



11 March 1992

Final Student Research Report

One Call Gets it All! Reorganization of Marine
Aircraft Wing Communications Supporting
Expeditionary Airfields

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Thesis: The current Marine Aircraft Wing communications structure does not adequately support Expeditionary Airfield internal communications. The communications assets and personnel within the Marine Wing Support Squadron should be incorporated into the Marine Wing Communication Squadron. This paper addresses issues concerning AEF communications support.

USMC; Command and Control; C2; C3; C4I;
Joint Command and Control; AEF, MWSS; MWCS; Aviation;
Airfield Opns; AGS; Aviation Ground Support

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Unclassified

Unclassified

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ONE CALL GETS IT ALL!
 REORGANIZATION OF MARINE AIRCRAFT WING COMMUNICATIONS
 SUPPORTING EXPEDITIONARY AIRFIELDS

UNITED STATES

Approved For	
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Unpublished	☐
Justified	☐
By _____	
Distribution /	
Availability Codes	
Dist	Availability or Special
A-1	

Submitted to
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11 March 1992

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ONE CALL GETS IT ALL!
REORGANIZATION OF MARINE AIRCRAFT WING COMMUNICATIONS
SUPPORTING EXPEDITIONARY AIRFIELDS

OUTLINE

Thesis: The current Marine Aircraft Wing communications structure does not adequately support Expeditionary Airfield internal communications. The communication assets and personnel within the Marine Wing Support Squadron should be incorporated into the Marine Wing Communication Squadron.

- I. Introduction
- II. Evolution of Expeditionary Airfield communications
 - a. Aviation ground support reorganization study to support the EAF concept
 - b. Reorganization of the Marine Wing Support Group and the creation of Marine Wing Support Squadrons
 - c. MWSS missions and tasks in support of EAF communications
 - d. MWCS missions and tasks in support of EAF communications
- III. Problems with EAF communications support
 - a. Structure deficiencies
 - b. Training deficiencies
 - c. Liaison/planning shortfalls
- IV. Recommended organization of EAF communication support
 - a. Airfield communication detachment
 - b. Advantages of the proposed reorganization
- V. Conclusions

**ONE CALL GETS IT ALL!
REORGANIZATION OF MARINE AIRCRAFT WING COMMUNICATIONS
SUPPORTING EXPEDITIONARY AIRFIELDS**

During the mid-1980's, the Aviation Ground Support (AGS) structure was reorganized to better support the Combat Service Support (CSS) requirements needed at Expeditionary Airfields (EAF). The goal of this reorganization was to organize the AGS elements within the Marine Aircraft Wing (MAW), to streamline command and control, and to integrate the training of all AGS functional elements under one commander. Since this reorganization the AGS is much more capable of supporting the CSS requirements of an EAF. In the area of communications, the reorganization has been ineffective in supporting the EAF concept. A reorganization of the communication structure, personnel and equipment is needed. In this paper we will explore the original reorganization as it pertains to the current EAF communication structure. We will also address the deficiencies associated with the current structure, and propose an organization that will solve these problems.

EVOLUTION OF EXPEDITIONARY AIRFIELD COMMUNICATIONS

The current Marine Aircraft Wing structure for EAF communications is the result of the AGS reorganization during the middle 1980's. This reorganization was

implemented to better support the evolving EAF concept. Several studies in the early 1980's examined the AGS/CSS structure, and recommended a reorganization of AGS elements to support EAF requirements. One serious oversight in the reorganization, however, was in the area of communications. Neither of the two major studies conducted gave enough consideration to the communication support requirements of the EAF. The first study was conducted in 1982, and was tasked to develop an operational concept for the Marine Corps Expeditionary Airfield system of the future (1985 to 1995). The study identified changes and/or modifications to the EAF system currently in place, which would permit it to support a task organized Aviation Combat Element of a Marine Air Ground Task Force (MAGTF). Additionally, the study looked at the current table of organization and equipment for EAF units, and identified the support requirements (for the EAF concept) and sources of that support. The results of the study showed that no one agency or CSS organization within the MAW could support the proposed EAF concept (Figure 1). The study also found that the problem was not only limited to the EAF concept, but was representative of a larger and more complex issue, i.e., what organization is most capable of meeting the CSS requirements that are unique to a Marine Aircraft Wing? The study's recommendation was to consolidate the MAW's

REQUIRED CAPABILITIES	UNIT			
	MABS	H&MS	MATCS	WES
1. STAFFED WITH PERSONNEL TRAINED/ SKILLED IN OPERATION OF EAF FUNCTION	YES	LIMITED	LIMITED	NO
2. STAFFED WITH PERSONNEL TRAINED/ SKILLED IN MANAGEMENT OF NAVAL AVIATION SUPPLY SYSTEM.	NO	YES	YES	NO
3. EQUIPPED WITH OR HAVE ACCESS TO COMPUTER/SOFTWARE RESOURCES REQUIRED BY NAVAL AVIATION SUPPLY SYSTEM.	YES	YES	YES	YES
4. STAFFED WITH PERSONNEL TRAINED/ SKILLED IN MANAGEMENT OF 3M SYSTEM.	NO	YES	YES	NO
6. STAFFED/EQUIPPED TO PROVIDE REQUIRED ENGINEER SUPPORT.	NO	NO	NO	YES

MATRIX OF ORGANIZATION CAPABILITIES

Figure 1.

CSS organizations. Three options for reorganization within the MAW suggested by the study were as follows:

- Consolidate all of the CSS functional units within the Marine Wing Support Group (MWSG).
- Consolidate all of the CSS functional units under the Marine Air Base Squadron (MABS).
- Create a new organization.

A second study conducted in 1984 by a Marine Corps working group assessed the reorganization concepts of the CACI study. The group was appointed specifically to assess the need for reorganization of the AGS structure. The working group chose to consolidate all CSS functional units within the Marine Wing Support Group. Marine Wing Support Squadrons (MWSS) were developed under the Support Groups to provide support for each EAF (Figure 2).

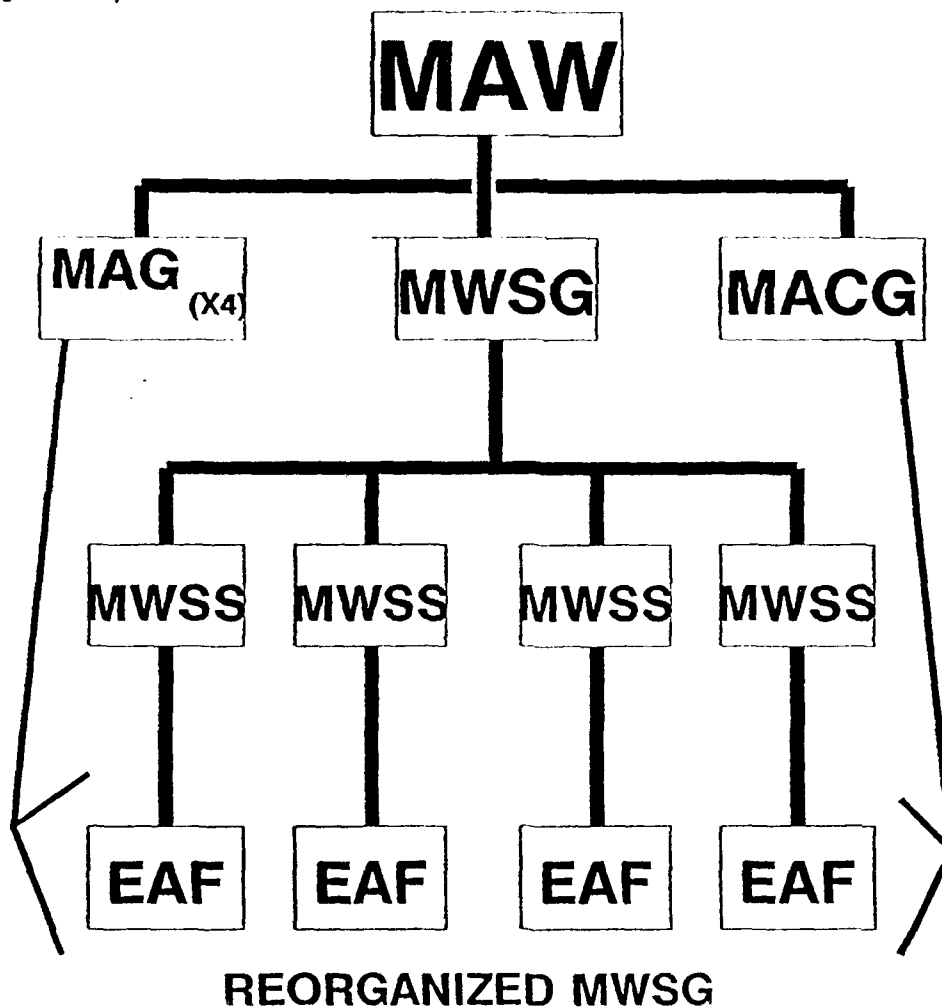


Figure 2.

In September 1985, the Commandant of the Marine Corps approved the proposed concept, and continued to develop and refine supporting Tables of Organization (T/Os) and Tables of Equipment (T/Es). The proposed T/Os and T/Es were then drafted, staffed, and forwarded to the Fleet Marine Forces for concurrence/comments. The T/O requirements and modifications were made, and a "concur in principle" response was made.

The reorganized Support Group has proven to be a capable organization in all areas, except communications. When the MABS were supporting EAF communications, they had a large organic communication section (Figure 3).

MABS COMMUNICATION SECTION

DESCRIPTION	GRADE	MOS	OFF	ENL
HEADQUARTERS SECTION				
COMM OFF	CAPT	2502	1	
ASST COMM OFF	LT	2502	1	
COMM CHIEF	MSGT	2591		1
FIELD MESSAGE CENTER SECTION				
MSG CNTR UNIT NCOIC	GYSGT	2549		1
MSG CENTER MAN	SGT	2542		1
MSG CENTER MAN	SGT	2549		2
MSG CENTER MAN	CPL	2542		3
TELETYPE OPR	CPL	2542		3
TELETYPE OPR	PFC	2542		3
FIELD RADIO SECTION				
RADIO UNIT NCOIC	GYSGT	2537		1
FLD RADIO OPR	SGT	2531		2
HF RADIO OPR	SGT	2534		1
FLD RADIO OPR	LCPL	2531		2
HF RADIO OPR	LCPL	2534		1

COMM MAINTENANCE SECTION

REPAIR UNIT NCOIC	GYSGT	2861	1
LOG DATA CTL CLK	LCPL	0411	1
TELETYPE REPAIR MAN	CPL	2818	1
RADIO REPAIRMAN	CPL	2841	3
TELETYPE REPAIRMAN	LCPL	2811	1
RADIO REPAIRMAN	LCPL	2841	2

WIRE SECTION

WIRE UNIT NCOIC	SSGT	2519	1
WIREMAN/SWBRD OPR	CPL	2512	3
WIREMAN/SWBRD OPR	PRC	2512	3

TOTAL		2	38
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Figure 3.

This section's mission was to provide an EAF's internal communication to include: tactical telephone service in and about the EAF (to include tenant ACE units), multi-channel radio communications, communications for EAF security, communications for ground transport, and communications between the EAF and its adjacent facilities, i.e., munitions area and petroleum, oil, and lubrication sites.

The newly formed Support Squadrons were given a communications mission statement identical to that of the MABS. However, the Support Squadron communication section is a much smaller organization (Figure 4).

SUPPORT SQUADRON COMMUNICATION SECTION

DESCRIPTION	GRADE	MOS	OFF	ENL
HEADQUARTERS SECTION				

COMM CHIEF	GYSGT	2591	1
WIRE SECTION			
NCOIC	SSGT	2519	1
WIRE SUPERVISOR	SGT	2514	1
WIREMAN/SB OPR	CPL	2512	2
WIREMAN/SB OPR	LCPL	2512	2
SWITCHBOARD OPR	LCPL	2514	2
FIELD RADIO SECTION			
NCOIC	SSGT	2537	1
FIELD RADIO OPR	SGT	2531	1
FIELD RADIO OPR	CPL	2531	1
FIELD RADIO OPR	LCPL	2531	5
RADIO/TE OPR	CPL	2531	1
COMM MAINT SECTION			
NCOIC	SGT	2861	1
RADIO REPAIRMAN	SGT	2841	1
RADIO REPAIRMAN	CPL	2841	1
TEL TECHNICIAN	LCPL	2811	1
TOTAL			22

Figure 4.

The loss of seventeen personnel while retaining the same mission has understandably hampered the Support Squadron's communication section effectiveness. Consequently the Support Squadron frequently can not meet its communications requirements and must request augmentation from the Marine Wing Communication Squadron (MWCS).

The Communication Squadron is not structured to support the Support Squadron's additional communication

Communications Squadron's assets and personnel will continue to be over burdened having to augment the Support Squadron.

PROBLEMS WITH FAF COMMUNICATION SUPPORT

In conducting our research we have noted a number of weaknesses in the present structure of communications support sources within the MAW. Specifically we are focusing on the area of EAF support and their associated units. Deficiencies in personnel, training, and equipment are affecting the current MAW communication organization's ability to meet mission requirements.

The communications section of the Support Squadron is responsible for installing, operating, and maintaining the EAF's internal communications architecture. However, due to the lack of personnel and equipment, the communications section is only marginally successful at completing its mission. With the limited switching capability of the SB-3865 (telephone switchboard), only a limited telephone system can be installed. The radio central and switchboard must be manned around the clock. In addition, troubleshooters must be on hand to resolve problems or repair circuit outages. To provide this support a three-section watch is needed. However, the current T/O makes this impossible. Unable to keep pace

with growing EAF communication requirements, the Support Squadron's communications section is unable to support EAF communication requirements. Recent exercise after-action reports as well as lessons learned from Southwest Asia support this statement. Ninety-seven percent of the respondents to our questionnaire reported that the Support Squadron needed more personnel and equipment to accomplish its mission.

Considering the communication requirements of the units usually located at an EAF-- Support Squadron, one or more MAG HQ's, numerous aircraft and maintenance squadrons, and the Marine Air Traffic Control Squadron--it is easy to understand the complexity of the communication system and the enormous amount of equipment required. Placed in this environment the Support Squadron communications section is completely overwhelmed.

The Communication Squadron is currently only required to provide to the EAF external communications connectivity. When the Communication Squadron is tasked to augment the Support Squadron, it must integrate the Support Squadron communications structure into its own. This often results in a duplication of effort and wasted manpower.

When the MABS's were disbanded, the Marine Aircraft Groups lost their tie to tactical ground-based communications. The Aircraft Groups no longer have internal ground-based communications equipment or personnel. In the past, the Aircraft Groups used their Communications Officer to plan their tactical communications requirements. The Communications Officer was able to keep the Aircraft Group informed of communications support capability and availability. Without the MABS communications personnel, the Aircraft Groups often do not know what support is available or what to request. Additionally, the MABS ground-based radios were extensively used by aircraft squadrons for their squadron-common communications. This squadron-common communications link is essential for pilots to coordinate with their maintenance section. The squadron duty officer also coordinates flight safety and squadron flight operations on the squadron-common. Presently, the Aircraft Groups must go to the MAW G-6 to request communications support. This relationship works adequately for garrison communication matters, but lacks the responsiveness and flexibility for tactical situations. Without resident ground communications knowledge, the Aircraft Groups often feel they are not being adequately supported.

The Support Squadron communications section lacks the necessary expertise to provide adequate liaison coordination to the supported unit commanders. This is particularly true during the planning phase of an operation.

Due to the small size and the limited communications equipment available within the Support Squadron, the training of the Marines within the communication section is not on par with that of those in the Communication Squadron. The newer and more advanced systems such as the AN/TTC-42 (Unit Level Circuit Switch) and the AN/MRC-142 (Multi-channel System) will not be fielded at the Support Squadron level. Marines stationed in Support Squadron communication sections will not receive the opportunity to regularly train on these systems and will lag behind their peers at the Communication Squadron.

The personnel we interviewed were unanimous in the belief that with the imminent cutbacks in manpower, all Marines will have to be more diversified in their knowledge of communication systems to provide the same level of support that we have today. During one of these interviews, LtCol D. C. Litchfield stated that, "One of the things we are being told about the reorganization and down sizing of the Marine Corps is that [each Marine] is going to have to be more knowledgeable about more things"

(12). Today's Marines have to be better trained and more familiar with all communications systems. All wire men need to become proficient with the Unit Level Circuit Switch system. Radio operators need to become proficient with multi-channel radio systems frequently used to provide digital transmission paths. Our message center personnel need to understand the various systems, (including personal computer disk storage and transfer), to transmit and receive message traffic.

These deficiencies combined with eminent manpower cutbacks, necessitate the reorganization of the communication structure within the Aircraft Wing to support EAFs.

RECOMMENDED ORGANIZATION OF EAF COMMUNICATIONS SUPPORT

As recommended by every officer we interviewed and every respondent to our questionnaire, the first step in improving the communication support provided to an EAF is for the Communication Squadron to assume the mission of the Support Squadron's communications section. The communications personnel within the Support Squadron should be reassigned to the Communication Squadron to compensate for the increased mission. We believe that the Communications Squadron should establish communication detachments capable of supporting EAF communication requirements (Figure 5).

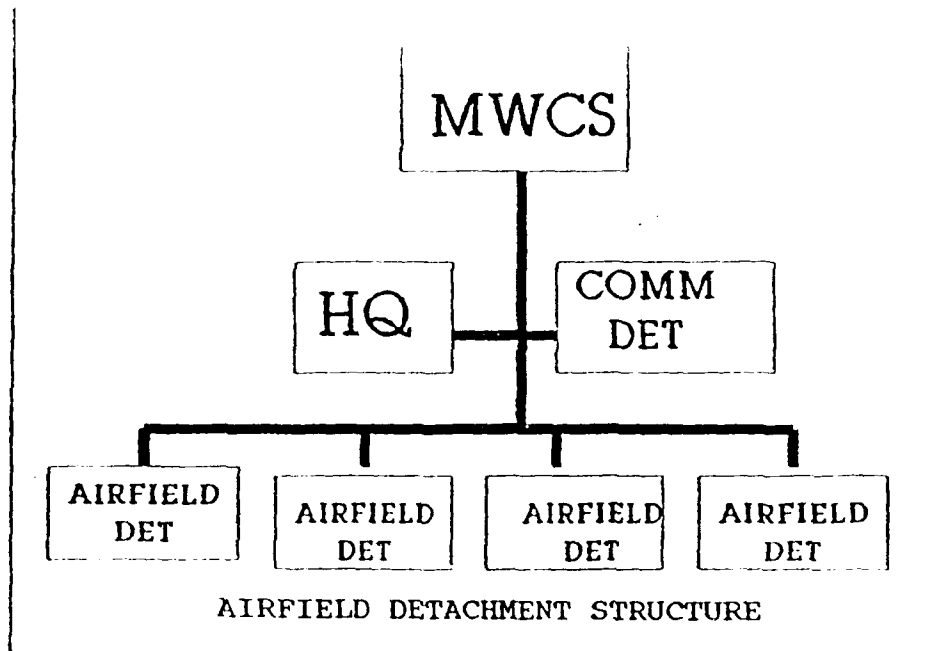


Figure 5

This Airfield Detachment structure differs from the current Communication Squadron structure (Figure 6).

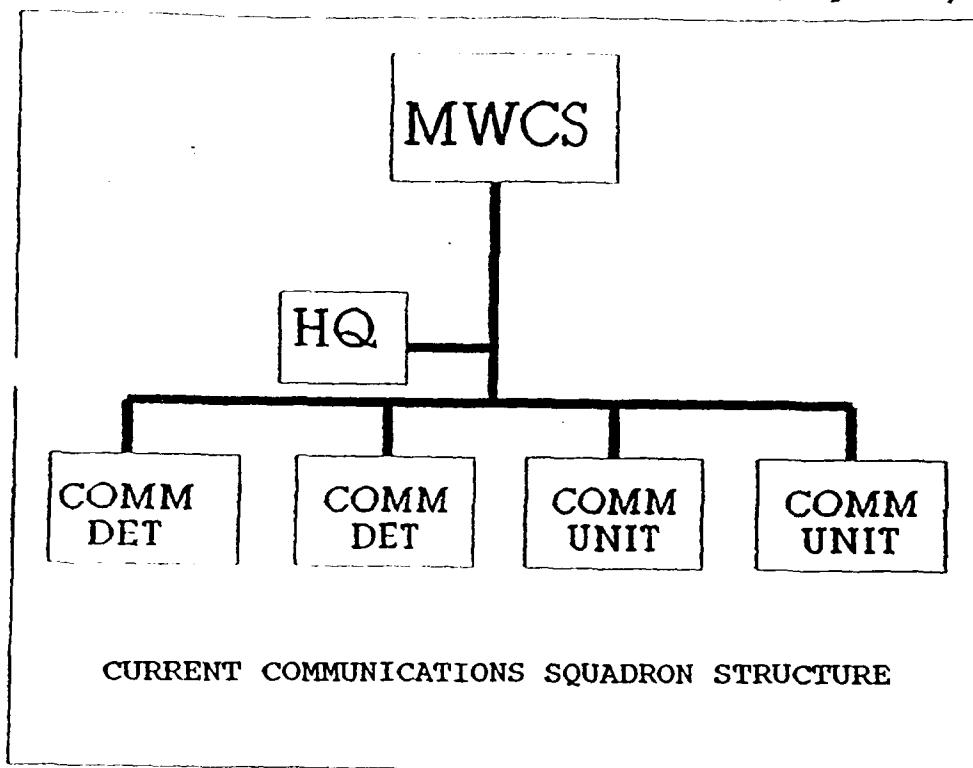


Figure 6

The Airfield Detachment is structured to support an EAF, where the current Communication Units and current Communication Detachments are task organized to support each assigned mission. The proposed structure of the EAF communication detachment is detailed below (Figure 7).

AIRFIELD COMMUNICATIONS DETACHMENT

HEADQUARTERS	RANK	MOS	OFF	ENL
DET CO	CAPT	2502	1	
COMM CHIEF	MSGT	2591		1
SYS CON CHIEF	GYSGT	2591		1
FIELD RADIO TEAM				
RADIO CHIEF	SSGT	2537		1
FIELD RADIO OPERATOR	CPL	2531		2
FIELD RADIO OPERATOR	LCPL	2531		3
FIELD RADIO CENTRAL				
WATCH SUPERVISOR	SGT	2531		3
RADIO OPERATOR	CPL	2531		5
RADIO OPERATOR	LCPL	2531		6
FIELD TECHCON TEAM				
TECHCON CHIEF	SGT	2823		1
WIREMAN	SGT	2512		1
WIREMAN	CPL	2512		1
WIREMAN	LCPL	2512		2
FIELD MESSAGE CENTER				
CHIEF WATCH OFFICER	SSGT	2549		2
WATCH SUPERVISOR	SGT	2542		3
PUBS/CMS CLERK	CPL	2542		1
ACCEPTANCE CLERK	CPL	2542		2
MESSAGE PROCESSOR	LCPL	2542		2
INCOMING CLERK	LCPL	2542		2
REPRO CLERK	LCPL	2542		1
TOTAL			1	40

Figure 7

Each detachment is capable of providing an EAF with a message center, a TASS (including telephone support services), and single channel radio as required. The airfield communications detachment provides the minimum number of personnel required to maintain twenty-four hour support. The field radio team will install, operate and maintain single channel radio assets appropriate to the needs of the EAF. The techcon or wire section is capable of installing, operating and maintaining a SB-3865 switchboard and the necessary complement of telephone instruments. The message center will provide message processing and distribution services.

Based upon input from our interviews and questionnaires, the airfield detachment (outlined in Figure 7) is capable of providing the minimum communications support required at EAFs.

The detachment concept has the advantage of developing a team that works and trains together on a regular basis. Each Marine learns the strengths and weaknesses of others, and a more cohesive unit is created. Based on our research we feel that detachment concept is more efficient than task organizing a different group of Marines each time an EAF must be supported. The detachment, having supported EAF communication

requirements in prior exercises, already knows how to install, operate and maintain the communication system.

The airfield detachment serves as a base organization for supporting EAFs (Figure 7). Additional personnel and equipment can be integrated into the original base unit in order to expand the communications system. Communication responsibilities are clearly defined as all support is provided by the same unit. The detachment commander, being familiar with the existing communication system, determines the shortages and requests any additional support.

Tasking the Communications Squadron with providing the internal communications requirements at EAFs resolves the problem of the duplicity of effort. All of the communication personnel will be resident in a single command, eliminating the need to integrate personnel for every exercise or operation. Planning for operations is simplified by having all of the planners in one unit. The airfield detachments as an integral part of the Communication Squadron will assist in developing an integrated communications plan.

In our proposed table of organization for airfield detachments (see Figure 7) a captain is designated as the detachment commander. The detachment

commander of each airfield must play an effective role in integrating and satisfying the needs of the Support Squadron and the Aircraft Group assigned to the EAF. The detachment commander will be assigned liaison responsibilities with the Support Squadron and Aircraft Group which his detachment is assigned to support. This responsibility is continuous and is to be accomplished both in garrison and in the field. The detachment commander must learn the internal communication requirements of each organization so that he can plan more effectively. Additionally, the detachment commander becomes the single point of contact between Aircraft Groups, the Support Squadron, and other units located at the EAF on communication matters. When the detachment commander becomes familiar with the internal requirements of each organization, and the Aircraft Groups and the Support Squadron have a single person to focus on, all parties will be able to integrate and operate more effectively as a team.

Reassigning the Support Squadron communications personnel to the Communication Squadron will improve communications training of those personnel. The communications training for Marines in the Support Squadron is limited when compared to that of Marines in the Communication squadron due to the lack of equipment.

CONCLUSION

As the Marine Corps undergoes force reduction and reorganization, we have a perfect opportunity to consolidate Marine Aircraft Wing communications units and eliminate current communication deficiencies. By doing this we will provide more effective communication support to EAFs. We have limited our research to communication support of EAFs, but a thorough analysis of the Marine Wing Communication Squadron structure is in order.

The AGS reorganization of the 1980s caused a reduction in communication support capability for EAFs. The Support Squadron communication section inherited the same mission statement that the previous MABS communication section had had; however, the personnel and equipment were reduced. This oversight has made it nearly impossible for the Support Squadron communication section to accomplish its mission without personnel and equipment augmentation from the Communication Squadron. The Support Squadron is less effective at training personnel, and lacks the ground communications planning personnel to support the Aircraft Group Commander. Transferring the Support Squadron communication section personnel and equipment into the Communication Squadron and forming an airfield communication detachment will solve the communication support deficiencies that currently exist at Expeditionary Airfields.

STUDENT RESEARCH PROJECT QUESTIONNAIRE

The purpose of this questionnaire is to determine how the communication assets within the Marine Air Wing should be reorganized to best serve the commander. Data compiled from completed surveys will facilitate a subjective evaluation of the same.

It is our belief that the current communication structure does not adequately support the Marine Aircraft Wing. Specifically, the communication assets required to support Marine Aircraft Groups deployed to Expeditionary Airfields are insufficient.

Should you have specific questions concerning this survey, please contact key personnel identified in the cover letter. Thank you for your support.

Name/Rank _____ Date _____

Current billet/assignment _____

Do you want the comments provided in this survey to remain confidential (non-attributable)? Yes No (circle one)

1. The mission of the MWCS should be expanded to include supporting internal communications at Expeditionary Airfields.

disagree 1 2 3 4 5 6 7 8 9 10 agree

comments:

2. The MWSS communication section is currently able to support internal Marine Aircraft Group communication requirements at Expeditionary Airfields.

disagree 1 2 3 4 5 6 7 8 9 10 agree

comments:

3. The current communication assets resident in the MWSS should be expanded to support the Marine Aircraft Groups and the internal communication requirements at Expeditionary Airfields.

disagree 1 2 3 4 5 6 7 8 9 10 agree

comments:

4. To best support Marine Aircraft Groups and the internal communication requirements at Expeditionary Airfields a new communication detachment should be formed and placed under the Marine Aircraft Group Headquarters.

disagree 1 2 3 4 5 6 7 8 9 10 agree

comments:

5. All Wing Communication assets and personnel should be placed under the MWCS and they should assume the MWSS communication detachment mission.

disagree 1 2 3 4 5 6 7 8 9 10 agree

comments:

Enclosure (1)

6. The MWSS communication detachment does not receive adequate training in a garrison environment due to the commercial communication systems in use at Marine Corps Air Stations.

disagree 1 2 3 4 5 6 7 8 9 10 agree

comments:

7. A communication Officer should be added to the communication detachment within MWSS.

disagree 1 2 3 4 5 6 7 8 9 10 agree

comments:

Optional question

8. What changes to the TO/TE of wing communication units should be implemented to support Marine Aircraft Groups and the internal communication requirements at Expeditionary Airfields?

Enclosure (1)

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