

APPENDIX D

ADDITIONAL CURRICULA

MAWTS-1 COMMANDER'S COURSE

Course Objective: This course is designed to update squadron/MAG and battalion/regimental commanding officers, executive officers, and other senior officers on Marine aviation tactics and training, joint operations, and issues concerning the employment of Marine aviation in future conflicts.

Length: 24 classroom hours

Notes:

- 1 The Commanders Course is developed by MAWTS-1 and taught by MAWTS-1 staff.
- 2 The Commanders Course is a three-day course, normally conducted during the summer, which serves as a forum for interaction among the commanders of the Marine-Air-Ground Team. Format includes formal lecture, symposium, and discussion panel, all facilitated by the MAWTS-1 staff.

Academic Syllabus:

- 1 The academic syllabus will vary according to the needs of the commanders attending the course and the results of recent contingencies and operational advisory groups includes the following classes:
 - a Fixed Wing Threat Update (S)
 - b Rotary Wing Threat Update (S)
 - c AAA Threat Update (S)
 - d IR Sam Threat Update (S)
 - e RF Sam Threat Update (S)
 - f TMD & UAV Threat Update (S)
 - g Intel Systems (S)
 - h MACCS Update (U)
 - i ATARS / UAV (S)
 - j TACC (U)
 - k SIS Aircraft Update (S)
 - l EW Employment (S)
 - m Information Management & Connectivity (U)
 - n Aviation Ground Support (U)
 - o TRAP (U)
 - p ROE (U)
 - q JDAM / JSOW Targeting Requirements (S)
- 2 The course includes Guest Speakers with current or recent Command experience.

Flight Syllabus: None

MEU/SPMAGTF ACE COMMANDER'S COURSE

Course Objective: This course is designed to enhance the knowledge of current or potential ACE Commanders in integrating and employing all elements of the ACE. Particular emphasis is placed on Offensive Air Support; Command, Control and Communications; and Naval Expeditionary Force integration. The Course provides a forum to familiarize ACE Commanders with the following:

- 1 Offensive Air Support planning and the integration of fixed and rotary wing aircraft in close air support and assault support missions.
- 2 Marine Corps and Navy command and control agencies and procedures involved in executing Assault Support and Offensive Air Support missions.
- 3 Sources of aviation intelligence and how it is disseminated to the MEU ACE.
- 4 Issues involved with integrating the MEU ACE in the Naval Expeditionary Force and Joint Task Forces.

Length: 24 classroom hours

Notes:

1. The MEU/SPMAGTF ACE Commanders Course is developed by MAWTS-1 and is designed to be taught by the MAWTS-1 staff.
2. The MEU/SPMAGTF ACE Commanders Course is normally conducted during the summer at MCAS Yuma. Amplifying information concerning the MEU/SPMAGTF ACE Commanders Course and a request for student nominations will be promulgated by MAWTS-1.

Academic Syllabus:

1. The academic syllabus includes the following classes:
 - a. Aviation Intelligence (S)
 - b. Threat Updates (S)
 - c. MACG in support of the MEU (SOC) (U)
 - d. Select Marine Aviation Capabilities and Employment Considerations (S)
 - e. NATO and Combined Ops. (S)
 - f. Recent Operations After Actions. (S)
 - g. TAC (A)/FAC (A) Employment (U)
 - h. Convoy Escort Operations (U)
 - i. OAS Fixed Wing/Rotary Wing Integration (U)
 - j. OAS Precision Guided Munitions (S)
 - k. Mission Load Allowance (U)
 - l. TRAP (U)
2. The course includes Guest Speakers with current or recent MEU/SPMAGTF experience.

MARINE DIVISION TACTICS COURSE (MDTC)

Course Objective: The objective of the MAWTS-1 Marine Division Tactics Course (MDTC) is to provide FA-18 aircrew and Marine Air Intercept Controllers (AIC) with ground and airborne instruction in the doctrine, tactics, and weapons employment considerations for the successful employment of Marine fighter/attack aircraft in a complex air to air environment. The course is taught at the graduate level and is instructional vice evaluation oriented.

Length: Approximately 54 classroom hours, 18 sorties

Notes:

1. MDTC developed by MAWTS-1 and designed to be conducted by the MAWTS-1 staff. The course is designed to provide the requisite air-to-air training prior to attending the WTI course. Additionally the course will help prepare the prospective squadron WTI to implement a comprehensive air-to-air training program in their squadron. Upon successful completion of MDTC or TOPGUN and the WTI course, the 7577 MOS may be awarded to FA-18 aircrew. For AIC, graduation from MDTC or TOPGUN is highly recommended prior to attending the WTI course.
2. This course will normally be held twice a year based on fleet requirements. The periods for the classes are flexible, but they must deconflict with the WTI course and coincide with VMFT-401 availability.

Prerequisites: Prior to beginning MDTC, FA-18 aircrew and AIC must meet the following prerequisites.

1. FA-18 Aircrew:
 - a. Minimum of 500 hours in type.
 - b. Designated as an Air Combat Tactics Instructor (ACTI).
 - c. Pilots must be designated as a division leader.
 - d. Selected by their commanding officer to attend or completed the WTI Course.
 - e. ATTP qualified. (IF APPLICABLE)
 - f. LAT qualified and current at the beginning of flying phase.
 - g. ACM current at the beginning of flying phase.
2. AIC:
 - a. Designated and current as an Air Intercept Control Instructor.
 - b. Has not attended TOPGUN.
3. Prior to the course the FA-18 student should review the following manuals, FA-18 TACMAN Volumes I, II, III, TOPGUN Manual Volumes 1 and 2, and the AFTTP 3-1 Volume 2. In addition the following sorties should be flown in the month prior to the course.
 - a. 1v1 BFM (2) / Perch and Neutral
 - b. 2v2 (2) VID and Engaged maneuvering
 - c. 4v4 (2) OCA / DCA
 - d. LAT (1) Section maneuvering

Course Content: The course consists of 24 training days over a 27-day period. It includes approximately 45 hours of classroom instruction and 18 flights. The course is designed around two divisions of fighters with 4-6 FA-18 crews and a maximum of 4 AIC students. A single division course with 1-3 FA-18 crews and a maximum of 2 AIC

students is possible. A single division course requires additional blue air support during the final week of training.

1. Academic Phase. MAWTS-1 instructors will give all lectures. Requests for academic only quotas will be entertained on a space available basis. The uniform for the academic phase will be flight suits. The academic syllabus includes the following classes:
 - a. Threat
 1. Aircraft
 2. Radar Missiles
 3. IR Missiles
 4. Electronic Warfare
 5. Tactics
 - b. Weapons
 1. A/A Gunnery
 2. AIM-9
 3. AIM-7
 4. AIM-120
 - c. Systems
 1. APG-65/73
 2. Data Link
 3. Radar/EW Theory
 - d. Employment
 1. FA-18 1v1 Lab
 2. Fighter Missions
 3. Self Escort
 4. FA-18 Employment
 5. Targeting Lab
 - e. Other
 1. Valid Shot
 2. PID / ROE
 3. Intercept Control
 4. ATTP
 - f. The following additional lectures will be provided to AIC students:
 1. Threat Tactics Primer
 2. Tactical Terminology
 3. Threat Tactics Trainer
 4. Briefing/Debriefing
 5. Air Control Communications Lab
2. Flight Phase. The flight phase of MDTC consists of 18 sorties. These sorties are designed to expose the student aircrew to a wide variety of fighter attack missions in a realistic threat environment. The emphasis throughout will be on comprehensive briefs, disciplined and effective execution, and debriefs focused on teaching and learning. Assuming 6 student crews, each student crew is

scheduled to lead nine sorties, including four division or larger events. The following list break sorties down by type.

- a. 1v1
 - 1. Offensive Perch BFM
 - 2. Defensive Perch BFM
 - 3. Unknown Maneuvering
- b. Section
 - 1. PID
 - 2. Engaged Maneuvering
- c. Division
 - 1. OCA Demo
 - 2. OCA (2)
 - 3. DCA Demo
 - 4. DCA (2)
 - 5. Self Escort
 - 6. HVAA Cap
 - 7. Assault Support Escort
- d. Strike
 - 1. Defense in Depth
 - 2. Force Concentration Strike

Support Requirements: The sections below will list the specific requirements in order to conduct the course. The organization responsible for each requirement will also be listed.

1. Aircraft. The two-division course will require 8 aircraft the first two and a half weeks and 10 aircraft. The single division course will require 6 aircraft the first 2 ½ weeks and 8 aircraft the last half-week plus additional blue air support. Aircraft allocation and maintenance will be the responsibility of the supported MAGs or squadrons. Each aircrew under instruction will normally fly the aircraft from his squadron, however appropriate coordination to allow student aircrew to fly sister squadron aircraft is required. Aircraft should not be loaded with a LST or NAVFLIR since these systems will not be utilized during the course. The following list indicates the standard configuration for each aircraft:
 - a. Centerline tank.
 - b. Wing pylons on stations 3 and 7 only
 - c. Operable VTR with mission recorder or CVRS.
 - d. Operable radar, ALE-39/47, and ALR-67.
 - e. One CATM-9-8 per aircraft.
 - f. One CATM-7 with LAU-115 per aircraft.
 - g. One TFLIR per two aircraft.
 - h. Appropriate number of NVGs for C/D aircraft.
 - i. Two MUs per aircraft.
2. Maintenance. Maintenance requirements are the responsibility of the respective MAGs or squadrons. MAWTS-1 strongly recommends that the detachment OIC not be a student undergoing training.

3. Ordnance. The following is a list of the total ordnance requirements for the course. These requirements will be coordinated by MAWTS-1. Training flares ("stuf") are not suitable substitutes.
 - a. Chaff (RR-129) 2600 rounds
 - b. Flares (MJU-8) 1840 rounds
 - c. BDU-45 16
4. Ranges. All sorties will be flown on the local Yuma ranges, R2301W/E, R2507, and R2306/08. All intercept sorties will be scheduled on the R2301W TACTS range. MAWTS-1 will handle all range scheduling issues for the course.
5. Bogey Support. The vast majority of red air requirements will be provided by VMFT-401. Additional red air sorties (night adversaries, fourth generation and EW support) will be required. All red air and the additional blue air requirements will be coordinated and scheduled by MAWTS-1.
6. Classroom and briefing spaces. All lectures and flight briefs will be conducted in Toad Hall, Ditto Hall or the MAWTS-1 FA-18 Ready Room. TACTS debriefs will be conducted at the Yuma TACTS building. These requirements will be scheduled by MAWTS-1.
7. Classroom, TAOM and radar support will be required from MACS-1. This support will be coordinated by MAWTS-1.
8. All additional station support items such as billeting, messing, vehicles, etc. are the responsibility of the supported MAG/squadron. MAWTS-1 will render assistance as required.

Additional Considerations:

1. MAWTS-1 will produce a daily coordination document covering the MDTC events by noon of the day prior in order to facilitate squadron / detachment scheduling requirements. In addition to the syllabus sorties, the MAWTS instructors will require warm-up sorties for currency.
2. Each division will normally consist of three student crews and a MAWTS instructor crew. If there are not enough student crews to fill the division then any ACM qualified aircrew may be substituted. This is an opportunity to expose additional squadron aircrew to valuable air to air training.
3. In the case of the single division course, the strike, or any other time where there is non-student blue air participation, a MAWTS instructor will be required to fly with the non-student element.
4. The requesting MAG NLT should publish the MDTC request message 90 days prior to the first day of the course. The student nomination message should be submitted NLT 30 days prior to the course.
5. Specific requirements as outlined in the MDTC program guide supercede this document.

AGS COURSE

Course Objective: This course is designed to provide reserve officers/SNCOs and active duty SNCOs with the opportunity to receive instruction in AGS, the capabilities of the MWSS, the role of the MWSS in supporting the six functions of Marine aviation, and in the planning and development of AGS support products such as the Air Base Master Plan, the Air Base Defense Plan, and the Base Recovery After Attack Plan.

Additionally, this course provides the reserve and active duty MWSS personnel with a rare opportunity to work together when participating in the AGS planning exercises.

Length: 11 days consisting of 40 academic hours of instruction followed by 57 hours of intense AGS planning and briefing.

Prerequisites: This course requires a specific student Table of Organization to facilitate the staffing of three AGS planning cells. The following is the ideal student composition for the course:

<u>LN #</u>	<u>BILLET DESCRIPTION</u>	<u>MOS</u>	<u>RANK</u>	<u>COMPONENT</u>
01	MWSS Commander	XXXX	Lt Col	4 th MAW
02	MWSS Commander	XXXX	Lt Col	4 th MAW
03	MWSS Commander	XXXX	Lt Col	
04	Engr Officer/SNCO	13XX	SSgt-Maj	AR/Reserve
05	Engr Officer/SNCO	13XX	SSgt-Maj	AR/Reserve
06	Engr Officer/SNCO	13XX	SSgt-Maj	AR/Reserve
07	EAF Officer/SNCO	70XX	SSgt-CWO3	AR/Reserve
08	EAF Officer/SNCO	70XX	SSgt-CWO3	AR/Reserve
09	EAF Officer/SNCO	70XX	SSgt-CWO3	AR/Reserve
10	Logistics Officer/SNCO	04XX	SSgt-Maj	AR/Reserve
11	Logistics Officer/SNCO	04XX	SSgt-Maj	AR/Reserve
12	Logistics Officer/SNCO	04XX	SSgt-Maj	AR/Reserve

13	General Student	ANY	SSgt-Maj	AR/Reserve
14	General Student	ANY	SSgt-Maj	AR/Reserve
15	General Student	ANY	SSgt-Maj	AR/Reserve
16	General Student	ANY	SSgt-Maj	AR/Reserve
17	General Student	ANY	SSgt-Maj	AR/Reserve
18	General Student	ANY	SSgt-Maj	AR/Reserve
19	General Student	ANY	SSgt-Maj	AR/Reserve
20	EAF Chief	7011	SSgt-MSgt	MWSG-27
21	Communications Chief	25XX	SSgt-MSgt	MWSG-27
22	Fuels Chief	1391	SSgt-MSgt	MWSG-27
23	NBC Chief	5711	SSgt-MSgt	MWSG-27
24	General Student	ANY	SSgt-MSgt	MWSG-27
25	EAF Chief	7011	SSgt-MSgt	MWSG-37
26	EAF Chief	7011	SSgt-MSgt	MWSG-37
27	Fuels Chief	1391	SSgt-MSgt	AD/MWSG-37
28	Comm Chief	25XX	SSgt-MSgt	AD/MWSG-37
29	Fuels Chief	1391	SSgt-MSgt	AD/MWSG-37
30	Fuels Chief	1391	SSgt-MSgt	MWSG-37
31	Utilities Chief	11XX	SSgt-MSgt	MWSG-37
32	General Student	Any	SSGT-MSGT	MWSG-37
33	General Student	Any	SSGT-MSGT	MWSG-37

34	Weather Forecaster	6842	SSGT-MSGT	MWSG-37
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Academics Syllabus: Academics instruction includes Marine aviation familiarization classes, concentrating on agencies the MWSS typically deals with, and classes focusing specifically on the MWSS and AGS. The following is a list of the classes presented during the course:

1. Marine Aviation Familiarization Instruction
 - Marine Corps Planning Process
 - Tactical Air Command Center (TACC)
 - Direct Air Support Center (DASC)
 - Air Traffic Control (ATC) Integration
 - Marine Mobile ATC Team (MMT) Integration
 - Low Altitude Air Defense (LAAD) Integration
 - Marine Wing Communications Squadron (MWCS)
 - KC-130 Rapid Ground Refueling (RGR)
 - CH-53 Tactical Bulk Fuel Dispensing System (TBFDS)
2. Specific AGS Instruction
 - Aviation Ground Support
 - METOC Support to the MAGTF
 - Forward Operating Base (FOB) ARFF Requirements
 - Air Base Master Plan (ABMP)
 - Survey, Liaison, and Reconnaissance Party (SLRP)
 - MWSS Communications
 - Airfield Design and Terminology
 - Air Base Ground Defense
 - M-21 Expeditionary Arresting Gear
 - Base Recovery After Attack Command and Control (BRAAT C2)
 - Lighting and Optical Aids
 - Damage Assessment Team (DAT)

AM-2 Matting and Accessories

Unexploded Ordnance (UXO)

Tactical Landing Zone (TLZ)

Basic Soils and Airfield Construction

Methods of Crater and Spall Repair

Soil Assessment Capabilities

Fiberglass Reinforced Polymer (FRP) Panels

Forward Arming and Refueling Point (FARP) Operations

Rapid Runway Repair (RRR) Planning Considerations

Minimum Operating Strip (MOS) Selection and Layout

3. AGS Planning Exercises: Consists of plan development and briefing of:

Air Base Master Plan

Air Base Ground Defense Plan

BRAAT Plan

AIR COMMAND AND CONTROL OFFICER COURSE (ACCOC)

Course Objective: This is intended to provide Marine Air Command and Control System (MACCS) refresher training to Majors and Majors-select returning to the Fleet after a non-fleet tour. This course is designed to provide the student with an enhanced knowledge of the duties required of an Operations Officer of a MACCS unit or in a staff billet requiring knowledge of all areas of the MACCS and joint operations. This training includes how to employ the MACCS, based on current doctrine and equipment; joint interoperability; current threat capabilities; control of aircraft and missiles; MACCS training management the Weapons and Tactics Training Program (WTTP); and the tactical billets held by 7202 officers. The graduates will be prepared to perform the following tasks in a MACCS unit:

1. Perform a detailed threat assessment, which supports MACCS operational planning.
2. Employ an agency of the MACCS.
3. Conduct operational planning for the employment of the MACCS.
4. Integrate the MACCS into joint/combined operations.
5. Establish an effective training management program.
6. Perform as a Sector Air Defense Commander (SADC).
7. Establish and supervise the functioning of a Battalion level Ground Based Air Defense (GBAD) Combat Operations Center.
8. Establish and supervise the functioning of a Direct Air Support Center (DASC).
9. Establish and supervise the functioning of a Tactical Air Command Center (TACC).

Length: 38 Academic Hours (22 hours lecture, 16.00 hours practical application)

Prerequisites: Major 7202 or Major-select 7202 returning to the Fleet Marine Force after a 2-3 year non-fleet tour.

Academic Syllabus:

1. Control of A/C & Missiles Update (U)
2. Passive Air Defense in the MACCS (U)
3. MAGTF Targeting and Fire Support Coordination. (U)
4. NATO and Combined Operations (U)
5. AC2W ISR Operations (S)
6. Intelligence Update (S)
7. Introduction to the Personnel Recovery System (U)
8. Information Management and Connectivity (U)
9. BlackHawk Shoot down and C3 Symposium (S)
10. JDAM/JSOW Brief (S)

11. Regional Air Defense Commander (U)
12. UAV Operations (U)
13. Intel support to Mission Planners Rules of Engagement & Laws of War (U)
14. Theater Missile Defense (S)
15. Joint Air Operations (S)
16. Theater Air Ground System (S)
17. Air Defense Weapons Systems Management (U)
18. Deep Air Operations (U)
19. Multi TADIL Network (S)
20. Future of MACCS Symposium (U)
21. Tactical Air Command Center (TACC) Update (U)
22. Tactical Air Operations Center (TAOC) Update (U)
23. Direct Air Support Center (DASC) Update (U)
24. Marine Air Traffic Control (MATC) Update (U)
25. MAGTF Ground Based Air Defense (GBAD) Update (U)
26. Marine Wing Communications Squadron (MWCS) Update (U)
27. Airborne Early Warning (AEW) (S)
28. Marine Aviation Planning Problem (MAPP) Introduction (U)
29. MAPP (Practical Application and Tactical Discussion) (U)
30. Weapons and Tactics Training Program/Training Management (U)