

TIME MANAGEMENT OF TRAINING AND  
MAINTENANCE OBLIGATIONS IN  
A MARINE CORPS COMMAND

Robin W. Cobble



# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



# THESIS

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MAINTENANCE OBLIGATIONS IN  
A MARINE CORPS COMMAND

by

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September 1974

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Time Management of Training  
and  
Maintenance Obligations in a Marine Corps Command

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## I. INTRODUCTION

### A. STATEMENT OF THE PROBLEM

The Marine Corps, like other military services and business and corporate segments of the civilian community, is faced daily with the age old problem of fulfilling requirements and meeting objectives with less than optimum strength in terms of manpower and physical assets. In the rank structure of the Marine Corps, officers, noncommissioned officers, and enlisted men at various levels of command, have felt frustrated with the belief that command requirements far exceed available manpower. Too often, acceptance of this belief, coupled with the inability to provide a solution for the problem, has led to a ready excuse for failure or inadequacy in meeting an established goal. How often is heard the excuse, you can't put "ten pounds into a five pound sack," to explain an apparent shortcoming?

Few management studies have been conducted to correlate manpower to command requirements in the Marine Corps. It is believed that a management analysis at each level of command is past due. The conclusion reached from such a study could be used to advise the establishment of priorities, the reduction or deletion of requirements of lesser importance, and the formulation of management techniques to better utilize available manpower assets.



## B. PURPOSE

The purpose of this thesis was to conduct a management study of the time requirements placed on a Marine Corps manager as compared to the manpower he had available to meet the requirements. The quality of work accomplished by the manager and his unit was not at issue. Therefore a time study, rather than a performance study, was determined to be best suited for this analysis.

Time requirements for the performance of pertinent Marine Corps directives was compared to the man hours available to the manager. Analysis of the gathered statistics provided for certain conclusions and recommendations. The questions to be answered and problems to be analyzed centered on whether a change of priorities to existing requirements, possible consolidation of requirements by higher authority, or better overall management of available time best met the managers' goals.

## C. CONSTRAINTS

It was determined that a Marine Corps Company size unit (275-350 men) would be suitable for use in this study; small enough for in depth analysis and large enough for comparison to larger units. Analytical methods documented for the Company sized unit could be utilized as appropriate for study of larger units.

A Communication Company was selected for several reasons. Past military experience of the thesis authors was gained through work in the communications field and in Communication



Companies. The sample type company selected was in close enough proximity to permit reasonable access. The further association of a Communication Company to a thesis in the field of Communications Management seemed logical. To this end, Communication Company, First Marine Division, Camp Pendleton, California was designated the focal unit of this thesis.

While the mission of Communication Companies are the same throughout the Marine Corps, varying local factors affect their operation. Geographical location, the support required to meet local commitments, and manpower limitations imposed by the supported Division all contributed variables. In areas where contrasting data was received from other companies, the facts were noted. Final analysis, however, was based primarily on data derived from Communication Company, First Marine Division.

Due to the large number of military occupational specialties (MOS's) held by members of a Communication Company (34), a specific breakdown by MOS was not attempted. The platoon and company as a unit was used primarily to determine man hour requirements. Training and maintenance were considered the areas of prime importance for analysis of time requirements versus manpower. Accordingly, an in depth study was made of these areas. The man hours required to meet training and maintenance requirements were tabulated for comparison by use of the individual command directives under review.

Time constraints, and the physical problems of gathering data, dictated the choice of a focus on the operational



platoons of a Communication Company, excluding supply and administration man hour requirements. A study of all administrative reports required and the man hours necessary to fulfill these requirements would provide sufficient scope and data for another study. Time factors other than those excluded, which affected the Company as a whole, were presented in a separate inclusive chapter.

Training analysis data was documented in such a manner as to provide comparisons for all Marine Corps units. Maintenance aspects were, however, related to the equipment peculiar to a Communication Company and would be of value only to units employing like equipment.

#### D. METHODOLOGY

Research data were gathered from all available sources. The research included a detailed review of directives issued by: Headquarters Marine Corps, Washington, D. C.; Fleet Marine Forces Pacific, Oahu, Hawaii; First Marine Division, Camp Pendleton, California; Headquarters Battalion and Communication Company, First Marine Division. Interviews and personal observation of personnel and records of Communication Company, First Marine Division, provided needed empirical data. Telephone conversations with key personnel at Headquarters Marine Corps; the Marine Corps Development and Education Center, Quantico, Virginia; the Marine Corps Institute, Washington, D. C.; Marine Corps Recruit Depot, San Diego, California; Army Plans and Training, Fort Ord, California; the Communications-Electronics office, Second Marine Aircraft





Wing, Cherry Point, North Carolina; the Communications-Electronics offices of the First and Second Marine Divisions, and Communication Companies of the First and Second Divisions provided a wealth of pertinent data.

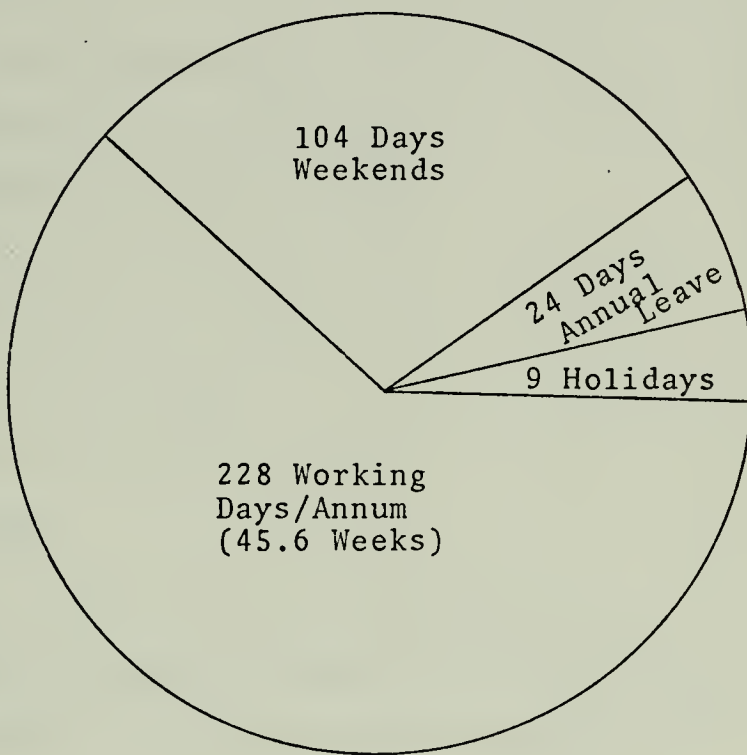
In the area of maintenance, technical manuals pertaining to the primary pieces of communication-electronic equipment maintained by a Communication Company were reviewed. These manuals were issued by Headquarters Marine Corps and the Department of the Army, Washington, D. C.

Analysis of the accumulated data required a time quantification. A common comparison factor was essential; the man hour was determined to be the best common denominator. All requirements discussed within this study were broken down into man hours at the individual, platoon, or company level. A final summation was prepared for the Company as a whole. Time factors were designated by determining all requirements leveled on Communication Companies by higher authority and tabulating appropriate man hours to meet these requirements.

The time available to the commander for comparison was taken from the daily routine schedule for Communication Company and Headquarters Battalion, First Marine Division. These schedules provided for seven and one-half (7.5) hours of work/training time per man per day (Ref.1, para. 4). To determine the yearly man hours available to unit commanders, the following table was used:



104 Weekend Days (Saturday and Sundays)  
 9 National Holidays  
24 Days Annual Leave (6 Days over Weekend or Holidays)  
 137 Days  
  
 365 Days in Year  
 -137 Days  
 228 Days; 45.6 Weeks or 1710 Man Hours/Year



228 Days/Year x 7.5 Working Hours/Day

or

= 1710 Man Hours/Year

45.6 Weeks/Year x 37.5 Working Hours/Week

Fig. 1 - Yearly Man Hours Available to Unit Commanders

The further determination of total man hours available to the unit commander was taken from the Table of Organization



(T/O) for a Communication Company (Ref. 2) and the average on-hand (O/H) personnel strengths.

The T/O called for thirteen (13) officers and two hundred ninety three (293) enlisted while the average for Communication Company, First Marine Division, for the period January to June 1974 listed nineteen (19) officers and two hundred sixty three (263) enlisted.

Officers

January	20
February	18
March	19
April	20
May	19
June	16

Enlisted

January	255
February	256
March	253
April	260
May	279
June	275

Fig. 2 - Average Monthly On-Hand Strength, January-June 1974



Total yearly man hours, according to T/O, totaled 523,260 hours. By on board strength computation, the figures reached 482,220 man hours per annum.

In areas such as physical fitness training, the time requirement was calculated on a weekly basis, utilizing the formula set to determine total yearly man hours (Fig. 1). For commitments such as the Company Career Advisor, requiring one individual's full time effort, 1710 man hours totaled an individual Marine's annual working hours (Fig. 1). Other duties, such as mess duty, required that the position be occupied on a full time basis. In these cases, 1882.5 man hours were quantified to fill the annual requirement and accounted for 43 weeks of five working days per week and nine (9) weeks of four working days per week or a total of 251 days (recognizing the nine national holidays). Directives which required specific weekly variables were noted when used in calculating training man hours.

Since performance of equipment maintenance was a year-round requirement (as were hospital visitation commitments and others), calculations were based on multiples of fifty two (52) weeks.

Tabulation of training and maintenance times was accomplished by establishing the number of man hours needed for each platoon requirement. Training hours were fixed by taking each directive requirement, which normally listed no time factor, and ascertaining the actual hours expended to meet the requirement by Communication Company personnel.





Individual, platoon or company participation was then tabulated as appropriate, and man hours necessary to comply with all directives computed, listed, and analyzed.

Maintenance hours were established by listing all communication-electronic equipment requiring scheduled maintenance by platoon, and multiplying the items of equipment by an average time factor. These factors were determined by averaging the data received from Communication Company, First and Second Marine Divisions, and Communication-Electronics office, First Marine Division. These commands provided detailed estimates of maintenance hours required on individual pieces of equipment. In like manner, motor transport figures were determined. Platoon equipment maintenance times were compiled from the averages of time estimates provided by the Communication Company and Headquarters Battalion Motor Transport Officers of the First Marine Division, and by the Motor Transport Operations and Requirements Officer, Headquarters Marine Corps (Code LME-2), Washington, D. C. Engineer equipment figures were derived from data provided by the Maintenance Section, Communication Company, First Marine Division.

Though training and maintenance were the prime areas of concern in this study for determining time requirements, an effort was made to list an assortment of subsidiary areas which were to be considered in the overall tabulation. Reserve Training Support and the Fleet Marine Force Assistance Program were among those areas discussed and tabulated.



## E. PROBLEM AREAS

Apart from the purely physical and universal problems of gathering data, the identification of time requirements from individual command directives under review was difficult and often inconclusive. Time factors were rarely quantified and requirements were stated in general terms. Assumptions were necessarily made to establish training man hours in areas not quantified. Every effort was made to validate these estimates of man hours required for particular tasks. Personnel in the individual areas of concern at Headquarters, Marine Corps and the First Marine Division were contacted for assistance in the validation of all assumptions made.



## II. AN INTRODUCTION TO COMMUNICATION COMPANY

### A. MARINE CORPS STRUCTURE

The National Security Act of 1947 established the strength of the Marine Corps at the three (3) Divisions, three (3) Aircraft Wing level. Manpower levels required to support the Divisions and Wings are controlled through the yearly budget approval by Congress.

The Division/Wings are located strategically in the United States and overseas. The First Marine Aircraft Wing is located in Japan, with the Third Marine Division based on the island of Okinawa. On the West Coast of the United States, the Third Marine Aircraft Wing operates from El Toro, California and the First Marine Division from Camp Pendleton, California. The Second Marine Division and Second Marine Aircraft Wing are based at Camp Lejeune and Cherry Point, North Carolina, respectively.

Marine Air Wings and Divisions are under the operational control of Commanding General, Fleet Marine Forces, Pacific (FMFPAC), Oahu, Hawaii, and Commanding General, Fleet Marine Forces, Atlantic (FMFLANT), Norfolk, Virginia. Though not an operational headquarters, training, administration and logistic guidance is directed from Headquarters, Marine Corps through the operational commanders.

The Marine Corps utilizes three basic tactical configurations to meet varied operational commitments. The Marine Amphibious Force (MAF) is comprised of one or more Aircraft



Wings and one or more Infantry Divisions, with combat support and combat service support elements, under a common headquarters. One Aircraft Group and an Infantry Regiment, with supporting elements, make up a Marine Amphibious Brigade (MAB), also commanded by a single headquarters. The Marine Amphibious Unit (MAU) couples an Aircraft Squadron and an Infantry Battalion with supporting elements under a common headquarters. MAF's are directly supported by Force Troops Units. Force Troops, Pacific, Twenty-Nine Palms, California and Force Troops, Atlantic, Camp Lejeune, North Carolina headquarter the major heavy support units for the combat organizations in their respective geographical areas. MAB's and MAU's are provided additional support from the Wing, Division or Force Troops units in their respective areas. Support is task organized to meet the operational requirements and normally includes amphibious tractors, tanks, and logistics elements not organic to the Division or Wing.

#### B. ORGANIZATION OF A COMMUNICATION COMPANY

The Communication Company is an organic Marine Corps Company within the Marine Division. It is the mission of Communication Companies to install, operate, and maintain the communications systems for Division Headquarters. With three Marine Divisions authorized by law, there are three corresponding Communication Companies.

Each Company consists of a company headquarters and six (6) operational platoons. The breakdown of the selected company, Communication Company, First Marine Division,





Camp Pendleton, California, by T/O and on board strength was as follows:

1 July 1974	T/O		On Board	
	Officers	Enlisted	Officers	Enlisted
Company Headquarters	2	19	4	27
Communication Center Platoon	5	59	6	56
Wire Platoon	1	42	1	50
Multichannel Radio Platoon	1	56	1	43
Air Naval Gunfire Platoon	1	30	2	18
Radio Platoon	1	51	2	48
Comm/Elec Maintenance Platoon	<u>2</u>	<u>36</u>	<u>2</u>	<u>24</u>
Totals	13	293	18	266

Fig. 3 - Comparison of On Board Strength vs. T/O, 1 July 1974

The missions of the six platoons and headquarters section of the Communication Company may be described as follows:

Company Headquarters - To provide the required administrative, supply and motor transport support for the operating platoons of the company.

Communication Center Platoon - To install, operate and maintain telecommunications service for the Division Headquarters, providing over the counter message delivery or courier service as appropriate.

Wire Platoon - To install, operate and maintain switchboards and telephone services for the Division Headquarters, Headquarters Battalion and Communication Company.



Multichannel Radio Platoon - To install, operate and maintain multichannel radio communications between Division Headquarters and subordinate units and to establish such other multichannel links as directed.

Air Naval Gunfire Platoon - To provide the required communication equipment and operational services in the Division Fire Support Coordination Center (FSCC) in support of the Air/Naval Gunfire mission. To supply radar beacon teams and ground locator systems in support of naval gunfire operations ashore. To make available platoon personnel for the Supporting Arms Coordination Center (SACC) afloat to augment naval personnel within that facility.

Radio Platoon - To establish, operate and maintain radio communications for Division Headquarters with all subordinate and adjacent units, and to maintain necessary radio communication with higher headquarters as required.

Communication/Electronics Maintenance Platoon - To provide third echelon maintenance on organic communication-electronic equipment, less radar and test equipment. Only first echelon maintenance is authorized on radar and test equipment assigned the company. To provide first and second echelon maintenance on engineer equipment authorized to the company. To provide limited maintenance of all assigned communication security equipment. To provide intermediate level maintenance of all assigned micro-miniature electronic communication-security equipment.



### C. MAN HOURS

Based on computations described in Chapter I, the total yearly man hours available to Communication Company, First Marine Division, was 523,260 by T/O and 482,220 by on board strength averages. Precise figures for the six month time period were not available for use in this study. The 1 July 1974 date was selected as the control date, for this date was accurate and complete for the computations necessary to this study. The 1 July on board strength, as listed on page 13 varies from the six month average figures by an increase of two men. This variance was considered a negligible factor. The average figures provided an overview of Communication Company capability in terms of man hours and size, but actual on board strength as of 1 July 1974 forms the basis for computation.

#### Yearly Man Hours Available to Communication Company by Platoon/Section, 1 July 1974

	Officers	E6/ E8	E4/ E5	E3/ Below	Yearly Man Hours 1 July 1974
Company Headquarters	4	6	11	10	53,010
Communication Center Platoon	1	1	7	35	106,020
Wire Platoon	6	9	15	32	87,210
Multichannel Radio Platoon	2	3	5	40	75,240
Air Naval Gunfire Platoon	2	2	5	11	34,200
Radio Platoon	1	9	10	5	85,500
Comm/Elec Maintenance Platoon	<u>2</u>	<u>2</u>	<u>8</u>	<u>40</u>	<u>44,460</u>
Totals	18	32	61	173	485,640

Fig. 4 - Yearly Man Hours by Platoon/Section



### III. TRAINING

#### A. BACKGROUND

Marine Corps Order 1510.2\_ Subj: Individual Training of Enlisted Marines is a primary reference when considering training requirements within the Marine Corps. The latest revision of this Order, 1510.2H, directed major changes in the Marine Corps training program and served as a basic reference for this study.

Among other actions, Marine Corps Order 1510.2H established and defined five major divisions of Marine Corps training and their priorities within the Marine Corps training program. For organizational purposes within this thesis, the training requirements were placed into these five major divisions. However, expansion of the definition of some of these divisions was necessary to accommodate certain aspects of the training requirements. The training divisions, in their expanded form, are defined as follows:

Mission-Oriented Training is that training which provides a Marine with the skills, knowledge and attitudes necessary to discharge his or her duties in support of a unit's mission (Ref. 3, Para. 3,c(2),(a)). This division includes physical fitness and marksmanship training (Ref. 3, Encl. 4) and was expanded to include Unit Training. Unit Training is defined as training which serves to prepare a unit to perform and accomplish its mission as a team (Ref. 3, Para. 3,b).





Related (Directive) Training is that training which augments, supports or adds to other individual training conducted at the unit level (Ref. 3, Para. 3,c,(2),(d)). Related training is directive if the training is required and non-directive if the commander has the option of conducting or not conducting the training (Ref. 3, Para. 7,b). For the purposes of this thesis, all requirements identified by higher authority which could be quantified and were not discussed in another division were placed in related (directive) training. Any commitment which could not be quantified was discussed in the Miscellaneous Time Requirements Chapter.

Career Training is that training which provides a Marine with the skills, knowledge and attitude necessary for increased rank and responsibility. Career training consists of MOS and leadership training (Ref. 3, Para. 3,c,(2),(b)).

Essential Subjects Testing/Training is that testing/training required to ensure that an enlisted Marine (regardless of rank, MOS, billet or unit to which assigned) maintains proficiency in certain subjects prescribed by the Commandant of the Marine Corps (Ref. 3, Para. 3,c,(2),(c)). These subjects include Code of Conduct and Military Law/UCMJ; History, Customs and Courtesies; Close Order Drill; Interior Guard; First Aid and Field Sanitation; Uniform Clothing and Equipment; Physical Fitness; NBC Defense; Service Rifle and Marksmanship; and Individual Tactical Measures (Ref. 3, Enclosure (2)). To avoid duplication, Physical Fitness and Service Rifle and Marksmanship Training were quantified in the Mission Oriented division.



Related (Non-directive) Training is defined as that training for which the commander has the option of conducting or not conducting (Ref. 3, Para. 7,b).

As stated in Chapter I, time constraints and the physical problem of gathering data, dictated the choice of focus on the operational platoons of the Communication Company. Training requirements of particular MOS's have not been specified; instead, training requirements placed upon the entire organization were emphasized. Unless a directive specified a particular requirement not substantiated elsewhere, no attempt was made to quantify each document. Programs which placed requirements upon the Company were discussed by referring to the orders and directives involved. Some directives applied to multiple programs and were, therefore, referred to more than once. Although some specific orders or directives pertaining to a particular program were not listed, the authors believed that the vast majority of the programs and requirements have been discovered and quantified where possible. Those programs and requirements which could not be quantified were discussed in the Miscellaneous Time Requirements Chapter.

Quantification of the training requirements presented a peculiar problem in that some requirements such as the Fleet Marine Force Assistance Program called for a number of people for a specified time period. Should the individual filling the requirement be unavailable (leave or liberty), the commitment does not require replacement by the parent organization.



In the guard requirement, however, lack of availability necessitates replacement which increases unit man hours. In those programs which required total participation, all Company personnel including officers and Staff NCO's were assumed to be involved, if not as students then as instructors and supervisors. For those programs not involving total Company participation, empirical data from Communication Company was utilized. When empirical data were not available, quantities were assigned to the various platoons consistent with the total Company requirements. Explanation of the quantification for each program was made in the separate program discussions.

## B. MISSION ORIENTED TRAINING

Program - Operation of the First Marine Division

Communication Center

Directive - Table of Organization Number M-1883

Comments - One major task assigned Communication Company was the installation, operation and maintenance of the communication center facilities for the Division Headquarters. This requirement existed whether the Division Headquarters was located in garrison or in the field and involved the entire platoon on a full time basis.



		RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE		
		T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	
Operation of Division Communication Center						64	62					
MAINT	HQTRS	MAN		MAN		TOTAL MAN		TOTAL MAN				
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	O/H	O/H	
				37.5/Wk	1710		109,440		106,020			
Cumulative Subtotal							109,440	106,020				

Fig. 5 - Man Hour Requirements for Operation of the First Marine Division Communication Center

Program - Physical Fitness, Weight Control and Military Appearance Program

Directives - MCO 6100.3F Subj: Physical Fitness and Weight Control

DivO 6100.1B Subj: 1st Marine Division Physical Fitness and Weight Control Program

BnO 6100.1D Subj: Physical Fitness Training

BnO 6100.5A Subj: Weight Control and Military Appearance Program

BnO 6100.6 Subj: Physical Fitness Activity and Traffic Safety

Comments - To determine man hour requirements for these directives it was assumed that all personnel within Communication Company were involved in the Physical Fitness requirements. The directives established a minimum of three 60 minute periods per week per individual and a Physical Fitness Test (PFT) or





Unit Endurance Test (UET), or Physical Inventory Test (PIT) to be administered to each individual involved on a semi-annual basis. The standard 45.6 weeks per year was used to quantify the physical training. In quantifying the physical evaluation time, the assumption was made that the Physical Fitness Test would be administered vice the Unit Endurance Test or Physical Inventory Test which could involve more time. Marine Corps Order 6100.3F stated that the PFT would be conducted in a single session either morning or afternoon. The assumption was made that it would be administered in one afternoon thereby allocating 3.5 hours per man for the test.

The directive also established a weight control and physical conditioning program for those Marines with a weight problem or who fail the PFT. These programs necessitated two additional 60 minute periods per week and the best estimates indicated that Communication Company would have four men constantly involved. For this program, 52 weeks per year was assumed since the same four individuals would not stay on the program for a full year. The total yearly man hours for both T/O and O/H quantities were rounded off to the nearest 0.5 hours.



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Physical fitness activity	52	50	57	44	64	62	31	20	43	51
Physical fitness test	52	50	57	44	64	62	31	20	43	51
Weight Control and Physical Conditioning Program					1	1			1	1
MAINT	HQTRS	MAN	MAN	TOTAL MAN		TOTAL MAN				
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	T/O	O/H	O/H
38	26	21	31	3/Wk	136.8		41,861			38,851
38	26	21	31	7/Yr	7		2,142			1,988
1	1	1	1	2/Wk	104		416			416
Cumulative Subtotal							153,859			147,275

Fig. 6 - Man Hour Requirements for Physical Fitness, Weight Control and Military Appearance Program

Program - Communications Exercises (COMMEX) and Command Post Exercises (CPX)

Directives - DivO P1500.31A Subj: SOP for Training

DivO P2000.5 Subj: Communications SOP

Comments - Directives required at least one COMMEX per quarter lasting a minimum of 24 hours. Although not required by specific directive, Headquarters Battalion participated in an annual CPX. Communication Company involvement in these exercises included the entire Company minus those Maintenance and Communication Center Platoon personnel required for garrison responsibilities.



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
COMMEX	52	50	57	44	47	45	32	20	43	51
CPX	52	50	57	44	47	45	32	20	43	51

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN		
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR		
				T/O	O/H		
5	5	21	31	22.5/Qtr	90	23,130	22,140
9	9	21	31	22.5/Yr	22.5	5,872.5	5,625
Cumulative Subtotal						182,861.5	175,040

Fig. 7 - Man Hour Requirements for Communications Exercises and Command Post Exercises

Program - Marksmanship Training

Directives - MCO 3574.2E Subj: Marksmanship Training, Individual Small Arms

DivO 3574.5A Subj: Marksmanship Training with Individual Small Arms

BnO 3574.1 Subj: Marksmanship Training with Individual Small Arms

DivO 3574.3B Subj: Marksmanship Coaches School

MCO 3591.2G Subj: Small Arms Marksmanship Competition

DivO 3591.20 Subj: Division Intramural Competition-In-Arms Program

BnO 3591.1 Subj: Division Intramural Marksmanship Program



Comments - Marksmanship training requirements specified that all O-3 and below, under 40 years of age, would requalify with the rifle annually and that all O-5 and below armed with a pistol, in accordance with their T/O assignment, would annually requalify with the pistol. For the purpose of this thesis, all Company personnel were assumed to be involved in marksmanship training. E-5 and below involvement included five days for preliminary marksmanship training and five days for requalification firing while E-6 and above involvement included approximately three days preliminary marksmanship training and five days for requalification firing. Division Order 3574.5A and Division Order 3574.3B specified that there will be assigned one coach per six rifle shooters and one coach per three pistol shooters, however, Headquarters Battalion assumed this responsibility thereby relieving Communication Company of the requirement. Scorekeeper requirements involved one Staff NCO and one enlisted scorekeeper for every three shooters for the last two days of each detail.

The Competition-in-Arms Program for Communication Company has involved four men firing in the Western Regional Rifle Competition for a four week period and six men in the Division Intramural Program for a 15 day period.

Headquarters Battalion Order 3574.1 authorized a 96 hour liberty for E-5's and below who succeeded in qualifying but were previously unqualified, and a 72 hour liberty for E-5's and below who raised their qualifying score into a higher bracket than the previous year. The amount of time involved in this requirement could not be quantified and was not calculated.





	RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Preliminary and requalification for E-5 and below	46	45	54	42	50	47	29	16	37	48
Preliminary and requalification for E-6 and above	6	5	3	2	14	15	2	4	6	3
Scorekeepers	20	20	20	19	20	19	17	11	17	19
S/NCO	4	4	4	4	4	4	4	4	4	4
Western Regional Rifle Competition	1	1	1	1					1	1
Division Intra-mural Program	1	1	1	1	1	1	1	1	1	1

MAINT	HQTRS		MAN		TOTAL MAN		TOTAL MAN	
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
						T/O	O/H	
23	15	16	21	75/Yr	75	19,125		17,550
15	11	5	10	60/Yr	60	3,060		3,000
5	4	3	3	15/Detail	15	1,530		1,425
4	4	2	2	15/Detail	15	390		390
				37.5/Wk	150	450		450
1	1			7.5/Day	112.5	675		675
Cumulative Subtotal						208,091.5		198,530

Fig. 8 - Man Hour Requirements for Marksmanship Training Program

Program - Exercise of Contingency Plans

Directives - MCO 3440.2F Subj: Marine Corps Participation in Domestic Emergencies



DivO P1500.31A Subj: SOP for Training  
1st MarDiv Airlift BLT (ABLT) Operations  
Plan 1-74  
1st MarDiv Civil Defense Plan 563-74  
DivO P3140.1 Subj: SOP for Destructive  
Weather

Comments - Marine Corps Order 3440.2F established a requirement for all hands to be trained in Civil Disturbance Operations. Division Order P1500.31A required a 33 hour course for all hands with refresher training conducted thereafter. Communication Company estimated that this training would involve all personnel for one week annually.

The support required of Communication Company by the Airlift BLT Operations Plan and the Civil Defense Plan were the same and involved 17 men for one day for each exercise. The best estimate concluded that each plan would be exercised once annually.

Division Order P3140.1 established specific radio circuits for use as needed during periods of destructive weather. This circuit involved two men and was exercised for one hour per week.



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Civil Dis-turbance Training	52	50	57	44	64	62	31	20	43	51
Airlift BLT Plan	13	13							4	4
Civil Defense Plan	13	13							4	4
Destructive Weather Plan	2	2								

MAINT		HQTRS		MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
						T/O	O/H
38	26	21	31	37.5/Wk	37.5	11,475	10,650
				7.5/Day	7.5	127.5	127.5
				7.5/Day	7.5	127.5	127.5
				1/Wk	52	104	104
Cumulative Subtotal						219,925.5	209,539

Fig. 9 - Man Hour Requirements for Exercise of Contingency Plans Program

Program - Naval Gunfire Shore Fire Control Party Training

Directive - DivO 3500.5A Subj: Naval Shore Fire Control Party Training

Comments - This directive required that each shore fire control party member be capable of performing his responsibilities and be familiar with the responsibilities of other members of the team. When individual training was completed, team training would be undertaken. Subjects for team training specified within the directive and applicable to Communication Company were as follows:



<u>Subject</u>	<u>Hours Per Qtr</u>
Tactical Principles of the Naval Gunfire Team	4
Selection of Observation Posts	4
Role of Naval Gunfire Teams with Infantry Units	4
Off Shore Spotting	4
Air Spotting	4
Communication Drills	12
Emergency Communication Expedients	4
Tactical Firing Problems	4
Elementary Principles of Fire Support Coordination	4
Basic Artillery and Air Liaison Functions and Or- ganization	4
Selection of Radar Beacon Sites	<u>4</u>
	52 Hrs

NOTE: The above training may be conducted on a concurrent basis.

No attempt was made to ascertain which classes could be conducted concurrently, therefore, a full 52 hours per quarter was assumed as being required. Individual and team-training involved the entire platoon one day per month. Additional individual and team-training involved 15 men for four days each quarter during actual firing exercises at San Clemente Island.





	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Classes specified in directive							31	20		
Individual and team training							31	20		
Firing exercise on San Clemente Island							15	15		

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN
				HOURS/YEAR	HOURS/YEAR
T/O	O/H	HOURS/X	HOURS/YEAR	T/O	O/H
		52/Qtr	208	6,448	4,160
		7.5/Mo	90	2,790	1,800
		30/Qtr	120	1,800	1,800
Cumulative Subtotal				230,963.5	217,299

Fig. 10 - Man Hour Requirements for Naval Gunfire Shore Fire Control Party Training Program

Program - Communications Security Training

Directives - FMFPAC O 02230.1B Subj: COMMSEC

DivO P5510.13B Subj: Standing Operating Procedure for Security Program Regulations

DivO 5511.1A Subj: Standing Operating Procedure for Communications Security

Material System

BnO 5510.1A Subj: Security of Classified Material

Comments - To accomplish the requirements established by Fleet Marine Forces Pacific Order 02230.1B, communications



security classes, secure net training and field exercise were held quarterly and annually. The quarterly training involved the entire Company for four hours per quarter and the annual training involved an average of 90 men for four hours.

The other directives established requirements for security clearance counseling, additional security training and briefings. Communication Company estimated that this training would require an additional one hour per quarter and would involve all personnel within the Company.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
COMMSEC Training for all personnel	52	50	57	44	64	62	31	20	43	51
Annual COMMSEC Training	40	40	35	35			15	15		
	MAINT T/O O/H		HQTRS T/O O/H		MAN HOURS/X		MAN HOURS/YEAR		TOTAL MAN HOURS/YEAR T/O	TOTAL MAN HOURS/YEAR O/H
	38	26	21	31	5/Qtr	20		6,120		5,680
					4/Yr	4		360		360
Cumulative Subtotal							237,443.5		223,339	

Fig. 11 - Man Hour Requirements for Communication Security Training Program

Program - MAF and MAB Exercise Commitments

Directives - MCO 3000.3 Subj: CNO-CMC Exercise Objectives for MAF and MAB Exercises

DivBul 3120 Subj: Planned Employment Schedule



Comments - MAF and MAB Exercise (MAFLEX and MABLEX)

commitments prescribed in Marine Corps Order 3000.3 required one full scale MAFLEX biennially and two full scale MABLEX's annually. Operational commitments for both the Navy and Marine Corps seldom allowed exercises of this size this frequently. However, at a minimum, First Marine Division elements staged one MABLEX and one MAULEX annually. This level of commitment was selected for the purpose of quantifying as it represented the minimum involvement for Communication Company. The average support required from the Company involved 17 men for four weeks plus equipment augmentation to each MABLEX and MAULEX. Equipment augmentation included the performance of limited technical inspections of that equipment which required an average outlay of one day for five radio men and the entire Multi-Channel Radio Platoon.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
MAB Commitments	10	10			2	2	5	5		
MAU Commitments	10	10			2	2	5	5		
Preparation and operational check of equipment	5	5	57	44						

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
				T/O	O/H
		37.5/Wk	150	2,550	2,550
		37.5/Wk	150	2,550	2,550
		15/Yr	15	930	735
Cumulative Subtotal				243,473.5	229,174

Fig. 12 - Man Hour Requirements for MAF and MAB Exercise Commitments Program



Program - Tactical Training Test

Directive - DivO P5041.22A Subj: SOP for Tactical Training Tests

Comments - The directive established periodic tactical training tests of the various combat and combat support Regiments and Battalions within the First Marine Division. Communication Company provided support for this testing which involved 23 men for six weeks annually.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Tactical Training Test Support	20	20							3	3

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
				T/O	O/H
		37.5/Wk	225	5,175	5,175
Cumulative Subtotal				248,648.5	234,349

Fig. 13 - Man Hour Requirements for Tactical Training Test Program

Program - Mountain Warfare Training

Directives - DivO P3120.27 Subj: Mountain Warfare Training SOP

Verbal directive by Division Communications-Electronics Officer

Comments - Division Order P3120.27 established the Standing Operating Procedures for Mountain Warfare Training conducted by the First Marine Division. It was determined that radio telephone service between the training site and Camp Pendleton





was required; the Division Communications -Electronics Officer levied this requirement on Communication Company. The requirement involved two men, five days per week for 24 weeks.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Radio Telephone service to Mountain Warfare Training Site	2	2								

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
				T/O	O/H
		37.5/Wk	900	1,800	1,800
Cumulative Subtotal				250,448.5	236,149

Fig. 14 - Man Hour Requirements for Mountain Warfare Training Program

Program - FMF Mobile Command and High Frequency Net

Training

Directives - FMFPAC O 2040.1A Subj: Fleet Marine Forces (FMF) Mobile Command Network Training

FMFPAC O 2040.2 Subj: Fleet Marine Force Pacific High Frequency (HF) Training Net

Comments - Directives required Communication Company entry into the FMF Mobile Command Net on a quarterly basis and entry into the HF Net on a monthly basis. FMF Mobile Command entry involved three men for four days per quarter and the HF Net entry involved three men for two days per month.



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
FMF Mobile Command Training	3	3								
HF Net Training	3	3								
MAINT T/O	O/H	HQTRS T/O	O/H	MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O		TOTAL MAN HOURS/YEAR O/H		
				7.5/Day	120	360		360		
				7.5/Day	180	540		540		
Cumulative Subtotal						251,348.5		237,049		

Fig. 15 - Man Hour Requirements for FMF Mobile Command and High Frequency Net Training Program

Program - Mechanized Embarkation Data System, Embarkation and Mount-Out Program

Directives - MCO P3120.6A Subj: MEDS Manual

FMFPAC O P3120.8 Subj: Implementation of the Mechanized Embarkation Data System

DivO 4400.36A Subj: Mount-Out

DivO 4600.6A Subj: Standing Operating Procedures for Embarkation

BnO P4600.1C Subj: SOP for Embarkation

Comments - These directives required that each Company appoint an Embarkation Officer and Embarkation NCO. Additionally, each Company must maintain a working deck of Electronic Account Machine (EAM) cards that reflect the Company embarkation posture. The high degree of embarkation readiness required was attained



and maintained by insuring that all supplies and equipment were packed, packaged and marked according to DivO P4600.6A. For the purpose of this thesis, the authors assumed that the Company embarkation status was satisfactory and that maintenance of this status fulfilled the requirement. Involvement included one man per platoon four hours per month and eight hours per man per month for the Embarkation Officer and NCO.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Maintenance of Embarkation Posture	1	1	1	1	1	1	1	1	1	1
Embarkation Officer and NCO									1	1
	MAINT T/O	HQTRS O/H	MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O		TOTAL MAN HOURS/YEAR O/H			
	1	1	4/Mo	48	336		336			
		1	8/Mo	96	192		192			
Cumulative Subtotal					251,876.5		237,577			

Fig. 16 - Man Hour Requirements for Mechanized Embarkation Data System, Embarkation and Mount-Out Program

Program - Retirement Ceremonies

Directive - Verbal Directive from Division Communications-Electronics Officer

Comment - On a monthly basis, First Marine Division honors Marines retiring from active duty with a parade and ceremony. Communication Company has been tasked by the Division



Communications-Electronics Officer to install and operate the loudspeaker system for this event. Three men for one day per month fulfilled this requirement.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Retirement Ceremony									3	3

MAINT	HQTRS		MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN	TOTAL MAN
	T/O	O/H			HOURS/YEAR	HOURS/YEAR
			7.5/Mo	90	270	270
Cumulative Subtotal					252,146.5	237,847

Fig. 17 - Man Hour Requirements for Retirement Ceremonies Program

C. RELATED (DIRECTIVE) TRAINING

Program - Hospital, Correctional Facility and Correctional Custody Visitation

- Directives - MCO 6320.3 Subj: Hospital Visitation Program
- DivO 6320.2 Subj: Hospital Visitation Program
- BnO 6320.1A Subj: Hospital Visitation Program
- BnO 1640.1 Subj: Command Visitation of Personnel Confined in the Correctional Facility and Correctional Custody

Comments - These directives required that personnel in the hospital be visited twice monthly and that personnel confined to the Correctional Facility or Correctional Custody be visited weekly. Data gathered from Communication Company provided a yearly average of five men confined to the Correctional Facility, two men confined to Correctional Custody





and three men in the hospital. The time required to visit these men involved an average of one man for one day per week for 52 weeks.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Personnel in Hospital, Correctional Facility and Correctional Custody	2	2	2	2	1	1	1	1	2	2
Visits										
MAINT	HQTRS	MAN	MAN	TOTAL MAN		TOTAL MAN				
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	T/O	O/H	O/H
1	1	1	1	37.5/Wk	1,882.5	18,825	18,825			
		1	1	7.5/Day	390	390	390			
Cumulative Subtotal						271,361.5	257,062			

Fig. 18 - Man Hour Requirements for Hospital Correctional Facility, and Correctional Custody Visitation Program

Program - Food Services

Directives - DivO P10110.3A Subj: Food Services Standing Operating Procedures

BnO 10110.2 Subj: Dining Facility Patron Education Program

Comments - Division Order P10110.3A established the requirement of one messman for every 25 men subsisting in the messhall. The Communication Company requirement was established at seven men annually. The same involvement was assumed for both T/O and O/H strengths. Since this was a continuing commitment, the standard 1882.5 man hours per individual was utilized.



Headquarters Battalion Order 10110.2 established a requirement for a dining facility education program applicable to those men subsisting in the messhall and recommended for all others. This requirement involved 195 men for two hours per quarter.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Mess men	1	1	1	1	1	1	1	1	1	1
Dining Facility Patron Education Program	35	35	35	35	35	40	20	15	35	40
	MAINT		HQTRS		MAN		TOTAL MAN		TOTAL MAN	
	T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	T/O	HOURS/YEAR	O/H
	1	1	1	1	37.5/Wk	1,882.5	13,177.5	13,177.5	13,177.5	13,177.5
	25	20	10	10	2/Qtr	8	1,560	1,560	1,560	1,560
Cumulative Subtotal							286,099	271,799.5		

Fig. 19 - Man Hour Requirements for Food Service Program

Program - Troop Information/Personnel Services

Directives - MCO 1510.25 Subj: Marine Corps Troop Information Program

FMFPAC O 1750.3 Subj: Personnel Services Program

DivO P5800.8A Subj: Standing Operating Procedure for Law and Legal Matters

DivO P5300.5A Subj: Standing Operating Procedures for Human Affairs

DivO P5000.4 Subj: Standing Operating Procedures for Administration



DivO 1751.1A Subj: Support of Dependents

BnO 5380.1A Subj: Personnel Services Program

BnO 1750.1 Subj: Family Assistance Program

Comments - The directives listed established requirements for troop information in the areas of drug abuse, equal opportunity, personal affairs, Uniform Code of Military Justice, discipline, legal assistance, contracts, taxation, installment buying, wills, request mast, administrative discharges, emergency leave, unauthorized absence and desertion. The directives established the requirement for a Unit Personnel Affairs Officer who was responsible for the administration of the Unit's Personnel Affairs Program. Headquarters Battalion Order 5380.1A required weekly briefing sessions. Discussions during research indicated that one hour per week involving all personnel within the Company was sufficient time to administer this program. The total man hours per year, for both T/O and O/H strength figures, were rounded off to the closest 0.5 hour.

		RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
		T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Troop Information and Personnel Services Program		52	50	57	44	64	62	31	20	43	51
MAINT	HQTRS	MAN		MAN		TOTAL MAN		TOTAL MAN			
T/O	O/H	HOURS/X		HOURS/YEAR		HOURS/YEAR		HOURS/YEAR			
T/O	O/H					T/O		O/H			
38	26	21	31	1/Wk	45.6	13,953.5		12,950.5			
Cumulative Subtotal						300,052.5		284,750			

Fig. 20 - Man Hour Requirement for Troop Information/Personnel Services Program



Program - Platoon Commanders Time

Directive - BnO 1510.3 Subj: Training Management

Procedure

Comments - This commitment established the requirement for one hour per week to be utilized as Platoon Commander's time. Savings Bond counseling, required by Marine Corps Order 5120.4A, Division Order 5120.2B, Headquarters Battalion Order 5120.1A, MCI class counseling and any other use specified by the Platoon Commander was accomplished at this time. The total annual man hours were rounded off to the closest 0.5 hour.

	RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Platoon Com- mander's Time	52	50	57	44	64	62	31	20	43	51

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN		
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR		
				T/O	O/H		
38	26	21	31	1/Wk	45.6	13,953.5	12,950.5
Cumulative Subtotal						314,006	297,700.5

Fig. 21 - Man Hour Requirement for Platoon Commander's Time Program

Program - FMF Assistance

Directive - DivO P5300.4A Subj: Standing Operating Procedure for FMF Assistance

Comments - This directive established six billets in the FMF Assistance Program which must be filled by Communication Company on a full time basis.





		RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
		T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
FMF Assistance		1	1	1	1	1	1	1	1	1	1
		MAINT		MAN		MAN		TOTAL MAN		TOTAL MAN	
		T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	T/O	HOURS/YEAR	O/H
1 1				37.5/Wk		1,710		10,260		10,260	
Cumulative Subtotal								324,266		307,960.5	

Fig. 22 - Man Hours Required for the FMF Assistance Program

Program - Officer and Staff NCO School

Directive - BnBul 1500 3/CJE/jdf dtd 28 June 1974

Subj: Quarterly Training Schedule; First  
Quarter, Fiscal Year 1975

Comments - This directive established a requirement for all officers and S/NCO's to attend a one hour lecture on various subjects every two weeks. Although the directive is cancelled quarterly, each new training schedule directive perpetuates the requirement.

		RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
		T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Officer and S/NCO School		6	5	3	2	14	15	2	4	6	3
		MAINT		MAN		MAN		TOTAL MAN		TOTAL MAN	
		T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	T/O	HOURS/YEAR	O/H
13 11		5	10	7.5/Wk		171		8,379		8,550	
Cumulative Subtotal								332,645		316,510.5	

Fig. 23 - Man Hour Requirement for Officer and S/NCO School Program



Program - Human Relations/Human Affairs

Directives - MCO 5350.5A Subj: Human Relations Training

DivO P5300.5A Subj: Standing Operating

Procedures for Human Affairs

BnO 5350.1B Subj: Battalion Human Affairs

Comments - These directives established the requirement for every Marine to participate in 20 hours of Human Relations Training annually. Supporting this requirement was the necessity for one discussion leader per 40 men and a Battalion and Company Human Affairs Council. Communication Company involvement included all personnel for 20 hours annually, an average of eight men for four weeks annually for Unit discussion leader training, and 12 men one hour per month as members of the Battalion and Company Human Affairs Councils. The authors assumed that the requirement would be the same regardless of T/O or O/H strength. In quantifying the Battalion and Company Human Affairs Council time requirements, eleven months were used allowing one month for leave per individual.



	RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Human Affairs Training	52	50	57	44	64	62	31	20	43	51
Unit Discussion Leader Training	1	1	1	1	1	1	1	1	1	1
Bn Human Affairs Council	1	1								
Company Human Affairs Council	1	1	1	1	1	1	1	1	1	1

MAINT		HQTRS		MAN		MAN		TOTAL MAN		TOTAL MAN	
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	T/O	O/H	HOURS/YEAR	HOURS/YEAR
38	26	21	31	20/Yr	20			6,120		5,680	
1	1	2	2	37.5/Wk	150			1,200		1,200	
		2	2	1/Mo	11			33		33	
1	1	3	3	1/Mo	11			99		99	
Cumulative Subtotal								340,097		323,522.5	

Fig. 24 - Man Hour Requirement for Human Relations/Human Affairs Training Program

Program - Training of Tactical Vehicle Drivers

Directives - MCO 11240.66 Subj: Standard Licensing Procedures for Operators of Military Motor Vehicles

BnO P11240.1A Subj: Standing Operating Procedures for Motor Transport

BnBul 11240 Subj: Tactical Vehicle Drivers; Training of

Comments - Marine Corps Order 11240.66 and Battalion Order P11240.1A established a minimum 40 hour training program to



properly train prospective military vehicle drivers. Headquarters Battalion Bulletin 11240 established a 10 day driver's training course for prospective drivers and required one licensed driver for each three trainees for six of the 10 days. The average involvement for Communication Company was established at 60 trainees annually.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Military Vehicle Trainees	14	14	24	24	3	3	6	6	6	6
Licensed driver assistance during training	5	5	8	8	1	1	2	2	2	2
	MAINT T/O	HQTRS O/H	MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O		TOTAL MAN HOURS/YEAR O/H			
	3	3	4	4	7.5/Day	75	4,500	4,500		
	1	1	1	1	7.5/Day	45	900	900		
Cumulative Subtotal							345,497	328,922.5		

Fig. 25 - Man Hour Requirement for Training of Tactical Vehicle Driver Program

Program - Safety and Traffic Safety

- Directives - MCO 5100.19A Subj: Marine Corps Traffic Safety Program for Off-Duty Military Personnel  
 DivO 5100.11A Subj: Standing Operating Procedure for Division Safety Program  
 DivO 5100.13 Subj: Zero in on Safety  
 DivO 1540.8 Subj: Defensive Driving Course  
 BnO 5100.1A Subj: Battalion Safety Program





Comments - Marine Corps Order 5100.19A established a need for a Traffic Safety Program and directed that it be incorporated into training programs. Division Order 1540.8 required all persons under 25 years of age to attend a defensive driving course. The Communication Company average commitment was established at 35 men for one day per quarter.

Safety directives also required the assignment of officers and NCO's as: Unit Safety Officer and NCO; Unit Motor Vehicle Accident Prevention Officers and NCO; and Unit Fire Safety Officer and NCO. The above listed personnel were required to attend specified safety training. Additional safety requirements included vehicle inspection, safety lectures prior to holidays, and establishment of a Battalion Safety Council.

Communication Company assigned an average of four men as safety officers and NCO's with two men each assigned two of the safety billets. Their safety training required 12 hours annually. All Communication Company personnel were required to attend a one hour safety lecture prior to each of the nine national holidays. Vehicle inspection averaged 60 vehicles inspected prior to each holiday and involved two inspectors for one day and 0.25 hours per vehicle. This quantification did not include the waiting time experienced by the drivers.



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Defensive driving course	5	5	5	5	5	5	5	5	5	5
Training for Safety Officers and NCO's										
Safety Council attendance										
Safety lectures	52	50	57	44	64	62	31	20	43	51
Vehicle inspection	10	10	10	10	10	10	10	10	10	10
Vehicle inspectors										
	MAINT T/O	HQTRS O/H	MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O	TOTAL MAN HOURS/YEAR O/H				
	5	5	5	5	7.5/Day	7.5	262.5	262.5		
	2	2	2	2	12/Yr	12	48	48		
	2	2	2	2	1/Qtr	4	16	16		
	38	26	21	31	9/Yr	9	2,754	2,556		
	5	5	5	5	0.25/Veh	2.25	135	135		
	2	2			7.5/Day	67.5	135	135		
Cumulative Subtotal							348,847.5	332,075		

Fig. 26 - Man Hour Requirements for Safety and Traffic Safety Programs

Program - Drug Exemption/Drug Abuse

Directives - MCO 6710.1B Subj: Marine Corps Drug Abuse

Control Program

DivO 6710.6A Subj: Drug Exemption Program

DivO P5300.5A Subj: Standing Operating Procedure for Human Affairs



BnO 6710.1 Subj: Drug Abuse Program

BnO 6710.2 (Proposed) Subj: Drug Abuse Program

Comments - These directives established the requirement for semi-annual drug abuse presentations for all personnel in Communication Company. E-3 and below required 1.5 hours and E-4 and above required two hours per presentation. Within the area of the drug exemption program, two levels of rehabilitation were established. The first level required six weeks at the Division Challenge and Development Center while the second level required counseling each man for a period of 10 weeks. An estimated average of 10 men were involved on a continuing basis in the drug exemption program and two hours per week per individual was estimated as adequate time for counseling. The 11th individual involved in the counseling quantification was the counselor.

	RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Drug abuse presentation										
E-3 and below	40	40	44	35	44	32	26	11	34	40
E-4 and above	12	10	13	9	20	30	5	9	9	11
Drug Exemption										
Level 1	1	1	1	1	2	2	1	1	2	2
Level 2	1	1	1	1	2	2	1	1	2	2
	MAINT	HQTRS	MAN	MAN	TOTAL MAN		TOTAL MAN			
	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR		HOURS/YEAR			
					T/O		O/H			
	13	5	14	10	3/Yr	3	645	519		
	25	21	7	21	4/Yr	4	364	444		
	2	2	1	1	37.5/Wk	225	2,250	2,250		
	2	2	2	2	2/Wk	20	220	220		
Cumulative Subtotal							352,326.5	335,508		

Fig. 27 - Man Hour Requirement for Drug Exemption/Drug Abuse Program



Program - Maintenance and Upkeep of Buildings and Grounds

Directive - DivO 11014.1A Subj: Permanent and Semi-

Permanent Building and Ground; Maintenance of

Comments - This directive required a continuous and aggressive program be maintained in the area of Buildings and Grounds Maintenance. Empirical data obtained indicated that three men were assigned on a full time basis to accomplish this work for Communication Company.

		RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE		
		T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	
Building and Grounds Maintenance												
MAINT	HQTRS	MAN		MAN		TOTAL MAN		TOTAL MAN				
T/O	O/H	HOURS/X		HOURS/YEAR		HOURS/YEAR		HOURS/YEAR				
	3	3	7.5/Day		1,710		5,130		5,130			
Cumulative Subtotal							357,456.5		340,638			

Fig. 28 - Man Hour Requirement for Building and Grounds Maintenance Program

Program - Marine Corps Reserve Unit Training

Directive - DivBul 1500 dated 26 Dec 1973 Subj: Organized Marine Corps Reserve (OMCR), Host Unit Support Assignments for Annual Training Duty 1974 (ATD-74).

Comments - Annually, Communication Company was assigned as a host unit for OMCR training which required varying individual involvement and equipment support depending on the platoon involved. Pre-conference meetings involved two men for three





days. Equipment preparation involved all members of the operational platoons for two days except Multi-channel platoon required four days. Instructors provided by the Company varied by platoon and the day of training.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Pre-conference meetings										
Equipment preparation	52	50			64	62	31	20	43	51
Equipment preparation			57	44						
Instructors										
1st Day			4	4						
2nd Day			8	8						
3rd Day			8	8						
4th Day	4	4	14	14	3	3	3	3		
5th Day	4	4								
	MAINT	HQTRS	MAN	MAN	TOTAL MAN		TOTAL MAN			
	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR		HOURS/YEAR			
					T/O		O/H			
		2	2	7.5/Day	22.5	45	45			
1	1			7.5/Day	15	2,865	2,760			
				7.5/Day	30	1,710	1,320			
				7.5/Day	7.5	30	30			
				7.5/Day	7.5	60	60			
				7.5/Day	7.5	60	60			
				7.5/Day	7.5	180	180			
				7.5/Day	7.5	30	30			
Cumulative Subtotal						362,436.5	345,123			

Fig. 29 - Man Hour Requirement for Marine Corps Reserve Unit Training Program

Program - Orienteering



Directives - MCO 6100.8 Subj: Orienteering Program

DivO 6100.2A Subj: Orienteering Program

BnO 6100.2 Subj: Orienteering

Comments - Marine Corps Order 6100.8 established this as a related (non-directive) program in that it encouraged but did not direct that an orienteering program be established. Division Order 6100.2A and Headquarters Battalion Order 6100.2, however, directed that this program would be incorporated into the land navigation and physical conditioning program. The Battalion order established inter-unit competition required to select a five man Battalion team for Division competition. The best estimates of average yearly Communication Company involvement was 14 men for four hours per week. The yearly time was rounded off to the closest 0.5 hours.

	RADIO		MULTI- CHAN		COMM CENTER		ANGR		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Orienteering	2	2	2	2	2	2	2	2	2	2

	MAINT		HQTRS		MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O	TOTAL MAN HOURS/YEAR O/H
	T/O	O/H	T/O	O/H				
	2	2	2	2	4/Wk	182.4	2,553.5	2,553.5
Cumulative Subtotal							364,990	347,676.5

Fig. 30 - Man Hours Required for Orienteering Program

Program - Postal Affairs

Directives - DivO P2700.6 Subj: Standing Operating Procedure for Postal Affairs

BnO 2700.1B Subj: Battalion Mail Handling



Comments - Division Order P2700.6 required an officer be assigned additional duties as Company Postal Officer and specified that he would conduct periodic inspections of the Company mail handling procedures. It also established responsibilities for Units maintaining a specified mail room. The Headquarters Battalion Order required Communication Company to maintain a mail room and a full time mail orderly. The mail orderlies time was quantified as a commitment since Communication Company does not rate a mail clerk by T/O.

RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H

Postal Officer  
Insp.

Mail Orderly

MAINT		HQTRS		MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
						T/O	O/H
		1	1	1/Wk	52	52	52
		1	1	37.5/Wk	1,882.5	1,882.5	1,882.5
Cumulative Subtotal						366,924.5	349,611

Fig. 31 - Man Hours Required for Postal Affairs Program

Program - Division Competition

Directives - DivO 3574.4A Subj: Division Crew Served

Weapons Competition

DivLtr 10/MSB/go over 4420 dtd 17 June 1974

Subj: Request for Communications Support

Comments - Division Order 3574.4A established yearly crew served weapons competition among Combat and Combat Support Units and directed Communication Company to provide three wire



men and associated equipment to support the judging. The average time these men were detached in support of this program was four weeks per year.

Division Letter 10/MSB/go Subj: Request for Communications Support required support for the Division Squad Competition. This annual event selected the best rifle squad from the Infantry Battalions within the Division. Support of this program involved three men for 11 days per year.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Crew Served Weapons Competition									3	3
Squad Competition	3	3								
	MAINT T/O	HQTRS O/H	MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O		TOTAL MAN HOURS/YEAR O/H			
			37.5/Wk	150	450		450			
			7.5/Day	82.5	247.5		247.5			
Cumulative Subtotal					367,622		350,308.5			

Fig. 32 - Man Hours Required for Division Competition Program

Program - Water Survival Training

Directives - DivO 1540.1B Subj: Water Survival School

BnO 1540.1 Subj: Water Survival School and Survival Training

Comments - These directives established the requirement that every Marine not designated as at least a 2nd class swimmer must be tested and that those who failed the test be given instruction to qualify them as 2nd class swimmers. The





testing organization must provide its own instructors. Communication Company involvement included one man for three weeks per year for instructor training. Communication Company indicated that an average of 130 men per year would be tested and that of these, 44 would need additional training. The testing required 4 hours and the training one day. The assumption was made that the same quantities would prevail regardless of T/O or O/H Company strength.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Water Safety Instructor Training										
Water Safety Testing	20	20	20	20	20	20	20	20	20	20
Water Safety Training	7	7	7	7	7	7	7	7	7	7
	MAINT		HQTRS		MAN		TOTAL MAN		TOTAL MAN	
	T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	T/O	HOURS/YEAR	O/H
			1	1	37.5/Wk	112.5		112.5		112.5
	20	20	10	10	4/Yr	4		520		520
	7	7	2	2	7.5/Yr	7.5		330		330
Cumulative Subtotal								368,584.5		351,271

Fig. 33 - Man Hours Required for Water Survival Training Program

Program - Armory Inventory

Directive - DivO P8000.3 Subj: Ordnance Standing Operating Procedure



Comments - This directive required all weapons to be kept in a Battalion Armory when not otherwise in use and required a weekly inventory of the Armory. By Headquarters Battalion Special Order, this function was assigned as an additional duty to one officer and empirical data reflected that an officer from Communication Company was assigned this duty. The average time required to perform this inventory was 2.5 hours per week for 52 weeks a year.

RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Armory Inventory									
MAINT	HQTRS	MAN		MAN		TOTAL MAN		TOTAL MAN	
T/O	O/H	HOURS/X		HOURS/YEAR		HOURS/YEAR		HOURS/YEAR	
						T/O		O/H	
	1	1	2.5/Wk	130		130		130	
Cumulative Subtotal						368,714.5		351,401	

Fig. 34 - Man Hours Required for Armory Inventory Program

Program - Recreation Council and Recreation Committee

Directive - BnO P1710.1B Subj: Standing Operating Procedure for Special Services

Comments - This directive established a Battalion Recreation Council and Recreation Committee and directed that one officer and one NCO be assigned an additional duty as members. Each of these committees met an average of 2 hours per quarter.



RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H

Recreation  
Council and  
Recreation  
Committee  
attendance

MAINT	HQTRS		MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR
					T/O	O/H
	2	2	2/Qtr	8	16	16
Cumulative Subtotal					368,730.5	351,417

Fig. 35 - Man Hours Required for Recreation Council and  
Recreation Committee Program .

Program - Marriage Improvement

Directives - DivO 1752.2 Subj: Marriage Improvement  
Program

BnLtr 1500 dtd 6 March 1974 Subj: Marriage  
Improvement Program

Comments - Division Order 1752.2 established a require-  
ment for Marriage Improvement teams to be formed within  
Commands. Training for these teams was conducted at Division  
level and involved two men from Communication Company for  
one day per month. Quantification of this time used 11 months  
per year which allowed for annual leave. Headquarters Bat-  
talion Letter 1500, dated 6 March 1974, established the re-  
quirement for one hour per quarter to be utilized in a  
Marriage Improvement lecture for all E-5 and below.



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H

Marriage Im- provement Lecture	46	45	54	42	50	47	29	16	37	48
--------------------------------------	----	----	----	----	----	----	----	----	----	----

Marriage Im-  
provement Team  
Training

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
				T/O	O/H

23	15	16	21	1/Qtr	4	1,020	936
		2	2	7.5/Mo	82.5	165	165
Cumulative Subtotal						369,915.5	352,518

Fig. 36 - Man Hours Required for Marriage Improvement Program

D. CAREER/MOS/LEADERSHIP TRAINING

Program - MOS Training

Directive - DivO 1500.31A Subj: Standing Operating Pro-  
cedure for Training

Comments - This directive required that one hour per week be allocated to MOS training for all Company personnel. Total man hours were rounded off to the closest 0.5 hours.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H

MOS Training	52	50	57	44	64	62	31	20	43	51
--------------	----	----	----	----	----	----	----	----	----	----

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
				T/O	O/H

38	26	21	31	1/Wk	45.6	13,953.5	12,950.5
Cumulative Subtotal						383,869	365,468.5

Fig. 37 - Man Hours Required for MOS Training Program





Program - Field Skill Training

Directive - DivO P1510.2 Subj: Standing Operating Procedure for Field Skill Training

Comments - This directive established Field Skill Training School for those Military Occupational Specialties which did not require formal schooling prior to assignment of the MOS. Communication Company annually received an average of 33 basic 2500's who were designated to become wireman, and 17 who were designated to become field radio operators. Field Skill Training for wiremen was 5 weeks and for radio operators was seven weeks.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Radio Operator Training	17	17								
Wiremen Training									33	33
	MAINT T/O	HQTRS O/H	MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O		TOTAL MAN HOURS/YEAR O/H			
			37.5/Wk	262.5	4,462.5		4,462.5			
			37.5/Wk	187.5	6,187.5		6,187.5			
Cumulative Subtotal					394,519		376,118.5			

Fig. 38 - Man Hours Required for Field Skill Training Program

Program - Formal/Informal Schools

Directives - MCO P1500.12F Subj: Marine Corps Formal Schools Catalog

LFTCPAC O P1540.1A Subj: Catalog of Amphibious Training Courses



DivO 1540.3A Subj: Staff Non-Commissioned  
Officer Academy

DivO 1510.1A Subj: Non-Commissioned Officer  
Leadership Course

DivBul 1500 dtd 20 Nov 1972 Subj: Mobile  
Training Team (MTT) Courses, 3rd Quarter  
FY-73

Comments - Although the directives listed did not levy specific commitments upon Communication Company, they described educational opportunities available to members of the Company, and it was incumbent upon the Commander to provide this training to his people. Quotas were requested by the Company, and by separate directive, individuals were ordered to instruction. Division Bulletin 1500 dtd 20 Nov 1972 was an example of Mobile Training Team Courses offered in Landing Force Communications Equipment Waterproofing and Landing Force Communications Planning (BLT/RLT). In addition to these courses which were available either from the Mobile Training Team or at Landing Force Training Center, Communication Company annually sent an average of four men for 10 weeks to Communication Center Chiefs Course; two men for six weeks to the Marine Corps S/NCO Academy; two men for two weeks per quarter to Embarkation School; eight men for five weeks per year to the Division S/NCO Academy; and eight men for four weeks per year to the Division NCO Leadership Course.



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Communication Planning Courses	1	1	1	1			1	1	1	1
Communication Center Chiefs Course					4	4				
Marine Corps S/NCO Academy							1	1	1	1
Embarkation School										
Division S/NCO Academy	1	1	1	1	1	1	1	1	1	1
Division NCO Leadership	1	1	1	1	1	1	1	1	1	1

MAINT	HQTRS	MAN	MAN	TOTAL MAN	TOTAL MAN
T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR
				T/O	O/H
	1	1	37.5/Wk	75	375
			37.5/Wk	375	1,500
			37.5/Wk	225	450
	2	2	75/Qtr	300	600
1	1	2	2	37.5/Wk	187.5
1	1	2	2	37.5/Wk	150
Cumulative Subtotal					400,144
					381,743.5

Fig. 39 - Man Hour Requirements for Formal/Informal Schools Programs

Program - Career Planning

Directives - FMFPAC O 1040.1B Subj: FMFPAC Career

Planning Program

BnO 1040.1 Subj: Battalion Career Planning

Program



Comments - The Marine Corps career planning program required interviews be held with each individual at 24 months, 12 months, 6 months, and 3 months prior to the end of his enlistment. Headquarters Battalion Order 1040.1 required that Communication Company have a designated full time career planner. Since the Company, by T/O did not rate the billet, his time was quantified as a separate commitment. Empirical data gathered from Communication Company indicated an average of 23 men had scheduled interviews per month, each lasting approximately 0.5 hours. Additionally, an average of 12 men per day visited the Career Planner to ask questions which utilized 0.25 hour per visitor. These visits were quantified on a 228 day per year basis but the scheduled interviews were quantified over a 12 month year as they were conducted by other members of the Company.

	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Career Planner										
Scheduled Interviews	4	4	3	3	3	3	3	3	4	4
Questions Answered	2	2	2	2	2	2	2	2	2	2
MAINT	HQTRS	MAN	MAN	TOTAL MAN		TOTAL MAN				
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	T/O	O/H	O/H
	1	1		37.5/Wk	1,710		1,710			1,710
3	3	3	3	0.5/Interview	136		138			138
1	1	1	1	0.25/Day	57		684			684
Cumulative Subtotal							402,676			384,275.5

Fig. 40 - Man Hour Requirement for Career Planning Program





Program - Marine Corps Institute (MCI) Enrollment

Directives - MCO 1550.21 Subj: Mandatory Completion of MCI Course 01.33

DivO P1560.5 Subj: Standing Operating Procedure for Education

DivO 1550.1A Subj: MCI Correspondence Courses

BnO 1560.1A Subj: Standing Operating Procedure for Education

Comments - These directives established the requirement for the assignment of one officer and one NCO as Company Education Officer and NCO. The Platoon Commander was required to know the status of personnel in his platoon who were enrolled in MCI courses and to counsel those who failed to submit lessons within the appropriate time frame. Average involvement for Communication Company included one Education NCO 10 hours per month, and one man per platoon 6 hours per month. Eleven months per year were used in quantifying this requirement which allowed for annual leave.

		RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
		T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Education NCO											
One man per platoon											
		1	1	1	1	1	1	1	1	1	1
MAINT	HQTRS	MAN		MAN		TOTAL MAN		TOTAL MAN			
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	O/H	HOURS/YEAR	O/H		
	1	1		10/Mo	110			110		110	
1	1			6/Mo	66			396		396	
Cumulative Subtotal								403,182		384,781.5	

Fig. 41 - Man Hours Required for Marine Corps Institute Enrollment Program



## E. ESSENTIAL SUBJECTS TRAINING

Essential Subjects Testing/Training has been defined as that testing/training required to ensure an enlisted Marine (regardless of rank, MOS, billet, or unit to which assigned) maintains proficiency in certain subjects prescribed by the Commandant of the Marine Corps. For the purposes of this thesis, MCO 1510.2H Subj: Individual Training of Enlisted Marines has been used as the guideline. This directive provided new and challenging criteria to be used in the Marine Corps training program especially in the Essential Subjects Testing/Training division. Foremost among these new criteria was the emphasis on performance testing and training within the Essential Subject division. Enclosure 3 of Marine Corps Order 1510.2H specified the performance objectives in each of the nine designated essential subjects. Every Marine was required to achieve and maintain proficiency in each of these objectives and their evaluation should be performance oriented.

Empirical data concerning the time requirements for these objectives was unavailable since the order was very recently published. However, performance testing/training had been utilized by the Army in their recruit training and was being tested by both Marine Corps Recruit Depots. Data from these sources assisted in the quantification procedure. By making certain assumptions, quantification of these requirements was possible. These assumptions and the rationale behind them were as follows:

### 1. Testing Procedure

a. Each of these examinations will require one to three men to participate in taking the test.



b. The tests should be administered out of the general view of other Marines waiting to take the test.

c. The test administrator will name the test to be administered and give any necessary directions.

d. The test administrator will then read the situation located at the top of the first page of the test.

e. At the command "EXECUTE," the testee will perform the steps of the specified test. The test administrator will closely observe the testee ensuring that no deviation is made from the step-elements stated on the testing pages. If any error is noted, the test administrator will immediately stop the test, advise the testee of the error made, award him a No-Go, advise him he has failed the test, and assign him to remedial instruction.

## 2. Test Criterion

a. The testee must perform the skill with 100% accuracy as defined:

(1) Each step-element shall be performed as stated on the test pages.

(2) Each step-element shall be performed in the sequence stated.

(3) Each step-element must be performed distinctly and confidently.

b. The testee shall perform the skill as quickly as possible without hesitation. The administering command may determine a time limit, if there is no time limit stated with the test.

c. Any deviation from these standards by any testee will constitute a No-Go (failure), (Ref. 4 Page 2).



3. All essential subjects can be performance tested. Of the essential subjects, Code of Conduct and Military Law and Marine Corps History, Customs and Courtesies least lend themselves to proficiency testing, however, specific objectives in these areas have been clearly delineated. Performance testing in these areas was visualized as the testor presenting situations that fit the objectives of these subjects and the testee responding verbally.

4. Each performance objective will constitute a separate performance test. For example, in First Aid and Field Sanitation there were nine separate objectives, therefore, there would be nine separate performance tests for this subject (Ref. 5).

5. When tested, each testee will be required to perform 100% of the performance tests. This assumption eases quantification by clearly delineating the number of tests to be administered to each testee.

6. Each performance test will require five minutes to administer to each testee. This assumption was based on best estimates from MCRD, San Diego and the Training Division, Director of Plans and Operations, Fort Ord.

7. Each performance test that is failed will require 10 minutes for remedial training and re-testing. Remedial training for each performance test entails walking the testee through each step until he can perform it successfully. Since each performance test was relatively short and simple, five minutes has been considered an average time to achieve remedial training. Retesting would then consume an additional five minutes.







8. There will be a 50% fail ratio for each performance objective. This assumption was based on empirical data gathered from the Army since none was available from the Marine Corps. Fort Ord experience indicated that after performance training has taken place and time has elapsed since the training, an average of 81-86 percent fail ratio was experienced (Ref. 7). Other Army Recruit Training Commands experienced lower fail ratios but none was as low as 50%. Considering the stringency of the test criterion and the lack of familiarity the testees would have for these tests, a 50% fail ratio was considered to be an optimistic assumption.

9. All Company personnel will be involved in performance testing on an annual basis. E-7 and below will be testees as required by the directive and E-8 and above will act as testers. Although no frequency of testing was addressed in the directive, in view of the frequency of higher echelon inspections, annual testing was anticipated.

10. Exceptions to the above assumptions are as follows:

a. Physical Fitness and Service Rifle and Marksmanship requirements are specified in other Marine Corps directives and these programs have been quantified under Mission Oriented Training. Sufficient time for performance testing occurs during this training, therefore, no time was allocated in this section for these subjects.

b. Interior Guard Subject. Marine Corps Order 5500.6B  
Subj: Arming of Military Law Enforcement and Security Personnel and the Use of Deadly Force, Division Order 8020.3B



Subj: Security of Weapons and Headquarters Battalion Order 1602.1 Subj: Requirements for Personnel for 11/15/16 Area Guard increased the time quantified. Marine Corps Order 5500.6B required specific information concerning use of deadly force be understood by each Marine standing guard prior to his posting. Division Order 8020.3B established specific regulations concerning the security of weapons which Headquarters Battalion observed by placing all weapons in a centralized Battalion Armory. This necessitated all E-5 personnel and below to spend one hour per week in checking out their weapons, cleaning them and checking them back into the Armory. Headquarters Battalion Order 1602.1 established a centralized Battalion guard and required 10 men on a continuous basis from Communication Company. All guard instruction was held during this time. In the essential subjects testing conducted by the Company, a 25% fail ratio vice a 50% was assumed due to the fact that these skills were practiced by a large percentage of the Company when they were assigned to the Battalion Guard.

c. The Close Order Drill Subject required that each Marine be capable of performing all the drill movements with or without arms either individually or in formation. Additionally, leadership performance objectives for Non-Commissioned Officers and Staff Non-Commissioned Officers required that these individuals form, drill, and inspect various size units. Empirical data from Communication Company indicated that an average of 2.5 hours per week was necessary to accomplish



these objectives. In quantifying this time a 45.6 week year was used.

d. The Uniform, Clothing and Equipment Subject was connected with inspection schedules since these items were traditionally inspected during Commanding General and Battalion Commander inspections. Quantification of these times, however, included all the time required to prepare totally for Commanding General and Battalion Commander inspections. Division Order 5041.21B Subj: Standing Operating Instruction for Inspections and Division Bulletin 5041 Subj: Conduct of Inspections required an annual Commanding General Inspection of Communication Company. The best estimates from Communication Company indicated that one day was required for the actual inspection and 10 days to make total preparation. Analyzation of the functions performed during this preparation indicated that many of the activities had previously been quantified within this thesis. One of the areas not previously quantified included pre-inspection by the Battalion Commander, Company Commander, and Platoon Commanders. Therefore, quantification of this commitment allowed one day for the inspection and three days for all preparation which had not previously been quantified. An additional 2.5 days was quantified for an annual Battalion Commander's inspection. This time included one day for the inspection and 1.5 days for the performance of preparation not previously quantified.

e. NBC Defense quantification included additional time required to accomplish the requirements of Marine Corps



Order 3400.3B Subj: NBC Defense Readiness Training Requirement; Division Order P3400.5A Subj: Standing Operating Procedures for NBC Defense; Division Order 1540.4A Subj: NBC Defense School; Headquarters Battalion Order P3400.2C Subj: Standing Operating Procedure for Defense Against NBC. These directives required Communication Company to maintain two survey/monitor teams and detailed specific individual and unit training requirements, however, no time estimation necessary for the accomplishment of these requirements was available. Division Order 1540.4A established a 2 week NBC school which involved an average of three men per quarter. Division Order P3400.5A required annual protective mask training which involved all Company personnel for 3 hours per year. An additional protective mask training requirement was specified to be conducted concurrently with field training which had been quantified in Mission Oriented Training.







	RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H

Essential Subject

Code of Con- duct and Military Law/ UCMJ										
3 Objectives Tested										
	52	50	57	44	64	62	31	20	43	51
1.5 Objec- tives Remedial Training and Re- testing										
	26	25	29	22	32	31	15	10	21	26
Marine Corps History Cus- toms and Courtesies										
3 Objec- tives Tested										
	52	50	57	44	64	62	31	20	43	51
1.5 Objec- tives Remedial Training and Retesting										
	26	25	29	22	32	31	15	10	21	26
MAINT	HQTRS	MAN		MAN		TOTAL MAN		TOTAL MAN		
T/O	O/H	T/O	O/H	HOURS/X	HOURS/YEAR	HOURS/YEAR	T/O	HOURS/YEAR	O/H	
38	26	21	31	0.25/Yr	0.25			76.5		71
19	13	11	15	0.25/Yr	0.25			38.25		35.5
38	26	21	31	0.25/Yr	0.25			76.5		71
19	13	11	15	0.25/Yr	0.25			38.25		35.5



	RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Close Order Drill	52	50	57	44	64	62	31	20	43	51
Interior Guard Hqtrs.Bn. Personnel Require- ments	2	2	2	2	2	2	1	1	1	1
Weapon Cleaning	46	45	54	42	50	47	29	16	37	48
4 Objectives Tested	52	50	57	44	64	62	31	20	43	51
2 Objectives Remedial Training and Testing	13	12	14	11	16	15	8	5	11	13
First Aid and Field Sanita- tion 9 Objectives Tested	52	50	57	44	64	62	31	20	43	51
4.5 Objectives Remedial Train- ing and Test- ing	26	25	29	22	32	31	15	10	21	26
MAINT T/O	O/H	HQTRS T/O	O/H	MAN HOURS/X	MAN HOURS/YEAR	TOTAL MAN HOURS/YEAR T/O		TOTAL MAN HOURS/YEAR O/H		
38	26	21	31	2.5/Wk	114	34,884		32,376		
1	1	1	1	37.5/Wk	1,882.5	18,825		18,825		
23	15	16	21	1/Wk	45.6	11,628		10,670.5		
38	26	21	31	0.33/Yr	0.33	100.98		93.72		
10	7	5	8	0.33/Yr	0.33	25.41		23.43		
38	26	21	31	0.75/Yr	0.75	229.5		213		
19	13	11	15	0.75/Yr	0.75	114.75		106.5		



	RADIO		MULTI-CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
Uniform Clothing and Equipment										
Commanding General Inspection and Preparation	52	50	57	44	64	62	31	20	43	51
Bn.Cmdrs.Inspection and Preparation	52	50	57	44	64	62	31	20	43	51
NBC Defense										
NBC School	1	1	1	1	1	1				
Protective Mask Training	52	50	57	44	64	62	31	20	43	51
6 Objectives Tested	52	50	57	44	64	62	31	20	43	51
3 Objectives Remedial Training and Testing	26	25	29	22	32	31	15	10	21	26
Individual Tactical Measures										
5 Objectives Tested	52	50	57	44	64	62	31	20	43	51
2.5 Objectives Remedial Training and Testing	26	25	29	22	32	31	15	10	21	26
MAINT	T/O	O/H	HQTRS	T/O	O/H	MAN	MAN	TOTAL MAN	TOTAL MAN	
						HOURS/X	HOURS/YEAR	HOURS/YEAR	HOURS/YEAR	
								T/O	O/H	
	38	26	21	31		7.5/Day	30	9,180		8,520
	38	26	21	31		7.5/Day	18.75	5,737.5		5,325
						75/Qtr	300	900		900
	38	26	21	31		3/Yr	3	918		852
	38	26	21	31		0.5/Yr	0.5	153		142
	19	13	11	15		0.5/Yr	0.5	76.5		71
	38	26	21	31		25 Min/Yr	25 Min	127.5		118.33
	19	13	11	15		25 Min/Yr	25 Min	63.75		59.166
Cumulative Subtotal								486,375.39		463,290.15

Fig. 42 - Man Hour Requirements for Essential Subjects Training Program



F. RELATED (NON-DIRECTIVE) TRAINING

Program - Maintenance of Proficiency in SCUBA Diving

Directives - MCO 1500.22A Subj: Maintenance of Proficiency in SCUBA Diving

MCO 1500.16B Subj: SCUBA Training

Comments - These directives specified the requirement for Marine Corps designated SCUBA divers to demonstrate certain diving skills on a semi-annual basis or lose their designation. The directives recommended that Commanders allow the individuals the opportunity to maintain this designation due to the expense invested in their training. On the average, Communication Company contained one designated SCUBA trained Marine. Maintenance of the designation required one day of testing twice a year.

	RADIO		MULTI- CHAN		COMM CENTER		ANGF		WIRE	
	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H	T/O	O/H
SCUBA designation maintenance		1		1						
	<u>MAINT</u>	<u>HQTRS</u>	<u>MAN</u>	<u>MAN</u>	<u>TOTAL MAN</u>		<u>TOTAL MAN</u>			
	<u>T/O</u>	<u>O/H</u>	<u>HOURS/X</u>	<u>HOURS/YEAR</u>	<u>HOURS/YEAR</u>		<u>HOURS/YEAR</u>			
			15/Yr	15	T/O		O/H			
					15		15			
Cumulative Subtotal					486,390.39		463,305.15			

Fig. 43 - Man Hours Required for Maintenance of Proficiency in SCUBA Diving Program





#### IV. MAINTENANCE

##### A. GENERAL MAINTENANCE

The Marine Corps Mission of providing effective combat ready forces, through the proper combination of ready troops and ready equipment, assigns a major role to the field of equipment maintenance. Time and effort is expended on the physical and professional training of troops; unless equal time and effort is devoted to material readiness, combat readiness cannot be achieved. To this end, the maintenance programs of the Marine Corps are established.

Maintenance provides those services necessary to retain or to restore equipment to a serviceable condition. The services commonly utilized include; inspection, testing, servicing, replacement, repair, rebuilding, classification as to serviceability or reclamation.

The organization of maintenance services within the Marine Corps is governed by the logistic capabilities of the individual units (as defined in the logistic capabilities paragraph of the unit's Table of Organization). Maintenance functions vary from minor preventive maintenance operations to highly specialized repair techniques.

The Marine Corps, in keeping with policy established by the Department of Defense, has grouped all maintenance operations into three broad categories. These categories have been subdivided to include five (5) echelons of maintenance. The subdivisions indicate more accurately the scope, mobility and



capabilities of maintenance organizations or facilities. They further detail the personnel, time, tools, equipment and parts which are available, authorized, or required in connection with a maintenance operation. The three broad categories and their associated echelons of maintenance as defined in Marine Corps Order P4400.19 (Marine Corps Supply Manual, Volume I) are:

1. Organizational Maintenance

Organizational maintenance is that maintenance authorized for, performed by, and within the responsibility of a using organization for its own equipment. This category incorporates the first and second echelons of maintenance.

a. First Echelon Maintenance - maintenance performed by the user or operator of the equipment to provide the proper care, use, operation, cleaning, preservation, lubrication and adjustment, minor repairs, testing, and parts replacements as may be prescribed by pertinent technical manuals.

b. Second Echelon Maintenance - maintenance designated to be performed by specially trained personnel provided for that purpose in the using organization.

2. Field Maintenance

Field maintenance is that maintenance authorized and performed by designated maintenance activities in direct support of using organizations. Normally, this category is limited to maintenance consisting of replacement of unserviceable parts, subassemblies, or assemblies. This category incorporates third and fourth echelons of maintenance.



a. Third Echelon Maintenance - maintenance authorized by appropriate publication to be performed by specially trained units in direct support of using organizations. A unit responsible for third echelon maintenance normally provides support to several using units. In some cases, however, third echelon maintenance may be performed by organic maintenance units within the using organization.

Appropriate publications authorize the assortment of repair parts, supplies, tools, test equipment and skilled personnel required to perform maintenance beyond the capabilities and facilities of using organizations (second and third echelon levels).

b. Fourth Echelon Maintenance - maintenance performed by units organized in semi-fixed or permanent shops to serve all units within a geographical area. The principal function of fourth echelon maintenance is to repair subassemblies, assemblies, and major items for return to using organizations.

### 3. Depot Maintenance

Depot maintenance is that maintenance required for the repair of material which requires a major overhaul or complete rebuild of major components. Depot maintenance includes fifth echelon maintenance and normally supports the supply system on a scheduled rebuild-and-return-to-stock basis.

## B. ORGANIZATIONAL MAINTENANCE

Organizational maintenance as outlined above, is the maintenance performed by a using organization on its own



equipment. Organizational maintenance operations stress the importance of preventive maintenance. Corrective maintenance is performed on an as required basis.

Effective preventive maintenance (PM) attempts to assure the prevention or early detection of equipment malfunction. Such early detection minimizes equipment downtime and improves equipment performance. The major part of PM requirements fall within the first and second echelons of maintenance. Specific technical manuals (TM's) on individual items of equipment prescribe the frequency of preventive maintenance required. Schedules may be established on a daily, weekly, monthly, quarterly, semi-annual or annual basis.

Corrective Maintenance (CM) is that maintenance which requires repair or replacement of defective parts, assemblies or subassemblies to restore the equipment to full operational capability and physical condition. Procedures for the repair of equipment are established in appropriate TM's and/or repair parts lists such as the Marine Corps Stock Lists (SL's).

Maintenance operations must be performed regardless of on-board personnel strength. Seldom does on-board personnel strength reach organization T/O levels; T/E equipment levels are, on the other hand, seldom under allowance. Frequently equipment levels are above T/E due to overlap in equipment exchange (new for outdated equipment) or special contingency allowances (fixed plant teletype, for example). Maintenance of equipment on hand must be provided by available organization manpower despite T/E - T/O imbalance.







### C. COMMUNICATION COMPANY MAINTENANCE

The T/O for a Communication Company listed the following logistic capabilities:

1. Capable of field (third echelon) maintenance on organic communications-electronics equipment, less radar and test equipment; organizational (first and second echelon) maintenance on motor transport and engineer equipment authorized the company; and organizational (first echelon) for other authorized equipment and supplies; not capable of organic supply functions.

2. Capable of limited maintenance of all assigned communication security equipment; capable of intermediate level maintenance of microminiaturized electronic communication security equipment (Ref. 2, Page 3).

Communication Company equipment requiring maintenance fell primarily in the areas of communications-electronics, motor transport and engineer equipment. The equipment allowance for a Communication Company was prescribed in a Table of Equipment (T/E) for a Headquarters Battalion, Marine Division. An individual breakdown of battalion equipment by company was in this T/E (Ref. 8).

Items presently utilized by Communication Company, not currently listed on the T/E, were authorized substitute items according to the Table of Authorized Material (TAM) (Ref. 9). Equipment authorized by the TAM was utilized to allow amortization of the original investment and to serve as interim items until new equipment was received.



Headquarters, Marine Corps required preventive maintenance for each line item of equipment. Maintenance procedures and schedules were located in appropriate technical manuals. The command prerogative of commanding officers allowed for amplification or modification of these stipulated procedures. Marine Corps Order P4790.2 (MIMMS Field Procedures Manual), authorized the unit commander to vary the schedule for preventive maintenance services when the amount of equipment use, climatic conditions or other factors warrant variations from the frequency established in the appropriate technical publications. This degree of flexibility was designed to maximize a total maintenance management program.

Communication-Electronics equipment TM's normally prescribe daily PM's for operational equipment and weekly PM's for non-operational equipment. Where TM's were not specific, Standing Operating Procedures (SOP's) of the unit command provided necessary guidance. In the case of the Second Marine Division, the SOP stated that weekly PM's would be performed regardless of equipment usage (Ref. 10, Pg. 3-1). The First Marine Division allowed the elimination of weekly PM's at the discretion of the unit commander, if not required by the TM, but required a monthly PM regardless of TM requirements (Ref. 11, Pg. 13-3). Quarterly PM services were also established in accordance with appropriate TM's and were required by both Divisions if omitted in an individual TM. Semi-annual and annual PM services were required only on the vehicular components of a vehicular mounted radio set.



Motor Transport and Engineer Equipment TM's prescribe the level and type of preventive maintenance per individual item. Motor Transport schedules followed a daily, weekly, quarterly, and annual cycle. Engineer equipment maintenance was performed daily, weekly, monthly, quarterly, semi-annually, and annually. Daily PM was performed, in both cases, only when the item was in an operational status.

Recently the major requirement for maintenance of engineer equipment was removed from Communication Company. Marine Corps Order 11310.10 of 29 April 1974, and implemented on 25 July 1974, consolidated Marine Corps engineer items in designated units within the Force Troops, Wing and Division organizations. Support Company, Engineer Battalion, Marine Corps Division was designated support unit for Communication Company engineer equipment. All equipment, with the exception of the PU-565 Frequency Converter, was turned over to that unit for maintenance operations.

#### D. CLASSIFICATION OF MAINTENANCE MAN HOUR REQUIREMENTS

For purposes of this thesis, preventive maintenance was the only type of maintenance tabulated for yearly man hour requirements. Corrective maintenance is an unscheduled drain on man hours. Time factors vary dramatically due to the variety of maintenance problems encountered by the individual units and the technical capabilities of the maintenance personnel in a unit. The importance of corrective maintenance and the enormity of man hours which may be required to support an effective maintenance program was recognized. Though





difficult to document, these hours must be considered by a commander in his overall management policies.

Communication Company, First Marine Division, performed preventive maintenance on organic communication-electronic equipment on a daily, weekly, and quarterly basis; organic motor transport equipment on a daily, weekly, quarterly, and annual basis; and engineer equipment on a daily, weekly, and quarterly basis. Man hour calculations for daily operator checks were omitted. Equipment was not normally operated on a daily basis, and tabulation of yearly man hours required were calculated using the remaining time factors.

Headquarters Battalion, First Marine Division consolidated all motor transport mechanics into a battalion motor pool. Therefore, second echelon maintenance; including quarterly and annual PM's were performed in the battalion motor pool. This requirement, however, was normally under the purview of the Communication Company Commander and was treated as a man hour requirement in comprising total figures.

Hourly averages for maintenance tabulation were derived from statistical data obtained from Communication Company, First and Second Marine Divisions. Where significant differences in man hours required for maintenance services were reported, the reasons for the discrepancies were investigated, and an assessment of man hours made. It should be noted that variables such as the condition of the equipment at time of service and the attitude and background of individuals performing maintenance services are factors that a commander must consider. This study assumed equipment to be in good,





operable condition and the individual performing the service to be of average experience and ability.

Administrative deadlining of equipment and Level "A" packing were maintenance management procedures followed by Communication Company. Administrative deadlining withdrew equipment from normal use in the interest of eliminating unnecessary use on a day to day basis. Maintenance requirements were lessened on administratively deadlined equipment. For example, any motor transport equipment marked for administrative deadlining was serviced bi-weekly instead of weekly. Level "A" packing was a category of authorized preservation for small non-mobile/power operated or towed equipment which could be stored indoors. These items were sealed in waterproof containers and packed with desiccant compounds to absorb moisture. Level "A" packed equipment required no weekly maintenance. The containers were inspected monthly for damage and deterioration.

Marine Corps policy allowed unit commanders to determine and order administrative deadline procedures best suited to their commands. Since man hours for maintenance of administratively deadlined equipment must necessarily be variable, man hour calculations for this study assumed all T/E equipment to be operational.

In the interest of clarity, tabulated man hour requirements of the platoons/section within Communication Company were consolidated in some areas; maintenance operations performed by the section or the company were listed as platoon operations. Second echelon maintenance of communication-electronic



equipment was performed by the communication-electronics section, but was highlighted in platoon figures. Motor transport quarterly and annual checks though performed at the company level were listed at the platoon level. Engineer equipment was included in the Communication-Electronic tables due to limited items on hand and similarity in maintenance schedules.

Preventive maintenance was a weekly task. Weekly time factors were multiplied by 52 (weeks) to determine yearly man hour totals. Since weekly (operator) maintenance must be performed prior to submission for higher echelon maintenance, quarterly and annual PM figures were added to weekly PM figures. Communication-electronic and engineer equipment quarterly factors were multiplied by four (quarters); motor transport quarterly time factors were multiplied by three (quarters) as the annual check took the place of the fourth quarter maintenance check. The summation of the weekly, quarterly, and annual totals provided the yearly man hours per individual item of equipment. To best demonstrate the breakdown of man hours required for maintenance in a Communication Company, man hours were listed on a weekly, quarterly, and annual basis.

#### E. QUANTIFICATION OF MAINTENANCE MAN HOUR REQUIREMENTS

Man hours required for maintenance of individual items of equipment differ as to the item and the individual performing the maintenance. Averages per item were determined based on statistical data as described above. Equipment itemized in the following tables was of the type and numbers held by



Communication Company, First Marine Division on 1 July 1974. Variances in these lists and the authorized T/E were due to substitute items (such as the AN/PRC-25 radio set for the AN/PRC-77 radio set); additional equipment held as directed by higher authority (such as the AN/MRC-123 jeep mounted radio set, the TA-1 telephone and the M37B1 3/4 ton truck). Equipment held on 1 July 1974, but scheduled for turn-in was not included.

Equipment with no quarterly figures was primarily test equipment which required weekly maintenance and was sent to the Force Service Regiment for calibration or third echelon maintenance as required. Other equipment listed without quarterly figures either did not require quarterly checks or required weekly maintenance, identical to quarterly maintenance requirements.

The maintenance man hours for platoons/sections of Communication Company, First Marine Division, effective 1 July 1974 were as follows:

1. Radio Platoon

Radio Platoon listed substitute items (the AN/MRC-123 jeep mounted radio sets for the AN/MRC-83 jeep mounted radio set and the AN/PRC-25 radio set for the AN/PRC-77 radio set) in its equipment inventory. Directives from higher authority placed quantities of AN/PRC-25/77 radio sets and two additional AN/MRC-123 jeep mounted radio sets above T/E listed allowances under Communication Company control.



Item/Description	Qty	Weekly M/H		Qtrly M/H		Total
		Avg	Total	Avg	Total	M/H
						Year
AN/MRC-83, Radio Set, Trk	11	2.0	22.0	6.0	66.0	1408.0
AN/MRC-123, Radio Set, Trk	4	2.5	10.0	3.0	12.0	568.0
AN/MRC-110, Radio Set, Trk	6	1.5	9.0	3.0	18.0	540.0
AN/TSC-15, Comm Central	5	4.0	20.0	16.0	80.0	1360.0
AN/PRC-25, Radio Set	12	0.5	6.0	0.75	9.0	348.0
AN/PRC-77, Radio Set	8	0.5	4.0	0.75	6.0	232.0
AN/GRA-39A, Control Group	12	0.5	6.0	0.75	9.0	348.0
AN/GRA-6, Control Group	16	0.5	8.0	0.5	8.0	448.0
AN/PRC-47, Radio Set	12	1.5	18.0	2.0	24.0	1032.0
AN/PRC-75, Radio Set	4	0.5	2.0	1.0	4.0	120.0
R-390/URR, Receiver	9	0.5	4.5	1.5	13.5	288.0
URA-TIX, Generator, Trng	2	0.5	1.0	0.5	1.0	56.0
RC-292, VHF Antenna	8	1.0	8.0	1.0	8.0	448.0
MK-456, Retransmission Kit	3	0.25	0.75	1.0	3.0	51.0
M-153/U, Dictaphone	8	0.2	1.6	--	--	83.2
H-161 A/U, Headset	8	0.1	0.8	--	--	41.6
OAH-4, Code Trainer	2	0.5	1.0	0.5	1.0	56.0
HD-44, Vacuum Cleaner	2	0.5	1.0	--	--	52.0
TS-183, Battery Test Set	1	0.25	0.25	--	--	13.0
PP-6836/U, Power Supply	2	0.25	0.5	0.5	1.0	30.0
PU-565, Frequency Converter	1	0.5	0.5	2.0	2.0	34.0
Totals			124.9		265.5	7556.8

Fig. 44 - Quantification of Man Hour Requirements for Maintenance of Radio Platoon Communication-Electronics Equipment







Item/ Description	Qty	Weekly M/H		Qtrly M/H		Yearly M/H		Total M/H
		Avg	Total	Avg	Total	Avg	Total	Year
AN/MRC-83 ¼T	11	2.0	22.0	7.5	82.5	18.0	198.0	1589.5
AN/MRC-110 ¼T	6	2.0	12.0	7.5	45.0	18.0	108.0	867.0
AN/MRC-123 ¼T	4	2.0	8.0	7.5	30.0	18.0	72.0	578.0
M151A1 ¼T	2	2.0	4.0	7.5	15.0	18.0	36.0	289.0
M35A2C 2½T	1	3.5	3.5	13.0	13.0	24.0	24.0	245.0
M416 Trailer	2	0.5	1.0	1.0	2.0	2.0	4.0	62.0
M105 Trailer	6	0.75	4.5	2.0	12.0	4.0	24.0	294.0
Totals			55.0		199.5		466.0	3924.5

Fig. 45 - Quantification of Man Hour Requirements for Maintenance of Radio Platoon Motor Transport Equipment

## 2. Multichannel Radio Platoon

Equipment held by the Multichannel Radio Platoon was that specified by the T/E.

Item/Description	Qty	Weekly M/H		Qtrly M/H		Total M/H
		Avg	Total	Avg	Total	Year
AN/MRC-135, Radio Set, Trk	26	1.5	39.0	4.0	104.0	2444.0
AN/MRC-134, Radio Set, Trk	4	1.5	6.0	4.0	16.0	376.0
AN/TRC-166, Radio Set	8	1.5	12.0	1.5	12.0	672.0
TA-312, Telephone	20	0.2	4.0	0.3	6.0	232.0
PP-6836/U, Power Supply	1	0.25	0.25	0.5	0.5	15.0
HD-44, Vacuum Cleaner	1	0.5	0.5	--	--	26.0
Totals			61.75		138.5	3765.0

Fig. 46 - Quantification of Man Hour Requirements for Maintenance of Multichannel Radio Platoon Communication-Electronics Equipment



Item/ Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Annual M/H</u>		<u>Total</u> <u>M/H</u>
		Avg	Total	Avg	Total	Avg	Total	Year
AN/MRC-135, ¼T	26	2.0	52.0	7.5	195.0	18.0	468.0	3757.0
AN/MRC-134, ¼T	4	2.0	8.0	7.5	30.0	18.0	72.0	578.0
M151A1, ¼T	1	2.0	2.0	7.5	7.5	18.0	18.0	144.5
M416, Trailer	31	0.5	15.5	1.0	31.0	2.0	62.0	961.0
M105, Trailer	1	0.75	0.75	2.0	2.0	4.0	4.0	49.0
M35A2C, 2½T	1	3.5	3.5	13.0	13.0	24.0	24.0	245.0
Totals			81.75		278.5		648.0	5734.5

Fig. 47 - Quantification of Man Hour Requirements for Maintenance of Multichannel Radio Platoon Motor Transport Equipment.

### 3. Communication Center Platoon

The Communication Center Platoon inventoried one substitute item, an AN/TCC-29 for an AN/TCC-14. Fixed plant teletype fell under the purview of the Communication Center Platoon with assistance provided by the Communication/Electronics Maintenance Platoon. Quarterly maintenance was not performed on fixed plant equipment. Thirty eight (38) additional pieces of fixed plant equipment was on hand 1 July 1974 representing an additional 2124 yearly maintenance man hours. This equipment was turned over to Marine Corps Base, Camp Pendleton, California in August 1974.



Item/Description	Qty	Weekly M/H		Qtrly M/H		Total M/H
		Avg	Total	Avg	Total	Year
AN/GGC-3, Teletypewriter	8	1.0	8.0	2.0	16.0	480.0
TH-85/GCC, Terminal	28	0.5	14.0	0.5	14.0	784.0
AN/TCC-14, TT Group	27	0.75	20.25	1.5	40.5	1215.0
AN/TCC-29, Tactical TT	1	0.5	0.5	1.0	1.0	30.0
HD-44, Vacuum Cleaner	2	0.5	1.0	--	--	52.0
S-126A/G, Shelter	1	0.5	0.5	1.0	1.0	30.0
Totals			44.25		72.5	2591.0

Fig. 48 - Quantification of Man Hour Requirements for Maintenance of Communication Center Platoon Communication-Electronic Equipment

Item/Description	Qty	Weekly M/H	Total M/H	Total M/H
				Year
AN/UGC-6, Teletypewriter Set	7	2.5	17.5	910.0
FCC-19, Patch Panel	2	1.5	3.0	156.0
TT-47, Teletypewriter Set	7	0.75	5.25	273.0
TT-171, Teletypewriter Set	12	0.75	9.0	468.0
TT-187, Distributor	9	0.75	6.75	351.0
TT-192, Reperforator Set	15	0.75	11.25	585.0
TT-266, Reperforator Set	5	1.0	5.0	260.0
Totals			57.75	3003.0

Fig. 49 - Quantification of Man Hour Requirements for Maintenance of Communication Center Fixed Plant Equipment



Item/ Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Annual M/H</u>		<u>Total</u>
		Avg	Total	Avg	Total	Avg	Total	M/H Year
M151A1, ¼T	3	2.0	6.0	7.5	22.5	18.0	54.0	433.5
M35A2C, 2½T	2	3.5	7.0	13.0	26.0	24.0	48.0	490.0
M105, Trailer	1	0.75	0.75	2.0	2.0	4.0	4.0	49.0
M416, Trailer	3	0.5	1.5	1.0	3.0	2.0	6.0	93.0
Totals			15.25		53.5		112.0	1065.5

Fig. 50 - Quantification of Man Hour Requirements for Maintenance of Communication Center Platoon Motor Transport Equipment

#### 4. Air Naval Gunfire Platoon

Air Naval Gunfire Platoon listed one substitute item, the AN/PRC-25 for the AN/PRC-77.

Item/Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Total</u>
		Avg	Total	Avg	Total	M/H Year
AN/PRC-25, Radio Set	4	0.5	2.0	0.75	3.0	116.0
AN/PRC-77, Radio Set	3	0.5	1.5	0.75	2.25	87.0
AN/PRC-47, Radio Set	4	1.5	6.0	2.0	8.0	344.0
AN/GRA-39A, Control Group	6	0.5	3.0	0.75	4.5	174.0
AN/GRA-6, Control Group	9	0.5	4.5	0.5	4.5	252.0
RC-292, VHF Antenna	2	1.0	2.0	1.0	2.0	112.0
AN/PRN-18, Transponder	6	0.5	3.0	--	--	156.0
AN/UPN-32, Transponder	4	0.5	2.0	--	--	104.0
AN/PRC-75, Radio Set	4	0.5	2.0	1.0	4.0	120.0
AN/MRC-123, Radio Set, Trk	2	2.5	5.0	3.0	6.0	284.0
AN/MRC-124, Radio Set, Trk	2	3.0	6.0	4.0	8.0	344.0
TS-183, Battery Tester	1	0.25	0.25	--	--	13.0
PP-6836/U Power Supply	1	0.25	0.25	0.5	0.5	15.0
HD-44 Vacuum Cleaner	1	0.5	0.5	--	--	26.0
Totals			38.0		42.75	2147.0

Fig. 51 - Quantification of Man Hour Requirements for Maintenance of Air Naval Gunfire Platoon Communication-Electronics Equipment





Item/ Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Annual M/H</u>		<u>Total</u>
		Avg	Total	Avg	Total	Avg	Total	M/H
AN/MRC-123, ¼T	2	2.0	4.0	7.5	15.0	18.0	36.0	289.0
AN/MRC-124, ¼T	2	2.0	4.0	7.5	15.0	18.0	36.0	289.0
M151A1, ¼T	2	2.0	4.0	7.5	15.0	18.0	36.0	289.0
M35A2C, 2½T	1	3.5	3.5	13.0	13.0	24.0	24.0	245.0
M416, Trailer	2	0.5	1.0	1.0	2.0	2.0	4.0	62.0
Totals			16.5		60.0		136.0	1174.0

Fig. 52 - Quantification of Man Hour Requirements for Maintenance of Air Naval Gunfire Platoon Motor Transport Equipment.

#### 5. Wire Platoon

Wire Platoon listed one substitute item, the AN/PIQ-3 public address system for AN/TIP-2 public address system. The TA-1 telephones were maintained by directive of higher authority. The M37B1 vehicles were part of the Headquarters Battalion allowance and were utilized and maintained by the Wire Platoon.



Item/Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Total</u>
		Avg	Total	Avg	Total	Year
LC-23,Climbers	7	0.25	1.75	0.5	3.5	105.0
RL-31-E,Reel Equip	12	0.25	3.0	0.25	3.0	168.0
RL-27,Axle	18	0.2	3.6	0.25	4.5	205.2
CE-11,Reel Equip	2	0.2	0.4	0.25	0.5	22.8
H-144/U,Headset	8	0.2	1.6	0.5	4.0	99.2
AN/GIC-1,Intercomm	3	2.0	6.0	4.0	12.0	360.0
TP-9,Telephone	6	0.75	4.5	1.0	6.0	258.0
AN/TIQ-2A,Public Address	2	1.0	2.0	1.5	3.0	116.0
AN/TIP-2,Public Address	1	1.0	1.0	1.5	1.5	58.0
AN/PIQ-5,Public Address	4	1.0	4.0	1.5	6.0	232.0
AN/PIQ-3,Public Address	1	1.0	1.0	1.5	1.5	58.0
MK-356-G,Wire Splicing	10	0.75	7.5	--	--	390.0
TA-287/G,Telephone Re- peater	11	0.3	3.3	0.5	5.5	193.6
TA-207/P,Signal Assembly	4	2.0	8.0	1.0	4.0	432.0
TS-26A/TSM,Test Set	2	0.5	1.0	--	--	52.0
SB-22,Switchboard	14	1.5	21.0	1.0	14.0	1148.0
SB-86,Switchboard	4	1.5	6.0	2.0	8.0	344.0
AN/MTC-1,Central Office	1	8.0	8.0	30.0	30.0	536.0
TA-312,Telephones	136	0.3	40.8	0.5	68.0	2393.6
TA-1,Telephones	55	0.25	13.75	0.25	13.75	770.0
HD-44,Vacuum Cleaner	1	0.5	0.5	--	--	26.0
Totals			138.7		188.75	7967.4

Fig. 53 - Quantification of Man Hour Requirements for Maintenance of Wire Platoon Communication-Electronics Equipment



Item/ Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Annual M/H</u>		<u>Total</u>
		Avg	Total	Avg	Total	Avg	Total	M/H
M151A1, ¼T	4	2.0	8.0	7.5	30.0	18.0	72.0	578.0
M37B1, 3/4T	2	2.5	5.0	10.0	20.0	21.0	42.0	362.0
M35A2C, 2½T	2	3.5	7.0	13.0	26.0	24.0	48.0	490.0
M101, Trailer	2	0.75	1.5	1.5	3.0	3.5	7.0	94.0
M105, Trailer	2	0.75	1.5	2.0	4.0	4.0	8.0	98.0
M416, Trailer	3	0.5	1.5	1.0	3.0	2.0	6.0	93.0
M103A3	1	0.75	.75	2.0	2.0	4.0	4.0	49.0
Totals			25.25		88.0		187.0	1764.0

Fig. 54 - Quantification of Man Hour Requirements for Maintenance of Wire Platoon Motor Transport Equipment

#### 6. Communication-Electronics Maintenance Platoon

Communication-Electronics Maintenance Platoon had the overall responsibility for second and limited third echelon maintenance of Communication Company. Maintenance support for other companies in Headquarters Battalion was provided on an as required basis. Additionally, teletype repair for internal Division communication center was provided on a 24 hour basis. Maintenance man hours for these functions were variable and were not included below. The AN/GRM-48 van was a substitute item for the AN/GRM-86 van.



Item/Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Total</u>
		Avg	Total	Avg	Total	Year
AN/USM-117B,Oscilloscope	5	0.25	1.25	--	--	65.0
TS-147D/UP,Radar Test Set	2	0.75	1.5	--	--	78.0
TS-297/U,Multimeter	2	0.5	1.0	--	--	52.0
TV-7D/U,Tube Tester	2	0.5	1.0	--	--	52.0
TV-7A/U,Tube Tester	2	0.5	1.0	--	--	52.0
AN/PRA-4,Cable Assembly	2	0.2	0.4	0.5	1.0	24.8
AN/USM-123A,Multimeter	2	0.5	1.0	--	--	52.0
AS/USN-116B,Multimeter	5	0.75	3.75	--	--	195.0
AN/URM-48,Signal Generator	2	1.0	2.0	--	--	104.0
AN/PSM-4E,Multimeter	1	0.25	0.25	0.5	0.5	15.0
PP-2953/U,Power Supply	2	0.25	0.5	0.5	1.0	30.0
AN/URM-127,Signal Generator	1	1.0	1.0	--	--	52.0
DA-371,Dummy Load	1	0.25	.25	--	--	13.0
MK-984/U,Maintenance Kit	1	1.0	1.0	--	--	52.0
AN/USM-328,Voltmeter	3	0.2	0.6	--	--	31.2
PP-6241/U,Battery Charger	12	0.75	9.0	0.75	9.0	504.0
AN/USM-140C,Oscilloscope	2	0.25	0.5	--	--	26.0
CP-843,Frequency Counter	2	0.25	0.5	--	--	26.0
AN/URM-43C,Freq Test Set	3	0.1	0.3	--	--	15.6
AN/UGM-5,TTY Test Set	1	0.25	0.25	--	--	13.0
MK-992/VRC-12,Test Kit	2	0.25	0.5	1.5	3.0	38.0
MK-993/PRC-25,Test Kit	4	0.25	1.0	1.5	6.0	76.0
TS-183 A/U,Test Set	2	0.25	0.5	--	--	26.0
AN/USM-44B,Signal Gen	1	0.25	0.25	--	--	13.0
PP-6836/U,Power Supply	2	0.25	0.5	0.5	1.0	30.0





Item/Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Total M/H</u>
		Avg	Total	Avg	Total	Year
AN/GRM-32D, Van	1	3.5	3.5	12.0	12.0	230.0
AN/GRM-38B, Van	1	3.5	3.5	12.0	12.0	230.0
AN/GRM-48, Van	2	2.5	5.0	10.0	20.0	340.0
SIMPSON 260-P, Multimeter	12	0.25	3.0	--	--	156.0
HD-44, Vacuum Cleaner	2	0.5	1.0	--	--	52.0
AN/UEM-25E, Signal Generator	1	1.0	1.0	--	--	52.0
S-126 A/G, Shelter	1	0.5	0.5	1.0	1.0	30.0
PU-565, Frequency Converter	1	0.5	0.5	2.0	2.0	34.0
BB-451's, Battery Shop	15	0.3	4.5	--	--	234.0
Totals			52.3		68.5	2993.6

Fig. 55 - Quantification of Man Hour Requirements for Maintenance of Communication-Electronics Maintenance Platoon  
Communication-Electronics Equipment

Item/ Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Annual M/H</u>		<u>Total M/H</u>
		Avg	Total	Avg	Total	Avg	Total	Year
M35A2C, 2½T	2	3.5	7.0	13.0	26.0	24.0	48.0	490.0
M151A1, ¼T	2	2.0	4.0	7.5	15.0	18.0	36.0	289.0
M416, Trailer	2	0.5	1.0	1.0	2.0	2.0	4.0	62.0
Totals			12.0		43.0		88.0	841.0

Fig. 56 - Quantification of Man Hour Requirements for Maintenance of Communication-Electronics Maintenance Platoon  
Motor Transport Equipment



## 7. Headquarters Section

Headquarters Section did not maintain Communication-Electronic equipment but did have organic motor transport equipment.

Item/ Description	Qty	<u>Weekly M/H</u>		<u>Qtrly M/H</u>		<u>Annual M/H</u>		<u>Total</u> M/H
		Avg	Total	Avg	Total	Avg	Total	Year
M151A1, ¼T	5	2.0	10.0	7.5	37.5	18.0	90.0	722.5
M35A2C, 3/4T	1	3.5	3.5	13.0	13.0	24.0	24.0	245.0
M416, Trailer	5	0.5	2.5	1.0	5.0	2.0	10.0	155.0
M105, Trailer	6	0.75	4.5	2.0	12.0	4.0	24.0	294.0
M149, Water Buf- falo	2	1.0	2.0	2.0	4.0	5.0	10.0	126.0
Totals			22.5		71.5		158.0	1542.5

Fig. 57 - Quantification of Man Hour Requirements for Maintenance of Headquarters Section Motor Transport Equipment.

## 8. Total Man Hour Requirements

The total yearly maintenance man hour requirements for Communication Company were as follows:

Communication-Electronics Equipment	29,955.8 M/H
Motor Transport Equipment	16,046.0 M/H
Engineer Equipment	68.0 M/H
Totals	46,069.8 M/H



## V. MISCELLANEOUS TIME REQUIREMENTS

The preceding two chapters made reference to specific continuing Communication Company programs and quantified the time requirements for each. Since these programs did not comprise the total compendium of commitments, additional programs and unprogrammed commitments not quantified under training or maintenance headings, were recognized as a major drain on the man hours available to the Commander.

Time requirements for many miscellaneous directives and programs could not be properly quantified. Commitments in this category were set in response to emergency situations, uncertain time factors and other variable conditions. The below listed commitments are representative of this category: investigations required of Communication Company personnel; personal effects inventories of AWOL (Absent Without Leave) company personnel; sick call; camouflage net garnishing; service record book audits and verification; Congressional Inquiries; additional public address system requirements; equipment demonstrations and static displays; participation on Division, Battalion and Company athletic teams; change of command ceremonies; Field Activity Support Maintenance (FASMO) inspections; Inspector-General (IG) and Fleet Marine Force Pacific inspections; maintenance tool kits inventories; Unsatisfactory Equipment Reports (UER's) and operational checks of selected equipments.



Corrective maintenance programs, which must respond to equipment malfunctions, could not be quantified with certainty. Considering the size of this commitment, allowances must be made in unit planning policies for the significant time requirements necessary to sustain corrective maintenance programs.

The following programs were referenced and time factors were estimated where possible:

Program - Organized Athletics

Comments - Although specific directives covering the subject of organized athletics were not available, Marine Corps policy had been to incorporate the program into many weekly training schedules. Experience had proven that the program varies widely among commands. Some units had highly organized athletic competition and unit personnel were released for one afternoon (frequently Wednesday) to participate. Other units did not recognize organized athletics as a weekly program and, therefore, expended no time towards its support. Frequently units provided a number of semi-organized events for selected participation by the unit personnel, work load permitting. Maximum participation would include all on hand company personnel; 3.5 hours per week, which amounts to 45,326.4 yearly man hours using the standard 45.6 weeks per year.

Program - Space Heater Training

Directive - DivO 11370 Subj: Space Heaters

Comments - This training was required only of unit personnel occupying older barracks which required the use of space heaters.





The commitment, which was necessary for safety reasons, required an average involvement of twelve men one day a year, which equated to 90 man hours annually.

Program - Sky-Lab Pick Up

Directive - CG I MAF Msg 040040Z, April 1973

Comments - Communication Company support was required for support of the Sky-Lab Pick Up. Six men participated in the program for 45 days, or 2025 man hours. Though easily calculated, the Sky-Lab requirement represented a single, rather than continuing commitment. It provided an excellent example of unplanned programs requiring Communication Company support and was typical of unprogrammed but commonly experienced special requirements.

Program - Alcohol Abuse

Directives - MCO 5370.6 Subj: Alcohol Abuse by Members of the Marine Corps

DivO 5370.2 Subj: Alcohol Abuse

BnO 6710.1 Subj: Drug/Alcohol Abuse Program

Comments - Alcohol Abuse directives represented related (directive) training which could not be quantified. Communication Company was required to appoint an Alcohol Prevention and Education Officer to counsel company personnel with an alcohol problem. Man hours attributable to the counselor depended directly upon the number of men identified by the program. Man hours attributed to the individual requiring counseling but lost from other training, was dependent upon the degree of assistance required. These time requirements could range from as little as one hour per week per individual



to as much as temporary full time assignment to the base hospital or transfer to U. S. Naval Hospital, San Diego, California. Yearly quantification represented a variable time requirement of 46 to 1710 man hours per man.

Program - Brush and Forest Fire Fighting

Directive - BnO 11320.1 Subj: Brush and Forest Fire Fighting

Comments - The Communication Company commitment to fire fighting, involving Headquarters Battalion units, was clearly designated. Communication Company was required to contribute 15 men for platoon size commitments and 31 men for company size commitments. The man hours lost to the company obviously would depend upon the size and intensity of the fire experienced.

Program - Lay Leaders

Directives - DivO 1730.6A Subj: Lay Leader Program  
BnO 1730.1A Subj: Lay Leader Program

Comments - The above listed directives required four lay leaders, trained and supervised by the Battalion Chaplain, to perform lay leader duties, as an additional duty, for Communication Company. No empirical data was available to properly quantify this man hour requirement.

Program - Prevention of Heat Casualties

Directives - MCO 6200.1B Subj: Heat Casualties  
DivO 6200.5B Subj: Prevention of Heat Casualties

Comments - These directives required that all training programs in warm weather be planned on the basis of the Wet



Bulb-Globe Temperature (WBGT) Index. This index combined shade, air temperature, radiation, humidity and wind into a single value to be used as a guide for controlling training. The WBGT Index, depending on its value, might place no restrictions; might require the cessation of training for unacclimated personnel; or might require the cessation of strenuous activity by all personnel (Ref. 6, Para 4 and 5). Empirical data was unavailable to assist in the quantification of this requirement.

Program - Group Study Course

Directive - MCO 1550.3F Subj: MCI Correspondence Courses

Comments - Although some quantification was possible in the general area of the Marine Corps Institute Program, none was attempted in the area of group study. Individual platoons of Communication Company were enrolled in group study and utilized some limited working hours to study. However, personnel involvement and lesson requirements were so variable that no attempt was made to quantify the man hours expended.

Program - Inflatable Boat Competition

Directive - CG First Mar Div Msg 282341Z, June 74

Subj: Inflatable Boat, Small, Competition

Comments - This non-directive program encouraged commanders to send unit teams to a Division inflatable small boat competition. No attempt was made to quantify the program.

It must be reiterated that the programs and commitments discussed above represent those areas discovered by the authors which could not be quantified but which represented a large number of man hours lost to the Company Commander.



It was not intended to imply that the above list is all inclusive, but representative of programs that further compound the management problem faced by the Commander.





## VI. CONCLUSIONS

As stated in the introduction, the research of this thesis was to ascertain the validity of the belief that command requirements exceed available manpower in a typical Marine Corps Command. This was accomplished by identifying the requirements in a selected unit, quantifying them as completely as possible and comparing the total number of man hours required with the man hours available. The study was limited to training and maintenance requirements.

In quantifying the time available in a Communications Company, the daily routine, as established by higher headquarters, was utilized which specified a 7.5 hour day. It must be noted that this time did not include formations which occur at least twice daily nor did it include quarters clean-up and other "housekeeping" duties. Inclusion of these activities would increase the daily work hours to at least eight or a standard 40 hour (or more) work week.

The total number of annual man hours available was established to be 523,260 for T/O personnel strength and 485,640 for O/H personnel strength. The number of hours quantified in Chapters III and IV totaled 532,460.19 or 102 percent for T/O strength figures and 509,374.95 or 105 percent for O/H strength. The breakdown of these hours are as follows:



	T/O	Percent	O/H	Percent
Mission Oriented Training	252,146.5	48	237,847	49
Related (directive) Training	117,769	23	114,671	24
Career/MOS/Leadership Training	33,266.5	06	32,263.5	07
Essential Subjects Train- ing	83,193.39	16	78,508.65	16
Related (non-directive) Training	15	0	15	0
Maintenance	46,069.8	09	46,069.8	09

It must be noted that these figures represent quantified programs. Inclusion of those programs discussed in Chapter V (Miscellaneous Training Requirements) would increase the percentages proportionately. For example, inclusion of the Organized Athletics Program would add an additional 9 percent of man hours, thereby, changing the overall requirements to 111 percent for T/O and 114 percent for O/H. The conclusion is made that command requirements exceed available command man hours.

This leads directly to the second conclusion; it is imperative that the Company Commander make maximum utilization of all man hours available. Employment of every management tool in the most skillful manner possible is necessary. One such tool made available in MCO 1510.2H is concurrent training. For example, Essential Subjects Testing/Training was quantified at 16 percent of available man hours. Satisfactory performance of many of these skills can be observed during other scheduled training such as evaluation of the individual while he is actually assigned to the Battalion Guard. First Aid and Field



Sanitation plus Individual Tactical Measures can be evaluated during scheduled field problems. These actions could significantly reduce the amount of time necessary for this division of training. Realistically, however, if higher headquarters inspections maintain the strict "go/no-go" test criterion as specified, Commanders will, of necessity, practice the specific tests for each subject.

The necessity for skillful management comes sharply into focus when it is realized that each individual represents a separate variable. Efficiency becomes paramount in these circumstances as the Commander must decide when to schedule specific training. In those areas where instructors are provided by outside resources such as schools, sending one individual can be efficient, however, where instructors come from Company resources, a decision as to class size must be made. Is it efficient to train three men in Human Relations or should at least 10 men be available prior to expending the necessary resources? If every available man hour is utilized to 100 percent efficiency, the Commander will still experience non-compliance with at least 5 percent of the required tasks based on man hours quantified in this study. This fact becomes even more significant when the scope of the non-quantified programs are considered in connection with this quantified over commitment. Increasing the Company strength is not the panacea commonly believed as each additional man represents 1710 man hours of which 1641 have been committed by the existing training programs.





Within this management program, certain inflexibilities exist. The existence of 34 separate military occupational specialties precludes the ability of assignment of every individual to every task; a wireman cannot, for example, perform quarterly maintenance on a piece of communication-electronics equipment.

Unit maintenance requirements are not flexible, commitments must be met regardless of total company strength. Equipment increases to the Company T/E inventory, resulting from the addition of new or supplementary equipment, are seldom accompanied by additional maintenance personnel. The company must provide maintenance requirements from the currently available resources.

Individual platoon participation in Communication Company maintenance requirements varied in proportion to the amount of on-hand equipment and to the numbers of available personnel. Drawn from data noted in Chapter IV, the following percentages were assigned Communication Company platoons to indicate the yearly percentage of total platoon man hours required for maintenance commitments; Radio Platoon, 10.9 percent; Multi-channel Radio Platoon, 9.9 percent; Communication Center Platoon, 5.7 percent; Air Naval Gunfire Platoon, 8.2 percent; Wire Platoon, 9.7 percent; and Communications-Electronics Maintenance Platoon, 14.5 percent. Percentages were calculated on the premise that all platoon personnel were available for assigned maintenance duties. Personnel assigned to guard duty, mess duty, or on leave would and do cause some variance to the platoon maintenance assignments.





The rigidity of maintenance is questioned as to its necessity. One Marine Division demands weekly maintenance performance whereas another Marine Division demands monthly maintenance performance as a bare minimum for equipment where maintenance is not specified by technical manuals.

The next conclusion to be discussed deals with the necessity for the establishment of a priority system defined in terms of unit and individual training. Marine Corps Order 1510.2H established a system which included Mission Oriented Training; Related (Directive) Training; Career/MOS/Leadership Training; Essential Subjects Testing/Training; and Related (Non-directive) Training as the prioritized divisions within the system but defined the training as applicable to individual Marines. This thesis has identified all quantified programs as being part of one of these prioritized divisions. Communication Company, with 49 percent of its quantified programs in the first priority division, would appear to be in an excellent posture, however, a closer analysis of this 49 percent revealed that only six (6) percent of the training actually involved the unit working together as a team. Twenty-two percent of the time involved operation of the Division Communications Center (an activity which required only one of seven platoons) while 13 percent of this time was directed to Marksmanship and Physical Fitness Training.

Equally important to the establishment of a priority system is its reception and implementation. Unless all echelons of command comply with the spirit and intent of the program,



the benefits may be lost. An excellent example is the Orienteering Program. MCO 6100.8 establishes the program as non-directive and MCO 1510.2H, in defining related training, states "An example of related training (non-directive) would be orienteering because the Marine Corps Order addressing this type of training encourages but does not require that it be conducted" (Ref. 3, Para. 7,b). Division and Battalion Orders however, changed the status of this program to directive which added an additional 2,553.5 committed man hours per year to Communication Company.

Accompanying this is the conclusion that every echelon in the command structure which has the authority to establish or modify programs must do so in a very judicious manner. Recognition of the over committed condition should be uppermost in the minds of these higher commands and every effort should be made to alleviate the problem. Utilization of existing information; statement of acceptable trade-offs between programs; and realistic placement of all programs into a priority system are methods that these echelons can use to assist the subordinate commander.



## VII. RECOMMENDATIONS

The conclusions reached heretofore lead the authors to propose the following recommendations:

1. Establish an operational priority system for all units based upon that system described in Marine Corps Order 1510.2H and define it in terms of Unit as well as Individual requirements. A satisfactory definition of Unit Training found in MCO 1510.2H is:

"Unit Training - That training which serves to prepare a unit to perform and accomplish its mission as a team. Unit training begins with the training of the smallest unit and progresses to training of the largest unit. It integrates the smaller units into larger coordinated teams," (Ref. 3, Para. 3,b).

Concomitant in this definition is inclusion of all maintenance authorized to be performed by the unit, for without operational equipment, no unit can effectively perform its mission. A suggested priority system could be:

- |            |  |
|------------|--|
| Priority 1 | Unit Training<br>(Includes all maintenance authorized to be performed by the Unit.)                                      |
| Priority 2 | *Mission Oriented Training<br>(Includes physical fitness for all and marksmanship for combat and combat ground support.) |
| Priority 3 | Related (directive) Training   |
| Priority 4 | *Career/MOS/Leadership Training  |
| Priority 5 | *Essential Subjects Testing/Training   |



## Priority 6      Related (non-directive) Training

\*When not covered in Unit Training or Mission Oriented Training.

Acceptance of such a priority system could lead to varying accomplishment of training, depending on the command, since some units (Force Service Regiment for example) have larger maintenance responsibilities than do other units (Infantry Regiment for example). In conjunction with this, a close examination of the related (directive) training requirements could be accomplished. The purpose of this examination would be to ascertain if any of the existing related (directive) programs could be changed to related (non-directive) programs. A separate priority system might be established for Combat, Combat Support and Combat Service Support Units, with the major differences being the unit training requirements and the related (directive) and related (non-directive) requirements. All new programs should state what priority they have in relation to existing requirements.

2. Formalize a Criteria Manual for the Communications-Electronics field to insure qualified personnel are assigned to the unit concurrent with the introduction of new equipment or with additional equipment to a unit's existing Table of Equipment.

3. Conduct a study, to include vendors of presently held equipment to determine the validity of existing maintenance time requirements, particularly for equipment in a non-operational status. Formalize the results of the study by establishing standard maintenance requirements and criterion for all Marine units of similar type.







4. Relax the strict "go/no-go" test criterion for Essential Subjects Testing. As stated in Chapter III, each performance objective specified for each Essential Subject would constitute a separate performance test. Also, each performance test consisted of specified step-elements which must be performed: as stated on the test page; in the sequence stated; and distinctly and confidently. Any deviation from these standards constituted a "no-go." Close evaluation of these step-elements discloses that some are inseparable from the performance objective. An example of this is step-element "C" for the objective. "Donning the M17 Field Protective Mask." This step states:

"1. Grasp the facepiece with both hands and slide thumbs inside so that the facepiece is opened to the fullest extent.

2. Place your chin in the chin pocket and pull the head-harness over your head," (Ref. 12, Pg. 2). Failure to accomplish this step should result in a "no-go." Other steps support the objective and assist in its accomplishment. For example, step-element "B" which states:

"1. Open your carrier with your left hand and hold it open.

2. Remove your mask by grasping the facepiece just below the eyepiece with your right hand," (Ref. 12, Pg. 2). If the testee should, for some obscure reason, open the carrier with his right hand, find the mask in backwards, grasp it by the webbing with his left hand and remove it, he would technically receive a "no-go." The fact remains that he got



the mask out and can put it on which is the purpose of the evaluation. Rather than being awarded a "no-go," he might be docked a specified number of points. Upon conclusion of the performance evaluation, any "no-go" or a score less than a specified total would constitute failure of the evaluation. Relaxation of the criterion to this extent would not affect the required levels of proficiency as specified in MCO 1510.2H and could encourage concurrent training in these subjects.

These recommendations are obviously not the only actions which could be taken to alleviate the problems of over commitment described in this thesis. However, it is believed that implementation of these recommendations could be the initiation of the actions required to change the existing situation of too few man hours to meet the directed tasks. Although directions for initiation of the recommendations would come from Headquarters Marine Corps, recognition of the problem; establishment of a priority system; accepting trade-offs for new and existing programs must be carried out at all echelons of command.



## LIST OF ACRONYMS AND ABBREVIATIONS

ANGF	Air Naval Gunfire Platoon
ATD	Annual Training Duty
Avg	Average
AWOL	Absent Without Leave
BLT	Battalion Landing Team
Bn	Battalion
BnO	Battalion Order
CM	Corrective Maintenance
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
COMM CENTER	Communication Center Platoon
COMMEX	Communication Exercise
COMMSEC	Communications Security
CPX	Command Post Exercise
DivBul	Division Bulletin
DivO	Division Order
dtd	dated
E-3	Enlisted, third rank, Marine Lance Corporal
E-4	Enlisted, fourth rank, Marine Corporal
E-5	Enlisted, fifth rank, Marine Sergeant
E-6	Enlisted, sixth rank, Marine Staff Sergeant
E-7	Enlisted, seventh rank, Marine Gunnery Sergeant
E-8	Enlisted, eighth rank, Marine Master/First Sergeant
EAM	Electronic Account Machine



FASMO	Field Activity Support Maintenance Office
Fig	Figure
FMF	Fleet Marine Force
FMFLANT	Fleet Marine Force Atlantic
FMFPAC	Fleet Marine Force Pacific
FMFPAC O	Fleet Marine Force Pacific Order
FSCC	Fire Support Coordination Center
Gen	Generator
HF	High Frequency
Hqtrs	Headquarters Platoon
IG	Inspector-General
LFTPAC O	Landing Force Training Center, Pacific, Order
MAB	Marine Amphibious Brigade
MABLEX	Marine Amphibious Brigade Exercise
MAF	Marine Amphibious Force
MAFLEX	Marine Amphibious Force Exercise
Maint	Communication/Electronics Maintenance Platoon
MARDIV	Marine Division
MAU	Marine Amphibious Unit
MAULEX	Marine Amphibious Unit Exercise
MCI	Marine Corps Institute
MCO	Marine Corps Order
MCRD	Marine Corps Recruit Depot
MEDS	Mechanized Embarkation Data System
M/H	Man Hour
MIMMS	Marine Corps Integrated Maintenance Management System
Min/Yr	Minutes per year





Mo	Month
MOS	Military Occupational Specialty
Msg	Message
MTT	Mobile Training Team
Multi-Chan	Multi-Channel Radio Platoon
NBC	Nuclear, Biological, Chemical
NCO	Non-Commissioned Officer
O-3	Officer, third rank, Marine Captain
O-5	Officer, fifth rank, Marine Lieutenant Colonel
O/H	On Hand
OMCR	Organized Marine Corps Reserve
PFT	Physical Fitness Test
PIT	Physical Inventory Test
PM	Preventive Maintenance
Qtr	Quarter
Qty	Quantity
Radio	Radio Platoon
Ref	Reference
RLT	Regimental Landing Team
SACC	Supporting Arms Coordination Center
SCUBA	Self Contained Underwater Breathing Apparatus
SL	Stock List
S/NCO	Staff Non-Commissioned Officer
SOP	Standing Operating Procedure
Subj	Subject
T	Ton
TAM	Table of Authorized Material



T/E	Table of Equipment
TM	Technical Manual
T/O	Table of Organization
Trk	Truck
Trng	Training
TT	Teletypewriter
UCMJ	Uniform Code of Military Justice
UER	Unsatisfactory Equipment Report
UET	Unit Endurance Test
Veh	Vehicle
WBGT	Wet Bulb-Globe Temperature
Wk	Week
Wire	Wire Platoon
Yr	Year



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