UNITED STATES MARINE CORPS
2d MARINE AIRCRAFT WING
II MARINE EXPEDITIONARY FORCE
POSTAL SERVICE CENTER BOX 8050
CHERRY POINT, NC 28533-0050

WgO 3710.38B Ch 1
G-3

22 MAY 2013

WING ORDER 3710.38B Ch 1

From: Commanding General, 2d Marine Aircraft Wing
To: Distribution List

Subj: STANDING OPERATING PROCEDURES FOR FLIGHT OPERATIONS IN 2D MARINE AIRCRAFT WING (SHORT TITLE: SOP FOR FLIGHT OPS IN 2D MAW)

Encl: (1) New Page Inserts to WgO 3710.38B

1. Situation. To transmit new page insert to the basic Order.

2. Execution. Remove page 2-7 and replace it with the corresponding page.

3. Filing Instructions. File this Change Transmittal immediately in front of the signature page of the basic Order.

P. D. BUCK
By direction

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JUL 12 2011

WING ORDER 3710.38B

From: Commanding General, 2d Marine Aircraft Wing
To: Distribution List

Subj: STANDING OPERATING PROCEDURES FOR FLIGHT OPERATIONS IN 2D MARINE AIRCRAFT WING (SHORT TITLE: SOP FOR FLIGHT OPS IN 2D MAW)

Ref: (a) OPNAVINST 3710.7
(b) DOD 4515.13-R
(c) DOD Flip AP/1B
(d) Joint Pub 3-04.1
(e) Joint Publication 3-09.3
(f) Joint Pub 3-50.2
(g) NAVAIR 0080T-106
(h) OPNAVINST 5102.1
(i) OPNAVINST 3750.6
(j) NAVMC 3500.14
(k) MCO 3500.12
(l) MCO 3500.27
(m) MCO 1326.2
(n) MCRP 3-11.4
(o) WgO 3500.23C
(p) WgO 3710.39
(q) WgO 3710.40B
(r) ASO P3710.7

1. Situation. To establish policy and provide guidance for the conduct of aircraft flight operations within 2d MAW.

2. Cancellation. WgO P3710.38A.

3. Mission. 2d MAW flight operations will be planned and executed at the Group and Squadron level in accordance with Chief of Naval Operations policy contained in reference (a), appropriate NATOPS flight manuals, guidance contained in references and the guidance contained herein. It is the intent of this Order to consolidate and reference higher headquarters guidance and to amplify and more completely specify those procedures and requirements applicable to the conduct of flight operations for aircraft within 2d MAW. This Order is considered an extension of and a complement to the NATOPS program. In no instance shall this order be interpreted to establish criteria less restrictive than those specified in the references.

4. Execution. The provisions of this publication are applicable to all 2d MAW flight operations. This Order is not intended to cover every possible

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situation and does not relieve personnel from the responsibility to exercise good judgment and common sense regarding circumstances not specifically addressed herein. Shipboard operations will be conducted in accordance with appropriate T/M/S and Ship NATOPS manuals as well as specific guidance published by Marine Aircraft Group (MAG) Commanders. Should a conflict arise between this Order and directives published by higher authority, the latter shall prevail. Any such conflict or other recommended changes to this Order should be addressed to the Assistant Chief of Staff (AC/S), G-3 for action.

5. Administration and Logistics. Commanding Officers (COs) and Officers-in-Charge (OIC) of detachments who operate or are responsible for the operation of 2d MAW aircraft will adhere to the policies contained in this Order.

6. Command and Signal.

a. Command. Recommendations for changes to this Order are invited. Recommended changes should be submitted in writing to the AC/S, G-3. Proposed changes should cite section, paragraph affected and rationale for the proposed change.

b. Signal. This Order is effective the date signed.

J. M. DAVIS

Distribution: A

JUL 12 2011

LOCATOR SHEET

Subj: STANDING OPERATING PROCEDURES FOR FLIGHT OPERATIONS IN 2D MARINE AIRCRAFT WING (SHORT TITLE: SOP FOR FLIGHT OPS IN 2D MAW)

Location: _____
(Indicate the location(s) of the copy(ies) of this Order.)

JUL 12 2011

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporating Change

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CHAPTER 1

ADMINISTRATION

SECTION 1: POLICY GUIDANCE

1100. PURPOSE. The purpose of this instruction is to standardize flight operations and aviation training procedures and policies concerning the operation of aircraft assigned to the 2d MAW. Deviation from this Order can be authorized by the Commanding General (CG) or the AC/S G-3.

1101. GENERAL

1. It is the individual and direct responsibility of all Aeronautically Designated Personnel (ADP) to thoroughly review, understand, and possess complete working knowledge of the contents of this instruction and directives referenced herein.

2. It is expected that sound judgment and common sense will be exercised in those cases where the provisions of this instruction does not apply.

1102. ACTION. The contents of this instruction are directive in nature and shall be used by all units and individuals of this command. Nothing in this instruction is intended to conflict with orders or directives of higher authority or published Naval Air Training and Operating Procedures (NATOPS) Manuals. When these documents are materially revised, appropriate revisions to this instruction shall be published. In the event of conflict between this instruction and higher authority directives, the provisions of the more stringent shall take precedence. Any/all conflicts shall be addressed to the CG 2d MAW via the chain of command.

1103. SAFETY

1. The primary operational objective within Marine Aviation is combat readiness. A sustained high level of combat readiness is attainable, but only through a dynamic and positive approach to doing things right and the aviation safety that flows from doing so.

2. There can be no delegation of responsibility when it comes to flight operations. The Squadron Commander is responsible for scheduling aircraft and aircrew. The Operations Duty Officer (ODO) is responsible for effective and efficient execution of flight operations. Section 8 of this chapter expands upon the duties, requirements and training of ODOs. The designated Flight Leaders or Mission Commanders are responsible for the safe operation of all aircraft in the flight, whether flying in the lead aircraft or as a wingman. The Aircraft Commander is responsible for the aircraft, whether actually at the controls or not.

3. COs are responsible for developing individual unit programs covering the safety aspects of their flight operations.

1104. CREW DAY

1. Crew day for all aircrew, to include Night System (NS) operations, shall not exceed 12 hours.

2. Crew day for combat/contingency operations will be delineated in the Wing Tactical SOP for that operation.

3. For planning/schedule writing purposes, crew day calculation begins at the time aircrew first begins assigned military duties (arrive at work or initiate flight planning/preparation); crew day will end with "wheels on deck"/rotor shutdown. Calculation for crew rest will begin at the termination of the flight debriefs or when the aircrew is released from assigned military duties.

4. KC-130 Aircrew

a. Crew day (to include Combat Support Operations). Crew day in an aircraft equipped with a functional autopilot is 18 hours if commenced from 0500 to 1659 (local time) and 15 hours if commenced from 1700 to 0459 (local time). Crew day in an aircraft not equipped with a functional autopilot is 12 hours. For an augmented crew with a functional autopilot and crew berthing facilities crew day is 24 hours. For an augmented crew without a functional autopilot and crew berthing facilities crew day is 18 hours.

b. NS Operations

(1) The crew day for aircrew utilizing night vision devices shall be 12 hours if the crew fly day terminates prior to 0000. If the fly day is to extend beyond the 0000 hour, the crew day shall be limited to 10 hours.

(2) The crew day is limited when NVD's are utilized continuously for 10 hours or more.

5. MV-22 Long Range Navigation Crew Day

a. For long range ferry and cross country flights in the MV-22, long range over-land and over-water flight in the MV-22, crew day in an aircraft equipped with functional Flight Director Panel (FDP) coupled modes is 15 hours, or 18 hours with an augmented crew (extra pilot) if commenced from 0500 to 1659 (local time) and 12 hours, or 15 hours with an augmented crew if commenced from 1700 to 0459 (local time).

b. Maximum flight time in an aircraft without functional coupled modes shall not exceed 8 hours in a single 24-hour period.

1105. SLEEP INDUCING AND ANTI-FATIGUE MEDICATION. COs shall receive approval from CG, 2d MAW before authorizing the use of stimulants and/or sedatives for the management of fatigue and maintenance of performance. During sustained combat operations, delegation of this approval authority will be at the discretion of the CG, 2d MAW.

1106. PROFICIENCY VERSUS CURRENCY. "Currency" in a specific flight skill is a control measure used to provide an additional margin of safety based on exposure and does not equate to "proficiency". Reference NAVMC 3500.14 (A-4 and A-8) for definitions of currency and proficiency.

1107. PRE-DEPLOYMENT FOR TRAINING (DFT) SAFETY SURVEY POLICY

1. Prior to beginning operations at a DFT base, all deploying 2d MAW units shall conduct a safety survey using the Naval Safety Center Review Checklist. Within three days after commencing deployed operations, the safety survey

shall be re-evaluated to ensure that no significant changes occurred between the time of the Pre-Deployment Safety Survey and the commencement of deployed operations.

2. Having operated previously from a particular deployment base does not eliminate the requirement for conduct of a safety survey.

3. If any condition adversely affecting safety is discovered during the original survey, flight operations shall not commence until that condition is corrected, or until the detachment/unit recommends acceptance of the risk and the respective MAG Commander concurs. If a discrepancy is discovered during the operational evaluation, immediate corrective action shall be undertaken and the discrepancy resolved or flight operations shall be suspended until the problem is corrected.

4. For the purposes of this section the following applies:

a. A "deployment base" is any location other than the unit's home field.

b. A "deployed detachment" for flying units is defined as 4 or more aircraft deployed for 5 or more nights away.

1108. PRE/POST DEPLOYMENT BRIEFS

1. Units will comply with WgO 3502.1_ when planning for deployments. Any 2d MAW unit deploying autonomously with four or more aircraft or a significant force/detachment, for five or more nights shall be responsible for briefing the CG, 2d MAW or his appointed representative.

2. Squadron deployments in support of operational deployments, named operations or Task Force in Continental United States (CONUS) or Outside the Continental United States (OCONUS) shall be briefed to the CG, 2d MAW 30 days prior to Main Body departure.

3. Briefs will be given by the unit's CO or the Detachment OIC.

4. All 2d MAW Groups and Squadrons that return from deployment in support of a named operation or Task Force in CONUS or OCONUS will prepare a secret post-deployment brief. Within 30-days after returning to home base, the unit Commander or his designated representative will present the unit's lessons learned and after action items to the CG. The brief should not be as in depth as the pre-deployment brief but instead should focus on the relevance of pre-deployment training; operations during the deployment; monthly currency, proficiency per Type/Model/Series (T/M/S) pilot and rationale for any shortcomings; post-deployment areas of concern; any Blue Threats that are pertinent to the Squadron based on the experiences of the deployment, recommendations/lessons learned that could be applied to the work-up/deployment of subsequent units; and any other items/issues/concerns the CO deems appropriate. This brief shall be presented to the CG, 2d MAW prior to the release of Lessons Learned to the Marine Corps Center for Lessons Learned (MCCLL).

1109. INCIDENT/MISHAP REPORTING

1. Timely aircraft and ground incident/mishap reporting, via flash reports, to include personnel injury is required. Units will comply with WgO 5100.29 Chapter 2 instructions for all reporting procedures.

2. Significant incidents/mishaps and personnel injuries shall be telephonically reported via the chain of command. Operations Report (OPREP)-3 reporting will be In Accordance With (IAW) II Marine Expeditionary Force (II MEF) guidance delineated by CG II MEF Marine Security Guard (MSG) 241720ZFEB09. Voice reports do not negate the necessity to submit an OPREP-3 SIR Message within one (1) hour. Additionally, each command shall report personnel injury through Web Enabled Safety System (WESS) by direction of the Naval Safety Center. Supplemental MSG reports shall be submitted as required to make corrections or submit additional information. Under no circumstances will notification be delayed due to missing or incomplete information or until official notification paperwork is completed/released. When additional or follow-up information is obtained; that information shall also be forwarded.

1110. THINGS FALLING OFF AIRCRAFT (TFOA)/OPREP-3 REPORTING

1. OPNAVINST 3100.6_ does not specifically mention requirements/procedures for reporting TFOA. However, Marine Corps Order (MCO) 5740.2_ lists objects falling off aircraft as a possible reportable event. The following additional guidance applies:

a. When it is known (or highly suspected) that an object has fallen off an aircraft into a populated area, report the incident as an OPREP-3/NAVY BLUE per CG, II MEF MSG 221206Z JUN 07, CHANGE (1) 110142Z SEP 07 and OPNAVINST 3100.6_. Supplemental MSG reports shall be submitted as required to make corrections or submit additional information.

b. When it is known that an object, which has fallen from an aircraft, has caused injury or substantial property damage that could result in a national, or international incident, upgrade the report to OPREP-3/PINNACLE.

c. When it is known (or highly suspected) that an object has fallen off an aircraft into the ocean or an unpopulated area, report the incident to the Wing via Flash Report.

NOTE: Filing these OPREP-3 reports does not alleviate the requirements to file a separate Hazardous Material Report (HMR) as specified in COMNAVAIRFORINST 4790.2.

2. WgO 4790.13 provides specific guidance regarding the 2d MAW Things Falling Off Aircraft (TFOA) Program. Whenever reportable events occur and questions arise that are not covered by instructions, contact CG, 2d MAW (AC/S, G-3) for guidance.

1111. TRANSPORTING HAZARDOUS MATERIAL IN 2D MAW AIRCRAFT

1. Hazardous materials shall be transported IAW MCO P4030.19_. Any deviations or waivers shall be requested from CG, 2d MAW (AC/S, G-3) no later than 5 days prior to the flight. It is the requesting unit's responsibility to ensure the cargo is properly prepared for shipment. It is the transporting unit's responsibility to permit only properly prepared hazardous cargo to be carried on 2d MAW aircraft.

2. To minimize the risk associated with the transportation of flammables and explosives, the following guidance is provided:

a. Liquid Oxygen (LOX). LOX is a fire hazard because it can easily support and accelerate combustion. During operations with LOX, particularly those involving its transportation by aircraft, it is imperative that LOX be kept away from all organic or easily oxidized materials, such as grease or oils. Transportation of LOX should be in strict compliance with MCO P4030.19_.

b. Ordnance/Explosives

(1) Units requesting transportation of ordnance and explosives in 2d MAW aircraft shall provide the Aircraft Commander with a completed DD Form 1387-2 (Special Handling Data/Certification) and/or Shipper's Declaration for Dangerous Goods prior to loading subject cargo.

(2) Unless a passenger deviation has been requested by the embarking unit and approved by CG, 2d MAW (AC/S, G-3), passengers shall not be transported in the same aircraft with ordnance/explosives with non-compatible Passenger Eligibility "P" Codes in the current edition of MCO P4030.19_.

c. Lithium Batteries. Per WgO 5100.15_ "Air Transportation of lithium batteries as cargo is specifically addressed in MCO 4030.19_. Used lithium batteries are not to be transported by aircraft."

CHAPTER 1

ADMINISTRATION

SECTION 2: GENERAL INSTRUCTIONS ON PERSONNEL AUTHORIZED TO FLY 2D MAW AIRCRAFT AND ANNUAL FLIGHT PERFORMANCE REQUIREMENTS

1200. PURPOSE. This section provides guidance and sets policies regarding flight status for ADP assigned to 2d MAW prescribing the criteria, standards, and regulations, which ensure the skills of all ADP are maintained at acceptable levels of readiness and aviation safety. Furthermore, policies are established to authorize the flying of non-ADP and personnel not assigned to units of the Wing.

1201. AUTHORIZATION TO FLY ADP MEMBERS OF 2D MAW AND ADP NOT ASSIGNED TO 2D MAW

1. Definitions. The following definitions are furnished to assist in understanding the relationship of ADP to the reporting units of the 2d MAW.

a. Tactical Aircraft (TACAIR) Squadron Aircrew. Those ADP who are members of a Marine Corps TACAIR squadron and who are reported under the squadron-reporting unit code in the Manpower Management System.

b. TACAIR Augmentation Aircrew. Those ADP who are assigned to a Marine Aircraft Group (MAG) or other staff not reported under a flying squadron are considered Augment Aircrew. These aircrew should maintain an appropriate level of readiness in order to fly as regularly assigned aircrew. The number of augments shall be limited to the needs of the reporting unit(s) to retain optimum combat capability.

c. Tactical Support Crewman. Those ADP assigned to a unit and maintained at a level of combat readiness, which shall not inordinately degrade the capability of the reporting unit to maintain combat readiness of tactical and augmentation aircrew.

d. Replacement Aircrew. Those ADP assigned to a Fleet Replacement Squadron (FRS) for training to a specified combat readiness level.

e. Wing Supervisory Aircrew. The CG and key staff personnel (e.g., Assistant Wing Commander (AWC), Chief of Staff (CoS), Wing Standardization Officer (WSO), ACs/S, or as designated) who are responsible for the day-to-day decisions which affect units within 2d MAW.

2. Information

a. OPNAVINST 3710.7__ establishes and defines categories of ADP and contains specific instructions concerning mandatory flight requirements. Part 2 of the Department of Defense Pay Manual (DODPM) sets forth requirements, which must be met by Duty Involving Flight Operations (DIFOP) personnel to qualify for flight pay. Instructions for termination of assignment to duty in a flying status are contained in MCO P1000.6_. CG, 2d MAW will publish (via separate correspondence) instructions for management of the TACAIR Sortie Based Training Plan (SBTP).

b. As defined and established by MCO 3125.1_, all billets within 2d MAW are specifically authorized as operational flying assignments for ADP.

Accordingly, the annual minimum flying hour requirements set forth in OPNAVINST 3710.7__ and the minimum monthly flying hour requirements set forth in the DODPM apply to ADP assigned to 2d MAW. However, due to fiscal constraints, some pilots will not be allowed to participate in the TACAIR SBTP. Requests for waiver of minimum flying requirements for aviators not allowed to participate in the TACAIR SBTP and not able to make minimums will receive favorable endorsement. Requests for waiver of annual flight performance minimums are to be submitted per OPNAVINST 3710.7__ and MCO 3125.1_.

3. Policy

a. Responsibility. It is the responsibility of ADP to maintain flight proficiency, a current instrument rating, and to meet minimum flying hour requirements. It is the responsibility of the aircraft-reporting custodian to which ADP are assigned to provide aircraft, instructors, evaluators, check pilots, etcetera (etc.), for the purpose of attaining these flight requirements. It is the responsibility of Reporting Seniors to afford ADP sufficient opportunity to comply with the above requirements.

b. Priority. Training priority is given to aircrew whose skills most directly contribute to tactical squadron combat readiness. Combat readiness will not be reflected as part of the unit's overall readiness. Tactical support aircrew may be assigned to more than one unit if qualified; however, one of those units shall be designated to maintain their flight records and provide flight time requirements. To execute the flight hour program as established in MCO 3125.1_, flight hours shall be apportioned as follows:

(1) Tactical Aircrew will normally fly no less than 15 hours per month.

(2) Augment Aircrew will normally fly no less than 100 hours per year.

(3) Tactical Support Aircrew will fly on a not to interfere basis.

(4) Wing Supervisory Aircrew will normally fly no less than 100 hours per year.

c. Assignment. ADP of 2d MAW will be assigned (for flight purposes) to an aircraft-reporting custodian. The reporting custodian to which the individual is assigned will hold and maintain the individual's flight logs and records, and is responsible for monitoring individual flight performance. ADP attached to Marine Wing Headquarters Squadron (MWHS), Marine Wing Support Group (MWSG) and Marine Air Control Group (MACG) will normally be classified as Tactical Support Aircrew and will be assigned (for flight purposes) to aircraft Groups by the Wing Headquarters.

d. Authorization. On occasion, ADP are assigned to aircraft groups inconsistent with Military Occupational Specialty (MOS) and/or aircraft currency. Additionally, selected ADP may be required to fly the aircraft of a Group other than the one to which the individual is assigned. Accordingly:

(1) MAWTS-1 ADP is authorized to fly aircraft in connection with assigned duties and to meet command requirements.

(2) ADP assigned to an aircraft Group and desiring to fly the aircraft of another aircraft Group will submit requests to 2d MAW (AC/S, G-3). Normally these personnel will be assigned a Tactical Support Crewman designation.

(3) ADP attached to MWHS, MWSG and MACG may request authorization to fly aircraft of more than one Aircraft Group. The approval/disapproval of these requests will be based on tactical support requirements, the capability of the supporting unit, and individual billet assignments.

(4) ADP attached to 2d MAW and those not assigned to this command for DIFOP will submit requests to fly 2d MAW aircraft to 2d MAW (AC/S, G-3). Forwarding endorsements should contain a statement concerning the individual's ability to perform as a tactical support aircrew. Subject to approval by CG, 2d MAW, aircrew external to 2d MAW may fly 2d MAW aircraft. However, 2d MAW reporting custodians are not responsible for minimum flight requirements and will not endorse minimum flight hour waiver requests submitted by these personnel.

(5) Personnel who have received authorization to fly the aircraft of an Aircraft Group other than the Aircraft Group to which assigned and fail to fly during a 90-day period will automatically have that authorization to fly revoked and 2d MAW (AC/S, G-3) shall be notified through the chain of command.

(6) 2d MAW ADP assigned to the Fleet Augmentation Program (FAP) are expected to maintain proficiency in model aircraft commensurate with their aviation MOS. Notification of failure to meet flying hour minimums will be conducted per paragraph 1201.2b of this instruction.

(7) Non-2d MAW aircrew may be authorized to fly with 2d MAW on a not-to-interfere basis with the approval of the CG. This aircrew will submit an individual Letter Requesting to Fly Tactical Aircraft (Fig 1-4). The request may be sent directly to CG, 2d MAW (G-3) then readdressed to the appropriate MAG for concurrence, or may be sent to CG, 2d MAW via the requested MAG.

e. Not qualified in Model. 2d MAW assigned ADP who have received authorization to fly in 2d MAW aircraft but who are not NATOPS qualified in model, may, with written approval of the Squadron CO, occupy a control seat of a multi-piloted aircraft in all phases of flight with the following restrictions:

(1) No passengers are embarked.

(2) The pilot in command occupies a primary control seat and is a designated and current NATOPS or assistant NATOPS instructor.

(3) The flight is conducted in VMC conditions.

(4) Flights in threat environments, which require specialized aircrew skills in regards to Aircraft Survivability Equipment and threat reaction maneuvering, will require CG approval before a non-NATOPS qualified aircrew may occupy a control seat.

4. Action

a. ADP assigned to other commands who wish to fly 2d MAW aircraft shall submit requests via the applicable reporting custodian. Figure 1-1 will be used to provide the individual résumé and flight data and may be reproduced locally. Figure 1-2 will be used to approve/disapprove flying requests. It will be returned with a copy to the appropriate aircraft Group. 2d MAW (AC/S, G-3) will be notified when the authorized individual is transferred to another command or when he quits flying for other reasons.

b. ADP assigned to MWHS, MWSG and MACG will complete a NA/NFO résumé and Request for Flying Assignment (figure 1-1) and forward to 2d MAW (AC/S, G-3) during check in. Assignment to a specific aircraft Group will be based on MOS, previous experience, current qualifications, needs of CG 2d MAW, capacity of T/M/S to handle additional aircrew, and individual desires. Authorization to fly the aircraft of additional aircraft Groups may be granted at this time.

c. The COs of MWHS, MWSG, and MACG shall provide each NA/NFO with a copy of figure 1-1 upon initial check-in and direct the NA/NFO to report to the 2d MAW (AC/S, G-3).

d. The 2d MAW (AC/S, G-3) will:

(1) Assign MWHS, MWSG, and MACG NAs/NFOs to a specific aircraft Group. A copy of the approved request will be forwarded to the Officers concerned.

(2) Forward the requests of other command personnel to the appropriate aircraft Group. Those requests disapproved will be returned to the individual with a copy to the appropriate aircraft Group.

e. The Group Commander will assign individuals to an aircraft-reporting custodian by second endorsement. Assignment will be based on unit requirements and capability. Designation as Tactical Support Crewman may be made at this time. NAs and NFOs occupying billets within Group staffs or assigned to squadrons without aircraft will be assigned to a reporting custodian (for flight purposes) by separate Group bulletin. For those NAs/NFOs occupying specialty billets within an aircraft Group inconsistent with MOS and/or aircraft currency, figure 1-1 will be used to submit requests/justifications that they are assigned to a different aircraft Group for flight purposes.

f. The reporting custodian will:

(1) Maintain the NA/NFO qualification jacket and flight logbooks of 2d MAW personnel and other command personnel assigned to 2d MAW for DIFOP. Skeleton qualification jackets will be maintained for those personnel authorized to fly squadron aircraft. OPNAV Form 3760/37 (Record of Completed Flight Time) will be used to transmit individual flight data to the unit holding the individual's logs and records.

(2) Ensure that personnel authorized to fly unit aircraft meet OPNAV and NATOPS requirements, to include required safety checks of flight equipment, medical requirements, instrument ground school and exams, physiological training, and monthly/semi-annual/annual flight requirements.

(3) Take appropriate action to terminate flight status should individual performance indicate that such action might be in the best interest of both the individual and the command. MCO P1000.6_ establishes guidelines and procedures to be followed to suspend and/or terminate an individual's assignment to duty in a flying status.

g. The CO of the individual NA/NFO who has failed to meet required annual flight minimums will ensure necessary action is taken for compliance with OPNAVINST 3710.7_.

h. 2d MAW (AC/S, G-3) will publish a quarterly bulletin, no later than the 25th of March, June, September and December, listing 2d MAW ADP who are not members of aircraft squadrons and those ADP of other commands authorized to fly 2d MAW aircraft. The bulletin will indicate parent unit, the aircraft Group(s) authorized to provide flight hour support, and the category of support to be provided.

1202. AUTHORIZATION TO FLY NON-CREWMEMBERS ASSIGNED TO 2D MAW IN CREWMEMBER SEATS OF 2D MAW AIRCRAFT

1. Background. Requests are made from time to time to fly non-crewmembers in 2d MAW aircraft where single piloted flights can be authorized.

2. Policy. The authorization to fly non-ADP may not be delegated down the chain of command. Compliance with MCO 5720.73 is mandatory. Non-ADP from outside of 2d MAW is not authorized to occupy aircrew seats in 2d MAW aircraft. Waivers to fly non-ADP in aircrew seats will be considered on a case-by-case-basis by the CG, 2d MAW, and with written approval of CMC (ASM). This policy does not limit flights by Flight Surgeons or Aero medical Safety Officers who are considered ADP.

3. Waivers. Requests for waivers may be submitted via the chain of command to CG, 2d MAW (AC/S, G-3). Each will be considered on a case-by-case basis.

4. Action

a. Non-crewmembers are not authorized to occupy crewmember seats in 2d MAW aircraft unless specifically approved in writing by the CG, 2d MAW.

b. Reporting custodians may authorize non-crewmembers who are qualified aviation maintenance personnel to participate in functional check flights of non-ejection seat aircraft when the maintenance individual's technical expertise is required for proper completion of flight checks to be performed.

1203. ORIENTATION AND INDOCTRINATION FLIGHTS

1. Background. CMC has an established program for the approval and conduct of Orientation and Indoctrination flights. The benefits accrued by both the aviation and ground elements of the MAGTF make such flights worthwhile.

2. Policy. MCO 5720.73 Chapter 3 outlines the requirements and restrictions for the conduct of Orientation and Indoctrination flights.

3. Action. All requests for non-crewmember orientation flights require CMC approval. Requests shall be submitted by naval message via the appropriate chain of command to CG, 2d MAW (AC/S, G-3) with CG, II MEF, CG, MARFORCOM

(G-3/G-3 AIR) and CMC (ASM) as info addressees. Requests shall be submitted no later than 10 working days prior to the requested flight day.

1204. AUTHORIZATION TO FLY NON-ADP PERSONNEL NOT ASSIGNED TO 2D MAW AND CIVILIAN PERSONNEL IN 2D MAW AIRCRAFT

1. Background. 2d MAW frequently receives requests to fly passengers not assigned to 2d MAW to include civilians. These flights will be at no additional cost to the government on a not-to-interfere basis with training or combat readiness. To the maximum extent possible 2d MAW will look for opportunities to fly non-ADP personnel (to include civilians) in existing exercises that aid and assist our strategic communications effort.

2. Policy. OPNAVINST 3710.7_ and MCO 4630.16_ provide guidance regarding authorized personnel, flight limitations, and requirements in conducting orientation and indoctrination flights. All such flights require specific written approval by CMC for flights in ejection seat aircraft and COMMARFORCOM for flights in non-ejection seat aircraft.

3. Action. All requests to fly non-ADP personnel not assigned to 2d MAW should be made to CG, 2d MAW (G-3) via naval message with CMC (ASM), COMMARFORCOM (G-3 AIR) and CG, II MEF (G-3) as info addressees. Requests shall be submitted no later than 10 working days prior to the requested flight day.

1205. REQUEST FOR FLYING ASSIGNMENT

1. Background. Request for the assignment to flying Groups, as outlined in this section, will use Figures 1-1, 1-2 and 1-3 with bold notation.

UNIT HEADER

3700
DATE

From:
To: Commanding General, 2d Marine Aircraft Wing (AC/S, G-3)

Subj: NA/NFO RESUME AND REQUEST FOR FLYING ASSIGNMENT

Ref: (a) WgO 3710.38B

1. Per the reference, the following information is provided for your use in making my assignment to fly 2d MAW aircraft.

Name_____ Grade_____ SSN/MOS_____

Parent Unit/Phone Number_____

Date Current Tour Began_____

Date Last Aviation Physical_____

Date Last Low Pressure Qual_____

Date Last Ejection Seat Qual_____

Date Last Water Survival Course_____

Date of Birth_____

Date Instrument Rating Expires/Type_____

Medical Service Group_____

NAMTD By Type/Date_____

NATOPS Qual in_____Expires(d)_____Desig_____

NATOPS Qual in_____Expires(d)_____Desig_____

T/M	HOURS IN MODEL	DATE LAST FLOWN
_____	_____	_____

Total Flight Hours _____

Total Jet Hours _____

Total Rotary Wing Hours _____

Total Turboprop Hours _____
NOTE: Flight hour totals may be approximate. Waivers in effect (solo auth, annual minimums, etc.).

(SIGNATURE)
Figure 1-1 NA/NFO Resume and Request for Flying Assignment

SOP FOR AIR OPERATIONS

UNIT HEADER

3710
DATE

FIRST ENDORSEMENT on _____ltr 3700 of _____

From: Commanding General, 2d Marine Aircraft Wing
To: Commanding Officer, Marine Aircraft Group ____

Subj: NA/NFO RÉSUMÉ AND REQUEST FOR FLYING ASSIGNMENT

Ref: (a) WgO 3710.38B

1. Readdressed and forwarded.

2. _____is assigned to your unit, category ____ as defined in the reference. You are directed to assign SNO to a flying squadron based on the résumé. SNO will be included in the next Wing Bulletin in the 3710 series.

3. Reporting custodians shall notify the CG, 2d MAW (AC/S, G-3), via the chain of command, when individuals who are assigned/ authorized to fly with their unit have been transferred or fail to fly for a period of 90 days.

(SIGNATURE)

Figure 1-2 First Endorsement on NA/NFO Resume and Request for Flying Assignment

UNIT HEADER

3700
DATE

From: (Individual's Name, Rank, SS/MOS)
To: Commanding General, 2d Marine Aircraft Wing (AC/S, G-3)
Via: Commanding Officer, Marine Aircraft Group ( )

Subj: REQUEST TO FLY TACTICAL AIRCRAFT

Ref: (a) WgO 3710.38B

1. The following is a summary of my flight experience:

   a. Total Flight Time:_____ Fixed Wing _____ Helo _____

   b. Last aircraft in which NATOPS qualified: _____

   c. Aircraft experience:

      (1) Aircraft type: _____ Currency expiration date:_____
      Hours in type:_____

      (2) Aircraft type: _____ Currency expiration date:_____
      Hours in type:_____

      (3) Aircraft type: _____ Currency expiration date:_____
      Hours in type:_____

   a. Instrument rating and expiration:_____

   b. Last tactical unit to which assigned and date of detachment:
   _____

   c. Flight limitations (no single pilot, etc)_____

   d. If currently flying, unit/units with which flying: _____

2. Other pertinent remarks.

(SIGNATURE)

Figure 1-3 Individual Letter Requesting to Fly Tactical Aircraft

CHAPTER 1

ADMINISTRATION

SECTION 3: AIR SUPPORT REQUEST PROCEDURES

1300. PURPOSE. To publish general policy regarding air support and procedures for requesting air support within 2d MAW by organic units. Additionally, to provide guidance on policies/procedures in support of II MEF Major Subordinate Commands (MSCs).

1301. PRIORITIES. In alignment with the II MEF priorities, the following priorities will be assigned to Air Support requests within 2d MAW:

1. Priority I: HQMC, MARFORCOM, OR II MEF DIRECTED EVENTS.

2. Priority II: PTP OF II MEF UNITS DEPLOYING WITHIN 6 MONTHS (FWD, MEU, UDP, SPMAGTF, TAI); USMC MOS PRODUCING SCHOOLS; MSOC PTP.

3. Priority III: SUSTAINMENT TRAINING FOR II MEF UNITS OUTSIDE 6 MONTH PTP; MSOC TRAINING OUTSIDE PTP.

4. Priority IV: UNITS/AGENCIES EXTERNAL TO II MEF.

1302. POLICY

1. Only CG 2d MAW can say "No" to HQMC, MARFORCOM or II MEF.

2. Air support commitments assigned to 2d MAW by higher headquarters (CMC, MARFORCOM, II MEF) will be integrated into the planned/scheduled air support schedule with the least possible disruption. Any required modification to the published schedule will be at the expense of the lowest priority scheduled mission, if practical.

3. It is the responsibility of the requesting command to determine the category, type, and priority of each requested mission subject to evaluation by this headquarters.

4. Requests from commands/organizations/units external to 2d MAW shall be addressed to CG, II MEF for tasking.

5. All aerial imagery requests will be submitted to CG, II MEF (AC/S, G-2 Collections Manager).

1303. REQUESTING PROCEDURES

1. A monthly Air Support Scheduling Conference will be scheduled and conducted by II MEF. Representatives from G-3 (FW/RW Frag Officers) and representatives from each MAG will attend. The purpose of the monthly conference will be to examine all requirements and assets available for the following month, and to make allocations of available assets to all requesting units on an equitable basis consistent with established priorities.

2. The monthly air support schedule will be published by Naval Message no later than 5 days following the II MEF Air Support Scheduling Conference for

the following month and distributed to all commands receiving air support from 2d MAW.

3. Air support requests received after the deadline for the monthly scheduling conference will normally receive the lowest priority and under most circumstances will only be supported in place of another commitment's cancellation (i.e., substitution).

4. All MAGs will be represented at the monthly scheduling conference. Each group will be prepared to discuss all Group assets available for the next month, including not only those assets that will be used in their own required training but those assets which could serve to accomplish other training, e.g., intercept flights which could provide Ground Control Intercept (GCI) controller training, simulated close air support which could provide required pilot training and satisfy tactical air control party training, etc.

5. All commands requesting air support should attend the monthly scheduling conference to ensure their requests receive adequate consideration. Commands requesting organic airlift support should refer to OPNAVINST 4631.2_.

6. Any command requesting fixed wing or rotary wing aviation support from 2d MAW shall submit a request using the Frag Request Sheet template posted on the 2d MAW/G-3/COPS website.

a. https://intranet.2dmaw.usmc.mil/G3/cops/Shared%20Documents/Forms/AllItems.aspx

b. Requests can also be submitted using the doctrinal ASR and JTAR formats.

c. All requests shall be submitted 31 days prior to the 1st day of the month in which the air support is being requested (i.e. 30 April for all June Frag Requests). Where appropriate, requests shall be submitted through Division, Regimental or highest Headquarters.

d. Communication of requests shall be via AMHS, addressed to CG, 2d MAW G3 with "REQUEST FOR 2d MAW AIRCRAFT SUPPORT" in the subject line, and/or through e-mail to the respective 2d MAW Fixed Wing/Rotary Wing Frag Officers.

e. Specific to KC-130J requests, units will submit requests using the Request for 2D MAW KC-130J Support template posted on the 2d MAW/G-3/COPS website.

7. Units requesting air support are responsible for all scheduling and coordination of ranges and/or other operational and logistic requirements. To include but not limited to the following:

NOTAMs
Airfields
Drop Zones
Landing Zones
Material Handling Equipment
Other working areas necessary to fulfill mission requirements

1304. AIR SUPPORT CANCELLATION

1. Supported Unit. Cancellation messages will be forwarded to 2d MAW (AC/S, G-3) via Naval message with the supporting unit as an info addressee. The information copy will be sufficient to cancel the event. The cancellation message will clearly identify events being canceled and state the reason for cancellation.

2. Supporting Units. Cancellation messages will be forwarded to 2d MAW (AC/S, G-3) via naval message with the supported unit as an info addressee. The message will include a brief explanation for cancellation. The information copy will be sufficient to cancel the event.

3. Last minute cancellations for such reasons as aircraft or equipment availability will be telephoned to appropriate Frag Officer and the supported/supporting unit. The canceling unit will be responsible for informing the supported/supporting unit involved. Frags will not be canceled without authorization from 2d MAW (AC/S, G-3).

CHAPTER 1

ADMINISTRATION

SECTION 4: EXTENDED TRAINING FLIGHTS

1400. PURPOSE. The purpose of this section is to establish procedures for the conduct of extended training flights for 2d MAW units.

1401. GENERAL. Extended flying for the purpose of navigation and instrument training is a continuing requirement. Extended flights are encouraged and will be planned to accomplish as many T&R syllabus and annual flight time requirements as possible.

1402. DEFINITIONS/CONDUCT

1. Extended Training Flight

a. As defined in OPNAVINST 3710.7, an Extended Training Flight (ETF) is a flight which either does not remain in the local flying area or which remains in the local flying area and terminates at a facility other than a Navy or Marine Corps facility with direct tower-to-tower communications.

b. All aircraft operations conducted over water beyond gliding distance from land will consist of at least two aircraft to the maximum extent practical. Aircraft operating solo will ensure they are in constant radar surveillance when practicable.

c. These flights may consist of up to four aircraft.

d. The duration of ETFs shall be planned for no more than four nights. Flight durations planned for more than four nights will be considered Deployment For Training (DFT) and will be subject to all DFT requirements.

2. Local Flights

a. Definition: A flight that remains within the local flying area and terminates at either the same facility or another Navy or Marine Corps facility with which the originating station has direct tower-to-tower communications.

b. Single aircraft may be launched in the local flying area for individual missions (e.g., familiarization flights, instrument proficiency, and functional check flights). For the purpose of this policy, the local flying area is defined as the area bounded by a line from MCAS Cherry Point to NAS Jacksonville to Moody AFB to Dobbins AFB to HVQ TACAN to Andrews AFB to NAS Oceana, and includes the airspace in W-72, W-110, W122, W177, W-132, W-134, W-157, and W-158.

3. Authorized Airfields. All Navy and Marine Corps aircraft are authorized to land and takeoff at airfields per OPNAVINST 3710.7.

4. KC-130J Operations

a. CONUS ETFs will abide by the same criteria as listed in paragraph 1402.1. OCONUS ETFs (including flights in support of deployed units) require a Pre-Deployment Brief to CG 2d MAW.

b. Approval of CONUS ETFs resides with CO, MAG-14, OCONUS ETFs approval authority is CG, 2d MAW (AC/S G-3).

1403. ACTION

1. Control. With the exception of flights described in paragraph 1403.3, the control, administration and approval of all extended training flights, rests with the parent aircraft Group Commander.

2. Approval. In approving ETFs, Group Commanders and Squadron Commanders shall adhere to the spirit and intent of OPNAVINST 3710.7_. In all cases, copies of approved Extended Training Requests will be forwarded via the MAG to the AC/S, G-3 no later than 2 working days prior to the scheduled departure. Any requests/intent to support public events messages shall be submitted IAW current directives and paragraph 2114 of this SOP. 2d MAW HQ does not mandate an ETF Request for 1 Remain Over Night (RON) CONUS flight.

3. Requests. Requests for ETFs that terminate outside the continental U.S. require a Pre-Deployment Brief to CG, 2d MAW.

4. Per Diem Allowance. Per Diem allowances shall be administered IAW the Joint Federal Travel Regulations (JFTRs).

1404. SPECIAL INSTRUCTIONS

1. Aircraft Groups will not have more than 25 percent of their mission capable aircraft on extended training flights at any given time. Squadrons with less than 50 percent Mission Capable (MC) rate require Commanding General's authorization prior to launching aircraft on extended training flights.

2. No first tour aviator shall gain more than 30 percent of flight time on extended training flights per year.

3. Personnel from outside 2d MAW will not participate in extended training flight without the written consent of the CG, 2d MAW.

4. Figure 1-4 shall be used for submitting extended flight requests and shall be completed by requesting aircrews regardless of approving authority. The endorsing/approval chain shall be clearly depicted, and a thorough assessment by each reviewing Officer shall be conducted prior to approval.

a. 30/60/90 hours shall be back dated from the 1st day of the extended training flight.

b. If any hours are forecasted, these hours should be denoted separately with explanation and not included in the 30/60/90 hours. No forecasted hours should be included in the 30/60/90.

5. All extended training flights should adhere to the approved enroute stops and destinations to the maximum extent practical. The Pilot-In-Command will ensure the field selected, if other than a military installation, is approved for military use and has adequate security. Deviation from the approved itinerary for reasons other than weather, mechanical difficulties or emergencies must be approved by the CO of the Squadron concerned. If deviations from the flight itinerary result in a change of destination or RON

location, a telephone call will be made to the parent organization outlining the new itinerary.

6. Flight leaders will ensure ground crews are aware of fueling, startup and any other procedures required at that field. If hot-pit refueling operations are conducted utilizing other then 2d MAW refueling crews, the aircrew will ensure that fuel caps, refueling doors, etc. are secured prior to taking off. If conducting single ship operations these checks will be completed even if it requires securing an engine/all engines in order to visually inspect the aircraft. In the case of multi-ship operations, repositioning aircraft to check security may be sufficient if so determined by the flight leader.

7. Flight leaders and Aircraft Commanders are accountable for ensuring compliance with provisions relating to all references relating to crew rest and alcohol consumption. For flights of such duration as to require crew rest, adequate delay will be planned to allow the crew to eat and then obtain a minimum of eight hours of uninterrupted sleep.

8. To the maximum extent possible, MAGs, squadrons and flight leads should plan to maximize training opportunities, T&R progression and Wing interoperability on extended training flights (i.e. Utilize KC-130 aerial refueling, MWSS refueling, assault support escort, SIMCAS for FAC(A) work-up and JTAC proficiency)

1405. REQUEST FOR EXTENDED TRAINING FLIGHT

1. Requests for extended training flights, as outlined in this section, will use Figure 1-1 with bold notation.

UNITED STATES MARINE CORPS
2d MARINE AIRCRAFT WING
U. S. MARINE CORPS FORCES, ATLANTIC
CHERRY POINT, NORTH CAROLINA 28533-0050

IN REPLY REFER TO:
3000
ORIGINATOR CODE
DD MMM YY

From: Commanding Officer, **SQUADRON NAME**
To: **Final Approval Authority**

Subj: REQUEST FOR **NIGHT(S)** EXTENDED TRAINING FLIGHT

Ref: (a) WgO 3710.38B

Administrative Data

TYPE A/C	GRADE/NAME	TOTAL HRS	T/M/S HRS	FLT HOURS (Ref. 1st day of X-CTRY)			LAST EP SIM	LAST FLT	Designations
				30	60	90			

CURRENCY REQUIREMENTS:

- T/M/S

Currency Comments/Mitigation (Req'd if Currency Requirements not met)

Itinerary

Date	Dep/Arr (Z)	Airport (Ex. MCAS Cherry Pt)	Route/ Area	Bash Level	T&R Code(s)	Sortie Description	PPR No.	RON
								☐
								☐
								☐
								☐
								☐
								☐

Figure 1-4 Request for Extended Training Flight Form

☐ Billeting ☐ Contract fuel ☐ Dip. Clearance
☐ Frag Type:
☐ Security ☐ TAD orders requested ☐ TEEP'd event
☐ Frag No:
☐ DIRLAUTH ☐ Message DTG: ☐ Growth
☐ Airshow Type:

Airfield Information

AIRFIELD IDENTIFIER (Ex. KNKT)	**PRIMARY RUNWAY - LENGTH** (Ex:14L/32R - 8984'x 200') / **ARRESTING GEAR / POSITION** (Ex: YES / 1500')	**APPROACHES AVAILABLE**				**FUELS AVAILABLE**	**A/C CONFIG.**
		TACAN (Y/N)	**ASR** (Y/N)	**PAR** (Y/N)	**ILS** (Y/N)		

Pilot / Aircrew Information

Pilot / Aircrew	**Hometown** (Ex. Havelock, NC)	**Recall Information** (Cell phone #)

Figure 1-4 Request for Extended Training Flight Form

COMMENTS SECTION

ORIGINATOR (SQUADRON OPS):

SQUADRON CO:

MAG DSS:

MAG S-3 (OPS):

MAG CO:

Figure 1-4 Request for Extended Training Flight Form

CHAPTER 1

ADMINISTRATION

SECTION 5: FLEET REPLACEMENT SQUADRON MANAGEMENT

1500. PURPOSE. To provide command guidance for the management of the 2d MAW FRSs.

1501. BACKGROUND. 2d MAW FRSs are heavily tasked with the production of Replacement Aircrew (RAC) through first tour, refresher, conversion, and transition syllabi. The FRS is bound by strict class convening dates and is required to operate on a rigid schedule that is influenced by external factors over which they have little control (e.g., input from the Naval Air Training Command).

1502. POLICY

1. Personnel

a. The minimum flight/crew chief instructor tour length is normally twenty-four months and is intended to commence after completion of the Instructor Under Training (IUT) syllabus.

b. Marines assigned to the FRS should normally be ineligible for temporary assignments which do not directly support the squadron's training mission; annual ground training requirements remain in effect.

2. Operations

a. Training Management. The HQMC Production Alignment Board Charter succinctly addresses FRS training management.

b. Non-Training Flights. IAW T&R Program Manual, FRSs shall not be tasked with flights which do not directly support student training (i.e., Frags, demo flights, staff flight time, static displays, and VIP/admin/log flights). This policy is not intended to restrict in any way miscellaneous flights, such as weather reconnaissance, IUT, functional check flights, or selected logistics flights in direct support of FRS aircraft maintenance. Any additional tasking that could impact an FRS's ability to make its annual training mission shall be requested via DMS message to CG TECOM Aviation Training Branch (ATB).

3. Aviation Logistics

a. FRS aircraft maintenance and logistical support priorities will be equal to operational squadrons, with the exception of squadrons scheduled for overseas deployment within the next ninety days.

b. Any issue which cannot be resolved satisfactorily at the MAG level will be addressed to 2d MAW (AC/S, G-3) for resolution.

CHAPTER 1

ADMINISTRATION

SECTION 6: FUNCTIONAL CHECK FLIGHTS

1600. PURPOSE. This chapter establishes standard FCF procedures and aircrew qualifications. FCFs are conducted following prescribed maintenance actions and evaluate maintenance performed on an aircraft to ensure the airworthiness and safety of an aircraft prior to its use on the flight schedule. FCFs will be conducted as delineated in OPNAVINST 3710.7_, COMNAVAIRFORINST 4790, NATOPS, and T&R manuals unless more stringent requirements are specified in this SOP or MAG/Squadron SOPs. Due to the increased risk of FCFs only qualified crew utilizing procedures established by the above references and this SOP shall conduct an FCF.

1601. BACKGROUND. Historically there has been a large disparity in how USMC units conduct FCFs to include selection of aircrew, training syllabi, and the actual execution of an FCF. Professional, well-trained, proficient and current aircrews are essential to the safe conduct of FCFs. This SOP specifies minimum requirements for 2d MAW units in managing and executing their FCF programs.

1602. POLICY. This policy is not intended to inhibit a MAG or Squadron Commander's flexibility in conducting flight operations but sets forth standardized procedures that will mitigate risks in conducting FCFs. FCF programs should be managed by MAG and Squadron DSSs and monitored and executed by the squadron Aviation Maintenance Department.

1603. QUALIFICATIONS/DESIGNATIONS

1. MAG Commanders shall designate a MAG-level collateral duty FCF Standardization Evaluator (StanE) for each T/M/S aircraft. This FCF StanE shall be an experienced field grade aviator designated in writing by the MAG CO. The FCF StanE shall ensure standardization across the MAG in the qualification process, execution of flights, proficiency, and currency requirements. The StanE may be assigned at the MAG HQ, MATSS, or a squadron as required. MAG Commanders may designate more than one StanE to meet MAG requirements.

2. Each Squadron Commander shall designate an FCF Standardization Officer (StanO) in writing. This FCF StanO shall be evaluated during a full-card simulator event by the MAG FCF StanE prior to assuming the duties of the StanO. The designation letter for StanO's shall have either an endorsement from the StanE or a separate letter reflecting the evaluation. The squadron FCF StanO shall oversee the training of prospective FCF aircrew and conduct the FCF check rides. Squadron FCF StanO's shall receive an annual FCF evaluation simulator from the MAG FCF Evaluator. This provides an external check of FCF standardization at the FCF StanO level and allows cross-pollinating of best practices. If a StanE is not available to conduct this annual check ride due to overseas deployments of StanO's or other unusual circumstances, a temporary waiver can be granted by the MAG CO until the check ride can be accomplished at the first available opportunity.

3. Squadron Commanders can designate additional FCF StanO's as needed to meet CONUS and deployed requirements. All FCF aircrew shall be designated in writing.

4. For those communities that have an FCF syllabus for enlisted aircrew, Squadron Commanders shall designate an FCF Stan SNCO to oversee enlisted aircrew training and qualifications.

5. The term "FCF Designated Aircrew" is inclusive of FCF Aircrew, FCF StanO's, and MAG FCF StanE's.

6. Aircrew that are FCF qualified in one squadron may perform a FCF for another squadron under the following conditions:

a. Specific authorization by the respective COs involved.

b. Specific NATOPS qualification and FCF qualification for the actual aircraft series involved.

1604. SYLLABUS

1. All FCF aircrew shall complete an FCF syllabus prescribed for their T/M/S aircraft. This syllabus shall meet the standardization requirement as stated in MCO 3500.14_, HQMC Aviation T&R Program Manual. This syllabus will be approved by MAG Commanders and will be published in the MAG T/M/S Flight SOP. Squadrons will use the T&R community FCF syllabus or the MAG T/M/S syllabus if the current T&R syllabus is deficient. Squadron Commanders may impose additional training requirements but cannot reduce the community standardized requirements. Waiver of minimum aircrew requirements resides with the MAG Commander on a case-by-case basis.

2. At a minimum, initial requirements to achieve the FCF qualification should be a recommendation by the squadron Standardization Board based on flight experience and demonstrated flight judgment, conscientiousness and systems knowledge to handle not only the FCF procedures themselves, but also the myriad of complications that can result while functionally checking an aircraft airborne.

3. T/M/S FCF syllabi will specify the required academic reading, study materials, lectures, exams, and simulator/aircraft qualification events for the initial qualification. FCF aircrew will maintain familiarity with the NATOPS flight manual, particularly the FCF chapter and NAMP requirements. Additionally, FCF aircrew will read and understand any pertinent aircraft bulletins.

4. Previously designated FCF aircrew that have not flown for greater than 12 months in their T/M/S aircraft shall be re-evaluated by either the MAG FCF StanE or a Squadron FCF StanO and receive training based on individual experience level before regaining FCF currency.

1605. CURRENCY AND PROFICIENCY

1. All FCF aircrew shall conduct an annual dedicated full-card simulator for proficiency. This event may be flown in an aircraft if simulators are not available. However, the intent is to fly these events in a simulator to the maximum extent possible. Additionally, all FCF aircrew shall fly a dedicated FCF profile EP simulator semi-annually. This FCF EP simulator event can be

flown in lieu of a normal monthly EP simulator. These FCF simulator events will be documented in MSHARP with appropriate T&R coded events. The annual FCF simulator or flight event shall be monitored by either a FCF StanE or StanO. The EP simulator shall be monitored by a StanE, StanO, or qualified CSI. The use of scenario-based flight profiles and system failures and EPs should be based on actual FCF mishap or Hazard Report (HAZREP) scenarios to the maximum extent possible.

2. Squadron Commanders will designate both a minimum and maximum number of FCF aircrew per unit as prescribed by the MAG Commander based on T/M/S and unit requirements. This number is designed to meet both the maintenance/operational requirements but allow for FCF aircrew proficiency and currency.

3. FCF aircrew should have flown one flight in the T/M/S in the previous 15 days prior to executing an FCF. For multi-crew aircraft, either the PIC or an FCF qualified co-pilot or NFO should meet this criteria. This may be waived by the Squadron CO.

1606. WEATHER CRITERIA. In accordance with COMNAVAIRFORINST 4790.2_, FCFs should be conducted during daylight hours within the local flying area in VMC. If necessary to accomplish the assigned mission, unit Commanders may authorize check flights under conditions other than the above if, in their opinion, the flight can be conducted with an acceptable margin of safety. This authority shall not be delegated below the Squadron CO. Those portions of the flights that are considered critical shall be conducted in the vicinity of a suitable landing area.

1607. BRIEFING REQUIREMENTS

1. FCF aircrew shall receive detailed pre-flight briefs from squadron Maintenance Control, QA division and appropriate work center personnel describing the maintenance performed, requirements for the flight and the expected results. Particular emphasis will be placed on areas in which major maintenance was performed. As part of the normal NATOPS brief, the FCF aircrew shall cover immediate action emergencies that may be encountered based on the type and extent of the maintenance performed. Single-seat aircraft Functional Check Flight Pilots (FCPs) will brief these emergencies with an FCF StanO, or the ODO if a StanO is not available, prior to flight.

2. Plane Captain Briefing. The unique preflight checks of an FCF require that the FCF aircrew and PC brief FCF peculiar requirements during pre-flight/start/pre-taxi/shut-down. This ensures that all personnel clearly understand the conduct for completion of the FCF Card.

1608. CHECKLIST. Aircrew conducting FCFs shall utilize the FCF Checklist from their specific NATOPS and ensure each task is recorded appropriately. Specific operating parameters shall be recorded whenever required. FCF requirements do not replace normal procedures. NATOPS procedures apply during the entire check flight. For those T/M/S aircraft that do not integrate the normal NATOPS Start through Shutdown procedures into the FCF checklist, FCF aircrew need to be diligent in following all normal NATOPS procedures in conjunction with the separate FCF prescribed checklist.

1609. CREW COMPOSITION. Minimum aircrew required for the safe conduct of FCFs will be determined by the applicable NATOPS and to ensure proper operation of all required equipment. FCF aircrew shall be fully qualified in

accordance with this Order, their T&R manual and the applicable NATOPS manual. Passengers shall not be carried.

1610. ORDNANCE AND CARGO. Live ordnance shall not be carried on an FCF mission. Expendables and self-protection ordnance can be carried in combat zones per local requirements. Cargo will not be transported unless authorized by the squadron commander.

1611. CHECK AND GO FLIGHTS. At the discretion of either the Squadron or MAG Commander, and as allowed by applicable NATOPS, operational flights may be conducted in combination with an FCF, provided the operational portion is not conducted until the FCF requirements have been completed and entered in the FCF checklist. Check and Go flights will normally be a local event only. Non-local FCFs may be conducted with the approval of the Squadron CO.

1612. DEBRIEFS. After completion of the FCF, the FCF aircrew shall conduct a debrief with QA Division, Maintenance Control and applicable work center representatives to determine compliance with objectives outlined in the FCF checklist and to clarify discrepancies noted. FCF checklists shall be completed and promptly returned to Maintenance Control. Maintenance Control shall retain all FCF checklists for a minimum of six months or one phase cycle, whichever is greater, per COMNAVAIRFORINST 4790.2_.

1613. READ AND INITIAL. The MAG DSS shall maintain a central FCF "Read and Initial" file and distribute it to all squadrons, IOT ensure relevant lessons learned best practices and FCF-related safety information are promulgated to all FCF aircrew.

1614. ODO CHECKLISTS. MAG Commanders will ensure that unit ODO checklists reflect the minimum requirements pertaining to aircrew pre-flight preparation in this SOP for the conduct of FCFs.

CHAPTER 1

ADMINISTRATION

SECTION 7: DEMONSTRATIONS

1700. PURPOSE. THIS SECTION IS CURRENTLY IN WORK. IT WILL BE STAFFED AND INCLUDED UPON COMPLETION.

CHAPTER 1

ADMINISTRATION

SECTION 8: ODO PROCEDURES

1800. PURPOSE. This chapter establishes standard Operational Duty Officer (ODO) requirements for qualification. The Operations Duty Officer (ODO) (when required augmented by the Assistant Operations Duty Officer (AODO)) is a critical billet requiring a thorough working knowledge of squadron flight operations. The ODO is the Commanding Officer's direct representative, charged with executing the flight schedule, and is the last line of defense in order to ensure that the flight schedule is executed safely and effectively. An ODO is required to be in a position to take immediate action or coordinate a sensible response to a dynamic situation anytime that a squadron or detachment is conducting local flight operations. ODOs must be fully conversant with the rules and regulations that cover flight operations, know the flying areas being utilized, the present and forecast weather, the divert bases and their weather and fuel to reach them, involved in the flight ODOs will be thoroughly familiar with the responsibilities outlined in the OPNAVINST 3710.7_, OPNAVINST 3750, NATOPS, and T&R manuals with regard to their responsibility during flight operations in addition to more stringent requirements specified in individual MAG/Squadron SOPs.

1801. BACKGROUND. Historically there has been a large disparity in how USMC units train their ODOs with regard to the training syllabi and the actual designation as a qualified ODO. Professional, experienced, well-trained, and proficient ODOs are essential to the safe supervision of flight operations. This SOP specifies the minimum requirements for 2D MAW units in training ODOs.

1802. POLICY. This policy is not intended to inhibit a MAG or Squadron Commander's flexibility in conducting flight operations but sets forth standardized minimum requirements that will help mitigate risks during times of flight operations through in depth training. ODO training programs should be managed by MAG and Squadron Operations/DSS Departments - but they are the responsibility of the squadron commanders.

1803. ODO QUALIFICATIONS/DESIGNATIONS

1. ODO training will consist of four hours; two hours monitoring a qualified ODO and two hours being monitored (scheduled as separate training events). ODO instruction shall cover Pre-Mishap plans, Range Regulations, Course Rules, Station Regulations, ODO daily responsibilities and all other pertinent topics relating to the duty. Further guidance is listed below.

2. The ODO is responsible for the safe efficient and orderly execution of the flight schedule in addition to briefing highlights, notes, and all misc information (i.e. FOD Walk, classes and meetings) that may be on the bottom portion of the flight schedule. A qualified ODO will be assigned during all squadron local flight operation evolutions to include deployment operations or detachment operations. All qualified squadron aviators will receive in-depth ODO training and become ODO qualified. All qualified squadron aviators will receive an ODO initial in-brief with the Operations Officer, Maintenance Officer and the DOSS prior to completing the required ODO Qualification Syllabus. ODO training will be coordinated by the Assistant Operations Officer. Upon completion of the appropriate classroom instruction and on-

the-job training evolutions, the Commanding Officer based on recommendations from the OPSO/ASO, will designate the individual as Operations Duty Officer qualified.

3. Prior to designation as a squadron ODO, aircrew shall receive instruction from the Operations Department covering the MSHARP system, the completion of the corrected flight schedule, flight schedule board, local airfield operations and the ODO publication library. The Safety Department shall also cover Flash Reports, CCIRs, squadron Pre-Mishap Plan, Safety Read & Initial Folder and Board, and squadron safety program.

1804. ODO SYLLABUS

1. All qualified aircrew shall complete the syllabus outlined in Enclosure (1) for their T/M/S aircraft. This syllabus shall meet the standardization requirement as stated in MCO 3500.14_, HQMC Aviation T&R Program Manual. This syllabus will be approved by MAG Commanders and will be published in the MAG Flight SOP. Squadrons will use the MAG syllabus if their current syllabus is deficient. Squadron Commanders may impose additional training requirements but cannot reduce the community standardized requirements.

2. Only qualified aircrew can be designated as ODO's upon completion of the ODO syllabus. Unqualified aircrew for the purposes of the ODO syllabus and Fleet Replacement Squadron students cannot serve as an ODO however they can be assigned to serve as assistant ODO.

3. At a minimum, initial requirements to achieve the ODO qualification should be those outlined in Enclosure (1).

4. ODO syllabi will specify the required academic reading, study materials, lectures, exams, and simulator/aircraft qualification events for the initial qualification. ODOs will maintain familiarity with the OPNAVINST 3710.7_ and OPNAVINST 3750 particularly ODO responsibilities.

1805. CURRENCY AND PROFICIENCY REQUIREMENTS

1. All ODO aircrew shall conduct annual refresh training. There are several options available to a Squadron Commander to ensure that annual training is completed.

2. A dedicated EP simulator is the preferred method. A simulator provides an opportunity for aircrew to act as the ODO while sitting at the device console in addition to receiving quarterly Mishap training from DSS. An ODO EP simulator event can be combined with scheduled simulator event; i.e. NATOPS Check Flight, Instrument Check Flight, EP simulator etc. There is no requirement for the ODO EP simulator to be a stand-alone event.

3. For FRS Instructor Pilots this simulator can be accomplished on instructional simulator sorties, but must be done from the device console. The use of scenario-based flight profiles and system failures and EPs should be based on actual mishap or HAZREP scenarios to the maximum extent possible.

4. In some cases, an ODO EP simulator is not practical based on simulator availability. In these instances MAG Commanders and Squadron Commanders have other options to satisfy the annual requirement.

5. Dedicated, scheduled academic periods, or simulated emergency/weather divert drills centered on the ODO desk or during an All Officer Meeting (AOM) can serve as an annual refresh training as well.

6. Aircrew who have previous fleet experience and have transitioned from one T/M/S to another and have been previously designated as ODO's are exempted from the initial training and require refresh training only prior being designated an ODO.

7. Squadron Commanders will designate both a minimum and maximum number of aircrew per unit as prescribed by the MAG Commander based on the unit requirements. This number is designed to meet both the maintenance/operational requirements necessary for operations.

8. It is the responsibility of all Squadron Commanders that their ODO's are properly and fully trained to handle any situation they may face while serving as the ODO.

1806. ODO AND AODO UTILIZATION

1. Whenever local flight operations are ongoing, an ODO must be present and "on duty" in the ready room. In units that have deltas in flight leadership qualifications and AODO may be employed (as an exception vice the rule) to assist the ODO in executing his duties. The AODO must complete all the pre-requisites that the ODO does, with the exception of Section Lead (TACAIR) or Aircraft Commander (Assault Support) designation. When an AODO is sitting in for the ODO, the ODO must be able to reach to ODO desk within 1 minute. Even though the AODO may be on the desk, it is the ODO that is accountable to the Commanding Officer for the execution of the flight schedule.

2. VMGR-252 will utilize the Flight Duty Officer (FDO). FDOs are officers assigned to the Operations Department and serve as a primary billet and function similar to an ODO instead of a collateral duty. FDO responsibilities and training will be standardized and managed at the VMGR squadron level. The FDO training syllabus and prerequisites are outlined in Enclosure (2).

ODO Qualification Syllabus

Name / Rank: _____

Date / Signature

A. Flight Leadership/Experience Pre-requisites

a. TACAIR = Section lead* (if WSO/ECMO equivalent qualification)

b. Assault Support = Aircraft Commander*

*Aviators in the work-up phase (3 months prior to designation) of receiving these designations may be qualified as ODOs

B. Current TMS NATOPS and Instrument Qualification gained _____

C. Crew Resource Management Training _____

D. Academic Requirements (Operations Department training)

1. Thorough review of all 3710 requirements with the ODO UT _____
2. Wing/MAG/Squadron SOP reviews _____
3. ODO Binder/Checklists/Out Brief _____
4. All associated ODO related Websites _____
5. All associated flight related facilities _____
6. Managing the flight schedule board _____
7. MSHARP Management (MATSS training/OJT) _____
8. Completion of the corrected flight schedule _____
9. Local airfield operations/fuel scheduling proc/CALA Ops _____
10. Authorized sources for weather and NOTAMS _____
11. SITREP Reporting Procedures _____

E. Academic Requirements (Department of Safety training)

12. Thorough review of all 3750 requirements with the ODO UT _____
13. Thorough review of all 2D MAW CCIRs _____
14. Flash Report reporting procedures and process _____
15. Squadron Mishap Plan _____
16. Read and Initial File _____

F. Evaluated Requirements

1. 2 hours monitoring the ODO _____
2. 2 hours as ODO, monitored by a qualified ODO _____
3. ODO simulator conducted in conjunction with an EP sim _____

- Adds realism to the EP sim, great two-way training
- Leverages existing sim events; no new simulator burden

G. Designation Letter _____

Figure 1-5 ODO Qualification Syllabus

VMGR-252 Flight Duty Officer (FDO) Qualification Syllabus

Name / Rank: _____

	Date / Signature
A. Flight Leadership/Experience Pre-requisites	
NTPS-6111 (T2P, > 400 total hours/200 in T/M/S)	_____
INST-6130	_____
**NTPS-6111 Pre-Requisite may be waived at the discretion of the squadron commander.	
B. CRM/ORM Training	
CRM ground and flight training IAW 1547.7C	_____
Advanced ORM course (Marine Net)	_____
C. Academic Requirements (Operations Department training)	
Thorough review of all 3710.7U requirements	_____
NAVMC 3500.53A (KC-130J T&R) review	_____
Wing/MAG/Squadron SOP reviews	_____
FDO Binder/Checklists review	_____
Squadron Sync Matrix Management and procedures	_____
Managing the current flight schedule	_____
MSHARP Management	_____
MSHARP Schedule Creation	_____
SITREP Reporting Procedures	_____
APACS, flight clearance and FCG review	_____
MSHARP current readiness tracking/ NAVFLIR entry	_____
D. Academic Requirements (Department of Safety training)	
Thorough review of all Wing/MAG/Squadron CCIRs	_____
Flash Report reporting procedures and process	_____
Squadron Mishap Plan	_____
Read and Initial File	_____
ORM Sheet completion	_____
E. Evaluated Requirements	
One week monitoring the FDO	_____
One week acting as FDO, monitored by a qualified FDO	_____
Pre-Mishap Plan Execution	_____
F. Designation Letter	_____

Figure 1-6 FDO Qualification Syllabus

CHAPTER 2

GENERAL FLIGHT OPERATIONS

SECTION 1: GENERAL FLIGHT OPERATING INSTRUCTIONS

2100. PURPOSE. To publish those flight and operating instructions that affect a broad range of mission profiles and to specify those 2d MAW policies pertinent to each.

2101. BACKGROUND. Experience gained over time dictates that specific guidance will be provided in certain areas of flight operations to remove ambiguity and mitigate risk.

2102. SIMULATED ENGINE-OUT TRAINING. This policy is to prevent simulated engine-out training from becoming an actual emergency. Furthermore, this policy is intended to augment published procedures concerning simulated engine-out operation.

1. Policy

a. Any type of simulated engine-out takeoff is prohibited.

b. Simulated engine-out after takeoff is prohibited below 200 feet Above Ground Level (AGL) for helicopters and 500 feet AGL for fixed-wing with exceptions as stated below. KC-130Js are not subject to this 500 AGL restriction. Simulated V1 cuts will be executed in accordance with the current signed VMGR 252 SOP.

c. Simulated engine-out landings are authorized only at established airfields or prepared surfaces. Availability of crash crew is not required unless so specified in the applicable NATOPS manual. MAG Commanders should specifically designate those areas, other than established airfields, at which this training may be conducted.

d. Simulated engine-out approaches may be flown to a wave off or a landing if NATOPS permits.

e. Simulated engine-out touch and go landings are not authorized except under the conditions stated in paragraph 2102.2.h below. When a simulated engine-out landing is made, the simulation is terminated on landing. If the landing is intended to be a touch and go, required power on all engines shall be used for takeoff.

f. Simulated engine-out wave off shall be commenced no lower than 300 feet AGL. If the aircraft descends to 200 feet AGL on the simulated engine-out wave off, required power on all engines shall be used, except as in paragraph 2102.2.g below. Rotary Wing aircraft will follow appropriate MDG.

g. During simulated engine-out Field Carrier Landing Practice (FCLP) and KC-130J simulated three-engine wave off, the wave off shall be commenced no lower than 200 feet AGL. If the aircraft descends to 100 feet AGL on the wave off, required power on all engines shall be used.

h. When required for authorized and scheduled FCLP training, simulated engine-out touch and go landings are authorized when pre-briefed and controlled by a Landing Safety Officer (LSO).

i. Actual engine shutdown, for training demonstration, is not authorized below 4000 feet AGL for fixed-wing aircraft. Simulated two engine-out operations in the KC-130J are not authorized.

j. In twin engine helicopters, simulated engine failures shall be practiced only when single-engine flight and landing or recovery by auto-rotation is possible should both engines fail or lose power.

k. Simulated engine-out training for dual-engine fixed-wing aircraft must meet the "Single Engine Flyaway Capability" requirements of paragraph 3102 of this instruction.

l. Jettisoning of external stores to obtain the reduced aircraft gross weight for single-engine flyaway capability shall be computed prior to flight. However, jettisoning external stores shall not be considered in preflight planning as a means of reducing aircraft gross weight to achieve single-engine flyaway capability under engine-out training scenarios.

2103. SIMULATED EMERGENCIES

1. Only those simulated emergencies authorized by specific aircraft NATOPS manuals or maneuver description guide are approved for practice.

2. Simulated emergency training to be conducted during a flight shall be specifically briefed prior to manning the aircraft.

3. During simulated aircraft emergencies, Aircraft Commanders, Instructor Pilots and Section/Flight leaders shall ensure that Crew Resource Management (CRM) training techniques are practiced as briefed and that due care is taken by all aircrew to not overload themselves or other aircrew/wingmen with unrealistic, compound simulated emergencies.

4. Fixed Wing (FW) simulated emergencies shall not be performed at night unless required for the completion of a Training and Readiness (T&R) Manual syllabus flight or under the control of a qualified LSO.

2104. FIXED WING TAXI/LANDING LIGHT USE. The taxi/landing light should be on for all fixed wing approaches and landings. The taxi/landing light need not be used at night when meteorological or environmental conditions interact with the light to pose a safety hazard, or when mission requirements prohibit such use.

2105. NIGHT FLYING

1. The night flying minimums contained in OPNAVINST 3710.7_ are simply minimum requirements; they do not provide for adequate night tactical mission proficiency.

2. Squadron/detachment commanders shall strive to attain the goals outlined in the aircraft T&R Manual for proficiency in night tactical missions, and not simply accumulate night flying hours. Night flying operations should be spaced evenly throughout the year and not concentrated in months having extra hours of darkness.

2106. MAWTS-1/INSTRUCTOR SUPPORT

1. MAWTS-1 plays a unique role for the Marine Corps in the development of tactical doctrine/weapons employment. 2d MAW units are highly encouraged to participate in the process and are authorized direct liaison with MAWTS-1 in these matters.

2. All requests for MAWTS-1 support or certification shall be submitted to MAWTS-1 via the MAG/MACG/MWSG with 2d MAW and the local MATSS receiving informational copies.

3. Non-Combat ready aircrew flying multi-piloted aircraft in 2d MAW tactical squadrons shall fly only with current, appropriately designated syllabus/NATOPS instructors until such time as Combat Ready Qualification is achieved and, thereafter, whenever currency renewal requires instructor support. MAWTS-1 instructors are authorized to fly 2d MAW aircraft as syllabus/NATOPS instructors when properly designated and current in accordance with T&R Manual requirements.

2107. WEAPON SYSTEM CONFIGURATION, MODIFICATION, RESEARCH, DEVELOPMENT, TEST, AND EVALUATION (RDT&E) AND OPERATIONS EVALUATION (OPEVAL) REQUEST

1. Requests for configuration, modification, RDT&E, or OPEVAL of any weapon system shall be submitted in writing to 2d MAW (AC/S, G-3) for approval prior to any other action being taken.

2. Any external solicitation for configuration changes, modification, RDT&E, or OPEVAL shall be reported in writing to 2d MAW (AC/S, G-3 and ALD).

2108. AERONAUTICAL CHART USAGE AND UPDATING

1. All 2d MAW aircrew shall ensure that all charts used for navigation training flights are current and updated, using the publications listed below:

a. National Geospatial-Intelligence Agency (NGA) Catalog Part I, Volume I.

b. Flight Information Publications (FLIPS).

c. Notices to Airmen (NOTAMS).

d. NGA Aeronautical Chart Updating Manuals (CHUMs).

e. NGA Aeronautical Chart Updating Manuals Supplements (CHUMSUPS).

2. It is the responsibility of 2d MAW aircrew to immediately report any uncharted ground obstruction/hazard to aerial navigation/flight per the CHUM instructions.

3. Digital Chart Data Management. All aircrew utilizing computer flight-planning software shall ensure most current chart data is used. Also, electronic CHUM and digital airfield information files shall be current with the most recent release.

2109. BINGO/HOLD DOWN/HOLD SHORT FUEL QUANTITIES DURING CARRIER QUALIFICATIONS

1. Fuel requirements for minimum fuel on deck, bingo, and hold down/hold short of 2d MAW aircraft shall be determined by applicable T/M/S NATOPS, CVW/LHA/LHD NATOPS, and/or applicable unit SOPs.

2. The term "BINGO" refers to that airborne fuel state at which the pilot must commence planned procedures to affect a safe recovery, regardless of whether or not the mission profile is complete. The term "HOLD DOWN" or "HOLD SHORT" refers to that on-deck fuel state below which an aircraft must be refueled prior to launch. An aircraft reporting "HOLD DOWN" or "HOLD SHORT" fuel state no longer has sufficient fuel to launch, do the mission profile and make a normal recovery. Mission profile may or may not include aerial refueling.

2110. VISUAL SIMULATOR USAGE

1. The maximum length for any visual simulator sortie, without a break, shall be 4 hours.

2. All aircrew and simulator instructors shall report any simulator related discomfort to facilitate data collection that could support simulator improvement. Aircrews that have experienced any degree of "simulator sickness" shall have an uninterrupted night's sleep prior to participation in an actual aircraft flight.

2111. WARNING AND CONDITIONS OF READINESS CONCERNING HAZARDOUS OR DESTRUCTIVE WEATHER. WgO 3140.1_ and ASO P3140.2_ delineate procedures to be followed by 2d MAW units in the event of destructive weather. Commanders shall appoint a Destructive Weather Officer in writing and ensure compliance with applicable destructive weather plans.

2112. AIRCRAFT EVACUATION PLAN

1. Each MAG shall have an appropriate aircraft evacuation plan in the event of natural disasters and other emergencies. The evacuation plan will detail procedures and proposed sites

2. Each MAG shall appoint a Hurricane Evacuation Control Officer.

3. CG, 2d MAW will order the execution of Hurricane Evacuation plans. Each MAG shall notify 2d MAW G-3 Current Operations regarding the status of the fly away.

2113. FLIGHT SCHEDULES

1. Each squadron/detachment shall publish a daily flight schedule. If no flights are anticipated, a "No Flights Scheduled" notation shall be made on the flight schedule for that date. Flights shall be described in sufficient detail to define clearly the mission and any special mission requirements, the type of training to be conducted, and the responsibilities of each crew member. Additional/amplifying information should appear in the notes section of the schedule.

2. An aviation unit's flight schedule is the Commander's plan for using assigned resources to accomplish the unit's mission. As such, the daily

flight schedule constitutes a written order from the Commander and reflects the Commander's best judgment in balancing commitments, training requirements, and aircrew/unit capabilities:

a. Daily flight schedules shall be signed personally by the Squadron Commander or Detachment OIC. The squadron Executive Officer shall sign the daily flight schedule when he is the acting CO or the CO is not available.

b. Due to the nature of flight schedule dissemination, the scope of information provided on the daily flight schedule in addition to scheduled flights (e.g., aircrew training, special events, etc.) shall be at the discretion of the Commander.

c. The squadron's Director of Safety and Standardization, or the Safety Officer in his absence, shall review the daily flight schedule for factors that could influence the safe conduct of aircraft operations.

d. Any changes to the flight schedule shall be approved personally by the Squadron Commander, Executive Officer, or by the Detachment OIC. Schedule changes shall be minimized and every change to the flight schedule shall receive the same scrutiny and review accorded to the original schedule as well as the circumstances requiring the change.

e. All aviation squadrons/detachments shall retain an updated master copy of their daily flight schedules for a minimum of 6 months.

f. Daily flight schedules will be submitted to the 2d MAW G3 SharePoint site no later than 2000 the day prior, and 2000 the day prior to weekends and holidays.

2114. 2d MAW SUPPORT FOR PUBLIC EVENTS

1. CMC (ASM) publishes via a community relations website, public events eligible for Marine aviation participation. Approving authority for 2d MAW units desiring to participate in static displays, open houses, air shows, and/or flight demonstrations intended for the public, rests with CMC (ASM). 2d MAW units desiring to participate in an eligible event shall submit their request by official Naval message to CMC (ASM) via 2d MAW (AC/S, G-3), II MEF and COMMARFORCOM for endorsements. The requests shall be submitted at least 15 days prior to the desired participation.

2. If a 2d MAW unit is contacted and requested to participate in an event designed for the public, the requesting agency shall be referred to the following CMC (ASM) community relations website:
http://hqinet001.hqmc.usmc.mil/AVN/asm/ASCO.htm

3. Fixed-wing participation in these evolutions is restricted to military or joint use fields with at least 8000 feet of hard surface runway. Shorter length runways will be considered on a case-by-case basis.

CHAPTER 2

GENERAL FLIGHT OPERATIONS

SECTION 2: ORDNANCE OPERATING INSTRUCTIONS

2200. PURPOSE. This section and WgO 8600.4J publishes policy guidance on the use of ordnance by 2d MAW aircrew.

2201. AIR-TO-GROUND ORDNANCE MISSIONS

1. Air-to-ground ordnance missions shall not be scheduled with less than a section of aircraft. If one aircraft aborts the mission in the air or on the ground, the other aircraft may continue with the mission if the aircrew is qualified and at least one of the following conditions are satisfied:

a. There is a FAC(A) controlling the single aircraft.

b. There is a ground Joint Terminal Attack Controller (JTAC) controlling the single aircraft.

c. The target is physically manned by target personnel who are in a position to observe aircraft ordnance delivery and/or who have two-way communication with the delivering aircraft.

d. The aircraft is a F/A-18D or TAV-8B with a proficient WSO or current pilot in the aircraft cockpit. A proficient WSO has flown this sortie within the T&R re-fly interval and a current pilot has flown an A/G flight within 30 days.

2. Single aircraft may be scheduled for level delivery, flare, TAC(A) or FAC(A) and RW BCWD missions.

3. Single FAC(A) aircraft may mark targets.

4. Single SCAR aircraft may employ weapons for the purpose of marking targets for other aircraft flying Offensive Air Support (OAS) missions. Fixed Wing pilots performing single-ship SCAR shall remain above 1000 feet AGL. Rotary Wing pilots performing single-ship SCAR shall remain above 200' AGL.

2202. PREFLIGHT/BRIEFING/DEBRIEFING

1. Takeoff, climb out, enroute and recovery while carrying ordnance will, to the greatest extent possible, be planned so as not to fly over populated areas.

2. Each pilot shall study available maps, diagrams, and photos of the target area on all CAS missions or missions not conducted on a "raked range".

3. The flight leader and/or Aircraft Commander of an air to ground mission will ensure a thorough brief IAW T/M/S Briefing Guides and ANTTP is conducted.

2203. ARMING/DE-ARMING. Arming and de-arming will be accomplished in strict compliance with instructions contained in the appropriate Airfield Operations Manual.

2204. POST TAKEOFF. Each aircraft will check the other for security of all ordnance prior to assuming tactical formation. The controlling agency will be immediately notified if it appears that any ordnance has been inadvertently jettisoned.

2205. TACTICAL ABORT CRITERIA AND RULES FOR CONDUCT FOR ORDNANCE DELIVERIES. The following tactical abort criteria apply for all 2d MAW units:

1. Tactical abort parameters include minimum altitudes, airspeeds, maximum dive angle, minimum dive angle, minimum interval between aircraft, timing, loss of sight at critical points during a maneuver and loss of situational awareness. Tactical abort parameters specific to the conduct of different tactical mission/maneuvers shall be briefed before each mission.

2. The abort criteria contained in each T/M/S specific Tactical Manual shall be adhered to unless made more restrictive by MAG or squadron SOP, or in subsequent paragraphs of this Order.

3. The following tactical abort criteria apply for all 2d MAW units:

a. When conducting CAS, if the pilot has not received a complete preflight/airborne CAS brief, to include all essential information IAW JP 3-09.3 (Joint Tactics, Techniques, and Procedures for Close Air Support) or an alternate accepted joint CAS Tactics, Techniques, and Procedures (TTP) attack brief, the attack run shall not be commenced.

b. During training, if correction from a mark will violate the distances defined in the current Multi-Service Procedures for the Joint Application of Fire (JFIRE) minimum safe distances for ground parties table for the selected weapon, the run shall be aborted.

4. Minimum release altitudes shall be IAW T/M/S TAC Manuals and Joint Close Air Support (JCAS) publications but in no case shall fixed wing release altitude be lower than 500′ AGL for day or High Light Level delivery or 1000′ for night unaided or Low Light Level delivery or maximum frag/ricochet, whichever is higher.

5. The following additional rules of conduct apply for 2d MAW:

a. If the pilot is in doubt concerning any element of information related to safety of flight or safety of release, ordnance shall not be released.

b. Unless specifically prohibited, 2d MAW aircraft may deliver ordnance without a mark if cleared by the JTAC. "Talk-on's" are also permitted.

c. When personnel are on the ground within 2000 meters of the target, aircrew shall not, under any circumstance, release ordnance without clearance from the terminal controller.

2206. FLIGHT DEMONSTRATIONS INVOLVING ORDNANCE. Flight demonstrations by 2d MAW aircraft involving deliveries of live or inert ordnance shall be conducted per the following guidelines:

b. Unless specifically prohibited, 2d MAW aircraft may deliver ordnance without a mark if cleared by the JTAC. "Talk-on's" are also permitted.

c. When personnel are on the ground within 2000 meters of the target, aircrew shall not, under any circumstance, release ordnance without clearance from the terminal controller.

2206. FLIGHT DEMONSTRATIONS INVOLVING ORDNANCE. Flight demonstrations by 2d MAW aircraft involving deliveries of live or inert ordnance shall be conducted per the following guidelines:

1. The event shall be flown by qualified aircrew that is current in the type of delivery to be used; flight demonstrations shall not be used as training events.

2. Run-in headings shall be parallel to or away from the viewing/crowd line and all turns will be made away from spectators and inhabited/occupied facilities.

a. In preflight planning, aircrew shall ensure that the impact area is at a safe distance from the viewing area. In all cases, the impact point shall be no closer than 2000 meters from the viewing area.

b. Positive visual identification of the target shall be accomplished regardless of the type of delivery (e.g. FLIR, EOTD, RADAR).

3. Qualified JTAC control is required for weapons release.

4. Ultimate responsibility for the safe conduct of each flight rests with the pilot in command and/or designated flight leader.

2207. RETURN-TO-BASE WITH HUNG ORDNANCE. The following policy applies to all 2d MAW aircraft squadrons which carry ordnance or jettisonable stores:

1. Definitions

a. Hung ordnance is any airborne weapon which could not be dropped or fired due to a weapon, rack, or system malfunction. Pilots should be able to verify the condition through audible or visible indicators such as symbology, weapon movement, un-commanded aircraft movement, smoke, flame or soot. Ordnance not receiving firing voltage is considered unexpended ordnance (e.g. unexpended 2.75" rockets that were skipped by the intervalometer) vice hung ordnance.

b. Unexpended ordnance is ordnance in which no release has been attempted.

c. Practice ordnance is inert, normally painted blue and designated as practice ordnance (e.g., MK-76, MK-106, BDU-45).

d. Captive carry is that training ordnance designed for weapons/systems training that is not intended for release or delivery. (e.g. CAIM-9, Captive LMAV, etc.)

2. COs shall ensure strict adherence to ordnance loading and arming procedures in the appropriate airborne weapons/stores loading manuals and all ordnance procedures listed in applicable airfield operations manuals.

3. Pilots in command shall perform a visual inspection of all loaded ordnance, per NATOPS, prior to starting their aircraft. Jettisonable ordnance/stores shall not be uploaded or reconfigured once the aircraft engine(s) have been started.

4. Pilots of aircraft experiencing hung ordnance shall:

a. Attempt to release hung ordnance per applicable weapons/NATOPS manual and target range course rules.

b. Proceed, non-tactically, to the intended landing airfield and avoid, if practical, all populated areas.

c. Inform the appropriate controlling agency that the aircraft has hung ordnance aboard and request a Ground Controlled Approach (GCA) or straight-in visual approach to a full stop landing.

5. When executing a hung ordnance approach, aircraft landing configuration changes should be made over water or over an unpopulated area, if practical.

6. Pilots of aircraft with unexpended ordnance shall comply with applicable airfield operations manual recovery procedures.

2208. 2.75 INCH ROCKET (INERT) FIRING LIMITATIONS

1. For fixed-wing aircraft, the direct fire of 2.75 inch rockets (inert) shall be restricted to the published minimum release parameters of HE warheads as currently delineated in applicable tactical manuals or 1000 feet AGL, whichever is higher.

2. For rotary wing aircraft, the distance to target for firing 2.75 inch rockets with inert warheads shall not be less than 300 meters.

2209. USING MK-58, MOD O MARINE MARKERS AS BOMBING TARGETS. The use of the MK-58 MOD O Marine Location Markers as a bombing target is authorized.

CHAPTER 2

GENERAL FLIGHT OPERATIONS

SECTION 3: AIR COMBAT MANEUVERING

2300. PURPOSE. To publish rules of conduct, guidelines and restrictions to be used in the planning and execution of all Air Combat Maneuvering evolutions.

2301. BACKGROUND

1. Air Combat Maneuvering (ACM) is defined in OPNAVINST 3710.7_. For the purposes of this chapter, unless specifically broken out, the use of the term "ACM" includes Defensive Air Combat Maneuvering (DACM), Dissimilar Air Combat Maneuvering (DACT), Defensive Combat Maneuvers (DCM), Defensive Tactics (DEFTAC), Defensive Measures (DM).

a. DACM - The maneuvering of attack or utility helicopters in response to an airborne threat.

b. DACT - The execution of ACM with a different T/M/S aircraft.

c. DCM - Flights in the MV-22 syllabus including the defensive tactics versus a ground, R/W and F/W threat.

d. DEFTAC - Those aircraft maneuvers performed by aircraft possessing no offensive armament. This is performed as last ditch tactics when efforts to escape detection have failed.

e. DM - Defensive Measures. Flights in assault support helicopters utilizing defensive tactics versus airborne or ground-based threats.

2. ACM does not include aerobatics, all weather intercepts, tail chase, defensive turns, SAM breaks or Forward Quarter Missile Defenses terminated at the merge.

2302. SCOPE. NAVMC 3500.14_, OPNAVINST 3710.7_ and individual T/M/S T&R manuals contain the overall policies, responsibilities, syllabi, and flight objectives for ACM. 2d MAW units shall strictly adhere to these publications and this Wing order when developing and executing ACM evolutions.

2303. AUTHORITY/RESPONSIBILITY

1. Authority and responsibility for developing courses of instruction (both ground and flight), establishing standards for successful completion of such courses and presenting such courses in support of operating units is assigned to the CO, MAWTS-1.

2. Authority and responsibility for overall supervision of ACM training rests with the CG, 2d MAW and will be coordinated by AC/S G-3

3. Authority and responsibility for the safe and efficient implementation of ACM training for assigned aircrew, rests with COs.

4. MAG COs have approval authority for ACM, DEFTAC between squadrons internal to their groups. DACT between 2d MAW squadrons from different MAGS

may be approved by the Group Commanders. Group Commanders shall ensure that these missions are conducted per current editions of reference (c), this SOP and ensure identification on Squadron flight schedules.

5. If DACT is desired between 2d MAW units and units outside 2d MAW, MAG Commanders will notify the CG, 2d MAW, G-3 (Current Operations) of request to conduct DACT. The CG, 2d MAW will review the notification contained in Figure 2-1 and issue via message, authorization to conduct DACT, if approved. Sufficient notification is required to affect liaison and coordination for DACT with other agencies; therefore, all such notifications will normally arrive at 2d MAW a minimum of five working days in advance of the event.

6. MAG COs can request Direct Liaison Authorization (DIRLAUTH) for routinely scheduled DACT between 2d MAW units and external units through the CG, 2d MAW, G-3. Approval of DIRLAUTH will normally be granted upon completion of the procedures stated in paragraph 2303.7, and will be valid for a period of 12 months. DIRLAUTH will only be granted between MAG equivalent units or specific squadrons.

a. Once approval has been granted, routine DACT between the requesting MAGs and external units may be continued by listing DACT sorties with external units on daily squadron flight schedules.

b. A request must be submitted every 12 months to the CG, 2d MAW, G-3, for renewal of DIRLAUTH.

7. DACT will be coordinated by Group Commanders utilizing the following procedures.

a. The senior flight lead, or a designated Group/Squadron representative, will conduct a brief between a senior flight lead of all participating external units and will cover, at a minimum, the applicable ACM training rules, special instructions and safety specifics. The most restrictive ACM training rules will be adhered to for the entire briefed event or exercise. The senior flight leads will, in turn, brief their respective units.

b. Face-to-face ACM briefs are preferred, but are not normally required, unless deemed necessary by the cognizant MAG Commander. In lieu of face-to-face briefs, units may conduct ACM briefs via Video Teleconference (VTC) or telephone within 24 hours of each individual ACM event.

2304. <u>ACM TRAINING</u> (Reference OPNAVINST 3710.7_ ch. 5.1.10.2)

1. The nature of ACM demands that pilots be thoroughly familiar with the performance capabilities and limitations of the aircraft being flown. ACM must be closely supervised and the training rules strictly enforced in order to provide a high degree of safety for all concerned.

2. Squadron Commanders will ensure that all participants are qualified and current in accordance with applicable directives in order to participate in ACM. Additionally, Commanders shall ensure that qualified instructors conduct prerequisite ACM ground training.

3. The training rules established in applicable publications, directives, instructions, or orders shall not be waived or compromised.

2305. BRIEFING REQUIREMENTS

1. Flight leaders, instructor pilots, and/or Aircraft Commanders shall use the approved briefing guides for their T/M/S aircraft. If not already included in the applicable briefing guide, the following items shall be briefed/discussed:

a. Departure/Spin Procedures (Fixed Wing).

b. Training Rules per OPNAVINST 3710.7_, MAWTS-1 TACSOP, Aviation Training and Readiness Program Manual, applicable T/M/S TACSOP or ANTTP and this Order.

c. The learning objectives of each simulated aerial combat engagement will be clearly briefed.

d. Aircraft Limitations.

e. Situational Awareness (including a discussion on the inaccuracy of altitude and attitude visual cues when using an under cast or uneven terrain as a base for a hard deck)

f. Midair Collisions/Avoidance Procedures (altitude blocks for de-confliction as required).

g. Weapons and Weapons Systems Parameters.

h. Downed Aircraft/SAR Procedures.

i. Fuel State/Management Awareness.

2. ACM Between Collocated Units. For unit residents on the same base/station a face-to-face brief shall be conducted by aircrew participating in ACM evolutions. It is recommended that helicopter crew chiefs/observers participate in the brief, but it is not mandatory.

3. ACM Between Units Not Collocated. Face to face briefs shall be conducted to the maximum extent possible. If a face-to-face brief cannot be accomplished because participating units are geographically separated, a phone brief may be accomplished as outlined in OPNAVINST 3710.7_. The person receiving the telephone brief for the unit shall personally brief all participating aircrews from the command prior to launch.

4. Un-briefed ACM is prohibited.

a. ACM of any kind between aircrew who have not specifically briefed an ACM flight prior to launch, is prohibited.

b. Unscheduled ACM is prohibited.

c. Maneuvers that have not been pre-briefed are prohibited.

d. 2d MAW aircraft will not be operated in such a manner as to deliberately provide or cause un-briefed aircrew to believe that they have been engaged.

e. If interloping aircraft intrude on an authorized engagement, 2d MAW aircrew will terminate their engagement by entering wings level, one "G" flight. No attempt shall be made to evade the interloper. If the interloper persists, the Flight Leader shall broadcast on Guard Channel that un-briefed engagements are not authorized. An attempt to close with and identify an intruding aircraft for the purpose of reporting is strictly prohibited.

2306. TRAINING RULES/RULES OF CONDUCT

1. When ACM events are scheduled/flown with units from another MAW, U.S. military branch, or foreign nation, the most restrictive set of regulations and training rules of the participating units shall be used. [T/M/S NAVMC 3500.14]

2. Weather (Reference OPNAVINST 3710.7_ ch. 5.1.10.5).

3. Altitude/Maneuvering Restrictions.

a. Fixed Wing vs. Fixed Wing (Reference OPNAVINST 3710.7_ ch. 5.1.10.6).

(1) Upon disengagement in the low altitude environment, aircraft shall extend beyond visual range prior to re-attack.

(2) Engagements shall be terminated with a "knock it off" or "terminate" call and/or a "wing rock".

(3) In a downhill flight, the chasing aircrew must monitor altitude, call "knock it off" or "terminate" and break off his attack before any altitude restrictions are broken.

b. Fixed Wing vs. Helicopter (Reference OPNAVINST 3710.7_ ch. 5.1.10.7).

c. Helicopter vs. Helicopter (Reference OPNAVINST 3710.7_ ch. 5.1.10.2).

4. Termination of ACM Engagements.

a. All participants have a responsibility to terminate engagements when a dangerous or deteriorating situation is recognized. Should any aircrew member observe an unsafe or potentially dangerous situation developing, they shall announce it by transmitting "knock it off" or "terminate" and assume a wings level, one "G" flight profile. All participating aircrew will acknowledge the "knock it off" or "terminate" call over the radio.

b. 2d MAW units shall follow the rules for "Termination of ACM Engagements" as written in OPNAVINST 3710.7_.

5. Departure Resistance Systems. Aircraft equipped with departure resistance shall be flown with those systems "on". At no time will an ACM sortie be continued should the departure resistance system fail.

6. ACM Operating Areas.

a. ACM training shall be conducted only in airspace approved for ACM.

b. DM/DACM flight will only be conducted in designated TERF maneuver areas or restricted areas where otherwise approved.

c. The use of special use airspace for ACM training is authorized subject to the approval of the scheduling authority and provided the conduct of such training meets all other requirements set forth herein.

d. Flights entering special use airspace for the purpose of ACM training will request, from the controlling agency, advisory information on all other flights operating in the same area. Radar flight following shall be used when practical. Positive radar control is required during engagements of flights operating on assigned separate frequencies.

2307. FIXED-WING ATTACK PERFORMING AGGRESSOR/RED AIR MISSION

1. The mission of Fixed Wing aircraft acting as aggressors/"Red Air" is as follows:

a. Attempt undetected entry into rear quarter missile parameters of fixed-wing aircraft/formations in order to help evaluate ingress/egress tactics and the use and effectiveness of escorts and overall lookout doctrine. "Red Air" should also assess "Blue Air" weapons employment, defensive reactions, IRCM, and other areas requested/briefed by the "Blue Air" aircrew.

b. Attempt to locate helicopter formations and to approach and overfly them using bomb delivery parameters and provide feedback regarding route selection, terrain masking, formation, escorts, lookout doctrine and scatter plans.

2. Minimum distance between aggressor aircraft and helicopters is 2000 feet.

3. Aggressor/"Red Air" flight leaders shall ensure that the following items are briefed to all ACM participants:

a. Training rules listed in OPNAV 3710.7_ and those listed above.

b. Minimum distances between aggressor and "Blue" force aircraft for each evolution.

c. Aircraft of other services or USMC Air Wings are authorized to perform aggressor/"Red Air" missions for ACM.

2308. ACM WITH LIVE ORDNANCE. 2d MAW aircraft carrying live external A/G or forward firing ordnance shall not engage in ACM. A wing rock or a defensive hard turn, not to exceed 180 degrees, may be made to acknowledge an attack. Bullets, loaded in aircraft where the gun has been both mechanically and electrically placed in safe or in such a manner that the gun cannot be armed from the cockpit, are the only exception to this policy.

2309. AIRCREW REQUIREMENTS/QUALIFICATIONS. Fixed Wing and Rotary Wing aircrew shall strictly adhere to all ACM requirements and qualifications as stated in the applicable T/M/S T&R manual(s).

FROM: GROUP OR SQUADRON
TO: CG SECOND MAW//G2/G3/DOSS//
INFO: SQUADRON REQUESTING TRAINING//S3/(SIMILAR T/M/S SQUADRONS WITHIN GROUP)//

UNCLAS //N03140//
MSGID/GENADMIN//
SUBJ/MAG XX DIRLAUTH REQUEST FOR DISSIMILAR AIR COMBAT TRAINING(DACT)//
REF/A/DOC/WGO P3710.38B//
NARR/REF A IS 2D MAW SOP FOR AIR OPERATIONS//
POC/NAME,INIT/RANK/UNIT/DSN/EMAIL//
RMKS/1. IAW REF A PARA 2303.6, DIRLAUTH IS REQUESTED FOR DACT BETWEEN (MAG XX) AND (EXTERNAL UNIT).
2. INFORMATION SUBMITTED:
    A. DATES OF DACT/ACM/BFM:
    B. TYPE OF ACFT AND HOME:
    C. ADVERSARY PARENT CMD:
    D. LOC OF DACT:
    E. UNIT/NUMBER OF (PARENT CMD) ACFT:
    F. UNIT/NUMBER OF ADVERSARIES:
    G. NUMBER OF MSNS ANTICIPATED:
    H. DATE OF FACE TO FACE BRIEF (OR SIMILAR BRIEFING METHOD):
3. ALL TRAINING WILL BE CONDUCTED IAW USMC TRAINING RULES, WITH ADHERANCE GIVEN TO THE MOST RESTRICTIVE AMONG THE PARTICIPATION UNITS. REQUEST DIRLAUTH APPROVAL THROUGH (12 MONTHS FROM DATE OF FACE TO FACE BRIEF).

Figure 2-1.—REQUEST FOR DACT TRAINING.

CHAPTER 2

GENERAL FLIGHT OPERATIONS

SECTION 4: MILITARY TRAINING ROUTES

2400. PURPOSE. The purpose of this section is to set forth administration and operation procedures for use of Military Training Routes (MTRs) by 2d MAW units.

2401. BACKGROUND. The MTR program was mutually developed by the Department of Defense (DOD) and the Federal Aviation Agency (FAA) to provide for military operational and training requirements that cannot be met under the terms of FAR 91.70; e.g., operation of aircraft under 10,000 feet Mean Sea Level (MSL) in excess of 250 Knots Indicated Air Speed (KIAS). Accordingly, the FAA has issued a waiver to DOD to permit operation of aircraft below 10,000 feet MSL in excess of 250 KIAS along DOD developed and published Instrument Flight Rules(IR)/Visual Flight Rules (VR)/Slow Speed (less than 250 KIAS) Low Altitude Training (SR) routes.

2402. DISCUSSION. The MTR structure consists of VR, IR, and SR routes. Refer to appropriate FLIPS for definitions.

2403. POLICY

1. Under no circumstances will MTRs listed in DOD FLIP AP/1B be flown without prior approval of the scheduling authority.

2. Operations to and from MTRs should be conducted on an IFR flight plan in accordance with DOD FLIP AP/1B. Visual Flight Rules (VFR) flight plans may also be used to transit to and from an MTR but should be secondary to IFR flight plans.

3. Low altitude flight will be conducted on approved/published IR/VR/SR MTRs and shall conform to the direction of traffic flow and altitude restrictions indicated in the applicable route description. Altitude currency requirements established in NAVMC 3500.14_ shall apply.

4. Aircrew should comply with appropriate frequencies and transponder codes as directed by DOD FLIP AP/1B unless otherwise directed by Air Traffic Control (ATC).

5. Night low-level operations shall maintain minimum altitudes per the T&R Manual and Chapters 3, 4 and 5 of this Order. Aircrew(s) shall ensure operations are taking place during hours located in the FLIP for a particular route.

6. Pilots flying routes that pass through Warning or Restricted Areas will obtain clearance from the appropriate controlling agency as required.

7. In the event the flight deviates from an approved route over land, a minimum altitude shall be obtained ensuring clearance of obstacles within 25 NMs of route centerline.

8. Users will be scheduled on a first come, first served basis.

9. Each route will be flown by the description and requirements specified in FLIP AP/1B.

10. Aircrews will be familiar with FLIP AP/1B prior to flying IR/VR/SRs.

11. Aircrews are responsible for de-conflicting routes with other scheduling authorities.

12. Squadrons will schedule IR/VR/SRs no later than two hours prior to flight.

UNCHARTED OBSTRUCTION TO FLIGHT REPORT

FROM: GROUP OR SQUADRON
TO: CG SECOND MAW//G2/G3/DOSS//
INFO: (ALL MAGS)
UNCLAS //N03140//
MSGID/GENADMIN//
SUBJ/UNCHARTED OBSTRUCTION(S) TO FLIGHT//
REF/A/DOC/WGO P3710.38_//
AMPN/REF A IS 2d MAW SOP FOR AIR OPERATIONS//
POC/NAME,INIT/RANK/-/DSN:___//
RMKS/1. PER THE REF, THE FOL UNCHARTED OBSTRUCTION(S) TO FLT IS SUB.
2. OBSTRUCTION DATA:
A. OBSTRUCTION ELEV:
(1) AGL:
(2) MSL:
B. LOCATION: [EXAMPLE: 38' 221 MIN N 44' 40 MIN W (EXACT LOC NEAREST SEC) OR (GEOCOORD) 38' 22 MIN N 45' 25 MIN W (APPROX LOC TO NEAREST MINUTE)]
C. TYPE OF OBSTRUCTION:
(ADDITIONAL PARAGRAPH FOR EACH OBSTRUCTION AS NEEDED)//

Figure 2-2.--Uncharted Obstruction to Flight.

CHAPTER 3

FIXED-WING OPERATIONS

SECTION 1: FIXED-WING GENERAL OPERATING PROCEDURES

3100. PURPOSE. This chapter covers those general operating procedures for 2d MAW Fixed-Wing (FW) operations. Should a conflict arise between these policies and OPNAVINST or NATOPS, the latter shall prevail.

3101. SECTION TAKE-OFFS AND LANDINGS

1. Section takeoffs, fan breaks and section landings are approved only as authorized by applicable NATOPS and Training and Readiness manuals; all should be practiced for currency and proficiency. At a minimum, the following items shall be covered in pre-flight briefings:

Configuration
Aborted takeoff
Arrestment gear configuration
Positioning
Pattern speeds/intervals
Communications (radio and visual)
Brake failure
Weather criteria/conditions
Emergency diverts

2. Practice section landings shall be limited to runways at least 8,000 feet long and 200 feet wide (FW only). Section landings are authorized whenever operationally necessary.

3102. SINGLE ENGINE FLYAWAY CAPABILITY FOR DUAL ENGINE FIXED-WING AIRCRAFT

1. Dual engine FW aircraft shall have a single engine flyaway capability in the event of an engine failure after liftoff from a runway.

2. Single engine flyaway capability is defined as the ability to maintain at least minimum safe single engine airspeed and a 100 foot per minute rate of climb with one engine at maximum power after liftoff.

3. If airfield departure will overfly heavily populated areas, the jettisoning of external stores shall not be considered in pre-flight planning when determining aircraft gross weight to achieve single engine flyaway capability. (This does not restrict the emergency procedure to jettison stores when required.)

4. If single engine flyaway capability cannot be achieved, do not takeoff until the aircraft's gross weight has been reduced or the outside air temperature drops so that single engine parameters are achieved.

3103. AERIAL REFUELING WITH KC-135 TANKER AIRCRAFT

1. The hard hose and knuckle basket used by KC-135 tanker aircraft requires familiarity with procedures and precise tanking technique on the part of the receiver pilot.

2. Before participating in aerial refueling with a KC-135, all aircrew shall:

a. View the KC-135 aerial refueling procedures and technique video tape available via MAG HQ.

b. Have a minimum of 50 hours in type and be day and night aerial refueling qualified.

3. Before participating in transoceanic aerial refueling with a KC-135, aircrew shall be Combat Ready in type. Aircrew shall be qualified as per the Air-to-Air Refueling Manual, ATP-56(B) and shall be current in KC-135 aerial refueling procedures within the previous 90 days.

3104. KC-130 SUPPORT

1. Aerial refueling will be conducted in accordance with the Air-to-Air Refueling Manual, ATP-56(B). Units requesting KC-130 support are responsible for obtaining airspace for all Non-ALTRV aerial refueling.

2. Parachute operations will be conducted in accordance with the Marine Corps Parachuting and Diving policy (MCO 3500.20), the Static Line Parachuting Techniques and Training (FM 57-220), Special Forces Military Free-Fall Operation (FM 3-05.211/MWCP 3-15.6), U.S. Marine Corps Military Free-Fall Operations (TM 70244A-OI) and the ANTTP for KC-130 Aircraft (NWP 3-22.5-KC-130). Units requesting KC-130 para-ops are responsible for range scheduling and ground safety personnel/requirements.

3105. TACTICAL AIR STRIKES

1. General. This section provides policy and guidelines for the conduct of intra-Wing, joint and combined tactical air strike training operations.

2. Definitions

a. Wing/Group Strike. An evolution which includes more than one type of Wing aircraft, or a flight of more than one division of the same type aircraft from different units. In divisions with two types of aircraft, with one of them being a single F/A-18B/D flown in the TAC (A) or FAC (A) role, this definition does not apply.

b. Joint Strike. A strike in which aircraft from two or more U.S. Military Services participate.

c. Combined Strike. A strike in which U.S. aircraft and aircraft of one or more foreign nations participate.

3. Procedures.

a. CG, 2d MAW (AC/S, G-3) shall be informed/briefed on all planned 2d MAW combined tactical air strike training missions at least 5 days prior to the event except as part of a major planned exercise that has already been briefed to the MAW. The message shall include:

(1) Mission Commander's name/grade/unit/phone number.

(2) All participating units.

(3) The type and number of aircraft involved and the role they will play within the strike.

(4) Date(s)/time(s)/area(s) the strike is to take place.

(5) Special applications or alterations of Training Rules (TR) necessary to accomplish the strike.

(6) Support required from higher headquarters.

4. If ACM training is desired, it shall be requested via separate message per the applicable Memorandum of Understanding and/or directives IAW Chapter 2.

5. MAG Commanders are encouraged to conduct at least two strikes each quarter and all aircraft squadrons/detachments in the 2d MAW should have the opportunity to act as Mission Commander.

3106. TACTICAL NIGHT OPERATIONS

1. General. No pilot shall sign for an aircraft for night flight that has not flown that T/M/S aircraft within the previous 15 days.

2. Minimum Altitudes

a. Altitude restrictions and currency requirements for Unaided/Night Systems/NVD flights are contained in NAVMC 3500.14_ and applicable T/M/S T&R syllabi. Deviations from the guidance contained in this Order are not authorized.

b. NVD flight altitudes shall be limited to the minimums for the least current/least qualified aircrew member in the flight. Flight Leaders shall plan/brief/conduct all flights to accommodate the abilities and comfort level of the least capable aircrew member in the flight.

3. FW Ordnance Delivery Minimum Recovery Altitudes. The minimum dive delivery recovery altitude will be the applicable ANTTP altitude as defined for the specific ordnance being employed. The minimum altitude will be the result of an appropriate release altitude that accounts for the highest altitude as required for fragmentation avoidance, dive angle, terrain clearance and fuse arming time. In no case will the release altitude be less than 500' AGL for HLL or 1000' AGL for unaided or LLL.

3107. NIGHT VISION DEVICES (NVD)

1. All aircrew participating in NVD operations shall be familiar with all NVD policies set forth in OPNAVINST 3710.7_, NAVMC 3500.14_, MCO P3500.16_, applicable Tactical Manuals. Additionally, MAWTS-1 NVD Manuals also provide information on the conduct of NVD training.

2. FW NVD flight operations shall only be conducted using NAVAIR approved NVDs.

3. Illumination. The approved method for deriving illumination requirements for night operations is the Solar/Lunar Almanac Program (SLAP). Illumination levels (HLL/LLL) are defined per the MAWTS-1 NVD Manual.

4. External Lighting. Aircraft external lighting shall comply with existing FAA rules except as modified in FAA Exemption No. 8028 (contained in Appendix G of NAVMC 3500.14_). Aircraft incandescent external lighting shall be at the highest intensity consistent with NVD compatibility unless the FAA grants specific FAA waivers to solely use IR external lighting:

5. Single aircraft operations. Navigation lights on and anti-collision lights on.

6. Multi-aircraft operations.

a. Flights of up to four aircraft shall use lighting compatible with NVD operations. The last aircraft in the flight shall fly with navigation lights on, formation lights as desired, and anti-collision lights on. Anti-collision light shall be incandescent when outside of restricted airspace.

b. All flight members shall be briefed on the lighting configuration of each aircraft in the flight before they conduct separation and rejoin.

c. Within approved special use airspace or military training routes, the aircrew may secure the anti-collision lights if they pose a hazard.

d. The FAA regulation to see and avoid shall take priority over NVD tactics training. Lighting for aircraft in NVD formation flights shall be sufficient to ensure adequate opportunity exists for other aircraft external to the formation to "see and avoid" the formation.

7. All aircraft conducting NVD operations shall be equipped with approved NVD compatible cockpit lighting.

8. NVD operations shall be conducted in VMC conditions. Flight in IMC for purposes of conducting standard instrument departures and instrument approaches is permitted while under positive radar control. Entering IMC during VFR training is prohibited. Inadvertent IMC procedures shall be briefed for all NVD flights.

9. NVD pre-flight shall be conducted as described in the MAWTS-1 NVD Manual. All aircrew should use the ANV-2020 (Hoffman 20/20 box) to assess NVD performance prior to every NVD flight.

10. NVD take-offs and landings are authorized. During formation flight, the flight may goggle/de-goggle when the flight is stabilized (i.e., not during rendezvous or maneuvering). In all multi-piloted aircraft, the aircrew will not goggle or de-goggle simultaneously; one aircrew shall always be "heads out" of the cockpit for collision avoidance. Goggling and de-goggling will occur, one person at a time, one cockpit at a time. Goggling/de-goggling procedures for the flight will be briefed prior to launch.

11. Units desiring NVD demonstration flights for non-ADP should submit requests by naval message for approval to CMC via the chain of command to arrive at 2d MAW no later than 15 working days prior to the event.

12. All units participating in NVD operations are required to publish standard operating procedures regarding NVD policies/procedures (e.g., equipment, light discipline, crew coordination, etc.).

CHAPTER 3

FIXED-WING OPERATIONS

SECTION 2: FIXED-WING LOW ALTITUDE TACTICS (LAT) TRAINING

3200. PURPOSE. To publish guidance for implementing Low Altitude Tactics (LAT) training programs.

3201. BACKGROUND

1. To improve the operational readiness of FW squadrons and to give aircrew the tools to support the MAGTF in non-optimal weather, an organized and supervised program for low altitude flight training is required. Accordingly, this section provides guidance and standardization to ensure that low altitude flying is conducted in such a manner as to optimize tactical readiness requirements and yet assure that this training adheres to strict aviation safety standards.

2. LAT may be conducted at VMAT-203 in accordance with the approved FRS syllabus. This includes LAT flight profiles, LAT(I) certification, operating areas and LAT currency requirements. The minimum altitude of 300 feet for HUD equipped aircraft also applies to VMAT-203. Minimum Altitude Capable (MAC) is not authorized.

3202. DEFINITIONS

1. LAT Training. LAT training flights are designed to develop proficiency in low altitude tactics. The term LAT shall apply only to tactical fixed-wing and tilt rotor operations conducted during day or night VMC and applies only to those flights where the briefed intent is to fly below 500 feet AGL; specifically, missions which impose the high pilot workload associated with communications, ridgeline crossings, target acquisition, lookout, and defensive maneuvering against simulated air-to-air and ground-to-air threats. Missions performed on an ordnance delivery range for the sole purpose of refining delivery skills are excluded from the LAT definition. LAT instructor chase aircraft are not considered a part of the formation.

2. Comfort Level (CL). This is the lowest altitude at which it is possible to accommodate low-level task loading and maintain safe terrain clearance. This is a perceptual concept, subject to the psychology of individual differences, and never a hard altitude. It will vary according to terrain, aircrew skill, currency, and degree of training in the low altitude environment. Current USMC policy restricts LAT training to no lower than 300' AGL for FW aircraft and 200' AGL for tilt-rotor.

3. Minimum Altitude Capability (MAC). This is an altitude flown as a defensive response below the comfort level. At this level, the aircrew voluntarily disregards all other task loading to attain the lowest possible altitude commensurate with minimum terrain clearance. MAC is not authorized by current USMC policy.

4. Climb to Cope. Aircrew will employ climb to cope when situational awareness or mission performance is degraded. The climb to cope may be executed as an adjustment for CL or as a response to a Knock It Off (KIO) call. Training may resume once all aircrew are confident that continued safe operations are assured.

5. KIO. When a dangerous loss of situational awareness is recognized or a potentially hazardous circumstance develops, any crewmember shall call for a KIO without delay. The response to a KIO call will be an immediate wings level controlled climb to briefed altitude and discontinuation of training until the cause for the KIO has been adequately addressed and all aircrew concur on a course of action.

6. Terminate. To cease the current maneuver, crewmembers shall use the term "terminate." The response to "terminate" shall be an immediate discontinuation of maneuvering and leveling off at present or briefed altitude.

3203. CURRENCY/PROFICIENCY

1. Currency intervals relate to flight exposure involving a specific skill and are divided into time intervals. When aircrews exceed a currency interval, the aircrew must abide by the minimum altitudes commensurate with their particular currency interval as per the T&R. Aircrew may update the currency interval and corresponding minimum altitudes on one sortie; the individual may update currency after flying one circuit of an approved LAT course. In aircraft requiring two or more aircrew for the briefed mission, the most restrictive aircrew's currency interval applies to the aircraft. In flights of two or more aircraft, the most restrictive aircrew currency interval applies to the flight.

2. Proficiency is a measure of achievement of a specific skill. To regain proficiency, an individual shall complete the delinquent event with a proficient crewman/flight lead. If an entire unit loses proficiency, unit instructors shall regain proficiency by flying with an instructor from another like unit. If not feasible, the instructor shall regain proficiency by flying with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another Aircraft Commander or as designated by the commanding officer.

3204. LAT TRAINING PROGRAMS. LAT training programs will comply with the following criteria:

1. Instructor Qualifications. The training, qualification, and certification of instructors, shall be accomplished as prescribed herein. No flight instruction shall be conducted by any air crewman who is not qualified and current as an instructor listed below.

a. Weapons and Tactics Instructor (WTI). A graduate of the WTI Course conducted by MAWTS-1 who holds a 7577 secondary MOS. A WTI is authorized to conduct squadron flight training including LAT training and is authorized to certify new LAT (I)s.

b. LAT Instructor (LAT (I)). A naval aviator who has completed the MAWTS-1 LAT (I) syllabus in his type aircraft and has been certified by a WTI or MAWTS-1 Instructor.

c. Instructor Certification. LAT (I) certification shall be accomplished per the current MAWTS-1 course catalog as directed by NAVMC 3500.14_.

2. Trainee Qualifications. Aircrew commencing LAT training shall have demonstrated a high degree of aircraft proficiency in current model to include proficiency in navigation, map reading, maneuvering and weapons delivery at higher altitudes, as well as proficiency in LAT training conducted above 500 feet.

3205. POLICY. Because of the demanding nature of maneuvering aircraft at extremely low altitudes, training must be carefully structured in a comprehensive program that incorporates a building block approach to achieving qualification in LAT. This program is outlined in NAVMC 3500.14A, MCO P3500.15_ and specific MAWTS-1 T/M/S T&R syllabi.

1. Planning. Thorough flight planning and preparation shall be completed prior to each LAT training sortie IAW procedures/requirements applicable to each T/M/S aircraft.

2. Flight Requirements. Flights shall use requirements as outlined by T/R manual.

3. Flight Schedule. LAT training flights shall be specifically scheduled.

4. Instructor in Flight. A WTI or LAT (I) will be included in all flights conducting initial LAT training qualification.

5. LAT Training Routes and Areas

a. LAT training shall be conducted in restricted airspace, MOAs or published IR/VR/SR routes or other training areas so designated by CG, 2d MAW. LAT conducted on MTR's shall be in accordance with altitude restrictions and special operating procedures outlined in AP/1B-AREA PLANNING, MILITARY TRAINING ROUTES. Areas where LAT maneuvering will be conducted shall be free of vertical obstacles that would constitute a danger to the free navigation requirements of low altitude tactics training.

b. Certification procedures of unpublished routes. Squadron Commanders shall provide a detailed proposal to the CG, 2d MAW via the chain of command requesting approval to begin certification procedures. The proposed route will be flown by a current/proficient LAT (I) at a safe altitude and speed in order to survey for vertical hazards. If the proposed route is determined safe, a request for certification will be submitted to the CG, 2d MAW, AC/S G-3 via the respective MAG Commander.

6. Flight Limitations. Aircrew shall fly no more than two LAT training flights in one day.

7. Weather Minimums. LAT will only be conducted in VMC conditions with a minimum ceiling of 3000' AGL and visibility of 5 NM.

8. LAT Altitudes. [Reference NAVMC 3500.14_]

9. FW LAT Minimum Altitude Waivers. Requests to fly LAT training events lower than the FW LAT minimum altitudes delineated above shall be submitted in message format to HQMC via operational chain of command (To CMC WASHINGTON DC APP; info CG TECOM ATB). Requested training events, altitudes and applicable time periods for the waiver should be identified.

3206. ACTION

1. Wing AC/S, G-3. Monitor the overall LAT training program within 2d MAW and conduct Semi-Annual reviews of the authorized LAT routes in coordination with MAG-14/31 to insure they are still viable and safe for use.

2. Group Commanders

a. Monitor LAT training programs within the Group.

b. Notify squadrons of any changes, operational hazards or conflicting operations in approved LAT training areas as reported by range control or other squadrons.

c. Notify Wing (AC/S, G-3) of any changes, operational hazards, or conflicting operations in approved LAT training areas as reported by range control and using squadrons.

3. Squadron Commanders

a. Designate LAT (I)s in writing after completion of required syllabus training.

b. Conduct LAT training only in those areas approved by Wing Headquarters.

c. Notify the parent group and 2d MAW (AC/S, G-3) of any changes, operational hazards, or conflicting operations in approved LAT training areas.

CHAPTER 3

FIXED-WING OPERATIONS

SECTION 3: TRANSOCEANIC MOVEMENTS

3300. PURPOSE. To implement policies and procedures of WgO P3710.34_ and to establish specific responsibilities and procedures for the conduct of transoceanic operations.

3301. BACKGROUND

1. Transoceanic movements of Marine tactical jet aircraft are conducted using U.S. Air Force KC-135 or KC-10 strategic tankers. All 2d MAW transoceanic movements are directed by COMMARFORCOM. These missions are assigned the name "Coronet West/East."

2. Coronet requests are submitted via Naval Message traffic in accordance with current COMMARFORCOM message traffic. Movement dates are assigned via COMMARFORCOM message.

3. The CG, 2d MAW is tasked to plan and conduct transoceanic movements per the policies and procedures established in this chapter, WgO P3710.34_, AFI 11-207 and the Transoceanic MOU between the U.S. Air Force, Navy and Marine Corps. In addition to these references, Coronet West movements should refer to COMMARFORCOM P3710.3 and COMNAVAIRPACINST 3123.3 for applicable information.

3302. DISCUSSION

1. Currency requirements for transoceanic movements are delineated in the Air-to-Air Refueling Manual, ATP-56(B) and the MOU between the Department of the Navy and Department of the Air Force on Air Refueling Support for Naval Operations. Refresher training will be scheduled through the USAF Horse Blanket system. Horse Blanket requests are submitted through the ARMS website in accordance with COMMARFORCOM message traffic. These requests should contain time, duration, track and offload. Commanders are advised to keep their squadron current in order to deploy immediately.

2. Each squadron should request Air Force lead and trail maintenance support flights, Enroute Support of Transient Aircraft (ESTA), through their MAG S-4. These aircraft will bring essential support personnel to each stopover location. The MAG will coordinate and fund these flights.

3. Each transoceanic movement may request a KC-130 maintenance support aircraft to accompany the squadron. These may be requested through the normal II MEF scheduling conference. All requests are due to the 2d MAW (AC/S, G-3) Current Operations no later than the 1st of the month prior to the month requested; e.g., the 1st of April to schedule for May. These aircraft, if available, will be able to provide a carrying capacity of 10,000 pounds, inclusive of passengers and pack-up material. These aircraft will be able to provide a flight time of eight hours. It may be required to reduce this weight in order to support longer distances.

4. The MOU between the USAF, Navy and Marine Corps assigns an Air Force Delivery Control Officer (DCO) that assumes OPCON of the aircraft from departure until arrival at the final destination. The DCO will be funded by

the MAG. The assignment of a DCO does not relieve COs of ensuring their pilots are well-versed on transoceanic profiles, routes, diverts and bingo fuel levels. Squadron COs are required to ensure their aircraft and aircrew are ready to depart on time.

5. Each squadron CO is required to report safe on deck to the 2d MAW (AC/S, G-3) with location and status of aircraft. The required information to pass is: actual flight time, aircrew and aircraft status, location and any itinerary changes.

6. All transoceanic movements and associated costs will be funded by the MAG.

3303. ASSIGNMENTS AND RESPONSIBILITIES

1. AC/S, G-3. The AC/S G-3 shall maintain staff cognizance of all transoceanic operations involving 2d MAW aircraft, to include movements of 2d MAW aircraft and request for 2d MAW host unit support by transiting transoceanic units.

2. MAG CO. The MAG CO shall ensure all scheduling is complete, including: SAAM request message for transportation of squadron equipment, request for an Air Force support flight, request for refresher training and request for Marine support flight.

3. Squadron CO. Squadron COs shall ensure all aircraft and aircrew are ready to depart on time. He/she shall ensure that all arrangements have been made at airfields along the way for squadron personnel to include: PPRs, lodging, transportation, messing and clearances. This should cover any personnel traveling with the movement; e.g., any personnel on support aircraft or refueling aircraft.

4. Host Unit. Host units shall be responsible for providing aircraft peculiar support, e.g. maintenance, admin/briefing spaces and ground support equipment. The transoceanic unit shall make initial contact with host unit to make support requests. A host unit representative shall meet each transoceanic unit.

3304. POST-OPERATION REPORTS. Group and Squadron COs shall submit to 2d MAW (AC/S, G-3) a post-operation report. This report should contain trouble spots, lessons learned and recommendations.

3305. ACTION. All pertinent 2d MAW Staff Officers, Group and Squadron Commanders of tactical jets and the CO, VMGR, will review this section and be prepared to conduct or support transoceanic movements.

CHAPTER 4

ROTARY-WING OPERATIONS

SECTION 1: ROTARY-WING GENERAL OPERATING PROCEDURES

4100. PURPOSE. This chapter covers general operating procedures for 2d MAW rotary-wing operations. Should a conflict arise between these policies and OPNAVINST or NATOPS, the latter shall prevail.

4101. MASTER HAZARD MAP

1. Helicopter Squadrons shall maintain a Master Hazard Map (MHM). The requirement for the maintenance of a MHM rests within the Safety Department. The Director of Safety and Standardization is responsible for ensuring the MHM is maintained and kept up to date.

2. At deployed locations, the Director of Safety and Standardization will contact the local aviation authorities to ascertain what local flight hazards exist on low-level, MTRs and approve TERF routes prior to conducting flight operations on those routes. The ODO is responsible to ensure all aircrew have been briefed on local flight hazards contained on the MHM and have initialed the R&I board indicating so before the aircrew departs the briefing area to commence flight operations.

4102. HELICOPTER TROOP/PASSENGER TRANSPORT

1. Guidance for all troop/passenger movement operations contained in NATOPS, reference (a), reference (j), individual T/M/S T&R manuals and MAG and squadron SOPs shall be strictly followed.

2. In all cases, the HAC shall limit the number of troops/passengers embarked to the number for which there are adequate seats, safety belts, cranial protection and personal survival equipment. MAGTF Commanders have been delegated the authority to waive such restrictions as required for training/contingency operations/extraordinary mission requirements.

3. Authorized Passengers. Active duty military personnel and reserve U.S. military personnel on active duty are authorized to ride as passengers in 2d MAW aircraft. Other passengers must be eligible for air transport per MCO 4630.16_ or have been granted specific eligibility per reference (a). Prior to carrying civilians aboard squadron aircraft, the Squadron Operations Officer will ensure the necessary clearances have been obtained through the chain of command.

4. Passengers shall remain seated with seatbelts fastened from takeoff to landing and during ground taxi. On extended flights, once the aircraft is leveled off at planned cruise altitude, the Crew Chief may allow passengers limited movement about the cabin area. This shall be covered during the passenger brief. During UH-1 N/Y special operations missions when the use of seats is impractical, each passenger will be strapped in with seat belts via deck rings.

5. HACs are responsible for ensuring all troops/passengers receive a safety/emergency procedures brief prior to launching with passengers aboard. All passengers will be briefed and familiarized with normal ingress/egress procedures, emergency escape procedures and general safety precautions. For

tactical troop lifts this brief will be provided by the troop commander and is not the responsibility of the HAC.

6. Passengers should wear cranials or flight helmets. Combat helmets may be worn as a substitute during all tactical lifts. Respective Troop Commanders are responsible for providing adequate hearing protection (ear plugs) during tactical lifts when combat helmets are worn by troops. During over-water flights, all troops/passengers will wear LPPs unrolled and properly donned. HACs will ensure that sufficient numbers of protective cranial helmets and flotation devices, LPPs or rafts, are onboard to accommodate all passengers.

7. The HAC may authorize a Stick Leader to move forward to brief the pilots however, that individual must wear a gunner's belt or be seated in the cockpit jump seat. To the max extent possible the stick leader should be given an ICS cranial or flight helmet to communicate with the aircrew. For all Alternate Insertion and Extraction Operations (AIE) the unbuckle command shall come only from the pilot in command.

8. Departure from the aircraft will be granted by the Aircraft Commander and as directed by the Crew Chief.

9. All weapons will be checked clear with the bolts to the rear. Muzzles will be down, magazines will not be allowed in the weapons until just prior to landing and then only when cleared by the HAC/TAC and directed by the Crew Chief.

10. MOLLE/ILBE Packs may be stored in any of the following positions:

a. Placed on the deck between the legs.

b. Placed on the individual's lap.

c. Placed on the seat beside the individual if space is available.

d. Stacked together and tied down with a cargo strap.

11. Passengers gear, equipment and packs should not be placed under the seats of the aircraft.

12. All emergency situations involving passengers will be handled by the Crew Chief. Passengers are to be reminded that the Crew Chief represents the Aircraft Commander and therefore he controls the activities in the cabin section of the aircraft and that his instructions are to be obeyed at all times.

13. HACs should ensure that the embarked Troop Commander is provided two-way intercommunications with the aircrew during all troop lifts.

4103. NIGHT HELICOPTER TROOP/PASSENGER OPERATIONS

1. Guidance for all night training operations contained in NATOPS, reference (a), reference (j), individual T/M/S T&R manuals and MAG and squadron SOPs shall be strictly followed.

2. All assault support aircraft carrying passengers at night over water shall be equipped with a fully functional Helicopter Emergency Egress

Lighting System (HEELS) or emergency exits equipped with emergency lighting. Aircrew will utilize NVDs to the maximum extent practical.

3. Daytime route/LZ Recon and Rehearsals

a. A daytime route/Landing Zone (LZ) recon flight should be flown by the night assault aircrew to identify any obstacles and hazards to safe operations. This route/LZ recon may be combined with a day rehearsal flight involving embarked troops.

b. A route/LZ recon flight is not required for missions to frequently used LZs.

c. If the Squadron Commander deems it unfeasible for all aircrew to fly the daytime route/LZ recon, then efforts should be made for flight leaders assigned to the night assault to fly the route.

d. Missions involving evaluations may have route/HLZ recon for obstacles/hazards conducted by a WTI or STANO in lieu of aircrew participating in the night mission in order to allow for realistic training/operations.

e. Tactical training exercises such as JTFEX/CERTEX require that low altitude flight routes be planned and flown to counter a given threat scenario. Group or Squadron Commander certification and pre-flying of routes may be impractical under these circumstances. When a 2d MAW squadron or detachment is participating in a tactical training exercise in any of these areas, the parent Group Commander or MAGTF Commander may waive the requirements for pre-flying routes and route certification.

f. Routes/LZs requiring recon should be used for missions within 10 days of obstacle/hazard verification.

4. When conducting Night Troop/Passenger Transportation operations, the pilot and copilot shall be designated NSQ (HLL and LLL) per the appropriate T&R syllabus and must have flown at least 1 NVD T&R sortie (HLL or LLL) within the previous 30 days. Crew Chiefs and Aerial Gunners/observers shall be designated NSQ per the appropriate T&R syllabus. (Aircrew are "embarked troops HLL and LLL qualified" when they are designated NSQ in writing by the squadron commander with appropriate NATOPS, APR jacket and logbook entry).

5. During contingency/combat operations MAGTF or Wing Commanders may waive the criteria established for conducting NVD operations (HLL or LLL) with embarked troops and passengers.

4104. NIGHT SYSTEM (NS) OPERATIONS

1. All aircrew participating in NS operations shall be guided by and ensure familiarity with all NS policies set forth in reference (a), reference (j) and the MAWTS-1 NVD Manual. All general policies addressed under Sections 4101 and 4102 are relevant to NVD training/operations unless otherwise stated.

2. AN/AVS-9 Night Vision Goggles are the only authorized NVDs for use by 2d MAW aircraft.

3. The only approved method for deriving illumination requirements for night operations is the SLAP offered in the Geophysics Fleet Mission Program Library - New Technology (GFMPL-NT). Illumination levels (HLL/LLL) are defined per the MAWTS-1 Helicopter NVD Manual.

4. Squadrons shall establish an NVD eye lane as described in the MAWTS-1 NVD Manual or use the ANV-2020 (Hoffman 20/20 box) to assess NVD performance prior to every NVD flight.

5. No pilot shall sign for an aircraft for night flight without first meeting day currency requirements and completing at least one flight of 1.0 hour duration in T/M/S in the last 15 days.

6. Exterior lighting should be functional for all NS operations IAW reference (a) and reference (j).

7. During all NS training flights, general aviation regulations to "see and avoid" shall take precedence over tactical training. Lighting for aircraft in NS formation flights, outside of military training ranges, shall be in accordance with FAA regulations and reference (a) and reference (j).

8. NVD operations shall be conducted in VMC. Flight in IMC for the purposes of conducting standard instrument departures and instrument approaches is permitted while under positive radar control. However consideration should be given to flying unaided while in IMC to reduce the possibility of vertigo.

9. When flying in areas that are not routinely flown by a squadron, NS routes and LZs should be flight checked to ensure that the routes/zones are clear of obstacles that might influence the safety of flight. Hazard map inspections will suffice if an update has been conducted within 30 days.

10. During flights where NVDs are to be used, all aircrew aboard the aircraft shall use them unless crew duties dictate otherwise. Specific situations where aircrew can expect to be off the goggles to complete "other duties" shall be identified and thoroughly discussed during the preflight briefing.

4105. VERY IMPORTANT PERSON (VIP) FLIGHTS

1. Whereas all military and civilian personnel with a designated VIP code are deserving of services when available, due to 2d MAW's limited assets the following guidance will apply unless tasked otherwise:

a. Code 7 (Captain USN or Colonel USMC/USAF or GS-15): not normally afforded services. If tasked, one aircraft.

b. Code 6 (Brigadier General or Rear Admiral (1-star)): one aircraft.

c. Code 4 (Lieutenant General or Vice Admiral (3-star) and 5(Major General or Rear Admiral (2-star)): two aircraft. One primary and one flying backup. The flying backup should be in the immediate vicinity of the primary aircraft.

d. Code 3 (Generals or Admirals (4-star)), 2(VPOTUS, Commandant USMC) and 1(POTUS): three aircraft. One primary, one flying backup, and one turning backup.

NOTE: All VIP aircraft transiting over water shall have backup aircraft. VIP codes found in General Planning, Section 4-3.

e. VIP aircraft will be in position a minimum of fifteen minutes prior to the scheduled pickup time.

f. Passengers will be briefed by the crew chief on the use of survival equipment and aircraft safety procedures.

g. The VIP's destination will be contacted as soon as possible with the code's destination and inbound ETA.

h. Squadrons will assign aircraft in the best possible material condition with regard to cleanliness and operational status. VIP seat covers, seat belt covers, passenger briefing guides, clean life jackets and sound suppressors/cranial helmets will be provided when available.

i. Codes are assigned based on senior ranking member of party for each mission. If pick-up or drop off locations are different then multiple missions will be assigned and aircraft separately according to the code matrix above.

4106. USE OF HELICOPTERS DURING DISASTERS/EMERGENCIES. Squadron Commanders and Detachment OICs may authorize the use of assigned helicopters and crews for rescue missions or other support missions, within reference (a) and appropriate NATOPS, if an emergency exists (loss of life or significant loss of property). At the earliest opportunity, the Wing (AC/S, G-3) shall be provided with full details. If questions arise regarding the validity of the request, or its ability to remain within OPNAVINST and NATOPS parameters, the request will be made to the Group Commander or to Wing Headquarters (AC/S, G-3).

4107. HELICOPTER ALTITUDE RESTRICTIONS

1. Minimum en route altitude for helicopter operations in a restricted area or approved training area will be in accordance with reference (a), reference (j) and applicable Range Regulations.

2. Minimum en route altitude for helicopter operations outside an approved training area will be in accordance with reference (a) and reference (j). Whenever practicable, all 2d MAW helicopters shall utilize "radar flight following."

3. Minimum altitudes for Realistic Urban Training (RUT) will be established by FAA and site authorities through appropriate II MEF AC/S G-7 SOTG/TECG and/or MEU (SOC) Command Elements. MEU (SOC) Aviation Combat Element (ACE) Commanders shall ensure this coordination has been made and that established altitudes are briefed to all participating aircrews.

4. Minimum en route altitudes for the administrative movement of personnel shall be 200 feet AGL except for takeoffs and landings. TERF with embarked troops is authorized for tactical training flights where TERF is necessary for operational planning and training. Operational altitude restrictions will be in accordance with current editions of reference (a), reference (j), FARs, WING/MAG/Squadron SOPs and sound command judgment.

5. Minimum en route altitude for assault helicopters in approved TERF training areas is 50′ AGL. Minimum Nap of Earth (NOE) altitude is 10′ AGL for UH/AH aircraft. Minimum altitudes for regaining TERF currency shall be IAW reference (j).

4108. WEATHER MINIMUMS. Helicopter weather minimums for day visual training flight operations are 500 feet AGL ceiling/one statute mile visibility. Night visual flight minimums are established at 1000 feet AGL ceiling/three statute miles visibility. Day Special VFR operations are authorized; Special VFR weather criteria shall be consistent with local course rules and the current edition of reference (a). Minimum weather conditions for carrying passengers or conducting helicopter troop assaults under VFR shall be 500 feet AGL ceiling and 3 statute miles visibility for day operations and 1000 feet AGL ceiling and 3 statute miles visibility for night operations. Operations under IMC conditions are authorized when performed in accordance with current edition of reference (a).

4109. EXTERNAL OPERATIONS

1. All lifts of external cargo/vehicles shall be conducted in accordance with NATOPS, reference (a), and applicable instructions/guidelines. MCRP 4-11.3E (Multi-Service Helicopter Sling Load Manual) provides guidance on the lifting of numerous types of external loads for both single and dual-point operations.

2. The Aircraft Commander will conduct a thorough brief with all crewmembers regarding voice and emergency jettison procedures prior to conducting external operations. A thorough hook check will be completed prior to commencing external lifts. The minimum crew for all external flights will be the HAC, copilot and Crew Chief, or as specified in the appropriate NATOPS manual. Additional crewmembers may be embarked as required.

3. The Crew Chief and First Mechanic shall wear gunner's belts while conducting external operations. At no time will a crewmember wrap the external hook release lanyard around any part of his body.

4. Over flight of populated areas and highways shall be avoided to the maximum extent possible while carrying external loads.

5. CH-53E external operations will only be conducted with adequately trained Helicopter Support Team (HST) equipped with appropriate aircraft grounding devices as well as appropriate PPE. HST is not required for the drop-off of external loads.

CHAPTER 4

ROTARY-WING OPERATIONS

SECTION 2: SHIPBOARD FLIGHT OPERATIONS

4200. BACKGROUND. The LHA/LHD NATOPS manual, NAVAIR 00-80T-122 (Helicopter Operating Procedures for Air-Capable Ships NATOPS Manual), individual aircraft NATOPS, T&R manuals and individual T/M/S ANTTP shall guide all 2d MAW units.

4201. PURPOSE

1. Regardless of rank, the Marine aviation unit Commander aboard any amphibious air assault ship or air capable ship is responsible for the safety of his/her aircraft and aircrew. He/she must be familiar with the command relationships delineated in the LHA/LHD NATOPS and the NWP-42, which provide general guidance and procedures for safe flight operations.

2. For reasons of safety, Marine aviation unit Commanders may be more restrictive than these documents or the ship's COs policies. For example:

a. Launch, recovery, engage and disengage wind envelopes are defined in the type model series NATOPS manuals and the LHA/LHD NATOPS Manual. Although the approved wind envelopes provide for safe launch and recovery, they may not be optimum for the gross weight, environmental conditions or pilot experience. The Marine aviation unit Commander may require more stringent wind limitations.

b. The over-water operations matrix below should be used as a guide for mission planning/execution while embarked and operating in a shipboard environment. The combination of weather, aircraft capability, pilot proficiency and supporting facilities gives every situation its own character and should be taken into consideration when planning over-water flights.

c. The distances shown in the matrix reflect only over-water flights (ship-to-ship, ship-to-shore, or shore-to-ship) between suitable landing areas, not necessarily the distance between points of departure/destination.

DISTANCE	UP TO 25 NM	26-50 NM	51-100 NM	OVER 100 MILES
SINGLE AIRCRAFT	YES	NO	NO	NO
MULTIPLE AIRCRAFT	YES	YES	YES	YES
WEATHER	Day: 500 / 1 Night: 1000/3	1000 / 3	3000 / 3	3000 / 3
POSITIVE COMM OR TACAN LOCK WITH DEPARTURE/DEST	YES	YES	YES NOTE 2	YES NOTE 2
APPROVAL AUTHORITY	ACE/SQDN CO	ACE/SQDN CO	ACE/SQDN CO	MAGTF/MEU/GROUP CO

NOTE 1: AH-1 AIRCRAFT ARE LIMITED TO 50 NM OVER-WATER FLIGHT UNLESS THEY ARE PART OF A MIXED SECTION AND THE OTHER AIRCRAFT HAS A DESIGNATED LIFE RAFT TO ACCOMMODATE THE NUMBER OF AH-1W PILOTS.

NOTE 2: VOICE COMMUNICATIONS **AND** TACAN LOCK WITH EITHER DEPARTURE OR DESTINATION SHIP/AIRFIELD **OR** OPERATING LONG RANGE NAV SYSTEM WITH

KNOWN SHIPS PIM IS REQUIRED FOR ALL OVER-WATER FLIGHTS.

3. Deploying units shall obtain a directives library of pertinent Navy publications and a Navy reports outline required by the applicable ship and aircraft type Commander prior to chop. In the event the Marine Expeditionary Unit chops to another Fleet Command during deployment, every effort should be made to obtain appropriate directives required for that command.

4. Clear SOPs must be established between the ACE and the Navy with regards to Emergency Defense of the Amphibious Task Force (EDATF), SAR and Surface and Subsurface Surveillance and Classification (SSSC) missions.

4202. SQUADRON SOP FOR SHIPBOARD FLIGHT OPERATIONS. All composite squadrons will publish an SOP for shipboard flight operations. The shipboard flight operations SOP may be part of the squadron flight SOP or it may be a separate document. At the minimum, this SOP should include information, procedures and guidance for operating as a composite squadron.

4203. SIMULATOR TRAINING. Flight simulators, when available, should be used to develop baseline skills and techniques for Field Carrier Landing Practices (FCLPs) and Carrier Qualifications (CQs). Instruction should include crew coordination and air capable ship instrument flight procedures and approaches.

4204. FIELD CARRIER LANDING PRACTICE (FCLP). Day/Night/NVD FCLPs shall be flown by all pilots who are not NATOPS CQ qualified and current prior to carrier qualification in accordance with individual T/M/S T&R Manual requirements. At least 5 day and 5 night FCLPs will be flown as a prerequisite for carrier qualification. Five NVD FCLPs will be flown as a prerequisite for night aided NVD carrier qualification.

4205. BRIEFING REQUIREMENTS. Prior to deployment or initial CQ flight operations pilots should receive a thorough briefing by the ship's air department. This brief should include the ship's flight operational procedures, helicopter director signals, traffic patterns and communications procedures.

4206. CARRIER QUALIFICATIONS (CQs). CQs will be conducted in accordance with applicable NATOPS, ship NATOPS, T&R Manual, NAVAIR 00-80T-122 and joint COMMARFORPAC and COMNAVSURFPAC SOPs for shipboard operations. In addition, Group Commanders, in conjunction with Squadron Commanders, shall be responsible for planning and scheduling all CQ training through 2d MAW operations.

4207. PRIFLY OBSERVERS. An experienced pilot will be assigned as the command representative to PRIFLY during all flight operations. He will act as an advisor to the ship's Air Boss. He will also monitor the parameters for flight set by the Squadron Commander. In the event these flight parameters are exceeded, he will advise the ship's Air Boss and the Marine Aviation Unit Commander.

4208. TROOP SAFETY PROCEDURES. The wearing of individual 782 gear, MOLLE/ ILBE Packs and personal flotation gear aboard helicopters will be standardized. The wearing of personal gear during actual combat operations will be at the discretion of the ground unit Commander. The following peacetime procedures shall be used when operating over water and in addition to paragraph 4102 of this SOP:

1. Personal Flotation Devices (LPU-41/LPU-32). The LPU-41 or LPU-32 will be worn by passengers on all over water flights. The supporting squadron will provide the appropriate LPU and all passengers will put it on prior to takeoff. The belt will be buckled inside the flak jacket and the LPP lobe will be around the individual's neck; in the event of water entry, this configuration allows personnel to shed weight and entanglement hazard of 782 gear while retaining the LPU. The LPUs will be removed and stowed in its case once "feet dry."

2. Helicopter Assisted Breathing Device (HABD). Individuals who are properly trained in the use of the HABD shall be the only personnel who have one in their possession for over-water flights.

4209. SHIPBOARD SAR REQUIREMENTS DURING TROOP TRANSPORT. SAR requirements are the responsibility of the host ship and shall be in accordance with LHA/LHD NATOPS Manual and NAVAIR 00-80T-122.

4210. NIGHT SHIPBOARD OPERATIONS

1. Shipboard night flight operations should not be conducted out of sight of the ship and/or land without an operable ship's navigation aid.

2. Night flying at sea is predominantly instrument flying and shall be conducted accordingly. Units scheduled for night shipboard operations shall emphasize proficiency in all areas of instrument flight.

3. Administrative transport of passengers to/from amphibious ships and air capable class ships at night is prohibited except under emergency situations (e.g., CASEVAC). MAGTF Commanders may authorize tactical training transport of passengers over water at night if deemed operationally necessary.

4. Transfer of passengers by hoist at night is prohibited except under emergency situations (e.g., CASEVAC).

CHAPTER 4

ROTARY-WING OPERATIONS

SECTION 3: ROTARY-WING LOW ALTITUDE TACTICS TRAINING

4300. PURPOSE. To publish guidance for Terrain Flight (TERF) training and operations within 2d MAW.

4301. SCOPE. The current edition of NAVMC 3500.14A, MCO P3500.16, OPNAVINST 3710.7__, aircraft NATOPS Manuals, aircraft Tactical Manuals and the Assault Support Tactical SOP contain the overall policies, syllabi and techniques for rotary-wing low altitude tactics training. This section supplements those publications as well as other directives issued by higher headquarters. The most restrictive directive should be used for guidance in decision making.

4302. DEFINITIONS

1. Terrain Flight (TERF). TERF flights are those conducted at or below 200 feet AGL except for takeoff, landing and ordnance delivery.

2. Comfort Level (CL). This is the lowest altitude at which it is possible to accommodate low level task loading and maintain safe terrain clearance. This is a perceptual concept, potentially subject to individual differences and never a hard altitude. Comfort level will vary according to terrain, aircrew skill, currency and degree of training in the low altitude environment.

3. Climb to Cope. This is an emergency response employed when terrain awareness and mission performance are degraded due to an increase in anxiety and stress beyond acceptable limits. The "climb to cope" response is an immediate wings level climb to a safe operating altitude. It shall always be employed in response to a "terminate" or "KIO" call in a training situation, an aircraft emergency and/or any time situational awareness is lost.

4. Knock It Off (KIO). When a dangerous loss of situational awareness is recognized or a potentially hazardous circumstance develops, any crewmember shall call for a KIO without delay. The response to a KIO call will be an immediate wings level controlled climb to briefed altitude and discontinuation of training until the cause for the KIO has been adequately addressed and all aircrew concur on a course of action.

5. Terminate. To cease the current maneuver, crewmembers shall use the term "terminate." The response to "terminate" shall be an immediate discontinuation of maneuvering and leveling off at present or briefed altitude.

6. Helicopter TERF Area. An area free of unknown obstacles and hazards in which helicopters can conduct tactical training employing TERF Tactics, Techniques and Procedures (TTPs). Generally, this limits the usable airspace to Restricted Areas and/or federal property where control over obstacles, airspace and other hazards can be maintained through appropriate range management and/or control agencies. FAA, NATOPS or local regulations may prohibit TERF in portions of a Helicopter TERF Area.

7. TERF Maneuver Area. An area certified and designated for conducting TERF maneuver training down to and including NOE altitudes. A TERF Maneuver Area

is specifically dedicated to the administrative conduct of TERF maneuvering and TERF TTPs currency/proficiency training. A TERF Maneuver Area may be certified/designated within or outside a Helicopter TERF Area and shall meet the following criteria:

a. The area should be free of vertical obstacles in excess of 50 feet.

b. The area shall not be adversely impacted by excessive cultural lighting.

c. The area shall accommodate two aircraft operating at TERF altitudes and a Safety and Control (S&C) aircraft.

d. The area and all hazards are easily identifiable by the (S&C) aircraft.

8. TERF Route. A route over/through terrain certified and designated for conducting TERF navigation training down to and including NOE altitudes. A TERF Route is specifically dedicated to the administrative conduct of TERF navigation and TERF TTP currency/proficiency training. A TERF Route may be certified/designated within the confines of, or outside of, a Helicopter TERF Area. A TERF Route shall meet the following criteria:

a. The route should be free of vertical obstacles in excess of 50 feet.

b. The route shall not be adversely impacted by excessive cultural lighting.

c. The route shall accommodate at least two aircraft executing TERF navigation and a S&C aircraft.

d. The route and all hazards are easily identifiable by the Safety and Control Aircraft.

4303. TERF TRAINING. TERF training will comply with the following criteria:

1. Instructor Certification. TERFI, instruction shall be accomplished per NAVMC 3500.14_. The MAWTS-1 Course Catalog contains specific courses of instruction for each instructor qualification.

2. Instructor Currency

a. TERF instructors shall remain within the re-fly factor for a respective category as delineated in the T&R Manual in order to be qualified to instruct. Upon expiration of a re-fly factor, a requalification flight must be flown with one of the following who is current: WTI, TERFI, NSI, DMI, DACMI or a MAWTS-1 instructor as appropriate.

b. If an entire unit loses proficiency, unit instructors shall regain proficiency by flying with an instructor from another like unit. If not feasible, the instructor shall regain proficiency by flying with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another Aircraft Commander or as designated by the CO.

3. Trainee Qualifications. Aircrew must have completed all ground training requirements set forth in the T&R syllabus prior to commencing LAT.

4. Waivers. Requests to waive the altitudes or currency requirements specified in the T&R Manual must be submitted to CG, 2d MAW (AC/S, G-3) in writing with specific reasons for the waiver.

5. Flight Requirements

a. Flight Schedule. TERF flights are not authorized unless specifically designated on the flight schedule as TERF. The flight schedule shall reflect the area/route to be flown.

b. Troops. Carrying troops/passengers is prohibited on any initial or re-qualification TERF flight.

c. Aircrew Limitation. During peacetime, aircrew shall not fly more than five flight hours of TERF per day.

d. Minimum Crew. The minimum crew authorized for TERF will consist of pilot, copilot and for helicopters with cabin sections, at least two crewmembers as observers in the aircraft cabin.

4304. TERF CONDUCT OF TRAINING

1. All navigation flights must be pre-briefed thoroughly and include altitudes, airspeeds, intended route of flight, all hazards and obstacles in the TERF Area and the criteria to be used for "Magellan" ("check navigation") calls.

2. The profile of TERF to be flown over each portion of the routes will be pre-briefed; i.e., low level, contour or NOE.

3. All training flights navigating low level, contour or NOE require a "high bird" to function as an airborne S&C aircraft unless operating in a restricted area.

4. Not more than three aircraft shall fly a TERF route at the same time.

5. Positive radio communication will be established and maintained between the S&C aircraft and navigating aircraft prior to commencement of all navigation routes.

6. The "high bird" responsibilities may rotate between aircraft in the same flight.

7. "Low" aircraft shall acknowledge all "Magellan" and/or hazard/obstacle advisories made by the S&C aircraft.

8. The minimum responsibilities of the S&C aircraft are as follows:

a. Flight check the route/area at altitude prior to commencing TERF navigation or TERF maneuvers in order to ensure that the route/area is clear of obstacles or interloping aircraft that might influence the safety of the flight.

b. Maintain visual contact and positive radio communication with all aircraft by remaining at a sufficient altitude over the navigation area and ensure adequate separation among training aircraft.

c. S&C aircraft shall provide hazard/obstacle advisories.

d. S&C aircraft shall provide "Magellan" calls IAW criteria outlined in the flight brief.

9. The pilot in command of the S&C aircraft need not be qualified in TERF.

10. Compliance with all commands given by the S&C aircraft regarding flight safety are mandatory.

11. TERF profile will be aborted when the S&C aircraft loses sight of low bird or when environmental conditions do not permit the S&C aircraft to visually acquire obstacles.

12. Any obstacles/difficulties encountered on any TERF route/area that have not been previously identified will be reported to the appropriate controlling authority for that area. 2d MAW DOSS and AC/S G-3 shall also be notified via the appropriate chain of command.

13. All TERF maneuvers discussed in the T&R Manual will be performed as prescribed by the appropriate aircraft tactical manual.

14. Night TERF without NVDs is prohibited.

15. Currency requirements are established in reference (j).

4305. TERF TRAINING OUTSIDE OF 2D MAW TERF AREAS

1. During over-seas deployments and CONUS training conducted outside of 2d MAW's AOR it is permissible for units to establish new TERF routes. In addition to the guidelines established in this chapter, the following actions are required:

a. Squadron Commander's may develop new TERF routes and training areas utilizing squadron WTIs to fly the certification flights. Requests for the establishment, or modification, of TERF areas shall be submitted to MAG CO/MEU CO for validation. If applicable, the MAG CO will submit requests recommended for approval to 2d MAW (AC/S, G-3).

b. TERF flights will not be flown until a Master Hazard Map (MHM) has been certified for the new training areas.

2. Tactical training exercises such as JTFEX/CERTEX require that low altitude flight routes be planned and flown to counter a given threat scenario. Group or Squadron Commander certification and pre-flying of routes may be impractical under these circumstances. When a 2d MAW squadron or detachment is participating in a tactical training exercise in any of these areas, the parent Group Commander or MAGTF Commander may waive the requirements for pre-flying routes and route certification.

4306. HELICOPTER TERF TRAINING MANAGEMENT

1. 2d MAW (AC/S, G-3) will:

a. Monitor the helicopter low altitude training program within 2d MAW and conduct Semi-Annual reviews of the authorized TERF routes in coordination with MAG-29 to insure they are still viable and safe for use.

b. Approve areas for helicopter low altitude training. 2d MAW approved low altitude training areas are contained in Appendix A.

2. The MAG-29 Group Commander is assigned as the 2d MAW Helicopter TERF Training Manager and as such shall:

a. Monitor helicopter TERF training programs.

b. Designate/certify TERF/NVD routes within 2d MAW approved low altitude flight training areas. All certified routes with hazard maps shall be distributed to all squadrons within MAG-29. Validation of routes will use the following criteria:

(1) Area free of vertical obstacles in excess of 50 feet.

(2) TERF routes a minimum of 500 meters from high-tension power lines. TERF maneuver areas a minimum of 200 meters from high-tension power lines.

(3) Area not adversely impacted by excessive cultural lighting.

(4) Area can accommodate two working aircraft with one Safety and Control aircraft (high bird).

(5) Area is easily identifiable by S&C aircraft (high bird).

c. Ensure 2d MAW (AC/S, G-3) is notified of any changes, operational hazards or conflicting operations in approved low altitude flight training areas as reported by range control or other operational users.

d. Maintain the master hazard map for all TERF/NVD routes and TERF maneuver areas within 2d MAW Helicopter Primary Training Area. Provide updated hazard and obstacle information to all squadrons within MAG-29.

4. Squadron Commanders will:

a. Designate TERFI/NSI/DACMI instructors in writing after completion of required syllabus training.

b. Conduct TERF/NVD/DACM/DM training only in those areas approved by 2d MAW G3.

c. Notify the parent group and 2d MAW (G-3) of any changes, operational hazards or conflicting operations in approved low altitude training areas.

CHAPTER 4

ROTARY-WING OPERATIONS

SECTION 4: ROTARY-WING SPECIAL TACTICAL OPERATIONS

4400. PURPOSE. To publish procedures for the safe conduct of rappelling, fast rope, Special Insert/Extraction (SPIE), water insertion (helo casting) and paradrops.

4401. RESPONSIBILITIES. Marine helicopters are authorized to perform the special missions discussed below.

1. The Aircraft Commander will conduct a thorough face-to-face safety brief, to include emergency procedures, with the Helicopter Rope Suspension Techniques (HRST) Master prior to the conduct of operations, inspect any special equipment and ensure the proper gear is being used the proper way.

2. The HRST Master is responsible to the Aircraft Commander for the safe conduct and supervision of his special operation. He shall ensure that all participants under his supervision:

a. Comply with all applicable orders and SOPs.

b. Receive a thorough safety brief.

c. Comply with the aircrew's instructions.

3. Troop Commanders and HRST masters will be provided with an ICS cranial or flight helmet with two-way communications capability to allow them to talk with pilots, monitor tactical nets and to allow supervisory participation.

4402. RAPPELLING SPECIAL INSERT/EXTRACTION (SPIE) AND FASTROPE OPERATIONS. All rappelling, SPIE, fast rope and similar operations involving rope suspension from a helicopter will include the following safety measures:

1. The rappel, SPIE or fast rope master, as appropriate, is additionally responsible for the attachment and condition of the rope(s) to be used and for the padding of the aircraft opening through which the rope passes.

2. The Aircraft Commander is responsible for the safe conduct of the flight, to include a detailed safety briefing to all participants. The Aircraft Commander shall ensure that:

a. A face-to-face briefing shall be conducted between the Aircraft Commander and the rappelling/fast rope/SPIE master.

b. The mission will commence only when the Aircraft Commander is satisfied that the helicopter will not be hazarded by loose padding, ropes or other gear.

c. The mission is aborted if aircraft or environmental factors prohibit a stable hover.

d. All participants are clear prior to moving out of a stabilized hover.

e. All rappelling/SPIE personnel are wearing serviceable, approved cranial protection.

3. Fast rope operations may be conducted from the UH-1N/Y and CH-53E in accordance with the following provisions:

a. UH-1N/Y:

(1) Only the Gantry system configured with the original base plate assembly P/N 2050722381 designed by Bell Helicopter is authorized. The single-point link arm mounting stud is not authorized. UH-1N aircraft used for rappelling shall be configured in accordance with ARMY Publication FM 3-21.38, Pathfinder Operations.

(2) NAVAIRSYSCOM letter 13410 Ser 53021D2/72043 of 19 Apr 89 provides the only authorized rappelling rigging system for the UH-1N. Use of either the three point rigging system or the U.S. Army "Donut Ring" system for rappelling from the UH-1N helicopters is not authorized.

b. CH-53E: operations will be conducted through the hellhole using the A-Frame fast rope attachment bar.

c. Failure to strictly adhere to these limits may result in damage to the airframe and serious injury to personnel.

4403. WATER INSERTIONS (HELOCASTING). Helocasting may be conducted from assault support and utility helicopters subject to the following restrictions:

1. Casting and recovery operations will be limited to day VFR operations.

2. The supported unit will ensure to have on hand all safety requirements as outlined in MCRP 3-11.4A.

3. Two-way radio communications will be maintained at all times between the safety boat and the aircraft.

4. Insert airspeed and altitude will not exceed 20 knots ground speed and 20 feet AGL. Normally, helocasting will be conducted at 10 knots ground speed and 10 feet AGL.

5. The Aircraft Commander shall ensure that a thorough face-to-face brief, to include emergency procedures, is conducted with the Cast Master prior to conducting helocasting operations.

6. The Cast Master shall ensure that all helocasting participants comply with applicable SOPs and pre-briefed aircraft procedures.

4404. PARADROP OPERATIONS. Paradrops may be conducted from 2d MAW assault and utility helicopters subject to the following restrictions:

1. Parachute drops will be conducted only in authorized drop zones.

2. The supported unit will schedule the drop zones to be used and notify appropriate air traffic control agencies.

3. The Jump Master shall ensure that all paradrop participants comply with applicable SOPs and pre-briefed aircraft procedures. Additionally, he/she is responsible for the safe and proper rigging of the aircraft for conduct of paradrops.

4. The Aircraft Commander is responsible for the safe conduct of the flight. He/she shall ensure that:

a. A thorough face-to-face brief is conducted with the Jump Master prior to conducting paradrops. This briefing, at a minimum, shall include the briefing items listed in the Para-ops Briefing Guide.

b. Parachute jump equipment and rigging is inspected by the Aircraft Commander or the co-pilot and Crew Chief.

c. Radio communications are established with the appropriate airspace controlling agency 5 minutes prior to the jump and maintained until the last jumper reaches the ground.

5. Aerial delivery of cargo involves use of the same techniques as para-ops. In both cases a detailed brief and inspection of cargo tie downs is required prior to execution.

4405. RAMP MOUNTED WEAPONS SYSTEM (RMWS) ON THE CH-53E.

1. Scope. The current edition of MCO 3500.50_, MCO 3500.51_, Aviation T&R Manuals, CH-53 aircraft NATOPS Manuals, aircraft Tactical Manuals, Assault Support Tactical SOP contain policies, syllabi and techniques for rotary-wing tactics training. This section supplements those publications. The most restrictive directive should be used for guidance in decision-making.

2. RMWS on the CH-53E. The gunners must positively identify a discrete target, ensure minimum collateral damage and receive clearance from the Aircraft Commander before firing. While not intended to limit the flexibility and authority of the Helicopter Aircraft Commanders (HACs), the following guidelines will be followed to the maximum extent possible:

a. Weapons procedures during passenger/cargo on-load and off-load

(1) The RMWS shall be Condition 4 and locked into position, pointing at the deck. Troops may de-bark both sides of the ramp to exit on the right side of the aircraft.

(2) The RMWS shall be Condition 4, ammunition removed and Medium Ramp Pintle removed and placed clear of ramp for cargo on-load and off-load.

b. Tail gunner's position

(1) The tail gunner will man the weapon during all critical stages of flight. During transit through low threat areas, the tail gunner may reposition to and from the ramp. Should the tail gunner reposition to and from the ramp, he shall inform the crew of his intentions, clear and safe the weapon and immediately reattach his gunner's belt to the aircraft upon repositioning. The pilots shall maintain straight and level flight while the tail gunner is repositioning within the aircraft. Should maneuvering be required, the pilots shall alert the aircrew prior to maneuvering the aircraft.

(2) The tail gunner shall remain on ICS at all times.

(3) The tail gunner shall remain on a gunner's belt and secured at all times while manning the RMWS.

CHAPTER 4

ROTARY WING OPERATIONS

SECTION 5: CASEVAC/TACTICAL RECOVERY OF AIRCRAFT AND PERSONNEL

4500. GENERAL. Request for CASEVAC/TRAP support will be handled through established procedures. Short notice requests will be approved by the 2d MAW G-3 and assigned to MAG-29 when a helicopter is deemed appropriate for the mission. MAGs will assign the mission and responsibility to a Squadron for liaison and execution. While on standby status the aircraft and crew may conduct local training. Standby crews conducting local training are requested to notify Cherry Point Approach of their status and to monitor GUARD for the remainder of the flight.

4501. SQUADRON RESPONSIBILITY. It is the responsibility of the squadron to coordinate the accomplishment of any assigned CASEVAC/TRAP mission.

4502. CAPABILITIES. The following capabilities apply to VFR overland/overwater rescue missions.

1. Overland. The UH-1N/Y and CH-53E are all capable of day/night VFR overland rescue missions since the preferred rescue method is to land and disembark the rescue party.

2. Over water. The UH-1N/Y aircraft is capable of performing day VFR overwater rescue missions. USMC aircraft are prohibited from performing night/low visibility overwater rescues.

4503. BRIEFING. Prior to assuming a mission, the ODO (when in garrison) or the Coordinator (when embarked) will brief the HAC per the Search Briefing Guide. The HAC shall brief all crewmembers on required duties per the Search Briefing Guide.

4504. SEARCH PATTERNS. The eight main groups of search patterns may be found in the current edition of NWP 19-1 and NWP 55-8-SAR. The HAC will pick the parameters which best fit the situation.

4505. RESCUE

1. Overland. Overland rescue missions may usually be accomplished by landing nearby once the survivors have been located. If unable to land, medical aid may be hoisted down to assist survivors and all may then be extracted the same way, situation permitting.

2. Over Water. Over Water rescues may be accomplished in one of three ways: remaining in an overhead orbit and directing a surface vessel to make the pick-up, life raft deployment to survivors or rescue by aircraft hoist. The HAC must decide what the best course of action will be to affect the rescue. The decision should be made with the proper regard for the proximity of participating units, sea state and temperature, time of day, number of survivors and length of their exposure time.

3. Upon completion of any rescue operations, the HAC will notify the Mission Commander/controlling agency of the number of survivors on board, their conditions, his/her intent and any remaining wreckage that may require pickup.

4506. CASEVAC

1. 2d MAW aircraft may be utilized for CASEVAC when civilian helicopter assets are not available. Commercial assets include:

a. East Carolina Greenville (800) 672-7828.

b. Carolina Air Care (800) 247-6264.

c. Duke Life Flight (800) 362-5433.

d. Charlotte Carolina Med Center Air (800) 421-9195.

2. MAG-29 is not required to keep a CASEVAC aircraft on 24 hour standby. The MAG will provide the Squadron a point of contact familiar with the details of the mission. The crew will familiarize themselves with any peculiar patient requirements. Adequate time should be available for a face-to-face weather brief and flight filing. A CASEVAC crew will consist of a HAC, H2P, Crew Chief and an in-flight medical specialist. CASEVAC support will be provided only if the medical condition of the patient dictates an immediate CASEVAC, the support is not available via the normal CASEVAC chain or there is no civilian support available to provide the service. This does not preclude CASEVACs of opportunity from within the R5306 complex to the Naval Hospitals at Cherry Point or Camp Lejeune nor does it preclude CASEVACs to local hospitals that are the result of an ongoing SAR.

4507. WEATHER CRITERIA FOR LAUNCHING A CASEVAC AIRCRAFT

1. Daytime

a. Minimum weather for a VFR departure is a 500 ft ceiling and one Statute Mile (SM) visibility. IMC departures are authorized down to IFR minimums.

b. En route weather to the destination shall be VFR, or if IFR, free from thunderstorm activity and icing conditions.

c. Destination weather shall be VFR or if IFR, the nearest airport has forecast weather suitable for an instrument approach and an alternate.

2. Night Time. Minimum weather for night VFR operations is 1000 ft ceiling and three SM mile visibility.

CHAPTER 5

TILT-ROTOR OPERATIONS

SECTION 1: TILT-ROTOR GENERAL OPERATING PROCEDURES

5100. PURPOSE. These policies offer guidance for tilt-rotor operations. Should a conflict arise between these policies and OPNAVINST or NATOPS, the latter shall prevail, unless the policies herein are more restrictive.

5101. TILT-ROTOR TROOP/PASSENGER TRANSPORT

1. In all cases, the TAC shall limit the number of troops/passengers embarked to the number for which there are adequate seats, safety belts, cranial protection and personal survival equipment. MAGTF Commanders have been delegated the authority to waive such restrictions as required for training/contingency operations/extraordinary mission requirements.

2. Authorized Passengers. Active duty military personnel and reserve U.S. military personnel on active duty are authorized to ride as passengers in 2d MAW aircraft. Other passengers must be eligible for air transport per MCO 4630.16 or have been granted specific eligibility per OPNAVINST P3710.7__. Prior to carrying civilians aboard squadron aircraft, the Squadron Operations Officer will ensure the necessary clearances have been obtained through the chain of command.

3. Passengers shall remain seated with seatbelts fastened from takeoff to landing and during ground taxi. On extended flights, once the aircraft is leveled off at planned cruise altitude, the Crew Chief may allow passengers limited movement about the cabin area. This shall be covered during the passenger brief. No more than four passengers are allowed out of their seats at a time and they should stay in the general vicinity of their seat.

4. Passenger Transportation. TACs are responsible for ensuring all troops/passengers receive a safety/emergency procedures brief prior to launching with passengers aboard. All passengers will be briefed and familiarized with normal ingress/egress procedures, emergency escape procedures and general safety precautions. For tactical troop lifts this brief will be provided by the Troop Commander and is not the responsibility of the TAC.

5. Passengers should wear cranials or flight helmets. Combat helmets may be worn as a substitute during all tactical lifts. Respective troops Commanders are responsible for providing adequate hearing protection (earplugs) during tactical lifts when combat helmets are worn by troops. During over-water flights, all troops/passengers will wear LPPs unrolled and properly donned. TACs will ensure that sufficient numbers of protective cranial helmets and flotation devices, LPPs or rafts, are onboard to accommodate all passengers.

6. The TAC may authorize a stick leader to move forward to brief the pilots however, that individual must wear a gunner's belt or be seated in the cockpit jump seat. For all AIE operations the unbuckle command shall come only from the pilot in command.

7. Departure from the aircraft will be granted by the Aircraft Commander and as directed by the Crew Chief.

8. All weapons will be checked clear with the bolts to the rear. Muzzles will be down, magazines will not be allowed in the weapons until just prior to landing and then only when cleared by the TAC and directed by the Crew Chief.

9. MOLLE/ILBE Packs may be stored in any of the following positions:

a. Placed on the deck between the legs.

b. Placed on the individual's lap.

c. Placed on the seat beside the individual if space is available.

d. Stacked together and tied down with a cargo strap.

10. Passengers gear, equipment and packs should not be placed under the seats of the MV-22.

11. All emergency situations involving passengers will be handled by the Crew Chief. Passengers are to be reminded that the Crew Chief represents the Aircraft Commander and therefore he controls the activities in the cabin section of the aircraft and that his instructions are to be obeyed at all times.

12. TACs should ensure that the embarked Troop Commander is provided two-way intercommunications with the aircrew during all troop lifts.

5102. NIGHT TILT-ROTOR TROOP/PASSENGER OPERATIONS

1. Guidance for all night training operations contained in NATOPS, OPNAVINST 3710.7__, NAVMC 3500.14A, individual T/M/S T&R Manuals and MAG and squadron SOPs shall be strictly followed.

2. All assault support aircraft carrying passengers at night over water shall be equipped with a fully functional Emergency Egress Lighting System (EELS) or emergency exits equipped with emergency lighting. Aircrew will utilize NVDs to the maximum extent practical.

3. Daytime route/LZ Recon and Rehearsals

a. A daytime route/LZ recon flight should be flown by the night assault aircrew to identify any obstacles and hazards to safe operations. This route/LZ recon may be combined with a day rehearsal flight involving embarked troops.

b. A route/LZ recon flight is not required for missions to frequently used LZs.

c. If the squadron commander deems it unfeasible for all aircrew to fly the daytime route/LZ recon, then efforts should be made for Flight Leaders assigned to the night assault to fly the route.

d. Missions involving evaluations may have route/HLZ recon for obstacles/hazards conducted by a WTI or STANO in lieu of aircrew participating in the night mission in order to allow for realistic training/operations.

e. Tactical training exercises such as JTFEX/CERTEX require that low altitude flight routes be planned and flown to counter a given threat scenario. Group or Squadron Commander certification and pre-flying of routes may be impractical under these circumstances. When a 2d MAW squadron or detachment is participating in a tactical training exercise in any of these areas, the parent Group Commander or MAGTF Commander may waive the requirements for pre-flying routes and route certification.

f. Routes/LZs requiring recon should be used for missions within 10 days of obstacle/hazard verification.

4. When conducting Night Troop/Passenger Transportation operations, the pilot and copilot shall be designated NSQ (HLL and LLL) per the appropriate T&R syllabus and must have flown at least 1 NVD T&R sortie (HLL or LLL) within the previous 30 days. Crew Chiefs and Aerial Gunners/observers shall be designated NSQ per the appropriate T&R syllabus. (Aircrew are "embarked troops HLL and LLL qualified" when they are designated NSQ in writing by the Squadron Commander with appropriate NATOPS, APR jacket and logbook entry).

5. During contingency/combat operations MAGTF or Wing Commanders may waive the criteria established for conducting NVD operations (HLL or LLL) with embarked troops and passengers.

5103. NIGHT SYSTEMS (NS) OPERATIONS

1. All aircrew participating in NS operations shall be guided by and ensure familiarity with all NS policies set forth in OPNAVINST 3710.7__, NAVMC 3500.14A and the MAWTS-1 NVD Manual. All general policies addressed under Sections 4101 and 4102 are germane to NVD training/operations unless otherwise stated.

2. AN/AVS-9 Night Vision Goggles are the only authorized NVDs for use by 2d MAW tilt-rotor aircraft.

3. The only approved method for deriving illumination requirements for night operations is the SLAP offered in the GFMPL-NT. Illumination levels (HLL/LLL) are defined per the MAWTS-1 Helicopter NVD Manual.

4. Squadrons shall establish an NVD eye lane as described in the MAWTS-1 NVD Manual or use the ANV-2020 (Hoffman 20/20 box) to assess NVD performance prior to every NVD flight.

5. No pilot shall sign for an aircraft for night flight without first meeting day currency requirements and completing at least one day flight of 1.0 hour duration in T/M/S in the last 15 days.

6. Exterior lighting should be functional for all NS operations IAW reference (a) and reference (j).

7. During all NS training flights, general aviation regulations to "see and avoid" shall take precedence over tactical training. Lighting for aircraft in NS formation flights, outside of military training ranges, shall be in accordance with FAA regulations.

8. NVD operations shall be conducted in VMC. Flight in IMC for the purposes of conducting standard instrument departures and instrument approaches is

permitted while under positive radar control, however consideration should be given to flying unaided while in IMC to reduce the possibility of vertigo.

9. When flying in areas that are not routinely flown by a squadron, NS routes and LZs should be flight checked to ensure that the routes/zones are clear of obstacles that might influence the safety of flight. Hazard map inspections will suffice if an update has been conducted within 30 days.

10. During flights where NVDs are to be used, all aircrew aboard the aircraft shall use them unless crew duties dictate otherwise. Specific situations where aircrew can expect to be off the goggles to complete "other duties" shall be identified and thoroughly discussed during the preflight briefing.

5104. VERY IMPORTANT PERSON (VIP) FLIGHTS

1. Whereas all military and civilian personnel with a designated VIP code are deserving of services when available, due to 2d MAWs limited assets the following guidance will apply unless tasked otherwise:

a. Code 7: (Colonel USMC/USA/USAF or Captain USN) Not normally afforded services. If tasked, one aircraft.

b. Code 6: (Brigadier General or Rear Admiral; 1 star) One aircraft.

c. Code 5: (Major General or Rear Admiral; 2 star) Two aircraft. One primary and one flying backup. The flying backup should be in the immediate vicinity of the primary aircraft.

d. Code 4: (Lieutenant General or Vice Admiral; 3 star) Two aircraft. One primary and one flying backup. The flying backup should be in the immediate vicinity of the primary aircraft.

e. Code 3 (General or Admiral; 4 star), 2 (VPOTUS, Commandant USMC) and 1 (POTUS): Three aircraft. One primary, one flying backup, and one turning backup.

NOTE: All VIP aircraft transiting over water shall have backup aircraft.

f. VIP aircraft will be in position no more than two to five minutes prior to the scheduled pickup time.

g. The VIP's destination will be contacted as soon as possible with the code's destination and inbound ETA.

h. Squadrons will assign aircraft in the best possible material condition with regard to cleanliness and operational status. VIP seat covers, seatbelt covers, passenger briefing guides, clean life jackets and sound suppressors/cranial helmets will be provided when available.

5105. USE OF TILT-ROTOR AIRCRAFT DURING DISASTERS/EMERGENCIES. Squadron Commanders and Detachment OICs may authorize the use of assigned aircraft and crews for rescue missions or other support missions, within OPNAV and NATOPS,

if an emergency exists (loss of life or significant loss of property). At the earliest opportunity, the Wing (AC/S, G-3) shall be provided with full details. If questions arise regarding the validity of the request or its

ability to remain within OPNAV and NATOPS parameters, the request will be made to the Group Commander or to Wing Headquarters (AC/S, G-3).

5106. ALTITUDE RESTRICTIONS. Minimum en route altitudes for tactical training missions with personnel embarked shall be 300 feet AGL except for takeoffs and landings. Operational altitude restrictions will be in accordance with current editions of reference (a), reference (j), FARs, WING/MAG/Squadron SOPs and sound command judgment.

5107. WEATHER MINIMUMS. Minimum weather conditions for carrying passengers or conducting assaults shall be 500/3 for day operations and 1000/3 for night operations. Operations under IMC conditions are authorized when performed in accordance with current edition of reference (a).

5108. EXTERNAL OPERATIONS

1. All lifts of external cargo/vehicles shall be conducted in accordance with NATOPS, reference (a), and applicable instructions/guidelines.

2. The TAC will conduct a thorough brief with all crew members regarding voice procedures and emergency jettison. The minimum crew for all external flights will be in accordance with NAVMC 3500.11. Additional crew members may be embarked as required.

3. The Crew Chief and aerial observer will wear gunner's belts at all times while conducting external operations. At no time will a crew member wrap the external hook release lanyard around any part of the body.

4. Passengers will not be routinely carried during external operations, unless approved by MAGTF/MAG Commander.

5. Over flight of populated areas will be avoided while carrying external loads.

5109. PILOT CURRENCY REQUIREMENTS. If a TAC exceeds 24 months without flying a MV-22, the TAC must complete the refresher syllabus as outlined in NAVMC 3500.14A/3500.11. An abbreviated refresher syllabus is required if no flights flown during a period greater than 16 months and less than 24 months. The following criteria apply for currency lapses less than 16 months.

1. A TAC who has not flown for 30 days shall complete warm-up training as determined by the Squadron Commander prior to signing for an aircraft. Warm-up criteria for copilots shall be at the discretion of the Squadron Commander. The Squadron SOP will delineate TAC warm-up criteria (flights and/or simulators) based on the following (at a minimum):

a. 30-90 days flight inactivity in T/M/S: complete one warm-up flight and/or simulator of 1.5 hours duration.

b. Greater than 90 days flight inactivity in T/M/S, but less than 16 months: complete a warm-up syllabus as directed by the Squadron CO.

c. During contingency/combat operations MAGTF or Wing Commanders may waive the criteria established for conducting NVD operations (HLL or LLL) with embarked troops and passengers.

CHAPTER 5

TILT-ROTOR OPERATIONS

SECTION 2: SHIPBOARD FLIGHT OPERATIONS

5200. BACKGROUND. The LHA/LHD NATOPS manual, NAVAIR 00-80T-122 (Helicopter Operating Procedures for Air-Capable Ships NATOPS Manual), individual aircraft NATOPS, T&R manuals and individual T/M/S ANTTP shall guide all 2d MAW units.

5201. GENERAL

1. Regardless of rank, the Marine Aviation Unit Commander aboard any amphibious air assault ship or air capable ship is responsible for the safety of his/her aircraft and aircrew. He/she must be familiar with the command relationships delineated in the LHA/LHD NATOPS and the NWP-42, which provide general guidance and procedures for safe flight operations.

2. For reasons of safety, Marine Aviation Unit Commanders may be more restrictive than these documents or the ship's COs policies. Launch, recovery, engage and disengage wind envelopes are defined in the type model series NATOPS manuals and the LHA/LHD NATOPS Manual. Although the approved wind envelopes provide for safe launch and recovery, they may not be optimum for the gross weight, environmental conditions or pilot experience. The Marine Aviation Unit Commander may require more stringent wind limitations.

3. Over-water Operations. The authorizing authority and risk mitigation for all MV-22 over-water operations lies with the squadron commanding officer. The combination of location, mission, weather, pilot proficiency and supporting facilities gives every situation its own character and should be taken into consideration when planning over-water flights. In all cases over-water operations shall have a thorough risk assessment and controls in accordance with WgO 5100.29A. Mission priority, mutual support, distances, light conditions, reference (a) alternate minimums, weather, sea-state and temperature, SAR capabilities and requirements, as well as ship and shore based NAVAIDS, communications, and radar shall be considered. Additionally, positive communications and/or external navigation aid reception should exist throughout flight.

4. MV-22 Shipboard Operations. MV-22 shipboard operations should only be conducted to those ships that have completed NAVSEA certification.

5. Deploying units shall obtain a directives library of pertinent Navy publications and a Navy reports outline required by the applicable ship and aircraft type Commander prior to chop. In the event the Marine Expeditionary Unit chops to another Fleet Command during deployment, every effort should be made to obtain appropriate directives required for that command.

5202. SQUADRON SOP FOR SHIPBOARD FLIGHT OPERATIONS

1. All tilt-rotor squadrons will publish an SOP for shipboard flight operations. The shipboard flight operations SOP may be part of the squadron flight SOP or it may be a separate document.

5203. FIELD CARRIER LANDING PRACTICE (FCLP). Within 90 days of embarking aboard ship for any amphibious operations, all aircrew should have at least one period of day and one period of night FCLP regardless of their CQ currency.

5204. BRIEFING REQUIREMENTS

1. Prior to commencing initial deployment or initial CQ flight operations, pilots should receive a thorough briefing by the ship's air department. This brief should include the ship's flight operational procedures, helicopter director signals, traffic patterns and communications procedures.

2. The squadron or detachment operations section will ensure that ODO and flight briefs are conducted prior to each flight in accordance with NATOPS.

5205. CARRIER QUALIFICATIONS (CQ). All aircrew should be fully qualified prior to assignment to the MEU.

5206. PRIFLY OBSERVERS. An experienced pilot will be assigned as the command representative to PRIFLY during all flight operations. He will act as an advisor to the ship's Air Boss. He will also monitor the parameters for flight set by the Squadron Commander. In the event these flight parameters are exceeded, he will advise the ship's Air Boss and the Marine Aviation Unit Commander.

5207. TROOP SAFETY PROCEDURES. The wearing of individual 782 gear, MOLLE/ILBE Packs and personal flotation gear aboard tilt-rotor aircraft will be standardized. The wearing of personal gear during actual combat operations will be at the discretion of the Ground Unit Commander. The following peacetime procedures shall be used:

1. Seatbelts. Seatbelts will be buckled from takeoff until landing. Aircrew will ensure that seatbelts are outside of any tactical gear being worn and that the buckle is accessible for emergency egress.

2. Personal Flotation Devices (LPU-41/LPU-32). The LPU-41 or LPU-32 will be worn by passengers on all over water flights. The supporting squadron will provide the appropriate LPU and all passengers will put it on prior to takeoff. The belt will be buckled inside the flak jacket and the LPP lobe will be around the individual's neck; in the event of water entry, this configuration allows personnel to shed weight and entanglement hazard of 782 gear while retaining the LPU. The LPUs will be removed and stowed in its case once "feet dry."

3. Helmets. Helmets will be worn with chin straps tightly fastened.

4. HABD. Individuals who are properly trained in the use of the HABD shall be the only personnel who have one in their possession for over-water flights.

5. Packs. Packs will not be worn aboard the aircraft.

a. Packs will be hand carried on and off the aircraft.

b. Packs may be stored in any of the following positions:

(1) Placed on the deck between the legs.

(2) Placed on the individual's lap.

(3) Placed on the seat beside the individual if space is available.

(4) Packs may be stacked together and tied down with a cargo strap.

(5) Passengers gear, equipment and packs will not be placed under the seats of the MV-22.

6. Weapons. Weapons, except pistols, will be held muzzle down between the Marine's legs.

7. Communications. The Stick Leader or senior person in charge will be provided a flight helmet or ICS cranial that allows for communication with the aircrew.

5208. NIGHT SHIPBOARD OPERATIONS

1. Local shipboard night flight operations should not be conducted out of sight of the ship without an operable ship's navigation aid.

2. Night flying at sea is essentially instrument flying and shall be conducted accordingly. Units scheduled for night shipboard operations shall emphasize proficiency in all areas of instrument flight.

3. Administrative transport of passengers to/from amphibious ships and air-capable class ships at night is prohibited except under emergency situations (e.g., CASEVAC). MAGTF Commanders may authorize tactical training transport of passengers over water, at night, if deemed operationally necessary.

4. Transfer of passengers by hoist at night is prohibited except under emergency situations (e.g., CASEVAC).

5. During contingency/combat operations MAGTF or Wing Commanders may waive the criteria established for conducting NVD operations (HLL or LLL) with embarked troops and passengers.

CHAPTER 5

TILT-ROTOR OPERATIONS

SECTION 3: TILT-ROTOR LOW ALTITUDE TACTICS

5300. PURPOSE. To publish guidance for tilt-rotor LAT and operations within 2d MAW.

5301. BACKGROUND. Due to the demanding nature of maneuvering tilt-rotor aircraft at extremely low altitudes, training must be carefully structured in a comprehensive program that incorporates a building block approach to achieve proficiency in the low altitude flight profiles.

5302. SCOPE. The current edition of reference (j), NAVMC 3500.11, reference (a), aircraft NATOPS Manuals, aircraft Tactical Manuals and the Assault Support Tactical SOP contain the overall policies, syllabi and techniques for tilt-rotor low altitude tactics training. This section supplements those publications as well as other directives issued by higher headquarters. The most restrictive directive should be used for guidance in decision making.

5303. LAT TRAINING. LAT training will comply with the following criteria:

1. Instructor Certification. LAT(I) instruction shall be accomplished per reference (j). The MAWTS-1 Course Catalog contains specific courses of instruction for each instructor qualification.

2. Instructor Currency

a. LAT instructors shall remain within the re-fly factor for a respective category as delineated in the T&R Manual in order to be qualified to instruct. Upon expiration of a re-fly factor, a re-qualification flight must be flown with one of the following who is current: WTI, LATI, NSI, or a MAWTS-1 instructor as appropriate.

b. If an entire unit loses proficiency, unit instructors shall regain proficiency by flying with an instructor from another like unit. If not feasible, the instructor shall regain proficiency by flying with another instructor. If a unit has only one instructor and cannot complete the event with an instructor from another unit, he shall regain proficiency with another Aircraft Commander or as designated by the CO.

3. Waivers. Requests to waive the altitudes or currency requirements specified in the T&R Manual must be submitted to CG, 2d MAW (AC/S, G-3) in writing with specific reasons for the waiver.

4. Flight Requirements

a. Flight Schedule. LAT flights are not authorized unless specifically designated on the flight schedule. The flight schedule shall reflect the area/route to be flown and the minimum altitude authorized.

b. Troops. Carrying troops/passengers is specifically prohibited on any initial or re-qualification LAT flight.

c. Aircrew Limitation. During peacetime, aircrew shall not fly more than 5 flight hours in the LAT regime per day.

d. Instrument Conditions. LAT shall not be conducted in IMC.

5304. POLICY

1. Thorough flight planning and preparation shall be completed prior to each LAT flight. A properly prepared kneeboard card, along with the published route with checkpoints and other appropriate notations depicted on suitable navigation charts will be carried in each cockpit. Back-up charts showing divert information shall be carried and readily available in the event of a DIGMAP system malfunction.

2. Flight members shall be thoroughly briefed on all current regulations, restrictions and route intelligence data. Squadrons will compile and maintain route information files to include such information as aerial hazards and areas that should be avoided along all approved routes. Route information files shall be kept up to date utilizing (but not limited to) CHUM updates, local area authorities, and other aviation units that utilize the operating area and detailed current turnover files with units being replaced on deployments. Under no circumstances will Military Training Routes (MTRs) be flown without prior coordination with the scheduling authority. All LAT flights shall be specifically scheduled and briefed in accordance with reference (j) and NAVMC 3500.11.

3. Operations to and from MTRs should be conducted on an IFR flight plan ensuring adherence to fix/radial distance requirements at entry and exit points to preclude possible flight violations. VFR flight plans may be filed.

4. LAT shall only be conducted in restricted airspace or MOAs, on certified 2d MAW TERF or LAT routes, or on LAT designated and scheduled MTRs. LAT conducted on MTRs shall be in accordance with altitude restrictions and special operating procedures outlined in AP/1B-Area Planning and MTRs.

5. When a previously uncertified route is desired to be used as a LAT training route, the Squadron Commander shall provide a detailed proposal to the CG, 2d MAW, via the Group Commander requesting approval to begin the certification process. If approved, the proposed route shall be flown by a LAT(I) at a safe altitude and speed noting all hazards. If the proposed route is declared "safe" by the LAT(I), a request for certification will be submitted to the CG, 2d MAW, AC/S G-3 via the Group Commander.

6. Tilt-rotor Squadron Operations Departments shall maintain current electronic chum files of all LAT routes used by the squadron. At deployed locations, the Squadron Operations Officer shall contact local aviation authorities to ascertain what local flight hazards exist in local training areas, on certified TERF routes, and MTRs prior to conducting LAT operations on those routes.

7. Any obstacles/difficulties encountered on any route/area that have not been previously identified will be reported to the appropriate controlling authority for that area. 2d MAW DOSS and AC/S G-3 shall also be notified via the appropriate chain of command.

5305. LAT TRAINING OUTSIDE OF DESIGNATED 2D MAW LAT AREAS

1. During over-seas deployments and CONUS training conducted outside of 2d MAW's AOR it is permissible for units to establish new LAT routes. In addition to the guidelines established in this chapter, the following actions are required:

a. Squadron WTIs, with the Squadron Commanders approval, may fly and develop new LAT routes and training areas. Requests for the establishment, or modification, of LAT areas shall be submitted to MAG CO/MEU CO for validation. IF applicable, the MAG CO will submit requests recommended for approval to 2d MAW (AC/S, G-3).

b. LAT flights will not be flown until a Master Hazard Map or electronic CHUM file has been certified for the new training areas.

2. Tactical training exercises such as JTFEX/CERTEX require that low altitude flight routes be planned and flown to counter a given threat scenario. Group or Squadron Commander certification and pre-flying of routes may be impractical under these circumstances. When a 2d MAW squadron or detachment is participating in a tactical training exercise in any of these areas, the parent Group Commander or MAGTF Commander may waive the requirements for pre-flying routes and route certification.

5306. TILT-ROTOR LOW ALTITUDE TACTICS MANAGEMENT

1. 2d MAW (AC/S, G-3) will:

a. Monitor the tilt-rotor LAT program within 2d MAW and conduct Semi-Annual reviews of the authorized LAT routes in coordination with MAG-26 to insure they are still viable and safe for use.

b. Approve areas for low altitude tactics.

2. The MAG-26 Commander is assigned as the 2d MAW Tilt-rotor LAT Manager, and as such shall:

a. Monitor tilt-rotor low altitude tactics programs within their respective Groups.

b. Designate/certify LAT routes within 2d MAW approved low altitude flight training areas as required. All certified routes with hazard maps shall be distributed to all squadrons within their Group.

c. Distribute all certified routes and maneuver areas within 2d MAW Tilt-rotor Primary Training Area with hazard maps to all squadrons within the group.

d. Ensure 2d MAW (AC/S, G-3) is notified of any changes, operational hazards or conflicting operations in approved 2d MAW Tilt-rotor Primary Training Areas as reported by range control or other operational users.

3. Squadron Commanders will monitor the squadron's LAT training program and notify the parent group and 2d MAW (G-3) of any changes, operational hazards or conflicting operations in approved low altitude training areas.

CHAPTER 5

TILT-ROTOR OPERATIONS

SECTION 4: TILT-ROTOR SPECIAL TACTICAL OPERATIONS

5400. PURPOSE. To publish procedures for the safe conduct of rappelling, fast rope, SPIE, water insertion (helocasting) and para-operations.

5401. RESPONSIBILITIES. Tilt-rotor aircraft are authorized to perform the special missions discussed below, subject to NATOPS restrictions and applicable orders.

1. The Aircraft Commander is responsible:

a. For conducting a thorough face-to-face safety brief, to include emergency procedures, with the HRST master prior to the conduct of operations.

b. For inspecting any special equipment and ensuring the proper gear is being used the proper way.

c. For the safe conduct of the flight.

2. The HRST master is responsible to the Aircraft Commander for the safe conduct and supervision of his special operation. He shall ensure that all participants under his supervision:

a. Comply with all applicable orders and SOPs.

b. Receive a thorough safety brief.

c. Comply with the aircrew's instructions.

3. Troop Commanders and HRST masters will be provided with an ICS cranial or flight helmet with two-way communications capability to allow them to talk with pilots, monitor tactical nets and to allow supervisory participation.

5402. RAPPELLING, SPECIAL INSERT/EXTRACTION(SPIE) AND FASTROPE OPERATIONS. All rappelling, SPIE, fast rope, and similar operations involving rope suspension from a tilt-rotor aircraft will include the following safety measures:

1. The HRST master is responsible for the attachment and condition of the rope(s) to be used and for the padding of the aircraft opening through which the rope passes. He will specifically ensure the following:

a. The entire edge of the ramp, door or hatch across which a rope is expected to lie will be padded with appropriate material. Appropriate padding is double the thickness of half inch hair felt pads taped over the edge of the opening that might come in contact with the rope. Where possible, the padding will extend at least 18 inches on the inside of the aircraft toward the anchor point of the rope and six inches away from the edge on the outside of the aircraft.

b. All padding will be adequately secured in place so that it will not be inadvertently displaced. All surfaces to be padded should be clean and free of oily substances so that the tape will adhere properly.

c. Prior to each event, the HRST master, or his assistant, will inspect the rope at the point it exits the aircraft.

2. The Tilt-rotor Aircraft Commander (TAC) is responsible for the safe conduct of the flight, to include a detailed safety briefing to all participants. The TAC shall ensure that:

a. Prior to the mission, a face-to-face brief shall be conducted between the Aircraft Commander and the rappel/fast rope/SPIE Master.

b. The surfaces to be padded are clean and free of oily substances or residue.

c. The padding installation is checked during flight by him/her, the copilot or Crew Chief, to ensure that it is adequately secured.

d. The mission continue only when he/she is satisfied that the aircraft will not be hazarded by loose padding, rope or other gear.

e. The mission is aborted if aircraft or environmental factors prohibit a stable hover.

f. All participants are clear prior to moving out of a stabilized hover.

g. All rappelling/SPIE personnel are wearing serviceable, approved cranial protection.

5403. WATER INSERTIONS (HELOCASTING). Helocasting may be conducted from tilt-rotor aircraft subject to the following restrictions:

1. Casting and recovery operations will be limited to day VFR operations.

2. The supported unit will have a safety boat at the cast point during insertion of swimmers.

3. Two-way radio communications will be maintained at all times between the safety boat and the aircraft.

4. Insert airspeed and altitude will not exceed 20 knots ground speed and 20 feet AGL. Normally, helocasting will be conducted at 10 knots ground speed and 10 feet AGL.

5. The Aircraft Commander shall ensure that a thorough face-to-face brief, to include emergency procedures, is conducted with the Cast Master prior to conducting helocasting operations.

6. The Cast Master shall ensure that all helocasting participants comply with applicable SOPs and pre-briefed aircraft procedures.

5404. PARACHUTE OPERATIONS (PARA-OPS). Para-ops may be conducted from 2d MAW tilt-rotor aircraft subject to the following restrictions:

1. Parachute drops will be conducted only in authorized drop zones.

2. The supported unit will schedule the drop zones to be used and notify appropriate air traffic control agencies.

3. The Jump Master shall ensure that all para-ops participants comply with applicable SOPs and pre-briefed aircraft procedures. Additionally, he/she is responsible for the safe and proper rigging of the aircraft for conduct of para-ops.

4. The Aircraft Commander is responsible for the safe conduct of the flight. He/she shall ensure that:

a. A thorough face-to-face brief is conducted with the Jump Master prior to conducting para-ops.

b. Aircraft parachute jump equipment and rigging is inspected by the Aircraft Commander or the copilot and Crew Chief.

5. Aerial delivery of cargo involves use of the same techniques as para-ops. In both cases a detailed brief and inspection of cargo tie downs is required prior to execution.

6. When required, radio communications are established with the appropriate airspace controlling agency 5 minutes prior to the jump and maintained until the last jumper reaches the ground.

CHAPTER 6

UAS OPERATIONS

SECTION 1: UAS GENERAL OPERATING PROCEDURES

6100. PURPOSE. This document is intended to establish policy and provide guidance to 2d MAW Aviation personnel who are charged with operating UASs, training UAS mission teams and support personnel, as well as processing, coordinating, reviewing and approving UAS operations. These policies are not intended to cover every possible situation and therefore do not relieve the unmanned Aircraft Commander, unmanned aircraft system operator or the aircrew mission team from the responsibility for proper action under circumstances not specifically addressed by this document. Should a conflict arise between policies and provisions stated herein or with higher authority due to changes in applicable OPNAVINST, NATOPS and FAA regulations or guidance, it is then incumbent on the Squadron, Group and Wing Staff to adjust and correct these UAS general operating procedures.

6101. BACKGROUND. UAS operations have increased dramatically during the past several years in both the public and private sectors. In response to this increasing activity the FAA has found it necessary develop guidance to use when approving and evaluating applications for Certificate(s) of waiver or Authorization (COA) and special airworthiness certificates to UAS operators. The FAA UAS operating guidance is under development and may change several times over the next several months and years. 2d MAW personnel must remain familiar with the changing UAS authorities and coordination requirements. The policy and procedure guidance presented in this document applies to those UAS operations affecting areas of the National Airspace (NAS) to include active Restricted, Prohibited or Warning Areas. The FAA is particularly concerned with developing procedures and authorities to operate UASs in the NAS outside of active Restricted, Prohibited or Warning Areas.

6102. AUTHORITY AND ASSETS

1. The VMU-2 Squadron Commander shall exercise overall cognizance of operations and training. The VMU-2 Commander will ensure all aircrew mission team members are current and familiar with the policies, regulations and guidance regarding the conduct of UAS operations and training within the NAS. The VMU-2 Commanders authority and responsibility also applies when operating outside the contiguous U.S. and its territories in preparation for UAS deployment and contingencies.

2. The VMU-2 Commander may be called upon to act as the 2d MAW UAS subject matter expert when an experienced UAS Staff Officer is not available to assist the MACG and 2d MAW G3/G5 staff in preparing, coordinating, establishing, revising and updating procedures, guidance and regulations regarding UAS operations and training.

3. 2d MAW's RQ-7B Shadow unmanned aircraft systems are tactical Tier III UAS's capable of providing unmanned aerial surveillance, reconnaissance and target acquisition in support of a Marine Air Ground Task Force (MAGTF) and/or a Joint Force Commander. Other UAS's, UAS payloads and UAS capabilities may be employed by 2d MAW as part of contingency operations, combat development or training. All UASs regardless of payload will follow the provisions and procedures established by this SOP and in coordination

with UAS flight regulations/guidance established in coordination with higher and adjacent authority within DOD, the FAA and base flight procedures.

4. At current time and for the foreseeable near future the VMU will continue to employ contractor operated non-program of record platforms such as the Boeing Scan Eagle, STUAS Integrator, cargo UAS to include models like the Lockheed Martin K-MAX and Boeing A160T Hummingbird in both training and combat. As stated above, these systems shall operate in strict compliance with existing Marine Corps orders, directives and guidance in regards UAS. At all times when flying in support of Marine Corps, and unless directed by a competent higher authority, there shall be a Marine Mission Commander (MC) overseeing the conduct of flight.

6103. OPERATIONS

1. All UAS operations are to be conducted per this SOP and the appropriate procedures contained in the Air Traffic Control Facility Manual. UAS flight operations within the MCAS Cherry Point Class D Surface Area (CDSA), requires an FAA COA. An FAA UAS COA is also required to operate from the Bogue Field Marine Corps Auxiliary Landing Field (MCALF) in order to operate in the surrounding restricted areas.

2. UAS SCHEDULING PROCEDURES

a. UAS basing and operations have become part of MCAS Cherry Point and Bogue Field operations. The majority of UAS training takes place in Special Use Airspace and requires route transit through Class D and E airspace to get to those training areas. UAS operations at Cherry Point occur on Taxiway Foxtrot (200' X 7100'), an area that is also utilized for overflow aircraft parking, special operations/airlifts and as a training area. Use of Taxiway Foxtrot must be scheduled through Airfield Operations.

b. Scheduling of Taxiway Foxtrot UAS operations shall be made through MCAS Cherry Point Base Operations at least 48 hours prior to scheduled operations. All operations will be included on a daily flight schedule. All taxiway Foxtrot operations are considered special operations that require special handling. Priority and scheduling conflicts will be resolved through 2d MAW G-3. 2d MAW G-3 will set training priorities when scheduling conflicts arise between 2d MAW users. UAS operations in Restricted Areas R-5306D and R-5306E will require scheduling of R-5306C for transition. All Special Use Airspace shall be scheduled through the appropriate Range Scheduling activity. When taxiway Foxtrot cannot be scheduled, contact 2d MAW G-3 at DSN 582-5101/3695 to schedule MCALF Bogue Field. In order to ensure desired UAS scheduled operations at Bogue Field, identify requirements no later than the month prior to planned operations.

c. Procedures for specific UAS operations shall be delineated IAW the current FAA COA and the current Letters of Agreement (LOA) between Airfield Operations and VMU-2. Applications for a COA are processed through FAA ATC. COAs are typically issued for a period of up to one year, but may be issued for a lesser duration if requested or deemed appropriate. COAs are not required for operations conducted wholly within an active Restricted, Prohibited or Warning Area airspace when operating with permission from the appropriate authority or using agency of that airspace.

d. Once installed and fully operational, the Ground Based Sense And Avoid (GBSAA) system will be manned and operated by approach control through

Cherry Point ATC. This system will have a detailed SOP that will be created under the direction of 2d MAW, and with inputs from all affected agencies.

3. Local Flying Area. Local operating areas are considered to be MCAS Cherry Point Class D airspace, the R-5306 A/C/D/E and the W-122. UAS flight operations in the Cherry Point CDSA must be coordinated with Cherry Point ATC, tower and when required with the FAA through a COA.

4. Mission Brief. Local flight operation mission briefs will include, at a minimum, telephonic coordination and brief with a local ATC representative. All UAS operations will be conducted in accordance with established local ATC procedures.

5. MCAS Cherry Point and Bogue Field Flight Operations.

a. UAS Ground operations at Cherry Point will be confined to the Foxtrot Taxiway area unless otherwise coordinated with Base Operations and Local ATC.

b. Operations in the Airport Traffic Area and Local Operating Areas will be conducted in accordance with local operating instructions, LOA's and current FAA COA's.

(1) All flight operations shall be conducted in VMC and per VFR flight rules.

(2) Prior to takeoff, clearance will be requested via two-way radio communication with ATC (tower). Clearance will be acknowledged.

c. En route/Return to/from Local Operating Areas. All UAS flight restrictions regarding en route to and return from local operating areas are addressed in current FAA COA's associated with MCAS Cherry Point and Bogue Field. When temporarily operating 2d MAW UASs outside these airfields, separate COAs and LOAs must be established with local control agencies and FAA ATC in order to operate.

6. Minimum Equipment Required for Flight Operations. Operations conducted within the Airport Traffic Area will require two-way radio communication with backup and land line capability. Operations conducted in the local operating areas require those items specified above in addition to an operating mode 3/C transponder, ground and aircraft lighting.

7. LASER OPERATIONS

a. All LASER operations will meet the safety requirements and conducted in accordance with the following: ANSI Z136.1, SECNAVIST 5100.14_, OPNAVIST 5100.23_, BUMEDINST 6470.23_, COMNAVAIRFORINST 4790.2_, MCO 5104.1_, MIL-HDBK-828_, WgO 5104.1_ and SqO 5104.1_. When operating on any range facility the aircrew will comply with local range SOPs regarding LASER safety.

b. All LASER employment as well as Infrared Pointer terminology, tactics, techniques and procedures will adhere to the standardization set forth by the Joint Publication 3-09.3 Close Air Support 8 July 2009. Further information can also be found in the following publications: NTTP 3-22.3-VMU, FM 304.15, NTTP 3-55.14, ANTTP(I)3-2.64 and the JFIRE. All LASER deliveries and terminal guidance marks (spots) shall be made within the safety and optimal employment geometry parameters. As publications and doctrine in the UAS realm are rapidly changing it is incumbent for aircrews

to stay abreast of the most current JCAS standardization in regards to Marine TacAir TACSOPs, published though MAWTS-1.

8. INTELLIGENCE SURVEILLANCE AND RECONNAISSANCE (ISR)

a. ISR or Multi-Spectral Image Reconnaissance (MIR) sensor tasking is provided via Full Motion Video (FMV). Frequency assignments for system broadcast and feeds will be in accordance with 2d MAW allocations. Utilization and operation shall comply with system TM/NATOPS and the above sited publications in paragraph 7b.

b. With the addition of the Plug-in Optronic Payload (POP) 300 Designator (POP300D) to the Shadow system its target acquisition capability has moved from pure surveillance and reconnaissance detection to enhanced mark abilities through full LASER designation (spot) and IR Pointer (sparkle) modes. For amplifying LASER information also see the references cited in paragraphs 7a and b.

c. VMU has a robust internal intelligence section able to rapidly analyze and disseminate raw data gathered via the systems onboard sensor suite. The imagery analyst are qualified to pass low TLE CAT I coordinates utilizing PSS-SOF.

d. The Communications Relay Package (CRP) now allows for an extended range communication and relay.

e. In the future, further information will be available in the USMC TACP TACSOP as well as other secret manuals such as the CAF-SOF.

9. WEAPONIZATION

a. Future weaponization of Marine Corps UAS platforms is forthcoming and therefore this section will be updated appropriately in accordance with publication changes.

APPENDIX A

2D MAW SPECIAL PROCEDURES

APPROVED HELO TERF ROUTES

GREAT WHITE ROUTE

POINT	LOCATION	FEATURE
A	TP 880521	ROAD INTERSECTION
B	TP 924498	ROAD INTERSECTION/POWER LINE
C	TP 943482	BEND IN ROAD
D	TP 991491	BEND IN ROAD
E	UP 010524	BEND IN ROAD
F	UP 001555	RIVER FORK
G	UP 028558	BRIDGE
H	UP 075646	ROAD INTERSECTION
I	UP 144695	ROAD/POWER LINE INTERSECTION
J	UP 057693	ROAD INTERSECTION
K	TP 993636	BEND IN ROAD
L	UP 034633	ROAD/POWER LINE INTERSECTION
M	UP 006586	ROAD INTERSECTION

HOLLY SHELTER ROUTE

POINT	LOCATION	FEATURE
A	TP 667292	ROAD INTERSECTION
B	TP 626283	BRIDGE
C	TP 553183	ROAD INTERSECTION
D	TP 503095	POWER LINE INTERSECTION
E	TP 504179	ROAD INTERSECTION
F	TP 529228	ROAD INTERSECTION
G	TP 489279	ROAD/POWER LINE INTERSECTION
H	TP 493346	ROAD INTERSECTION
I	TP 572338	ROAD INTERSECTION

HOFFMAN FOREST

POINT	LOCATION	FEATURE
A	TP 801569	ROAD INTERSECTION
B	TP 774596	ROAD INTERSECTION
C	TP 778669	ROAD INTERSECTION
D	TP 745726	ROAD INTERSECTION
E	TP 798812	ROAD INTERSECTION
F	TP 888718	ROAD INTERSECTION
G	TP 821682	ROAD INTERSECTION
H	TP 922610	BEND IN ROAD
I	TP 854610	ROAD INTERSECTION
J	TP 848578	ROAD INTERSECTION

ELLIS LAKE ROUTE

POINT	LOCATION	FEATURE
A	UP 061561	ROAD INTERSECTION
B	UP 111572	ROAD INTERSECTION
C	UP 126545	BEND IN TRAIL
D	UP 209516	BEND IN ROAD
E	UP 196488	BEND IN ROAD
F	UP 142471	ROAD INTERSECTION
G	UP 117508	ROAD INTERSECTION
H	UP 096523	ROAD/RAILROAD INTERSECTION
I	UP 061561	ROAD INTERSECTION

MERRIMON ROUTE

POINT	LOCATION	FEATURE
A	UP 436561	ROAD INTERSECTION
B	UP 445643	ROAD INTERSECTION
C	UP 478629	BEND IN RIVER
D	UP 514673	BRIDGE
E	UP 507627	BEND IN RIVER
F	UP 489624	ROAD INTERSECTION
G	UP 508567	BRIDGE
H	UP 473614	ROAD INTERSECTION
I	UP 468587	BEND IN TRAIL
J	UP 486561	BEND IN TRAIL

ATLANTIC ROUTE (WGS-84)

POINT	LOCATION	FEATURE
A	UD 54874 71669	PENINSULA
B	UD 59329 66758	MOUTH OF CREEK
C	UD 68620 65450	MOUTH OF CREEK
D	UD 73136 67207	PENINSULA
E	UD 75406 65769	BRIDGE
F	UD 72044 61986	BRIDGE
G	UD 61129 61860	PENINSULA

REQUIRED MAP SHEETS

TOPSAIL 5452 I, ROCK POINT 5452 IV, MAPLE HILL 5453 II, BURGAW 5453 III, MAYSVILLE 5553 I, SWANSBORO 5553 II, NEW RIVER 5553 III, JACKSONVILLE 5553 IV, TRENT RIVER 5554 III, BOGUE SOUND 5653 III, HAVELOCK 5653 IV

APPENDIX B

2D MAW SPECIAL PROCEDURES

APPROVED FIXED-WING LAT ROUTES

MOODY 2 SOUTH MOA

POINT	LAT/LONG	DESCRIPTION
A	3056/8240	FIRE TOWER
B	3049/8243	ROAD/RR CROSSING
C	3039/8245	BRIDGE
D	3042/8218	ROAD "T"
E	3049/8251	ROAD BEND
F	3055/8253	CROSSING

MOODY 2 SOUTH NORTHLAND MOA

POINT	LAT/LONG	DESCRIPTION
A	304020/824530	BRIDGE
B	304200/825810	ROAD "T"
C	305650/825910	RR ROAD AT BASE OF DRAW
D	310820/825805	ROAD INTERSECTION
E	311140/825050	ROAD "Y"
F	310330/824105	TOWN OF TRAVISVILLE
G	304920/824330	INTERSECTION ROADS/RR

GAMECOCK I MOA

POINT	LAT/LONG	DESCRIPTION
A	3433/8029	LOOKOUT TOWER
B	3424/8037	POND
C	3429/8046	POND
D	3436/8051	ROAD BEND
E	3431/8045	POND
F	3442/8036	INTERSECTION

R2508 SALINE ROUTE

POINT	LAT/LONG	DESCRIPTION
A	363355/1173609	SMALL ROCK COMPOUND
B	363729/1174016	TIP OF FINGER
C	364150/1174953	ROAD BEND AT LAKE BED
D	365118/1175247	DARK ROCK MOUND
E	365905/1174905	SMALL DRY LAKE BED
F	370555/1174448	TIP OF FINGER
G	365742/1173818	TIP OF FINGER

R2508 PANAMINT ROUTE

POINT	LAT/LONG	DESCRIPTION
A	355320/1171657	100' MICROWAVE
B	362019/1172522	ROAD JUNCTION
C	361921/1173018	ROAD JUNCTION
D	363128/1173245	ROAD JUNCTION
E	362221/1172356	ROCK OUTCROPPING
F	361003/1171757	ROAD INTERSECTION
G	360202/1171610	RADAR STATION AT ROAD INTERSECTION

R2508 OWENS ROUTE

POINT	LAT/LONG	DESCRIPTION
A	361737/1174902	HIGH POINT OF TERRAIN
B	362133/1175828	SMALL BRIDGE ON TRAIL
C	362456/1180004	SMALL RAILROAD BRIDGE
E	362845/1180124	CEMENT PLANT
F	363235/1175451	ABANDONED TRAMWAY
G	362600/1174927	ROAD JUNCTION

R-3007, COASTAL MOA EAST, WEST AND FIVE

POINT	LAT/LONG	DESCRIPTION
A	3144.4/08132.3	POINT 1
B	3126.1/08148.4	POINT 2
C	3124.0/08155.2	DUALLANE HIGHWAY
D	3135.6/08204.1	SINGLE LANE ROAD
E	3148.5/08204.2	TOWER 268'
F	3145.5/08154.3	RIVER BEND
G	3135.3/08140.3	POWERLINE CROSSING

LUCIN MOA A/B

POINT	LAT/LONG	DESCRIPTION
A	4126.2/11313.2	KNOLL/RIDGELINE
B	4136.5/11318.5	KNOLL
C	4147.5/11344.7	PEAK
D	4139.2/11410.4	DAM
E	4131.6/11423.4	DRY POND BED
F	4123.2/11423.1	ROAD BED
G	4121.4/11410.4	DAM
H	4121.1/11354.2	ROAD/RR X-ING
I	4126.2/11313.2	KNOLL/RIDGELINE

SEVIER MOA A/B

POINT	LAT/LONG	DESCRIPTION
A	4012.0/11238.0	ROAD BEND
B	3941.0/11246.0	HILL
C	3934.0/11304.0	FORK IN ROAD

D	3918.5/11303.0	HILL
E	3915.5/11328.0	CROSS ROAD
F	3859.0/11312.0	N. TIP OF DRY LAKE BED
G	3840.5/11318.0	N. TIP OF DRY LAKE BED
H	3906.5/11303.0	N. TIP OF DRY LAKE BED
I	3926.0/11251.0	PLATEAU
J	3941.0/11306.0	HILL

YUKON 2 MOA

POINT	LAT/LONG	DESCRIPTION
A	6550.0/14457.0	LITTLE CRAZY MAN MT.
B	6603.0/14416.0	BEND IN RIVER
C	6606.0/14324.0	HILL 1330
D	6538.0/14328.0	HILL 2316

AUSTIN 1 MOA NORTH ROUTE

POINT	LAT/LONG	DESCRIPTION
A	395745/1172230	INTERSECTION
B	395700/1170700	HILL
C	400400/1165200	HILL
D	400500/1163830	ROAD
E	401900/1163530	INTERSECTION
F	401600/1165630	HILL

AUSTIN 1 MOA SOUTH ROUTE

POINT	LAT/LONG	DESCRIPTION
G	394100/1171600	HILL
H	395030/1170630	INTERSECTION
I	395600/1164000	INTERSECTION
J	394300/1164400	INTERSECTION
K	393830/1165700	HILL

GABBS SOUTH/GABBS CENTRAL (A-K)

POINT	LAT/LONG	DESCRIPTION
A	3901.15/11834.45	HILL
B	3906.15/11820.55	HILL
C	3903.50/11806.00	ABANDONED SETTLEMENT
D	3906.30/11745.30	ROAD INTERSECTION
E	3856.00/11736.00	ROAD INTERSECTION
F	3852.30/11739.00	ROAD INTERSECTION
G	3900.00/11755.00	HILL
H	3858.45/11808.00	HILL
I	3845.00/11803.00	ROAD INTERSECTION
J	3851.00/11820.00	DRY LAKE
K	3857.00/11831.30	DRY LAKE

AUSTIN 2 MOA

POINT	LAT/LONG	DESCRIPTION
L	3911.30/11715.45	MOUNTAIN FINGER
M	3908.45/11704.30	ROAD INTERSECTION
N	3924.00/11656.30	ROAD INTERSECTION
O	3928.00/11642.30	ROAD INTERSECTION
P	3922.00/11634.30	HILL
Q	3920.30/11644.00	MOUNTAIN FINGER
R	3911.00/11653.00	HILL
S	3903.30/11715.00	MOUNTAIN GAP

BRUSH CREEK MOA

POINT	LAT/LONG	DESCRIPTION
1	3923/08324	MINE PIT
2	3915/08313	ROAD BEND
3	3906/08314	TOWN
4	3901/08325	BRIDGE
5	3856/08328	BRIDGE
6	3853/08319	PASS
7	3856/08313	TOWN
8	3904/08303	CORNER OF BRIDGE
9	3924/08314	WAREHOUSE

ELGIN MOA

POINT	LAT/LONG	DESCRIPTION
1	365008/1143924	RAILROAD TOWN
2	370351/1143322	RAILROAD TOWN
3	371020/1141732	ROAD FOLK
4	371827/1142814	ROAD/RR INTERSECTION
5	371829/1143402	ROAD FOLK
6	370515/1144734	ROAD INTERSECTION
7	364628/1144750	HIGHWAY

THE FOLLOWING 3D LAT TRAINING COURSES ARE ALSO APPROVED FOR MAG-14.

R2301 W

POINT	LAT/LONG	DESCRIPTION
1	3235/11423	PARALLEL RIDGE LINE
2	3226/11419	PARALLEL RIDGE LINE
3	3220/11407	PARALLEL RIDGE LINE
4	3226/11357	VALLEY
5	3226/11317	FLAT N. OF RIDGE
6	3240/11345	N. TIP OF DRY POND BED

R2301 W

POINT	LAT/LONG	DESCRIPTION
1	323930/1141815	BEND IN ROAD
2	323420/1140810	SMALL MOUND
3	323840/1135945	HILL
4	323955/1134355	NE TIP OF DRY POND NAME
5	323400/1133745	PARALLEL RIDGE LINE
6	322500/1133915	SMALL MOUND N. OF RIDGE
7	322640/1135330	HILL
8	321850/1140400	HILL MEETS TRAIL
9	322510/1140855	SADDLE
10	323420/1140810	SMALL MOUND

R2501

POINT	LAT/LONG	DESCRIPTION
1	342011/1161937	FLAT VALLEY
2	343111/1162312	VALLEY
3	343524/1162238	DRAW
4	343832/1162103	MINE PIT
5	343804/1161537	FINGER
6	343312/1160737	HILL #4699
7	342935/1155518	N OF HILL #2891
8	342437/1154949	FLAT
9	341908/1155321	SW OF RIDGE #4187
10	342353/1155819	VALLEY
11	342507/1160300	STREAM (BED) INTERSECTION
12	342615/1161042	FINER (RETURN TO POINT 1)

R2507 NORTH/SOUTH

POINT	LAT/LONG	DESCRIPTION
IP	330900/1145645	HILL
1	331430/1150600	HILL
2	330840/1151125	SMALL ROCK MOUND
3	332725/1153700	HILL #3060
4	33100/1153245	VEGETATION STARTS
5	331845/1150620	FLAT

OWYHEE MOA

POINT	LAT/LONG	DESCRIPTION
1	423700/1165200	LARGE FINGER
2	420400/1165600	FINGER
3	420500/1155800	SMALL DAM
4	421830/1160200	POND (BED)
5	422800/1163900	DEEP POND
6	421600/1165300	BEND IN RIVER/TRAIL END

R4808, R4804N, R4808S, AND R4809 ARE AUTHORIZED FOR LAT IN CONJUNCTION WITH NELLIS TRAINING AREA EXERCISES.

APPENDIX C

RELATED REFERENCES

DOCUMENT NUMBER	DOCUMENT NAME
AAFI 11-207	Flight Delivery of Fighter Aircraft
ATP-56(B)	Air to Air Refueling Manual
CMC Order 3720	
DODPM PART 2	DOD Pay Manual, Part 2
FLIP AP/1B	Flight Information Publication, Area Planning
FAR 91.70	Special Military Operations
FAA Handbook 7610.4	Crewmember Requirements at Flight Stations
JP 3-09	Joint Fire support
JP 3-09.3	Joint Close Air Support (CAS)
JP 3-30	Command and Control for Joint Air Operations
JP 3-52	Joint Airspace Control in the Combat Zone
JP 3-60	Joint Targeting
OPNAVINST 3710.7_	NATOPS General Flight and Operating Instructions
OPNAVINST 3770.2_	Airspace Procedures Manual
OPNAVINST 4631.2_	Management of DON Airlift Assets
NAVAIR 01-230HMA1	NATOPS Flight Manual
NAVAIR 00-80T-106	LHA/LHD NATOPS
NAVAIR 17-1-537	Aircraft Tie Down Procedures
NWP 55-8-SAR	Search and Rescue
MCWP 3-2	Aviation Operations
MCWP 3-23	Offensive Air Support
MCWP 3-24	Assault Support
MCO P1000.6_	ACTS Manual
MCO 1326.2	Administration of Temporary Flight Orders
MCO 3125.1	Marine Corps Flying Hour Program Management
NAVMC 3500.14_	Aviation Training and Readiness Program Guide
MCO 4030.19I_	Preparing Hazardous Materials for Military Air Shipment
MCO 4630.16	Air Transportation Eligibility
MCO P5720.73	Marine Corps Aviation Support of the Community Relations Program Manual
2d MAW Policy Ltr 01-97	Operational Risk Management
2d MAW Policy Ltr 03-02	Wing Policy Ltr Concerning Flight Schedule Changes
2d MAW WgO 1326.5C	Administration of Temp Enlisted Flight Orders
2d MAW WgO 3500.23C	2d MAW Operational Risk Management
2d MAW WgO 3710.34C	Transoceanic Movement of 2d MAW Tactical Aircraft
2d MAW WgO 3710.40B	2d MAW Bird Aircraft Strike Hazard (BASH) Plan
3d MAW WgO 3700.1	Air Operations Manual 29 Palms
3d MAW WgO/StaO 3700.2	Standing Plan for Supporting Squadron Detachment Deployments
StaO P3710.4_	Airfield Ops Manual Yuma
MAWTS-1	USMC Assault Support Tactical SOP
MAWTS-1	Helo DACT Guide
MAWTS-1	NVD Manual