interest and planning requirements are addressed.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. Joint Publication 3-59
http://www.dtic.mil/doctrine/new_pubs/jp3_59.pdf

MPC-4201 8.0 * B E S/L

Goal. Submit input to annexes of operational orders.

Requirement. Submit METOC input to the annexes of operational orders and LOIs to the requesting command. Complete the requirement on each of the following:

(1) Intelligence operations, Annex B.
(2) Environmental operations, Annex H.
(3) Collection plan, Annex J.
(4) Communications and information systems, Annex K.

Performance Standard. Draft METOC input must be in Joint Operational Planning and Execution System (JOPES) or applicable format; be in accordance with orders and directives; and contain all required information to support designated mission and designate all external requirement for successful METOC support.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. MCWP 3-35.7

MPC-4202 35.0 * B E S/L

Goal. Conduct METOC support for Intelligence Operations.

Requirement. Provide METOC support through all phases of Intelligence Operations execution operations. Complete, at a minimum, the following items:
(1) Participate in target package development.
(2) Coordinate METOC support requirements for the targeting cycle.
(3) Develop and produce Targeting METOC Products.
(4) Participate in Collections Operations Management (COM) working group.
(5) Coordinate METOC support requirements for COM.
(6) Develop and produce COM METOC Products.

Performance Standard. Draft METOC input for Intelligence Operations or applicable format; be in accordance with orders and

directives; and contain all required information to support designated mission and designate all external requirement for successful METOC support.

Instructor. SI, WTI

Prerequisite. None

External Syllabus Support. None

Reference.
1. MCWP 3-35.7 MAGTF Meteorology and Oceanography (METOC) Support
2. MCWP 2-2 MAGTF Intelligence Collection
3. MCWP 2-21 Imagery Intelligence
4. MCWP 2-22 Signals Intelligence
5. MCWP 2-24B Remote Sensor Operations
6. MCWP 2-26 Geographic Intelligence
7. MCWP 2-3 MAGTF Intelligence Production and Analysis
8. MCWP 2-4 MAGTF Intelligence Dissemination
9. MCWP 2-6 Counterintelligence
10. SOP Unit/Local Standard Operating Procedures
11. JP 3-60 Joint Targeting
12. MCRP 3-16A Tactics, Techniques, and Procedures for the Targeting Process
13. MCWP 2-1 Intelligence Operations
14. MCWP 2-3 MAGTF Intelligence Production and Analysis

2.12 INSTRUCTOR TRAINING (5000)

2.12.1 Purpose. This phase contains instructor workup and evaluation certification syllabus events. This level will also contain instructor workup and certification syllabus events as applicable for Contract Instructors (CI) who instructs simulator events.

2.12.2 General

2.12.2.1 Admin Notes.

(1) Each event specifies the location of the training materials.

(2) Upon completion of academic events, personnel should print completion certificates for entry into Basic Training Records (BTR). Copies of completion certificates shall be placed within and maintained in individual training jackets.

(3) A general description of each type of training materials is as follows:

- Correspondence Course - A written publication that may or may not include testing materials.
- Computer Based Training - Self-paced learning modules that may be accessed via a CD-ROM/DVD or website.
- Instructor-Led Distance Learning - Formal courses of instruction that are accessed and facilitated via the internet (NIPRNET or SIPRNET)
- Resident Courses - Formal courses of instruction in which the student physically attends, normally at another location.

Total Training Events. 9 Events, XX.X Hours

2.12.2.2 Stages. The following stage is included in the Instructor Phase of training.

PAR NO.	STAGE NAME
2.12.3	INSTRUCTOR UNDER TRAINING (IUT)

2.12.3 INSTRUCTOR UNDER TRAINING (IUT) STAGE.

2.12.3.1 General. The MAWTS-1 C3 Course catalog contains the training requirements for above listed instructors. The catalog is located at the MAWTS-1 website, https://www.intranet.tecom.usmc.mil/sites/mawts1/default.aspx. The table below lists all IUT events.

T&R CODE	EVENT DESCRIPTION	INSTRUCTOR
5000	Introduce principles of instruction	BI
5010	Understand the structure of an event	BI
5020	Conduct a period of instruction on a T&R event	BI
5100	Understand the Aviation Training and Readiness (T&R) Program	SI
5110	Understand the applicable community T&R program	SI
5120	Understand T&R administration	SI
5130	Develop a training plan	SI

The table below outlines the events that each instructor can train, evaluate, and approve or recommend for approval.

INSTRUCTOR	Event Training, Evaluation and Approval
BI	Core Skill events in which current and proficient.
SI	Core Skill, Mission Skill, and Core Plus events in which current and proficient.
WTI	Mission Skill, Core Plus, and Qualification events. WTI: - Evaluate and recommend for qualification - Endorse recommendations for position designations
Notes	1. The Commanding Officer is the approving authority for qualifications and designations.

2.13 REQUIREMENTS, CERTIFICATIONS, QUALIFICATIONS AND DESIGNATIONS (6000)

2.13.1 Purpose. This phase contains tracking codes for designations and training that provide community standardization for combat leadership and instructor designations. This syllabus does not include "one time" certification training.

2.13.2 General.

2.13.2 Prerequisite. Completion of the ACPM, academics, Core, Mission, and

or Core Plus Skill events required for the position being trained.

2.13.2.1 Admin Notes.

(1) The squadron WTI shall review the Individual Performance Record (IPR) to ensure all required training, documentation and administrative actions have been completed prior to staffing qualification or designation recommendations for approval.

(2) Only once an individual is qualified or designated in writing, the signed letter is filed in the IPR, and all administrative actions are completed and the event code has been logged in M-SHARP will the qualification or designation be effective.

2.13.2.2 Stages. The following stage is included in the Instructor Under Training Phase of training.

PAR NO.	STAGE NAME
2.13.3	QUALIFICATIONS (QUAL)
2.13.4	DESIGNATIONS (DESG)
2.13.5	SCHOOL CODES (SCHL)

2.13.3 Qualifications (QUAL)

2.13.3.1 Purpose To qualify personnel in various METOC positions.

2.13.3.2 General.

Prerequisite. Completion of the required academic modules and core mission, and core plus skill events for the position being trained in.

Administrative Notes.

(1) During evaluation of the event performance standard, the instructor may provide minimal guidance. However, the instructor should guide and mentor the trainee during the training session and after an event evaluation.

(2) Personnel being recommended for qualification must perform the evaluation event to a proficient level. A proficient level is defined as the ability to efficiently and skillfully correct errors without hesitation and with minimal or no input from the Instructor.

(3) All METOC qualification events will be evaluated by a SI or WTI, and recommended by a WTI for approval. If a squadron does not have a WTI, the commanding officer can assign an SI who is proficient in the position being evaluated to serve as the evaluator.

(4) Policy on attaining, maintaining and regaining a qualification is contained in chapter 2 of reference (a).

(5) All qualifications in this syllabus are E-coded, therefore, the event evaluation forms used for qualification events shall be retained in the IPR permanently.

Crew Requirement. None.

QUAL-6200 2.0 1095 B,R,M E S/L

Goal. To be evaluated for the Apprentice METOC Analyst Forecaster qualification.

Requirement. Complete required 6842 events. The 6842 shall be designated by the Commander or representative as an Apprentice METOC Analyst Forecaster. An appropriate entry shall be made in M-SHARP and a letter filed in the Individual Personnel Record (IPR).

Prerequisite. 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401, 2402, 2500, 2501, 2502, 2503, 2504, 2600, 2700, 2701, 2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003

QUAL-6201 2.0 1095 B,R,M E S/L

Goal. To be evaluated for the Journeyman METOC Analyst Forecaster qualification.

Requirement. Complete required 6842 events. The 6842 shall be designated by the Commander or representative as an Apprentice METOC Analyst Forecaster. An appropriate entry shall be made in M-SHARP and a letter filed in the Individual Personnel Record (IPR).

Prerequisite. 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401, 2402, 2500, 2501, 2502, 2503, 2504, 2600, 2700, 2701, 2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003, 3004, 3005, 3007, 3008, 3009, 3012, 3013, 3100, 3101, 3102, 3103, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 6200

QUAL-6202 2.0 1095 B,R,M E S/L

Goal. To be evaluated for the Master METOC Analyst Forecaster qualification.

Requirement. Complete required 6842 events. The 6842 shall be designated by the Commander or representative as an Apprentice METOC Analyst Forecaster. An appropriate entry shall be made in M-SHARP and a letter filed in the Individual Personnel Record (IPR).

Prerequisite. 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401,

2402, 2500, 2501, 2502, 2503, 2504, 2600, 2700, 2701, 2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003, 3004, 3005, 3007, 3008, 3009, 3012, 3013, 3100, 3101, 3102, 3103, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3600, 3601, 6200, 6201

2.13.4 Designations (DESG)

2.13.4.1 Purpose To designate personnel in various METOC positions.

2.13.4.2 General.

Prerequisite. Completion of the required academic modules and core mission, and qualification events for the position being trained in.

Administrative Notes.

(1) Once an individual has met qualification and maintains that qualification, they may be designated by the Commanding Officer or the CO's designated individual.

(2) Designation of instructors is done once an individual has completed the 5000 phase events for that instructor position and has been found to meet all instructor requirements.

(3) Designations are at the discretion of the Commanding Officer and can be revoked upon CO decision or transfer from command.

Crew Requirement. None.

DESG-6300

Goal. To be designated as the Apprentice METOC Analyst Forecaster.

Requirement. Complete required 6842 events. The 6842 shall be designated by the Commander or representative as an Apprentice METOC Analyst Forecaster. An appropriate entry shall be made in M-SHARP and a letter filed in the Individual Personnel Record (IPR).

Prerequisite. 6200

DESG-6301

Goal. To be designated as the Journeyman METOC Analyst Forecaster.

Requirement. Complete required 6842 events. The 6842 shall be designated by the Commander or representative as an Apprentice METOC Analyst Forecaster. An appropriate entry shall be made in M-SHARP and a letter filed in the Individual Personnel Record (IPR).

Prerequisite. 6201

DESG-6302

Goal. To be designated as the Master METOC Analyst Forecaster.

Requirement. Complete required 6842 events. The 6842 shall be designated by the Commander or representative as an Apprentice METOC Analyst Forecaster. An appropriate entry shall be made in M-SHARP and a letter filed in the Individual Personnel Record (IPR).

Prerequisite. 6202

DESG-6320

Goal. Designation as a Basic Instructor (BI).

Requirement. Be recommended for BI designation by a unit SI or WTI. The commanding officer will designate the BI in writing.

Prerequisite. Complete BI training requirements set forth in the C3 Course Catalog (5000, 5010, 5020).

DESG-6321

Goal. Designation as a Senior Instructor (SI).

Requirement. Be recommended for SI designation by a SI or WTI. The commanding officer will designate the SI in writing.

Prerequisite. Complete SI training requirements set forth in the C3 Course Catalog (5100, 5110, 5120, 5130) and 6320.

DESG-6322

Goal. Designation as a Weapons and Tactics Instructor (WTI).

Requirement. Be certified by MAWTS-1 as a WTI and be recommended for designation by the squadron WTI. The commanding officer will designate the WTI in writing.

Prerequisite. Graduate the MAWTS-1 WTI Course.

2.13.5 Designations (DESG)

2.13.5.1 Purpose To designate courses for METOC personnel to attend to meet training requirements.

2.13.5.2 General.

Prerequisite. As dictated by individual school.

Administrative Notes. NONE

Crew Requirement. None.

SCHL CODE	NAME OF COURSE	LOCATION	CID
SCHL-6000	Weapons and Tactics Instructor (WTI)	MCAS Yuma, AZ	M14P2A1

2.14. AVIATION CAREER PROGRESSION MODEL (8000).

STAGE	TRNG CODE	T&R DESCRIPTION		ACAD TIME	TO BE COMPLETED DURING
ACPM	8000	**MACCS**		1	2000
ACPM	8001	MARINE AIR COMMAND AND CONTROL SYSTEM		4	2000
ACPM	8002	TACTICAL AIR COMMAND CENTER (TACC)		4	2000
ACPM	8003	DIRECT AIR SUPPORT CENTER (DASC)		4	2000
ACPM	8004	TACTICAL AIR OPERATIONS CENTER (TAOC)		4	2000
ACPM	8005	MARINE AIR TRAFFIC CONTROL (MATC)		4	2000
ACPM	8006	LOW ALTITUDE AIR DEFENSE (LAAD)		4	2000
ACPM	8007	MARINE UNMANNED AERIAL VEHICLE SQUADRON (VMU)		4	2000
ACPM	8008	MARINE WING COMMUNICATION SQUADRON (MWCS)		4	2000
ACPM	8020	**ACE**		1	2000
ACPM	8021	AVIATION OPERATIONS		4	2000
ACPM	8022	CONTROL OF AIRCRAFT AND MISSILES		4	2000
ACPM	8023	OFFENSIVE AIR SUPPORT (OAS)		4	2000
ACPM	8024	ASSAULT SUPPORT		4	2000
ACPM	8025	AIR RECONNAISSANCE		4	2000
ACPM	8026	ELECTRONIC WARFARE		4	2000
ACPM	8027	ANTI-AIR WARFARE		4	2000
ACPM	8028	AVIATION GROUND SUPPORT		4	2000
ACPM	8040	**THREAT**		1	3000
ACPM	8041	SURFACE TO AIR THREAT TO THE MAGTF		4	3000
ACPM	8042	FIXED WING THREAT TO THE MAGTF		4	3000
ACPM	8043	ROTARY WING THREAT TO THE MAGTF		4	3000
ACPM	8044	MISSILE AND UAS THREAT TO THE MAGTF		4	3000
ACPM	8060	**MAGTF**		1	3000
ACPM	8061	GROUND COMBAT OPERATIONS		4	3000
ACPM	8062	FIRE SUPPORT COORDINATION IN THE GCE		4	3000
ACPM	8063	MAGTF COMMAND AND CONTROL		4	3000
ACPM	8064	MAGTF COMMUNICATIONS		4	3000
ACPM	8065	PHASING CONTROL ASHORE		4	3000
ACPM	8066	INFORMATION MANAGEMENT		4	3000
ACPM	8067	UAS SUPPORT TO THE MAGTF		4	3000
ACPM	8080	**JOINT AIR OPERATIONS**		1	4000
ACPM	8081	COMMAND AND CONTROL OF JOINT AIR OPERATIONS		4	4000
ACPM	8082	THEATER AIR CROUND SYSTEM (TAGS)		4	4000
ACPM	8083	JOINT FIRE SUPPORT		4	4000
ACPM	8084	CLOSE AIR SUPPORT		4	4000
ACPM	8085	JOINT TARGETING		4	4000
ACPM	8086	NORTH ATLANTIC TREATY ORGANIZATION (NATO)		4	4000
ACPM	8087	JOINT AIRSPACE CONTROL		4	4000

ACPM	8088	COUNTERING AIR AND MISSILE THREATS		4	4000
TOTAL ACPM STAGE			39	141	

2.15 T&R ATTAIN AND MAINTAIN TABLES.

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
CORE/MISSION/CORE PLUS ATTAIN AND MAINTAIN MATRIX											
Complete *'Aerographer's Mate Third Class METOC Training Manual (AG3)'* Module (METOC-045-841-609-001)	ACAD	2000	*	ACAD	2000	ACAD		ACAD		-	-
Complete *'Skew-T Mastery'* Module		2001	*		2001					-	-
Complete *'Fog: Its Processes and Impacts to Aviation and Aviation Forecasting'* Module		2002	*		2002					-	-
Complete *'Forecasting Radiation Fog'* Module		2003	*		2003					-	-
Complete *'Dynamically Forced Fog'* Module		2004	*		2004					-	-
Complete the *'Local Influences on Fog and Low Stratus'* Module		2005	*		2005					-	-
Complete *'Thermally-Forced Circulation I: Sea Breezes'* Module		2006	*		2006					-	-
Complete 'Thermally-Forced Circulation II: *Mountain Valley Winds'* Module		2007	*		2007					-	-
Complete *'Cold Air Damming'* Module		2008	*		2008					-	-
Complete *'Coastally Trapped Wind Reversals'* Module		2009	*		2009					-	-
Complete *'Gap Winds'* Module		2010	*		2010					-	-
Complete *'Flow Interaction with Topography'* Module		2011	*		2011					-	-
Complete *'Mountain Waves and Downslope Winds'* Module		2012	*		2012					-	-
Complete *'Atmospheric*		2013	*		2013					-	-

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Dust' Module											
Complete *'Forecasting Dust Storms Version 2'* Module		2014	*		2014					-	-
Complete *'Low-Level Coastal Jets'* Module		2015	*		2015					-	-
Complete the *'Jet Streak Circulations'* Module		2016	*		2016					-	-
Complete the *'Vorticity Maxima and Comma Patterns'* Module		2017	*		2017					-	-
Complete the 'Dynamic Feature Identification: *Vorticity Minima and Anticomma Patterns'* Module		2018	*		2018					-	-
Complete the 'Recognition and Impact of *Vorticity Maxima and Minima in Satellite Imagery'* Module		2019	*		2019					-	-
Complete *'Principles of Convection I: Buoyancy and CAPE'* Module		2020	*		2020					-	-
Complete 'Principles of Convection II: *Using Hodographs'* Module		2021	*		2021					-	-
Complete 'Principles of Convection III: Shear and Convective Storms' Module		2022	*		2022					-	-
Complete the 'Lectures on Radar Applications in Mesoscale Meteorology' Module		2023	*		2023					-	-
Complete *'Landfalling Fronts and Cyclones'* Module		2024	*		2024					-	-
Complete *'How Mesoscale Models Work'* Module		2025	*		2025					-	-
Complete *'Definition of the Mesoscale'* Module		2026	*		2026					-	-
Complete *'Introduction to Ensemble Prediction'* Module		2027	*		2027					-	-
Complete *'Ten Common NWP Misconceptions'* Module		2028	*		2028					-	-
Complete *'Mesoscale Convective Systems:*		2029	*		2029					-	-

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Squall Lines and Bow Echoes' Module											
Complete *'Mesoscale Banded Precipitation'* Module		2030	*		2030					-	-
Complete *'Intelligent Use of Model-Derived Products –Version 2'* Module		2031	*		2031					-	-
Complete *'Effective Use of NWP in the Forecast Process: Introduction'* Module		2032	*		2032					-	-
Complete *'Topics in Tropical Meteorology' module*		2033	*		2033					-	-
Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 1: Introduction' module*		2034	*		2034					-	-
Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 2: Tropical Remote Sensing Applications' module*		2035	*		2035					-	-
Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 3: Global Circulation' module*		2036	*		2036					-	-
Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 4: Tropical Variability' module*		2037	*		2037					-	-
Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 5: The Distribution of Moisture and Precipiation' module.*		2038	*		2038					-	-
Complete *'Conceptual Models of Tropical Waves' module*		2039	*		2039					-	-

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Complete '*Polar Satellite Products for the Operational Forecaster: Microwave Analysis of Tropical Cyclones*' Module		2040	*		2040					-	-
Complete the '*Influence of Model Physics on NWP Forecasts-Version 2*' Module.		2041	*		2041					-	-
Complete the '*Introduction to Climatology*' Module		2042	*		2042					-	-
Complete the '*Isentropic Analysis*' Module		2043	*		2043					-	-
Complete the '*PBL in Complex Terrain - Part 1*' Module		2044	*		2044					-	-
Complete the '*PBL in Complex Terrain – Part 2*' Module		2045	*		2045					-	-
Complete the '*Mesoscale Aspects of Winter Weather Forecasting Topics*' Module		2046	*		2046					-	-
Complete '*Forecasting Aviation Icing: Icing Type and Severity*' Module		2047	*		2047					-	-
Complete '*Aerographer's Mate Second (AG2) Class Vol I METOC Training Manual*' Module (METOC-045-841-610-002)		2048	*		2048					-	-
Complete '*Aerographer's Mate Second (AG2) Class Vol II METOC Training Manual*' Module (METOC-045-841-611-003)		2049	*		2049					-	-
Demonstrate knowledge of atmospheric physics	AMS	2100	*	AMS	2100	AMS		AMS		-	-
Describe the dynamic atmospheric principles		2101	*		2101					2100	-
Describe atmospheric fundamentals		2102	*		2102					2100, 2101	-

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Initialize and verify meteorological model output		2103	*		2103					-	-
Utilize Graphical METOC products		2104	*		2104					-	-
Forecast macro/synoptic scale features		2105	*		2105					2102, 2704	-
Forecast severe weather		2106	*		2106					2102	-
Forecast local area (mesoscale/microscale) meteorological elements and phenomenon		2107	*		2107					2107	-
Brief synoptic chart set	MPB	2200	*	MPB	2200	MPB		MPB		2704	-
Complete 'Weather Radar Fundamentals' module	MDR	2300	*	MDR	2300	MDR		MDR		-	-
Perform basic radar imagery interpretation		2301	*		2301					-	-
Define the fundamentals of surface observations		2400	*		2400					-	-
Compute meteorological values	MSO	2401	*	MSO	2401	MSO		MSO		-	-
Take, record and disseminate a surface meteorological observation		2402	365		2402		2402		2402	2400, 2401	-
Identify upper air observational equipment and procedures		2500	*		2500					-	-
Decode upper air messages		2501	365		2501		2501		2501	-	-
Plot and analyze a Skew-T Log P diagram	UAS	2502	365	UAS	2502	UAS	2502	UAS	2502	2501	-
Analyze atmospheric conditions from the Skew-T, Log P diagram		2503	365		2503		2503		2503	2502	-
Analyze elements from a plotted Skew-T, Log P Diagram		2504	365		2504		2504		2504	2503	-
Analyze meteorological features on satellite imagery	MSAT	2600	365	MSAT	2600	MSAT	2600	MSAT	2600	-	-
Analyze and interpret a thickness chart	MDA	2700	365	MDA	2700	MDA	2700	MDA	2700	-	-
Analyze and interpret a		2701	365		2701		2701		2701	-	-

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
vorticity chart											
Analyze and interpret upper atmospheric weather charts		2702	365		2702		2702		2702	-	-
Analyze and interpret a surface chart		2703	365		2703		2703		2703	-	-
Develop synoptic scale forecast using prognosis techniques		2704	365		2704		2704		2704	2700, 2701, 2702, 2703	-
Generate and conduct a climatology brief	MCS	2800	365	MCS	2800	MCS	2800	MCS	2800	-	-
Disseminate weather warnings and advisories	WWA	2900	180	WWA	2900	WWA	2900	WWA	2900	-	-
MISSION SKILL (3000 Phase)											
T&R EVENT INFORMATION		BASIC POI				REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Complete the 'Writing Effective TAFS' Module		3000	*		3000					-	-
Complete the 'Writing TAFS for Convective Weather' Module		3001	*		3001					-	-
Complete the 'Writing TAFS for Winds and LLWS' Module		3002	*		3002					-	-
Complete the 'Writing TAFs for Ceiling and Visibility' Module		3003	*		3003					-	
Complete the 'Introduction to Distributed Hydrologic Modeling' Module	ACAD	3004	*	ACAD	3004	ACAD		ACAD		-	
Complete the 'Understanding the Hydrologic Cycle' Module		3005	*		3005					-	
Complete the 'Operational Use of Wave Watch III' Module		3006	*		3006					-	
Complete 'Wave Types and Characteristics' Module		3007	*		3007					-	

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Complete 'Rip Currents: Nearshore Fundamentals' Module		3008	*		3008					-	
Complete 'Introduction to Ocean Models' Module		3009	*		3009					-	
Complete 'Shallow-Water Waves' Module		3010	*		3010					-	
Complete 'Remote Sensing of Ocean Wind Speed and Direction: An Introduction to Scatterometry' Module		3011	*		3011					-	
Complete 'Introduction to Ocean Tides' Module		3012	*		3012					-	
Complete 'Rip Currents: Forecasting' Module		3013	*		3013					-	
Complete the 'Introduction to Ocean Currents' Module		3014	*		3014					-	
Complete the 'METOC Support for Strike Warfare' resident course		3015	*		3015					-	
Complete the 'METOC Support for Search and Rescue' resident course		3016	*		3016					-	
Complete the 'Introduction to the Verification of Hydrologic Forecasts' Module		3017	*		3017					-	
Complete 'Unit Hydrograph Theory' Module		3018	*		3018					-	
Complete 'Understanding the Hydrologic Cycle' Module		3019	*		3019					-	
Complete the 'Applied Environmental Sciences' (AES) Course		3020	*		3020					-	
Complete the 'METOC Impacts Analyst Course (MIAC)' course		3021	*		3021					-	
Complete the 'NITES Basic User' resident course		3022	*		3022					-	

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Certify proficiency at calculating tidal data	OFS	3100	180	OFS	3100	OFS	3100	OFS	3100	3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022	
Conduct surf observations		3101	180		3101		3101		3101	3013, 3015, 3016	
Demonstrate knowledge of surf forecasting		3102	180		3102		3102		3102	3013, 3015, 3016	
Compute Modified Surf Index (MSI)		3103	*		3103					3013, 3015, 3016	
Create a surf forecast		3104	180		3104		3104		3104	3013, 3015, 3016	
Encode and disseminate pilot reports (PIREPs)	METF	3300	180	METF	3300	METF	3300	METF	3300	-	
Produce Terminal Aerodrome Forecast (TAF)		3301	365		3301		3301		3301	-	
Demonstrate proficiency in flight weather briefings		3302	365		3302		3302		3302	3301	
Produce flight weather packets		3303	180		3303		3303		3303	3301	
Conduct an Aviation Strike Brief		3304	*		3304					3303	
Conduct a pre-deployment brief		3305	365		3305		3305		3305	2803	
Perform ceiling balloon operations		3306	*		3306					-	
Operate garrison handheld meteorological devices	ME	3400	180	GME	3400	GME	3400	GME	3400		
Operate the Automated Surface Observing System (ASOS)		3401	365		3401		3401		3401		-
Operate garrison METOC equipment in order to provide support to base operations		3402	365		3402		3402		3402		-
Conduct management operations for the		3403	*	TME	3500	TME		TME		-	-

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
meteorological radar system											
Manage meteorological radar operations		3404	365		3501		3501		3501	-	-
Perform advanced operations on tactical satellite system		3405	365		3502		3502		3502	-	-
Conduct an upper-atmospheric sounding		3406	180		3503		3503		3503	2500	-
Conduct operational checks of each subsystem inherent to the METMF(R)/NEXTGEN		3407	180		3504		3504		3504	-	-
Operate the METMF(R)/NEXTGEN		3408	365		3505		3505		3505	-	-
Operate the NITES IV		3409	180		3506		3506		3506	-	-
Discuss MAGTF operations	MDN	3600	*	MDN	3600	MDN		MDN		-	
Discuss local area policies and procedures		3601	365		3601		3601		3601	-	
CORE PLUS SKILL (4000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE	-	-
Complete 'In-Depth Physics Lessons' Module		4000	*		4000					-	-
Complete the 'METOC Support for Amphibious Warfare' resident course		4001	*		4001					-	-
Complete the 'METOC Support for Chemical, Biological, Radiological, and Nuclear Environment (CBRNE)' resident course	ACAD	4002	*	ACAD	4002	ACAD		ACAD		-	-
Complete the 'Target Acquisitions Weapons Software (TAWS) Primer' resident course		4003	*		4003					-	-

METOC MOS 6842											
CORE SKILL (2000 Phase)											
T&R EVENT INFORMATION				BASIC POI		REFRESHER POI		MAINTAIN PROFICIENCY		PREREQS	CHAINING
T&R DESCRIPTION	STAGE	CODE	REFLY	STAGE	CODE	STAGE	CODE	STAGE	CODE		
Complete the 'Advanced Refractive Effects Prediction System (AREPS) Primer' resident course		4004	*		4004					-	-
Conduct a Search and Rescue (SAR) brief		4005	*		4005					-	-
Complete the 'Riverine Analysis and Forecasting Course' resident course		4006	*		4006					-	-
Assess METOC impacts on Chemical, Biological, Radiological and Nuclear Environment (CBRNE) defensive operations		4100	*		4100					2102	-
Produce METOC impacts on command and control operations		4101	*		4101					-	-
Produce METOC impacts on MAGTF operations	MIA	4102	*	MIA	4102	MIA		MIA		-	-
Conduct an amphibious warfare brief		4103	180		4103		4103		4103	-	-
Produce METOC impact products to support planning and execution of joint and/or coalition operations and missions		4104	*		4104					-	-
Introduce joint operation METOC functions		4200	*		4200					-	-
Submit input to annexes of operational orders	MPC	4201	*	MPC	4201	MPC		MPC		-	-
Use Map Manager		4202	*		4202					-	-

2.16 T&R SYLLABUS MATRIX

METOC ENLISTED T&R SYLLABUS MATRIX																				
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
CORE SKILL INTRODUCTION TRAINING (1000 PHASE EVENTS)																			
MOAF	1000	Conduct Orientation	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
MOAF	1001	ID facts about Space Environment	B	E	G	-	-	-	*		12.0		0		0	-	-	-	-
MOAF	1002	Identify facts about the elements of a weather observation	B	E	G	-	-	-	*		12.0		0		0	-	-	-	-
MOAF	1003	Relate principles about the Earth and its atmosphere	B	E	G	-	-	-	*		14.0		0		0	-	-	-	-
MOAF	1004	Relate principles about atmospheric physics	B	E	G	-	-	-	*		21.0		0		0	-	-	-	-
MOAF	1005	Relate principles about atmospheric dynamics	B	E	G	-	-	-	*		20.0		0		0	-	-	-	-
MOAF	1006	Relate principles about hemispheric weather features	B	E	G	-	-	-	*		15.0		0		0	-	-	-	-
MOAF	1007	Relate principles about continental weather features	B	E	G	-	-	-	*		30.0		0		0	-	-	-	-
MOAF	1008	Relate principles about regional weather features	B	E	G	-	-	-	*		22.0		0		0	-	-	-	-
MOAF	1009	Relate principles about tropical weather features	B	E	G	-	-	-	*		9.0		0		0	-	-	-	-
MOAF	1010	Perform basic computer operations	B	E	G	-	-	-	*		95.0		0		0	-	-	-	103
MOAF	1011	Relate principles about the types of meteorological satellite systems	B	E	G	-	-	-	*		7.0		0		0	-	-	-	-
MOAF	1012	Relate principles about microwave satellite products and multispectral imagery	B	E	G	-	-	-	*		7.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE EVENTS		PREREQ	NOTES	CHAIN	EVENT CONV
STAGE	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				
MOAF	1013	Relate satellite imagery to meteorological and non-meteorological features or events	B	E	G	-	-	-	*		22.5		0		0	-	-	-	-
MOAF	1014	Decode a METAR observation	B	E	G	-	-	-	*		13.5		0		0	-	-	-	-
MOAF	1015	Decode pilot reports (PIREPS)	B	E	G	-	-	-	*		4.0		0		0	-	-	-	-
MOAF	1016	Encode Pilot Reports (PIREPS)	B	E	G	-	-	-	*		6.0		0		0	-	-	-	-
MOAF	1017	Decode land and ship synoptic data	B	E	S	-	-	-	*		10.0		0		0	-	-	-	-
MOAF	1018	Decode a Rawinsonde observation	B	E	G	-	-	-	*		10.0		0		0	-	-	-	-
MOAF	1019	Decode a plotted Skew-T/Log-P diagram	B	E	G	-	-	-	*		9.0		0		0	-	-	-	-
MOAF	1020	Derive wind flow from satellie imagery	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
MOAF	1021	Analyze upper-air and surface charts	B	E	G	-	-	-	*		54.0		0		0	-	-	-	-
MOAF	1022	Select effective quality assurance program procedures	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
MOAF	1023	Identify facts about the components of an effective regime forecast process	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
MOAF	1024	Relate principles about macroscale weather analysis techniques	B	E	G	-	-	-	*		30.0		0		0	-	-	-	-
MOAF	1025	Analyze macroscale weather features	B	E	G	-	-	-	*		24.0		0		0	-	-	-	-
MOAF	1026	Relate principles about synoptic scale weather analysis techniques	B	E	G	-	-	-	*		58.0		0		0	-	-	-	-
MOAF	1027	Identify facts about synoptic weather regimes	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
MOAF	1028	Analyze synoptic scale weather features	B	E	G	-	-	-	*		75.0		0		0	-	-	-	-
MOAF	1029	Encode METAR observations	B	E	G	-	-	-	*		29.0		0		0	-	-	-	-
MOAF	1030	Relate principles about mesoscale weather analysis techniques	B	E	G	-	-	-	*		31.0		0		0	-	-	-	-
MOAF	1031	Relate principles about mesoscale weather analysis techniques	B	E	G	-	-	-	*		6.0		0		0	-	-	-	-
MOAF	1032	Relate principles about weather radar products	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
MOAF	1033	Interrogate WSR-88D information to identify radar products (REWORD)	B	E	G	-	-	-	*		24.0		0		0	-	-	-	-
MOAF	1034	Analyze mesoscale weather features	B	E	G	-	-	-	*		35.5		0		0	-	-	-	-
MOAF	1035	Encode METAR observations	B	E	G	-	-	-	*		6.0		0		0	-	-	-	-
MOAF	1036	Relate principles about macroscale weather forecast techniques	B	E	G	-	-	-	*		11.0		0		0	-	-	-	-
MOAF	1037	Identify facts about numerical model processes	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
MOAF	1038	Relate principles about flight hazard forecast techniques	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
MOAF	1039	Relate principles about synoptic scale weather forecast techniques	B	E	G	-	-	-	*		34.0		0		0	-	-	-	-
MOAF	1040	Take a surface observation	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
MOAF	1041	Forecast tropical weather elements	B	E	G	-	-	-	*		4.0		0		0	-	-	-	-
MOAF	1042	Forecast macroscale and synoptic scale weather features	B	E	G	-	-	-	*		75.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE EVENTS		PREREQ	NOTES	CHAIN	EVENT CONV
STAGE	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				
MOAF	1043	Relate principles about mesoscale and microscale weather forecast techniques	B	E	G	-	-	-	*		23.0		0		0	-	-	-	-
MOAF	1044	Relate principles about mesoscale and microscale weather forecast techniques	B	E	G	-	-	-	*		21.0		0		0	-	-	-	-
MOAF	1045	Relate principles about JET system configuration	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
MOAF	1046	Encode a METAR observation	B	E	G	-	-	-	*		5.0		0		0	-	-	-	-
MOAF	1047	Identify meteorological parameters from microscale numerical weather prediction text products	B	E	G	-	-	-	*		9.0		0		0	-	-	-	-
MOAF	1048	Forecast mesoscale and microscale weather features	B	E	G	-	-	-	*		45.0		0		0	-	-	-	-
MOAF	1049	Prepare a Terminal Aerodome Forecast (TAF)	B	E	G	-	-	-	*		9.0		0		0	-	-	-	-
MOAF	1050	Perform duties related to the synoptic forecaster position	B	E	G	-	-	-	*		42.0		0		0	-	-	-	-
MOAF	1051	Perform duties related to the mission briefer position	B	E	G	-	-	-	*		50.0		0		0	-	-	-	-
MOAF	1052	Perform duties related to the forecaster position	B	E	G	-	-	-	*		48.0		0		0	-	-	-	-
MOAF	1053	Prepare and present a shift change briefing	B	E	G	-	-	-	*		14.0		0		0	-	-	-	-
MOAF	1054	Demonstrate proficiency of atmospheric physics	B	E	G	-	-	-	*		15.0		0		0	-	-	-	-
MOAF	1055	Describe the dynamic atmospheric principles	B	E	G	-	-	-	*		15.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
MOAF	1056	Brief synoptic chart set	B	E	G	-	-	-	*		3.0		0		0	-	-	-	270
MOAF	1057	Identify meteorological features on satellite imagery	B	E	G	-	-	-	*		14.0		0		0	-	-	-	-
MOAF	1058	Analyze and interpret a thickness chart	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
MOAF	1059	Analyze and interpret a vorticity chart	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
MOAF	1060	(Re)Analyze and interpret upper atmospheric weather charts	B	E	G	-	-	-	*		6.0		0		0	-	-	-	-
MOAF	1061	Analyze and interpret a surface chart	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
TOTAL CORE SKILL INTRODUCTION (1000 PHASE EVENTS)										23	1202.5	0	0	0	0				
CORE SKILL TRAINING (2000 PHASE EVENTS)																			
ACADEMIC SKILLS (ACAD)																			
ACAD	2000	Complete *'Aerographer's Mate Third Class METOC Training Manual (AG3)'* Module (METOC-045-841-609-001)	B	E	G	-	-	-	*		160.0		0		0	-	-	-	-
ACAD	2001	Complete *'Skew-T Mastery'* Module	B	E	G	-	-	-	*		7.0		0		0	-	-	-	-
ACAD	2002	Complete *'Fog: Its Processes and Impacts to Aviation and Aviation Forecasting'* Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2003	Complete *'Forecasting Radiation Fog'* Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2004	Complete *'Dynamically Forced Fog'* Module	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
ACAD	2005	Complete the *'Local Influences on Fog and Low Stratus'* Module	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
ACAD	2006	Complete *'Thermally-Forced Circulation I: Sea Breezes'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2007	Complete 'Thermally-Forced Circulation II: *Mountain Valley Winds'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2008	Complete *'Cold Air Damming'* Module	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	2009	Complete *'Coastally Trapped Wind Reversals'* Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2010	Complete *'Gap Winds'* Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2011	Complete *'Flow Interaction with Topography'* Module	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2012	Complete *'Mountain Waves and Downslope Winds'* Module	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
ACAD	2013	Complete *'Atmospheric Dust'* Module	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
ACAD	2014	Complete *'Forecasting Dust Storms Version 2'* Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2015	Complete *'Low-Level Coastal Jets'* Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2016	Complete the *'Jet Streak Circulations'* Module	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2017	Complete the *'Vorticity Maxima and Comma Patterns'* Module	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2018	Complete the 'Dynamic Feature Identification: *Vorticity Minima and Anticomma Patterns'* Module	B	E	G	-	-	-	*		0.4		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
ACAD	2019	Complete the 'Recognition and Impact of *Vorticity Maxima and Minima in Satellite Imagery*' Module	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2020	Complete *'Principles of Convection I: Buoyancy and CAPE'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2021	Complete 'Principles of Convection II: *Using Hodographs'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2022	Complete 'Principles of Convection III: Shear and Convective Storms' Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2023	Complete the 'Lectures on Radar Applications in Mesoscale Meteorology' Module	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
ACAD	2024	Complete '*Landfalling Fronts and Cyclones*' Module	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	2025	Complete '*How Mesoscale Models Work*' Module	B	E	G	-	-	-	*		0.5		0		0	-	-	-	228
ACAD	2026	Complete '*Definition of the Mesoscale*' Module	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2027	Complete '*Introduction to Ensemble Prediction*' Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2028	Complete *'Ten Common NWP Misconceptions'* Module	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	2029	Complete *'Mesoscale Convective Systems: Squall Lines and Bow Echoes'* Module	B	E	G	-	-	-	*		5.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE EVENTS		PREREQ	NOTES	CHAIN	EVENT CONV
STAGE	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				
ACAD	2030	Complete *'Mesoscale Banded Precipitation'* Module	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
ACAD	2031	Complete *'Intelligent Use of Model-Derived Products –Version 2'* Module	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	2032	Complete *'Effective Use of NWP in the Forecast Process: Introduction'* Module	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2033	Complete *'Topics in Tropical Meteorology' module*	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2034	Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 1: Introduction' module*	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2035	Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 2: Tropical Remote Sensing Applications' module*	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	2036	Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 3: Global Circulation' module*	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2037	Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 4: Tropical Variability' module*	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
ACAD	2038	Complete *'Introduction to Tropical Meteorology, 2nd Edition, Chapter 5: The Distribution of Moisture and Precipiation' module.*	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	2039	Complete *'Conceptual Models of Tropical Waves' module*	B	E	G	-	-	-	*		0.5		0		0	-	-	-	-
ACAD	2040	Complete *'Polar Satellite Products for the Operational Forecaster: Microwave Analysis of Tropical Cyclones'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2041	Complete the *'Influence of Model Physics on NWP Forecasts-Version 2'* Module.	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	2042	Complete the *'Introduction to Climatology'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2043	Complete the *'Isentropic Analysis'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2044	Complete the *'PBL in Complex Terrain - Part 1'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2045	Complete the *'PBL in Complex Terrain – Part 2'* Module	B	E	G	-	-	-	*		1.2		0		0	-	-	-	-
ACAD	2046	Complete the *'Mesoscale Aspects of Winter Weather Forecasting Topics'* Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	2047	Complete *'Forecasting Aviation Icing: Icing*	B	E	G	-	-	-	*		3.5		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																		
	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE EVENTS		PREREQ	NOTES	CHAIN	EVENT CONV
STAGE	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				
		Type and Severity' Module																	
ACAD	2048	Complete *'Aerographer's Mate Second (AG2) Class Vol I METOC Training Manual'* Module (METOC-045-841-610-002)	B	E	G	-	-	-	*		9.0		0		0	-	-	-	-
ACAD	2049	Complete *'Aerographer's Mate Second (AG2) Class Vol II METOC Training Manual'* Module (METOC-045-841-611-003)	B	E	G	-	-	-	*		12.0		0		0	-	-	-	-
TOTAL ACADEMIC SKILLS STAGE (ACAD)										50	266.6	0	0	0	0				
APPLIED METEOROLGICAL SCIENCE STAGE (AMS)																			
AMS	2100	Demonstrate knowledge of atmospheric physics	B	E	G	-	-	-	*		15.0		0		0	-	-	-	-
AMS	2101	Describe the dynamic atmospheric principles	B	E	G	-	-	-	*		15.0		0		0	2100	-	-	-
AMS	2102	Describe atmospheric fundamentals	B	E	G	-	-	-	*		5.0		0		0	2100, 2101	-	-	-
AMS	2103	Initialize and verify meteorological model output	B	E	G	-	-	-	*		2.0		0		0	-	-	-	229
AMS	2104	Utilize Graphical METOC products	B	E	G	-	-	-	*		20.0		0		0	-	-	-	-
AMS	2105	Forecast macro/synoptic scale features	B	E	G	-	-	-	*		2.0		0		0	2102, 2704	-	-	204
AMS	2106	Forecast severe weather	B	E	G	-	-	-	*		1.0		0		0	2102	-	-	202, 232

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
AMS	2107	Forecast local area (mesoscale/microscale) meteorological elements and phenomenon	B	E	G	-	-	-	*		0.5		0		0	2107	-	-	233
TOTAL APPLIED METEOROLGICAL SCIENCE STAGE (AMS)										8	60.5	0	0	0	0				
METOC PRODUCT BRIEFING (MPB) STAGE																			
MPB	2200	Brief synoptic chart set	B	E	G	-	-	-	*		3.0		0		0	2704	-	-	-
TOTAL METOC PRODUCT BRIFING SKILLS STAGE (MPB)										1	3.0	0	0	0	0				
METEOROLOGICAL DOPPLER RADAR STAGE (MDR)																			
MDR	2300	Complete 'Weather Radar Fundamentals' module	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
MDR	2301	Perform basic radar imagery interpretation	B	E	G	-	-	-	*		6.0		0		0	-	-	-	241
METEOROLOGICAL DOPPLER RADAR STAGE (MDR)										2	9.0	0	0	0	0				
METEOROLOGICAL SURFACE OBSERVATIONS STAGE (MSO)																			
MSO	2400	Define the fundamentals of surface observations	B	E	G	-	-	-	*		2.0		0		0	-	-	-	200
MSO	2401	Compute meteorological values	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
MSO	2402	Take, record and disseminate a surface meteorological observation	B,R,M	E	G	-	-	-	365		30.0		0		0	2400, 2401	-	-	203
METEOROLOGICAL SURFACE OBSERVATIONS STAGE (MSO)										3	34.0	0	0	0	0				
UPPER ATMOSPHERIC SENSING SKILLS STAGE (UAS)																			
UAS	2500	Identify upper air observational equipment and procedures	B	E	G	-	-	-	*		30.0		0		0	-	-	-	210
UAS	2501	Decode upper air messages	B,R,M	E	G	-	-	-	365		1.0		0		0	-	-	-	211
UAS	2502	Plot and analyze a Skew-T Log P diagram	B,R,M	E	G	-	-	-	365		1.0		0		0	2501	-	-	213

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT COD	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
UAS	2503	Analyze atmospheric conditions from the Skew-T, Log P diagram	B,R,M	E	G	-	-	-	365		2.0		0		0	2502	-	-	-
UAS	2504	Analyze elements from a plotted Skew-T, Log P Diagram	B,R,M	E	G	-	-	-	365		2.0		0		0	2503	-	-	-
UPPER ATMOSPHERIC SENSING SKILLS STAGE (UAS)										5	36.0	0	0	0	0				
METOC SATELLITE STAGE (MSAT)																			
MSAT	2600	Analyze meteorological features on satellite imagery	B,R,M	E	G	-	-	-	365		14.0		0		0	-	-	-	245
METOC SATELLITE STAGE (MSAT)										1	14.0	0	0	0	0				
METOC DATA ANALYSIS (MDA) STAGE																			
MDA	2700	Analyze and interpret a thickness chart	B,R,M	E	G	-	-	-	365		0.5		0		0	-	-	-	260
MDA	2701	Analyze and interpret a vorticity chart	B,R,M	E	G	-	-	-	365		0.5		0		0	-	-	-	261
MDA	2702	Analyze and interpret upper atmospheric weather charts	B,R,M	E	G	-	-	-	365		6.0		0		0	-	-	-	262
MDA	2703	Analyze and interpret a surface chart	B,R,M	E	G	-	-	-	365		1.0		0		0	-	-	-	263
MDA	2704	Develop synoptic scale forecast using prognosis techniques	B,R,M	E	G	-	-	-	365		10.0		0		0	2700, 2701, 2702, 2703	-	-	264
METOC DATA ANALYSIS (MDA) STAGE										5	10.0	0	0	0	0				
METOC CLIMATOLOGICAL/ASTRONOMICAL SERVICES SKILLS STAGE (MCS)																			
MCS	2800	Generate and conduct a climatology brief	B,R,M	E	G	-	-	-	365		12.0		0		0	-	-	-	213, 241, 330, 343
METOC CLIMATOLOGICAL/ASTRONOMICAL SERVICES SKILLS STAGE (MCS)										1	12.0	0	0	0	0				
WARNINGS, WATCHES AND ADVISORIES STAGE (WWA)																			
WWA	2900	Disseminate weather warnings and advisories	B,R,M	E	G	-	-	-	180		2.0		0		0	-	-	-	225, 255, 256, 257
WARNINGS, WATCHES AND ADVISORIES STAGE (WWA)										1	2.0	0	0	0	0				
TOTAL CORE SKILL PHASE (2000 PHASE)										77	447.1	0	0	0	0				

METOC ENLISTED T&R SYLLABUS MATRIX																				
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
MISSION SKILL TRAINING (3000 PHASE EVENTS)																			
ACADEMICS (ACAD)																			
ACAD	3000	Complete the 'Writing Effective TAFS' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3001	Complete the 'Writing TAFS for Convective Weather' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3002	Complete the 'Writing TAFS for Winds and LLWS' Module	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
ACAD	3003	Complete the 'Writing TAFs for Ceiling and Visibility' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3004	Complete the 'Introduction to Distributed Hydrologic Modeling' Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	3005	Complete the 'Understanding the Hydrologic Cycle' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3006	Complete the 'Operational Use of Wave Watch III' Module	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	3007	Complete 'Wave Types and Characteristics' Module	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	3008	Complete 'Rip Currents: Nearshore Fundamentals' Module	B	E	G	-	-	-	*		1.0		0		0	-	-	-	-
ACAD	3009	Complete 'Introduction to Ocean Models' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3010	Complete 'Shallow-Water Waves' Module	B	E	G	-	-	-	*		1.5		0		0	-	-	-	-
ACAD	3011	Complete 'Remote Sensing of Ocean Wind Speed and Direction:	B	E	G	-	-	-	*		0.6		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
		An Introduction to Scatterometry' Module																	
ACAD	3012	Complete 'Introduction to Ocean Tides' Module	B	E	G	-	-	-	*		0.6		0		0	-	-	-	-
ACAD	3013	Complete 'Rip Currents: Forecasting' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3014	Complete the 'Introduction to Ocean Currents' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3015	Complete the 'METOC Support for Strike Warfare' resident course	B	E	G	-	-	-	*		24.0		0		0	-	-	-	-
ACAD	3016	Complete the 'METOC Support for Search and Rescue' resident course	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
ACAD	3017	Complete the 'Introduction to the Verification of Hydrologic Forecasts' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3018	Complete 'Unit Hydrograph Theory' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3019	Complete 'Understanding the Hydrologic Cycle' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	3020	Complete the 'Applied Environmental Sciences' (AES) Course	B	E	G	-	-	-	*		78.0		0		0	-	-	-	-
ACAD	3021	Complete the 'METOC Impacts Analyst Course (MIAC)' course	B	E	G	-	-	-	*		60.5		0		0	-	-	-	-
ACAD	3022	Complete the 'NITES Basic User' resident	B	E	G	-	-	-	*		21.0		0		0	-	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
		course																	
TOTAL ACADEMICS STAGE (ACAD)										23	222.2	0	0	6	0				
OCEANOGRAPHIC/LITTORAL FORECAST SUPPORT SKILLS STAGE (OFS)																			
OFS	3100	Certify proficiency at calculating tidal data	B,R,M	E	G	-	-	-	180		1.5		0		0	3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022	-	-	220
OFS	3101	Conduct surf observations	B,R,M	E	G	-	-	-	180		30.0		0		0	3013, 3015, 3016	-	-	300
OFS	3102	Demonstrate knowledge of surf forecasting	B,R,M	E	G	-	-	-	180		5.0		0		0	3013, 3015, 3016	-	-	301
OFS	3103	Compute Modified Surf Index (MSI)	B	E	G	-	-	-	*		1.0		0		0	3013, 3015, 3016	-	-	302
OFS	3104	Create a surf forecast	B,R,M	E	G	-	-	-	180		24.0		0		0	3013, 3015, 3016	-	-	-
OCEANOGRAPHIC/LITTORAL FORECAST SUPPORT SKILLS STAGE (OFS)										5	61.5	0	0	23	0				
METEOROLOGICAL FORECASTING STAGE (METF)																			
METF	3300	Encode and disseminate pilot reports (PIREPs)	B,R,M	E	G	-	-	-	180		1.5		0		0	-	-	-	275
METF	3301	Produce Terminal Aerodrome Forecast (TAF)	B,R,M	E	G	-	-	-	365		26.0		0		0	-	-	-	276
METF	3302	Demonstrate proficiency in flight weather briefings	B,R,M	E	G	-	-	-	365		3.5		0		0	3301	-	-	347
METF	3303	Produce flight weather packets	B,R,M	E	G	-	-	-	180		2.0		0		0	3301	-	-	348
METF	3304	Conduct an Aviation Strike Brief	B	E	G	-	-	-	*		3.0		0		0	3303	-	-	214
METF	3305	Conduct a pre-deployment brief	B,R,M	E	G	-	-	-	365		6.0		0		0	2803	-	-	211
METF	3306	Perform ceiling balloon operations	B	E	G	-	-	-	*		0.5		0		0	-	-	-	201
TOTAL METEOROLOGICAL FORECASTING STAGE (METF)										7	42.5	0	0	8	0				

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
METOC EQUIPMENT SKILLS STAGE (GME)																			
ME	3400	Operate garrison handheld meteorological devices	B,R,M	E	G	-	-	-	180		3.0		0		0	-	-	-	-
ME	3401	Operate the Automated Surface Observing System (ASOS)	B,R,M	E	G	-	-	-	365		2.0		0		0	-	-	-	-
ME	3402	Operate garrison METOC equipment in order to provide support to base operations	B,R,M	E	G	-	-	-	365		24.0		0		0	-	-	-	-
ME	3403	Conduct management operations for the meteorological radar system	B	E	G	-	-	-	*		6.0		0		0	-	-	-	311
ME	3404	Manage meteorological radar operations	B,R,M	E	G	-	-	-	365		6.0		0		0	-	-	-	220, 410
ME	3405	Perform advanced operations on tactical satellite system	B,R,M	E	G	-	-	-	365		2.0		0		0	-	-	-	320
ME	3406	Conduct an upper-atmospheric sounding	B,R,M	E	G	-	-	-	180		2.0		0		0	2500	-	-	212
ME	3407	Conduct operational checks of each subsystem inherent to the METMF(R)/NEXTGEN	B,R,M	E	G	-	-	-	180		8.0		0		0	-	-	-	-
ME	3408	Operate the METMF(R)/NEXTGEN	B,R,M	E	G	-	-	-	365		24.0		0		0	-	-	-	-
ME	3409	Operate the NITES IV	B,R,M	E	G	-	-	-	180		48.0		0		0	-	-	-	-
TOTAL METOC EQUIPMENT SKILLS STAGE (ME)										10	125	0	0	0	0				
METOC DOCTRINE STAGE (MDN)																			
MDN	3600	Discuss MAGTF operations	B	E	G	-	-	-	*		1.0		0		0	-	-	-	260

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
MDN	3601	Discuss local area policies and procedures	B,R,M	E	G	-	-	-	365		2.0		0		0	-	-	-	-
TOTAL METOC DOCTRINE STAGE (MDN)										2	3.0	0	0	0	0				
TOTAL MISSION SKILL PHASE (3000 PHASE)										42	422.2	0	0	37	0				
MISSION PLUS SKILL TRAINING (4000 PHASE EVENTS)																			
ACADEMIC SKILLS (ACAD)																			
ACAD	4000	Complete 'In-Depth Physics Lessons' Module	B	E	G	-	-	-	*		2.0		0		0	-	-	-	-
ACAD	4001	Complete the 'METOC Support for Amphibious Warfare' resident course	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
ACAD	4002	Complete the 'METOC Support for Chemical, Biological, Radiological, and Nuclear Environment (CBRNE)' resident course	B	E	G	-	-	-	*		8.0		0		0	-	-	-	431
ACAD	4003	Complete the 'Target Acquisitions Weapons Software (TAWS) Primer' resident course	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
ACAD	4004	Complete the 'Advanced Refractive Effects Prediction System (AREPS) Primer' resident course	B	E	G	-	-	-	*		8.0		0		0	-	-	-	236
ACAD	4005	Conduct a Search and Rescue (SAR) brief	B	E	G	-	-	-	*		2.0		0		0	-	-	-	342
ACAD	4006	Complete the 'Riverine Analysis and Forecasting Course' resident course	B	E	G	-	-	-	*		8.0		0		0	-	-	-	-
TOTAL ACADEMIC SKILLS STAGE (ACAD)										7	44.0	0	0	0	0				
METOC IMPACT ASSESSMENT STAGE (MIA)																			

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
MIA	4100	Assess METOC impacts on Chemical, Biological, Radiological and Nuclear Environment (CBRNE) defensive operations	B	E	G	-	-	-	*		3.0		0		0	2102	-	-	237
MIA	4101	Produce METOC impacts on command and control operations	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
MIA	4102	Produce METOC impacts on MAGTF operations	B	E	G	-	-	-	*		3.0		0		0	-	-	-	-
MIA	4103	Conduct an amphibious warfare brief	B,R,M	E	G	-	-	-	180		8.0		0		0	-	-	-	215, 345
MIA	4104	Produce METOC impact products to support planning and execution of joint and/or coalition operations and missions	B	E	G	-	-	-	*		24.0		0		0	-	-	-	430
TOTAL METOC IMPACT ASSESSMENT STAGE (MIA)										5	41.0	0	0	0	0				
METOC PLANNING COORDINATION (MPC) STAGE																			
MPC	4200	Introduce joint operation METOC functions	B	E	G	-	-	-	*		24.0		0		0	-	-	-	258, 306, 420
MPC	4201	Submit input to annexes of operational orders	B	E	G	-	-	-	*		8.0		0		0	-	-	-	256, 310, 421
MPC	4202	Use Map Manager	B	E	G	-	-	-	*		1.0		0		0	-	-	-	235
TOTAL METOC PLANNING COORDINATION (MPC) STAGE										3	33	0	0	0	0				
TOTAL MISSION PLUS SKILL PHASE (4000 PHASE)										15	139.0	0	0	0	0				
TOTAL 2000, 3000, AND 4000 PHASE										134	1008.3	0	0	37	0				
INSTRUCTOR TRAINING (5000 PHASE EVENTS)																			
INSTRUCTOR UNDER TRAINING (IUT)																			
BASIC INSTRUCTOR (BI)																			

METOC ENLISTED T&R SYLLABUS MATRIX																				
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
IUT	5000	Introduce principles of instruction	B	-	G	-	-	D	*		0.0		0		2	Recommended by SI or WTI	-	-	-
IUT	5010	Understand the structure of an event	B	-	G	-	-	D	*		0.0		0		1	Recommended by SI or WTI	-	-	-
IUT	5020	Conduct a period of instruction on a T&R event	B	-	G	-	-	D	*		0.0		0		2	Recommended by SI or WTI	-	-	-
TOTAL BASIC INSTRUCTOR SKILLS STAGE (BI)										0	0.0	0	0	3	5				
SENIOR INSTRUCTOR (SI)																			
IUT	5100	Understand Aviation T&R program	B	-	G	-	-	D	*		0.0		0		2	5000, 5010, 5020, 6320	-	-	-
IUT	5110	Understand Applicable Community T&R	B	-	G	-	-	D	*		0.0		0		2	5000, 5010, 5020, 6320	-	-	-
IUT	5120	Understand T&R Administration	B	-	G	-	-	D	*		0.0		0		2	5000, 5010, 5020, 6320	-	-	-
IUT	5130	Develop a training plan	B,R,M	-	G	-	-	D	365		0.0		0		2	5000, 5010, 5020, 6320	-	-	-
TOTAL SENIOR INSTRUCTOR SKILLS STAGE (SI)										0	0.0	0	0	4	8				
TOTAL INSTRUCTOR UNDER TRIANING SKILLS PHASE (IUT)										0	0.0	0	0	7	13				
REQUIREMENTS, QUALIFICATIONS, CERTIFICATIONS, AND DESIGNATIONS (RQCD) (6000 PHASE)																			
QUALIFICATIONS (QUAL)																			
QUAL	6200	Apprentice METOC Analyst Forecaster qualification	B,R,M	E	-	-	-	-	1095		0.0		0		2	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103,	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																	
	EVENT		POI	E	DEVICE			COND	REFLY	GROUND/ ACADEMIC EVENTS		SIM EVENTS		LIVE EVENTS		PREREQ	NOTES	CHAIN	EVENT CONV
STAGE	CODE	TITLE			TYPE	#	OPTION			#	TIME	#	TIME	#	TIME				
																2104, 2105, 2106, 2107, 220C, 2300, 2301, 2400, 2401, 2402, 250C, 2501, 2502, 2503, 2504, 2600, 270C, 2701, 2702, 2703, 2704, 2800, 290C, 3000, 3001, 3002, 300E			
QUAL	6201	Journeyman METOC Analyst Forecaster qualification	B,R,M	E	-	-	-	-	1095		0.0		0		2	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401, 2402, 2500, 2501, 2502, 2503, 2504, 2600, 2700, 2701,	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
																2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003, 3004, 3005, 3007, 3008, 3009, 3012, 3013, 3100, 3101, 3102, 3103, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 6200			
QUAL	6202	Master METOC Analyst Forecaster qualification	B,R,M	E	-	-	-	-	1095		0.0		0		2	2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2032, 2033, 2042, 2047, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2200, 2300, 2301, 2400, 2401, 2402, 2500, 2501, 2502, 2503,	-	-	-

METOC ENLISTED T&R SYLLABUS MATRIX																				
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
																2504, 2600, 2700, 2701, 2702, 2703, 2704, 2800, 2900, 3000, 3001, 3002, 3003, 3004, 3005, 3007, 3008, 3009, 3012, 3013, 3100, 3101, 3102, 3103, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3600, 3601, 6200, 6201			
TOTAL QUALIFICATIONS STAGE (QUAL)										0	0.0	0	0	3	6				
DESIGNATIONS (DESG)																			
DESG	6300	Apprentice METOC Analyst Forecaster	B	-	-	-	-	-	*	0	0.0		0		0	6200	-	-	-
DESG	6301	Journeyman METOC Analyst Forecaster	B	-	-	-	-	-	*	0	0.0		0		0	6201	-	-	-
DESG	6302	Master METOC Analyst Forecaster	B	-	-	-	-	-	*	0	0.0		0		0	6202	-	-	-
DESG	6320	Basic Instructor (BI)	B	-	-	-	-	-	*	0	0.0		0		0	5000, 5010, 5020	-	-	-
DESG	6321	Senior Instructor (SI)	B	-	-	-	-	-	*	0	0.0		0		0	5000, 5010, 5020, 5100, 5110, 5120, 6320	-	-	-
DESG	6322	Weapons and Tactics Instructor (WTI)	B	-	-	-	-	-	*	0	0.0		0		0	6000	-	-	-
TOTAL DESIGNATIONS STAGE (DESG)										0	0.0	0	0	6	0				

METOC ENLISTED T&R SYLLABUS MATRIX																			
STAGE	EVENT CODE	EVENT TITLE	POI	E	DEVICE TYPE	DEVICE #	DEVICE OPTION	COND	REFLY	GROUND/ ACADEMIC EVENTS #	GROUND/ ACADEMIC EVENTS TIME	SIM EVENTS #	SIM EVENTS TIME	LIVE EVENTS #	LIVE EVENTS TIME	PREREQ	NOTES	CHAIN	EVENT CONV
SCHOOL CODES (SCHL)																			
SCHL	6000	Weapons and Tactics Instructor (WTI) course	B	-	-	-	-	-	*		0.0		0		0	-	-	-	-
TOTAL SCHOOL CODES STAGE (SCHL)										0	0.0	0	0	6	0				
TOTAL REQUIREMENTS, QUALIFICATIONS, CERTIFCATIONS, AND DESIGNATIONS PHASE (RQCD)										0	0.0	0	0	###	6				

2.17 SYLLABUS EVALUATION FORM. This form is found within Appendix B of the C3 Course Catalog. The Course Catalog can be found on the MAWTS-1 website at the following URL.

https://www.intranet.tecom.usmc.mil/sites/mawts1/C3%20Course%20Catalog/C3%20Course%20Catalog%20(May%202011).pdf

2.18 TRAINING DEVICE ESSENTIAL SUBSYSTEMS MATRIX (EESM). None.