NAVAL POSTGRADUATE SCHOOL

Monterey, California

THESIS

AVIATION SQUADRON ORGANIZATION DEVELOPMENT OF THE NAVY'S LIGHT AIRBORNE MULTI-PURPOSE SYSTEM (LAMPS) Mk III

by

John Richard Bush

December 1981

Thesis Advisor: John W. Creighton

Prepared for: Coordinator, LAMPS MK III Fleet Introduction Team, Manassas, Va.

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NPS-54-81-017	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Aviation Squadron Organization Development of the Navy's Light Airborne Multi-Purpose System (Lamps) Mk III		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis December 1981
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) John Richard Bush		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93940		12. REPORT DATE December 1981
		13. NUMBER OF PAGES 182
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report)
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Light Airborne Multipurpose System (LAMPS), Fleet Readiness Squadron (FRS), Helicopter Antisubmarine Warfare Light (HSL), Antisubmarine Warfare (ASW) Recovery, Assits, Securing,and Transversing (RAST), SH-60B SEAHAWK, Anti-Ship Surveillance and Targeting (ASST), Data Link, Aircorne Tactical Officer, Squadron Manpower Documents, Naval Flight Officer, (continued on p. 2)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This paper examines the evolution of the U.S. Navy's SH-60B, LAMPS Mk III aircraft and squadron methodology. It analyzes current HSL organization design and introduces alternative organization structures to support this new helicopter community when it is introduced in the fleet in 1983-84. It begins with a statement of the issue which includes a concise historical overview of the LAMPS program and discusses its tactical and support missions. It next examines the conventional naval air squadron organization methodology from which LAMPS squadrons are designed and manned. A statistical analysis

Key Words (continued from p. 1):

Projected Operational Capabilities, Projected Operational Environment, Replacement Air Group, Operational Readiness, Team Maintenence Organization, Multi-Rated Production Centers, Autonomous [illegible]ence Units, COTAC.

Abstract (continued from p. 1):

of operational fleet HSL squadrons is pres[illegible] [illegible] [illegible]ncludes that conventional squadron design methodology does not su[illegible] [illegible] unique LAMPS community. Four general alternative organization models a[illegible] [illegible]d followed by a discussion of the possible utilization of the Naval [illegible] Officer in the LAMPS System. The paper concludes with a summary [illegible] the p[illegible]sals from which organization redesign may result and offers rec[illegible]mmendations to that process.

Approved for public release, distribution unlimited

Aviation Squadron Organization Development of the Navy's Light Airborne Multi-Purpose System (LAMPS) Mk III

by

John Richard Bush
Lieutenant, United States Navy
B.A., Jacksonville University, 1975

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL

December 1981

Author: John R. Bush

Approved by: John W. Creighton, Thesis Advisor

Francis D. Harding, Second Reader

Chairman, Department of Administrative Sciences

W. M. Woods, Dean of Information and Policy Sciences

ABSTRACT

This paper examines the evolution of the U.S. Navy's SH60-B, LAMPS Mk III aircraft and squadron methodology. It analyzes current HSL organization design and introduces alternative organization structures to support this new helicopter community when it is introduced in the fleet in 1983-84. It begins with a statement of the issue which includes a concise historical overview of the LAMPS program and discusses its tactical and support missions. It next examines the conventional naval air squadron organization methodology from which LAMPS squadrons are designed and manned. A statistical analysis of operational fleet HSL squadrons is presented which concludes that conventional squadron design methodology does not support the unique LAMPS community. Four general alternative organization models are proposed followed by a discussion of the possible utilization of the Naval Flight Officer in the LAMPS System. The paper concludes with a summary of the proposals from which organization redesign may result and offers recommendations to that process.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. INTRODUCTION

A. STATEMENT OF THE ISSUE

1. A Need for Organization Redesign

The United States Navy is in a period of rapid technological growth and change. Sophisticated and complex weapon systems, as well as advanced platforms with which to deploy them, are being developed, produced, and introduced into the fleet. One such project is the Navy's new Light Airborne Multipurpose System (LAMPS) Mark III. Such growth in weapons technology coincides with the sharp decline in recent years in the number of ships and aircraft, and the Navy's inability to obtain and retain sufficient numbers of skilled personnel. These factors have a significant impact on the capability of the Navy to operate, maintain, and support new advanced systems. Efficient management of strained economic and manpower resources has assumed critical importance. New and innovative methods of training, maintenance, logistic support, deployment, operation, and manning are required.

One area of concern is the composition and structure of naval aviation squadrons. Naval aviation is comprised of a variety of sophisticated aircraft types engaged in a wide assortment of missions. Although the planes and missions are numerous and diverse, a basic common denominator exists throughout the system: the naval air squadron organization. The traditional squadron structure is based on shipboard organization methodology, which is the cornerstone of naval organizational structure. It was designed to meet the needs of a "typical" air squadron which is permanently shore based, or deployed aboard aviation ships as a unit.

This organization has worked well for fixed wing--attack (VA), fighter (VF), patrol (VP), antisubmarine (VS), and helicopter antisubmarine (HS) squadrons--because they normally maintain squadron integrity both ashore and at sea.

However, a large and growing segment of naval aviation is composed of aircraft systems which deploy in what is considered by many in the Navy to be "nonstandard" ways. An excellent example is the new Light Airborne Multipurpose System (LAMPS). This recently adopted program will result in substantial growth to the rotary wing community. Ten new squadrons, including a Fleet Readiness/Training Squadron (FRS) on each U.S. coast, and 2,352 new billets will be required. At present, no organization structure exists to support this growth. Initial planning for these new nonstandard squadrons calls for them to be manned according to current Helicopter Antisubmarine Light (HSL) squadron manning methodology. Although this approach conforms well to traditional aviation squadron's organizational concepts, it fails to support adequately the HSL operating mode. It has not worked well in the LAMPS Mk I community.

The mission of these squadrons is to provide either single or dual helicopter detachments which deploy aboard small surface combatants. Each deployed detachment is under the jurisdiction of a different operational commander. The squadron retains only administrative control of these deployed units.

The current HSL organization structure maintains both shore based (nondeploying) and sea duty (deployable) personnel. Approximately 40 percent of squadron manpower serves as overhead in these shore duty billets to make this type of organization viable. The remaining 60 percent of key squadron positions are filled by sea duty personnel who transfer in and out of squadron billets to meet detachment requirements as dictated by varing deployment schedules. This places a drain on personnel, increases training requirements, and creates an overall lack of squadron stability. Added to this is the fact that the missions of the squadron and its operating units (the detachments) essentially are different and often are conflicting. Also, important functions such as training and maintenance are inefficiently duplicated by each squadron within a wing. The end result is that the squadron cannot train its personnel effectively, nor adequately maintain its at-home aircraft assets.

Most HSL squadrons employ the standard organizational structure, but operate as a matrix organization in which personnel assets are shuffled between departments and detachments to meet changing operational and administrative requirements. This works against operational effectiveness and creates a climate in which people tend to feel insignificant in terms of total results. Careful management and effective leadership can diminish these tendencies, but eventually the sheer size of the problem depletes squadron vigor and effectiveness.

Navy planning documents call for the 10 new LAMPS Mk III squadrons to be structured and manned similarly to existing HSL squadrons. Obviously, many of the deficiencies discussed above could be solved by an unlimited supply of personnel and dollars. This, however, is not available. The addition of eight new operational, and two new fleet replacement HSL squadrons for the Mk III, requires a delta increase in the Navy's already exhausted personnel assets. The only viable alternative is to adjust or redesign the <u>organizational structure</u> on a wing basis that considers real world manpower constraints.

Estimates indicate that by 1987, more than <u>one-third</u> of naval aircraft in the inventory will be of the rotary wing types which deploy on a "detachment" basis. Beyone 1990, new Verticle/ Short Takeoff and Landing (V/STOL) aircraft such as the LTV-A7C Corsair will be entering the fleet, and will be deployed in nontraditional ways.

the purpose here is to identify key issues in squadron organization and suggest possible alternatives.

The first generation of these new naval air squadrons is the topic of this paper. The LAMPS Mk III program provides the Navy with a challenge, and a unique opportunity to address the weaknesses in HSL organization and manning, as well as to address the special needs of a sophisticated new systems era. Many aspects of this issue are emotional and entrenched in tradition. This report develops the need for an analytical approach to identify key issues regarding squadron organizational design, and suggests possible alternatives.

B. BACKGROUND INFORMATION

1. <u>The Evolution of the Light Airborne Multipurpose System (LAMPS) Mk III</u>

The Light Airborne Multipurpose System is part of a complete weapon (ship/air) system designed to maintain part of our national defense program: to keep sea lanes open, and to protect high value military and commercial ships during a major conflict.

The LAMPS project is a $3.9 billion dollar long range program that is the Navy's reaction to a deficiency in surface fleet antisubmarine warfare (ASW). The program evolved in 1970 from an urgent requirement of the Chief of Naval Operations (CNO) for a program to develop a manned helicopter that would support and serve as a ship's tactical ASW air arm. The advanced sensors, processors, and display capabilities aboard the helicopter would enable the ship to extend its capabilities beyond the classic line-of-sight limitations for surface threats, and the distance limitations for acoustic detection, prosecution, and attack of underwater threats.

The LAMPS role initially was filled (in the early 1970s) by the installation of shipboard equipment and conversion of the Kaman SH-2 helicopter (already in the Navy's inventory) to a LAMPS configuration. As that proved successful, the Navy planned for a Mk II version of employing similar electronics but different helicopter platforms.

In FY 1972, the CNO abandoned the project for the current system which adds improved electronics as well as greater range, and the Recovery, Assist, Securing, and Traversing (RAST) system for all-weather shipboard recovery. As illustrated in Figure 1, this aircraft "haul-down" system expands LAMPS aircraft recovery to a sea-state Condition 5 (winds to 33 knots, and sea wave swells to 13 feet).

The S-70L, since designated SH-60B Seahawk, was United Technology Sikorsky Division's submission for the Navy's LAMPS Mk III competition. It was selected as the winner in September 1977 in preference to the Boeing Vertol's Model 237. Detail design of the Seahawk was initiated by a U.S. Navy award to Sikorsky of a $2.7 million sustaining engineering

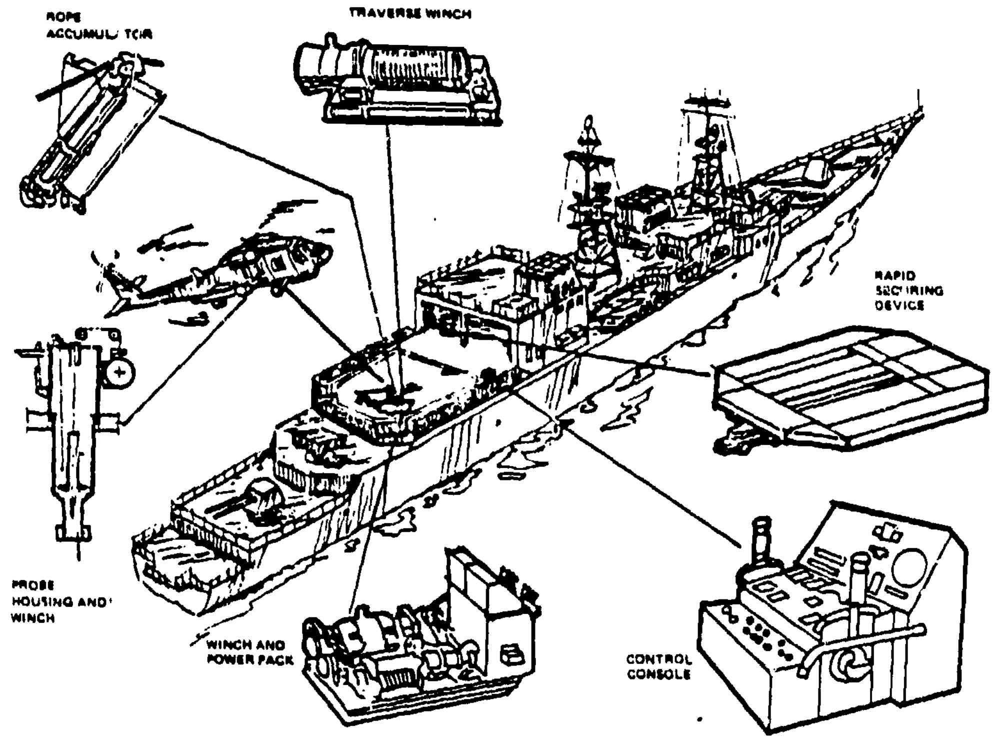


Figure 1: LAMPS Mk III RAST System

contract. Concurrently, General Electric was given a $547,000 contract for further development of the T700-GE-401 advanced turboshaft engine to provide increased power and improved corrosion resistance. Additionally, a $17.9 million contract went to IBM Federal Systems to continue development of the avionics essential for the SH-60B to fulfill the LAMPS Mk III role.

On 28 February 1978, it was announced that the U.S. Department of Defense (DOD) had authorized full-scale development of the SH-60B and had awarded Sikorsky Aircraft a $109.3 million contract for the development, manufacture, and flight testing of five prototypes, plus a further airframe for ground testing. Earlier, Sikorsky had updated the original UH-60A Black Hawk mockup to SH-60B configuration. This aircraft was reviewed formally by Department of Defense officials prior to the announcement of the contract award. In July and August 1978, this mockup was used for shipboard compatibility trials on board the frigate USS Oliver Hazard Perry (FFG-7), and the Spruance class destroyer, USS Arthur W. Radford (DD-968).

In mid-September 1978, the Navy responded to congressional demands and reported to the Senate Armed Services Committee that it had restructured the LAMPS project to reflect $401.2 million in cuts without adversely affecting the $3.9 billion overall program. In earlier sessions, the House recommended ending the program in favor of updating the existing LAMPS Mk I system.

In February 1979, the main transmission of the SH-60B completed qualification trials during which it was tested to a maximum of 3600 shaft horsepower (shp). That performance was 600 shp in excess of the Navy's mission performance specifications. On 29 March 1979, it was announced that final assembly of the first Seahawk prototype had begun, and the first flight was made on 12 December 1979. The remaining four prototypes were flown in early mid-1980, and operational evaluation began in November of that year in time to obtain the results for a Defense System Acquisition Review Council (DSARC) at the Pentagon. With DSARC's support, the Navy was able to gain congressional approval to procure 204 of these new helicopters for deployment onboard 114 naval ships of four classes: the DD-963 Spruance class ASW destroyer, the DD-993 Kidd class and CG-47 Aegis equipped guided missile fleet air defense destroyers, and the FFG-7 Oliver Hazard Perry class guided missile frigate.

The LAMPS Mk III weapon system embodies a ship and air integration ASW/ASST (antiship surveillance and targeting) concept. Figure 2 graphically depicts the two subsystems and their elements.

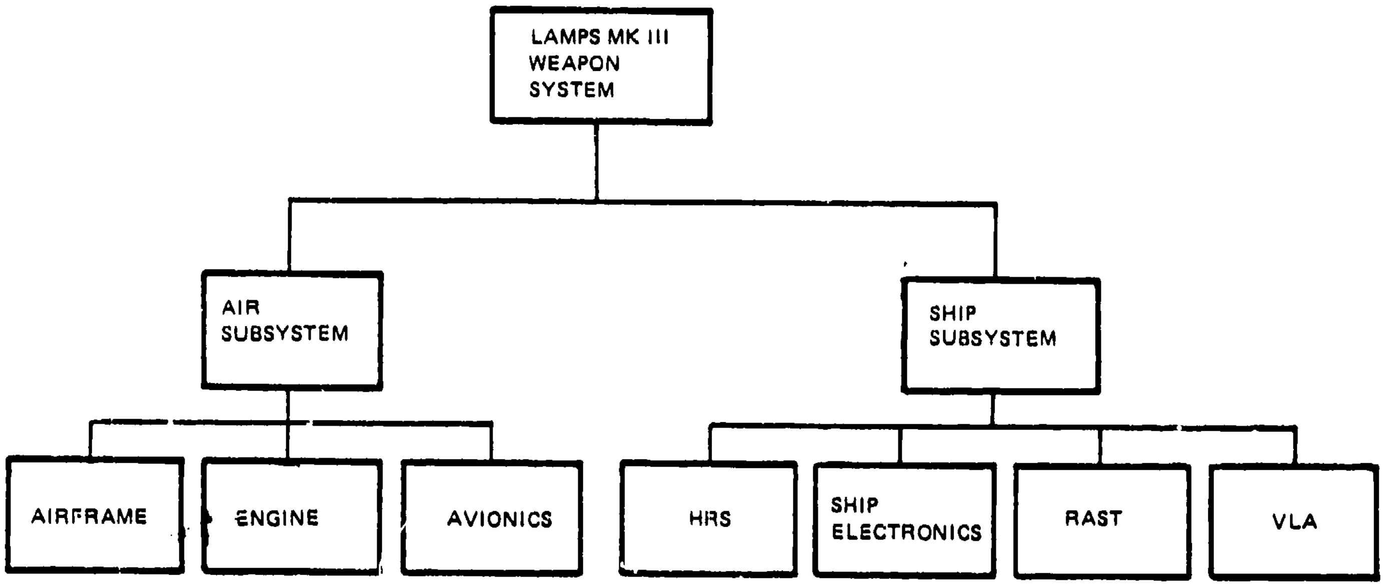


Figure 2: LAMPS Mk III Weapon System

The integrated ship/air weapon system consists of the following functional areas:

a. "System Control and Management" provides the necessary controls and processing on both the aircraft and the ship to perform system mode control, status monitoring, tactical processing, and data recording and extractions.

b. "Sensor" functions in ASW redetect, classify, identify, and localize enemy submarines. (Specific ASW equipment and processes are discussed in later text.) Against surface threats, an airborne 360° surface search radar is provided for detection of threat missile launch platforms. Electronic support measures (ESM) equipment provides a passive radio frequency (RF) classification capability for detection of surface and subsurface threats.

c. "Display" functions provide controls and displays to both shipboard and airborne Mk III system operators to aid them in helicopter and tactical direction, and in evaluating data from acoustic, radar, ESM, and magnetic anomaly detector (MAD) sensors. The parent ship has tactical displays for helicopter direction and control, including such functions as: navigation, data link control, ASW control, and antiship status monitoring. Shipboard ESM display equipment has the capability to control aircraft ESM equipment, and to enter threat data through the data system console. Additionally, the shipboard acoustic sensor operator can control and display acoustic data for acoustic threat detection and classification.

d. The "ordnance" function allows selection and launch of sonobuoys and torpedoes. Torpedo arming settings and operational mode can be preset onboard either on the surface ship or in the aircraft. Deployment of sound underwater source (SUS) and chaff from either the ship or the aircraft is accomplished by use of special auxiliary equipment. Sonobuoy selection and launch can be done either manually or automatically by onboard computer. Torpedo selection and deployment always are done manually by the pilot <u>or</u> airborne tactical officer.

e. "Communications" equipment provides secure and unsecure voice communications, acoustic sensor, tactical navigation, ESM, and radar data transmissions, as well as helicopter command and control functions between the aircraft and the ship via UHF, VHF, secure data link, and intercomputer communications networks. (See Figure 3.)

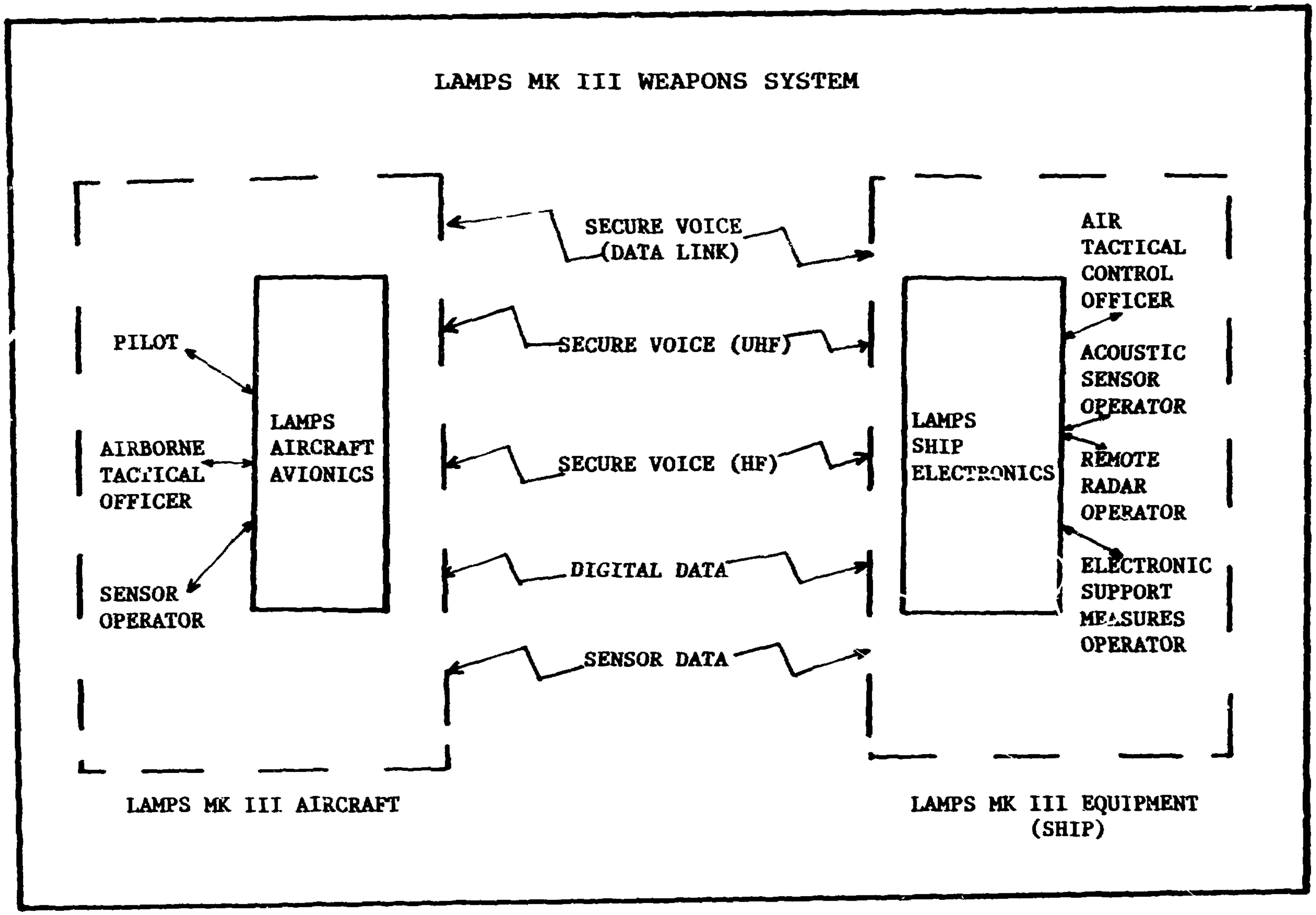


FIGURE 3 - LAMPS MK III Communication System

f. The "navigation" function determines and maintains the helicopter and ship's positions with respect to a fixed geographic reference point, and provides flight and tactical information for display to both helicopter and shipboard operators. Provisions are made to update the aircraft position via data link, TACAN, or radar/IFF data.

2. <u>Mission Profile and Weapon System Overview of the LAMPS Mk III</u>

The LAMPS Mk III has been designed to assist the Navy combat team in moving freely on the seas and in the sky, while denying that same freedom to an enemy. In the fulfillment of the Navy's sea control mission, LAMPS Mk III will encounter a threat that has many dimensions. The threat encompasses a hostile submarine fleet and missile-equipped surface ships. The primary missions of the new LAMPS Mk III weapon system are those of antisubmarine warfare (ASW), and antiship surveillance and targeting (ASST). (See Figure 4.)

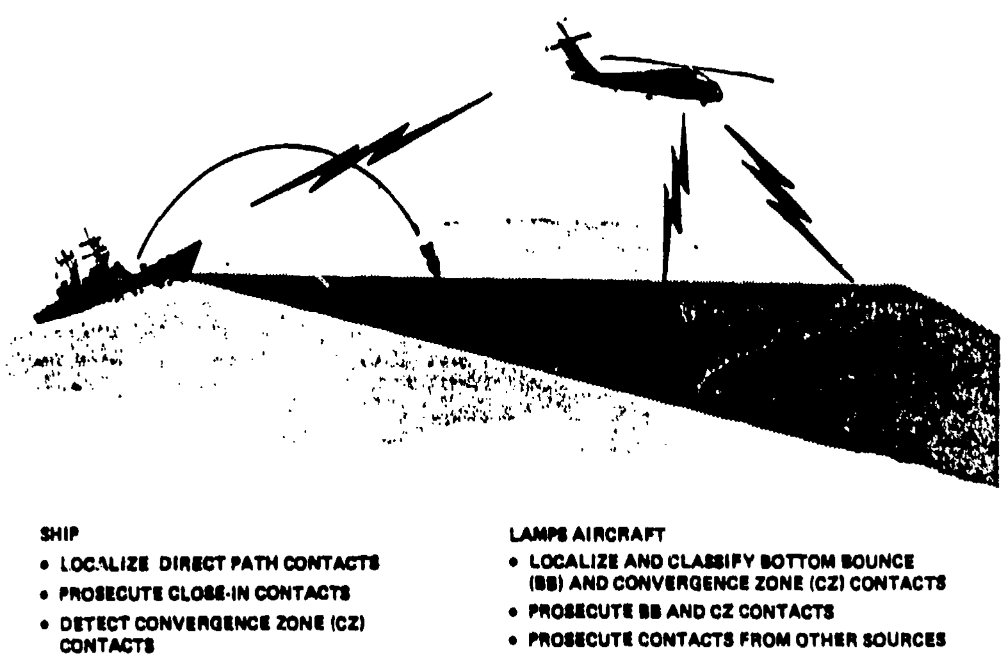


Figure 4: LAMPS ASW Mission Profile

The Seahawk also is required to perform secondary missions which include search and rescue (SAR), medical evacuation (Medevac), vertical replenishment (Vertrep), and communication relay (Comrel). The SH-60B helicopter provides an airborne platform for a variety of ASW equipment and other sensors whose information is relayed real time via fully digitized data link back to the combat information center (CIC) of its parent frigate or destroyer. This multichannel, encrypted data link communications system, operating in a ship-to-aircraft mode, enables CIC officers to control the airborne sensors directly, thereby extending the ship's ASW tracking and radar search capabilities far beyond the horizon. In this respect, the LAMPS Mk III will give the new destroyers and frigates an elevated platform for limited electronic sensors and remote torpedo weapons stores delivery capability previously enjoyed exclusively by aircraft carriers.

Principal sensors for ASW against submerged submarines are sonobuoys, which can be dropped by the LAMPS aircraft, and a magnetic anomaly detector (MAD), which measures variations in the earth's natural magnetic field caused by a transitory ship or submarine. Through use of the sophisticated LAMPS Mk III compatable shipboard tactical data system hardware, the ship provides tactical direction, acoustic sensor processing, redetection, and evaluation in the execution of its primary ASW and secondary missions. Additionally, the SH-60B will be able to alert task group ships to the proximity of enemy ships for own-ship defense to target McDonald Douglas Harpoon missiles and General Dynamics Tomahawk Cruise missiles in the ASST mission role.

The operational software for the SH-60B will total approximately 215,000 words, with an additional 900,000 words of software devoted to self-test and fault isolation. Extensive built-in test analysis is provided so that shipboard maintenance personnel need only replace one or more of the 100 "black boxes" on board that prove defective in preflight tests. This time-saving, self-diagnostic maintenance operation can be accomplished without requiring shipboard test equipment. IBM also developed approximately 250,000 words of operational software for the shipboard system, and an additional 980,000 words of computer code is projected for shipboard system test and fault isolation.

3. Typical ASW/ASST Mission Scenarios

a. ASW

In an ASW mission, the SH-60B Seahawk would transit from the parent ship when a suspected threat is detected by the ship's towed-array sonar, hull-mounted sonar, or by other sources. Operating through the data link and remotely controlled by a ship's operator, the LAMPS search radar searches the contact area. Enroute, the aircrew deploys an SSQ-36 bathytermographic sonobuoy into the water to guage temperature and transmitability to get the best possible acoustical return. The aircraft proceeds to the estimated target area (area of probability) where expendable passive sonobuoys are pneumatically deployed in a pattern designed to redetect and entrap the submarine. (Twenty-five sonobuoys may be carried by each deployed Seahawk.) Acoustic signatures detected by the buoy's variable depth hydrophones are transmitted over a VHF frequency band to the aircraft where they are coded and retransmitted to the ship for interpretation, analysis, and integration with data from other ship's sensors.

The Seahawk also has a limited capability to interpret the acoustic data by use of its onboard analyzer detection set (AN/DYS-1). When the location of the threat has been determined with adequate precision, the aircraft descends below the radio horizon and operates independently from the ship to execute final confirmation by employing active or passive sonobuoys, or by trailing its magnetic anomaly detector behind the aircraft. Passive sonobuoys can determine the direction of the target with respect to the buoy. In the active mode, target range (from the buoy) can be determined by the use of reflected energy or echoing. When specific attack criteria are achieved, an attack can be initiated by launching one or both of the MK-46 homing torpedoes that the Seahawk carries.

b. ASST

LAMPS would be launched for its ASST mission in response to information received by the ship of the possible presence of a threat. The helicopter radar and ESM sensors, operating on remote commands from the parent ships, greatly increases the capability to detect other ships by extending the search horizon, and by providing search data to the ship for correlation with other data. The parent frigate or destroyer normally maintains tactical control of the helicopter throughout the mission, although, as in the ASW role, the LAMPS Mk III can operate independently in its ASST mission duties. The LAMPS Mk III system can spend up to two hours on station 100 mautical miles (nm) away from the parent ship, compared to the limited range of 35 nm and one-hour prosecuting endurance of the LAMPS Mk I system.

4. LAMPS Mk III Aircrew/Shipboard Tactical Team Functional Descriptions

The LAMPS Mk III system requires a total of seven personnel: four on the ship, and three aircrew members. The helicopter crew is comprised of a pilot in the right seat; an airborne tactical officer (ATO), who doubles as a copilot, in the left flight station position; and an enlisted sensor operator (AW). When the aircraft is below the VHF radio frequency horizon, the ATO assumes mission command and acts autonomously from the parent ship.

On the ship, tactical LAMPS duties are divided among the air tactical control officer (ATCO--an officer who is the mission commander), the acoustic sensor operator (ASO), the remote radar operator (RRO), and the electronics support measures operator. Table 1 and Figure 5 depict the duties and tasks in greater detail.

It is apparent that the mission of the LAMPS Mk III system is one of teamwork and coordination. This paper will approach the management design of this advanced weapon system's squadron organization with an emphasis on providing a structure to support the LAMPS program while striving to work within the manpower constraints and retention dilemmas that currently plague the naval service.

Table 1: LAMPS Mk III Shipboard Operator Functions

Air Tactical Control Officer (ATACO):

a. Direct tactical operations
b. Direct the LAMPS mission
c. Control ship/aircraft communications
d. Control Data Link
e. Initialize the system and recover from system failures
f. Generate fly-to-points
g. Select sonobuoys for deployment
h. Designate sonobuoys to be processed
i. Localize contacts
j. Enter target tracks
k. Authorize prosecution

Acoustic Sensor Operator (ASO):

a. Process sonobuoy acoustic data
b. Tune sonobuoys
c. Detect submarine
d. Identify submarine
e. Classify submarine
f. Enter contact position data
g. Control active sonobuoys

Remote Radar Function:

a. Operate airborne search radar
b. Operate airborne IFF (identification, friend or foe) interrogator
c. Detect and track targets

Electronic Support Measures (ESM) Function:

a. Establish threat processing parameters
b. Control airborne ESM receiver
c. Identify/classify emitters
d. Enter ESM bearing lines
e. Fix emitter positions

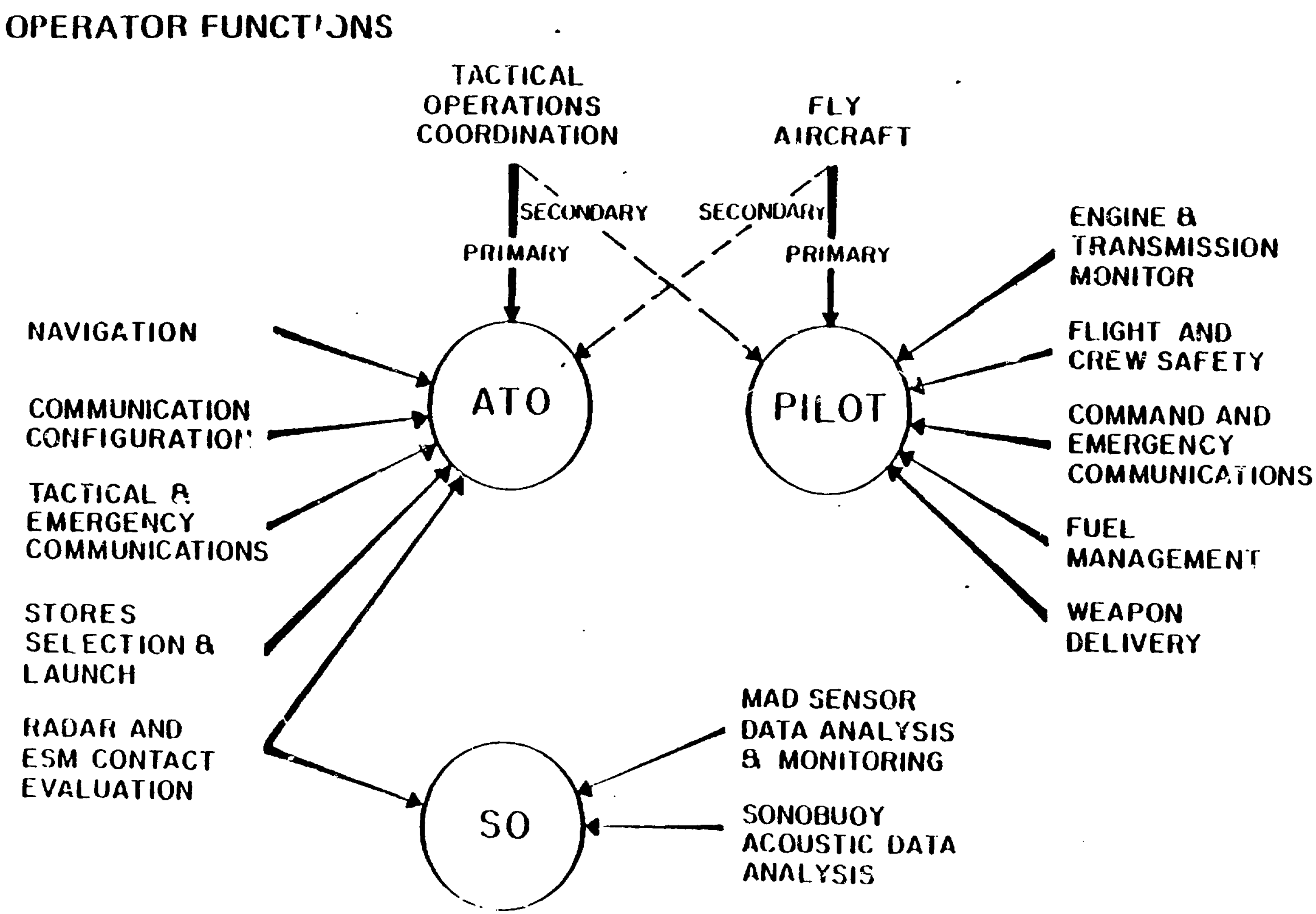


Figure 5: LAMPS Mk III Aircrew Operator Functions

II. LAMPS SQUADRON ORGANIZATION STRUCTURE

A. CURRENT ANTISUBMARINE WARFARE HELICOPTER LIGHT SQUADRON (HSL) ORGANIZATION

1. Purpose

The purpose of this chapter is to acquaint the reader with the current organization structure of the LAMPS Mk I squadron, and the methodology employed by the Navy to determine squadron manpower requirements. The structure of the current HSL squadron is based on traditional naval shipboard organization methodology, which is the design medium of all U.S. naval organization structures. Current planning decisions call for the design of the 10 new LAMPS Mk III air squadrons to follow this organization blueprint.

In reviewing this section the reader should keep in mind that, unlike any other naval organizational structure, the LAMPS community consists of two different assigned manpower elements: those personnel on shore duty (nondeploying work force), and a compliment of officers and enlisted personnel on sea duty. Sixty percent of the billets of the LAMPS squadron are filled by sea duty service members who rotate to and from deployments as their demanding detachment and ship schedules dictate. This highly transient characteristic makes for a lack of organization stability and continuity, and is an issue of primary concern.

2. The HSL Squadron Design Process

This section constitutes a guide for the organization and administration of the LAMPS squadron, and for the maintenance of proper administrative relationships among all departments of these squadrons.

The duties outlined in this organizational concept constitute the formal delegation of responsibility and authority of the commanding officer of each squadron to the officers and key enlisted personnel within the squadron. (No squadron organization structure design feature is to be modified so as to disregard or supersede U.S. Naval Regulations or any directives of higher authorities.)

In general, all LAMPS Mk I squadrons are organized in accordance with the directives contained in NWP 50, and OPNAVINST 4790.2B. An understanding of the design rationale of the current HSL squadron can be achieved best by examining the following processes and principles:

a. Process of Organization

The administration establishes organizational objectives and the overall policies that guide an organization in the attainment of these objectives. To organize is to develop and maintain proper relationships between functions, personnel, and material factors for the accomplishment of the desired objectives, with a maximum of economy. The process of organization has two aspects: the mechanical, which deals with organization structure; and the dynamic, which deals with the integration of human factors into the organizational structure.

b. Mechanics of Organization

The mechanical aspects of organization are defined as the determination of the activities that are neeessary to any purpose, and the arrangement of such activities in groups. Mechanics are concerned basically with structure; and since they primarily are static, they can be illustrated in the form of organizational charts, or by job descriptions.

c. Dynamics of Organization

The human element is the primary factor in the dynamic aspect of organization. U.S. Navy Regulations places responsibility on the commanding officer to organize the officers and enlisted personnel of his unit. Organization of the entire command is a primary responsibility of the executive officer, under the commanding officer. Heads of departments have the duty of organizing their departments for readiness in battle, including the organization of subordinates by assignments to watches, stations, and duties.

d. HSL Basis for Organization

The requirements for battle are the basis for the organization of HSL squadrons. A unit's organization for battle consists of functional groups headed by key officers who are at specified stations and control the activities of personnel under their direction. Such control ensures the effectiveness of the organization in carrying out either the plan for battle, or variations necessitated by the tactical situation.

As in all naval organization structures, the commanding officer heads the HSL battle organization and exercises command. During action it is his responsibility to engage the enemy to the best of his ability. The components of the battle organization are described fully in Battle Control, NWIP 50-1.

e. Standard Pattern of Organization

A comparison of the administrative and the battle organization indicates that the division of personnel in administrative departments closely approximates that found in the major battle components. However, to meet the requirements of sound organizational principles, the administrative organizational structure must allow for the carrying out of certain functions which have no place in battle. In the day-to-day routine, the needs of training and maintenance are emphasized, and certain support measures are administrative necessities.

The mission of the HSL squadron is to provide the Commander, Naval Air Force, U.S. Atlantic/Pacific Fleets with LAMPS capable helicopter detachments to be deployed aboard U.S. fleet assigned ships. In that regard, the commanding officer normally will administer and supervise the activities of the departments through the executive officer. Heads of departments are assigned assistants as necessary to carry out departmental duties. Billets listed in the organization manual of each HSL squadron will be assigned on a primary or collateral duty basis as directed by the commanding officer, executive officer, or department head, based on current billets authorized by the Chief of Naval Personnel and, because of current naval manpower shortages, officer availability. All officers will assist seniors to whom they are assigned, and will assume responsibility in the absence of their immediate superior. As is a provision of most naval organizational designs, in the event of the incapacity, relief from duty, or absence of the HSL commanding officer, the succession to command shall be in the order of seniority among the assigned naval aviators eligible to command.

The "conventional" LAMPS command organization structure and its departments' organizational relationships are reflected in Figures 6a and 6b.

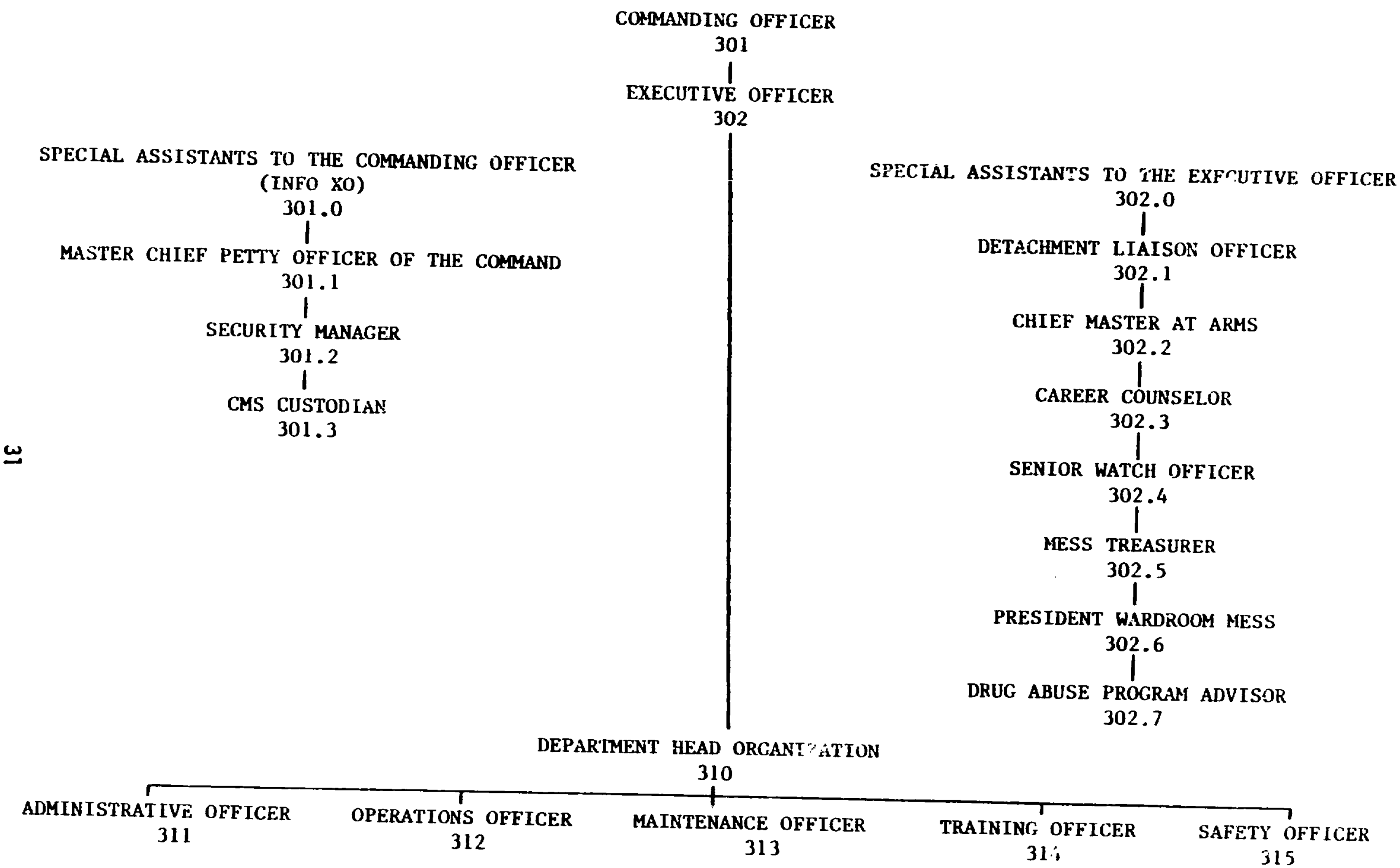


Figure 6a: HSL Squadron Organization Block Design

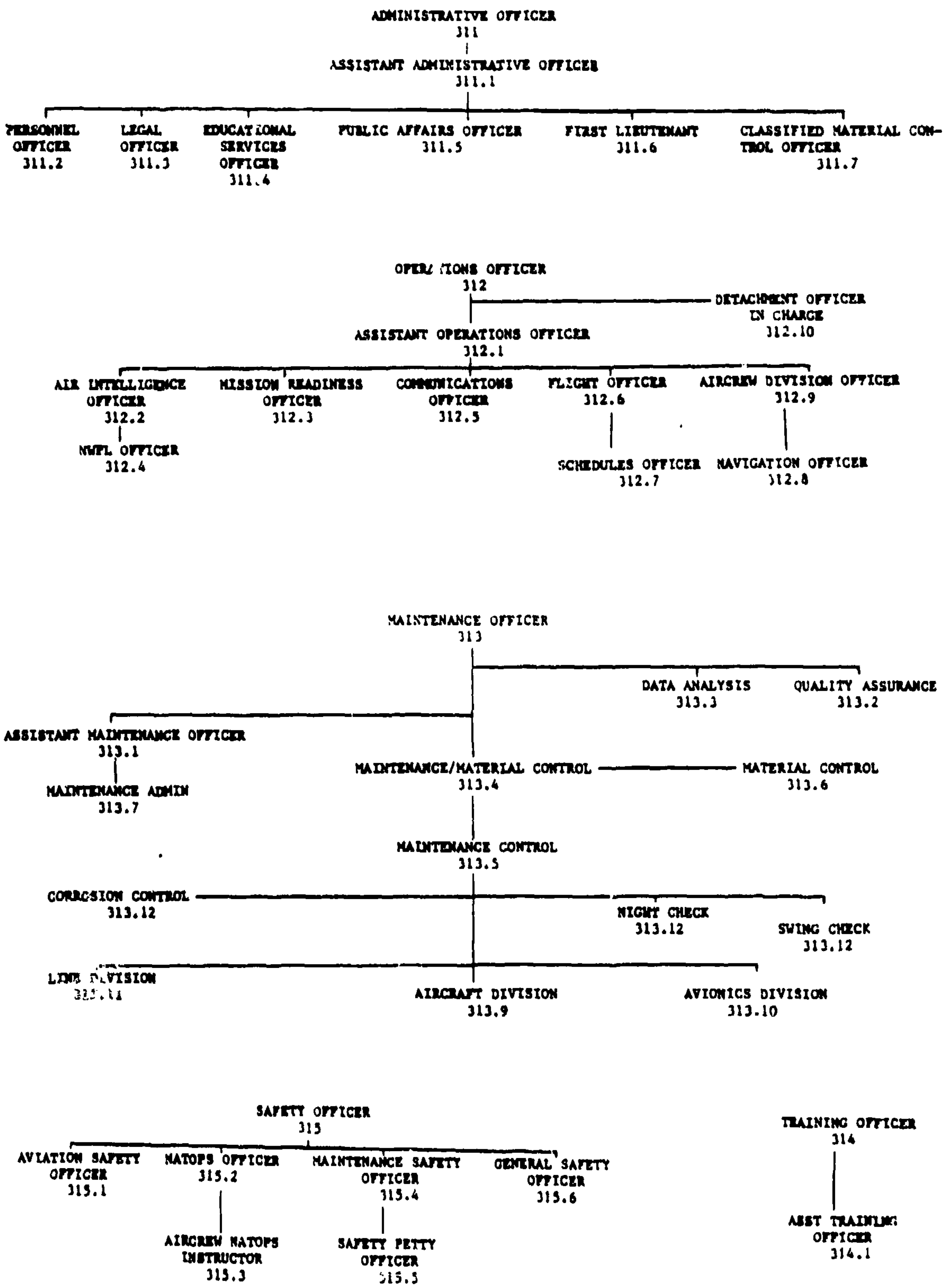


Figure 6b: HSL Departmental Organization

B. SQUADRON MANPOWER DETERMINATION METHODOLOGY

1. Introduction

To introduce a design change to an organization structure, one first must understand the organization and its manning requirements. This section describes the Navy's squadron manpower requirements program as it currently is employed in LAMPS Mk I squadrons.

The squadron manpower requirement's program documents manpower requirements for all of the Navy's aviation squadrons, and publishes them in Squadron Manpower Documents (SQMDs). They are based upon statements of mission-tasking, known as the Required Operational Capabilities (ROC), and Projected Operational Environment (POE), as developed by the Deputy Chief of Naval Operations (Air Warfare). The ROC/POE presents specific squadron tasking in terms of mission area, type and quantity of aircraft, flight crew composition monthly flight hour utilization, length of the flying day, average sortie length, crew rations, air/maintenance student load, and several other quantified factors. ROE/POE's are verified and updated annually, or as changes occur.

The program is managed by the Deputy Chief of Naval Operations (Total Force Planning) OP-11, and is supported by manpower validation teams at the Navy Manpower and Material Analysis Centers, Atlantic/Pacific (Norfolk, Virginia, and San Diego, California, respectively). One of the many teams of experienced manpower analysts visit each squadron to validate the manpower requirements for that squadron, or class of squadrons. Draft SQMD's subsequently are developed and forwarded to the squadron's chain of command for review, prior to publication as an OPNAV instruction. The published SQMD then becomes the basis for squadron, or squadron class (i.e., LAMPS Mk III HSL's), manpower planning and programming.

2. <u>Process</u>

The squadron manpower requirements process involves the computation of weekly workload as driven by tasking contained in the ROC/POE. The workload then is divided by the productive work hours available in a week to obtain the quantity of billets required at a work center, by work center basis. Workload is categorized as: preventive maintenance (PM), corrective maintenance (CM), administrative support (AS), facilities maintenance (FM), utility tasks (UT), directed manning (DM), and officer manning (OM).

a. Preventive Maintenance

PM accounts for scheduled maintenance workload needs taken directly from Maintenance Requirements Cards (MRCs) for each type and model of aircraft, and divided into the following categories: PM/aircraft/flight hour (FH), PM/aircraft/sortie (flight), PM/aircraft/day, and PM/aircraft/week. Each of these areas are subcategorized by maintenance work centers (electricians, air frames, mechanics, quality assurance, ordnance, etc.) with appropriate ratings and NEDs as determined from the Maintenance Requirements Cards. The SQMDs preventive maintenance data bank is updated continuously as MRCs are updated.

Raw PM is calcualted for each work center by using the formula(s):

$$\begin{aligned} \text{Raw PM} = & (\#\ \text{aircraft})(\text{PM/aircraft/week} + \\ & (\#\ \text{sorties/week})(\text{PM/sortie}) + \\ & (\#\ \text{flight hrs/week})(\text{PM/flight hr}) + \\ & (\#\ \text{aircraft})(\text{PM/day/aircraft})(\#\ \text{of days/wk}) \end{aligned}$$

$$\text{Total PM} = (\text{Raw PM})(1 + \text{MR/PA})[1 + (\text{PA} + \text{PD})]$$

where: MR/PA = 30 percent of Raw PM

PA = 20 percent of Raw PM

PD = variable by environment and work center

b. Corrective Maintenance

CM accounts for unscheduled maintenance workload, and is updated annually for each model aircraft. It is derived from historical 3-M data (maintenance, material, manpower) obtained from the Navy Aviation Maintenance Support Office (NAMSO). CM is regressed statistically to form predictive equations which enable the determination of total squadron manhours of workload required at any level of flight activity. The CM is broken down into two types of equations, predicting both MAF (Maintenance Action Form) and SAF (Special Action Form) documented workload. Data for each type and model aircraft is further segregated into deployed and shore based categories. In addition to regression analysis, ratios by work unit code are developed to determine how much of the squadron's total CM workload is assigned to each maintenance work center.

Two equations are used to compute CM total weekly MAF and total weekly SAF manhours:

$$MAF = (.23)(y)e^{[MAF \cdot \ln a - MAF \cdot \ln b\ (x)]}$$

$$SAF = (.23)(y)e^{[SAF \cdot \ln a - SAF \cdot \ln b\ (x)]}$$

where: y = total monthly flight hours

.23 = value to convert from month to week

e = base of the natural logarithm

MAF/SAF ln a - first MAF/SAF regression coefficient

MAF/SAF ln b = second MAF/SAF regression coefficient

x = total monthly hours or maximum documented flight hours, whichever is less

Using the exponential form, e^a, enables accurate prediction based upon the documented fact that as flight hours increase, maintenance manhour/flight hour decreases. In the equation the ln a and ln b values, and x, are derived from documented monthly 3-M statistics. The value of y is obtained from the ROC/POE. Once MAF and SAF total workloads are computed, the next step is to assign these hours in the appropriate percentages. An allowance for production delay is added to the CM to arrive at total CM for the work center. PD is a percentage allowance of from five to 35 percent of the raw CM, and varies by environment (deployed or ashore) and by work center.

The Manpower Requirements Program has determined that the documented preventive and corrective maintenance workload by itself does not describe adequately the total efforts expended by a work center in performing its required PM and CM. Thus, workload allowances known as Productivity Allowances (PA), Make Ready/Put Away (MR/PA), and Production Delay (PD) are added to PM and CM to account for otherwise not included factors such as fatigue, nonavailability of aircraft, tools or support equipment, personal needs, changing work conditions and areas, environmental effects, awaiting technical assistance, inclement weather and transportation. The exact employment of each allowance is outlined in later text.

The steps necessary to construct a Squadron Manning Document are depicted in Figure 7.

c. Administrative Support

AS accounts for supervision, clerical work, and administrative functions. It is determined through use of formulas which calculate

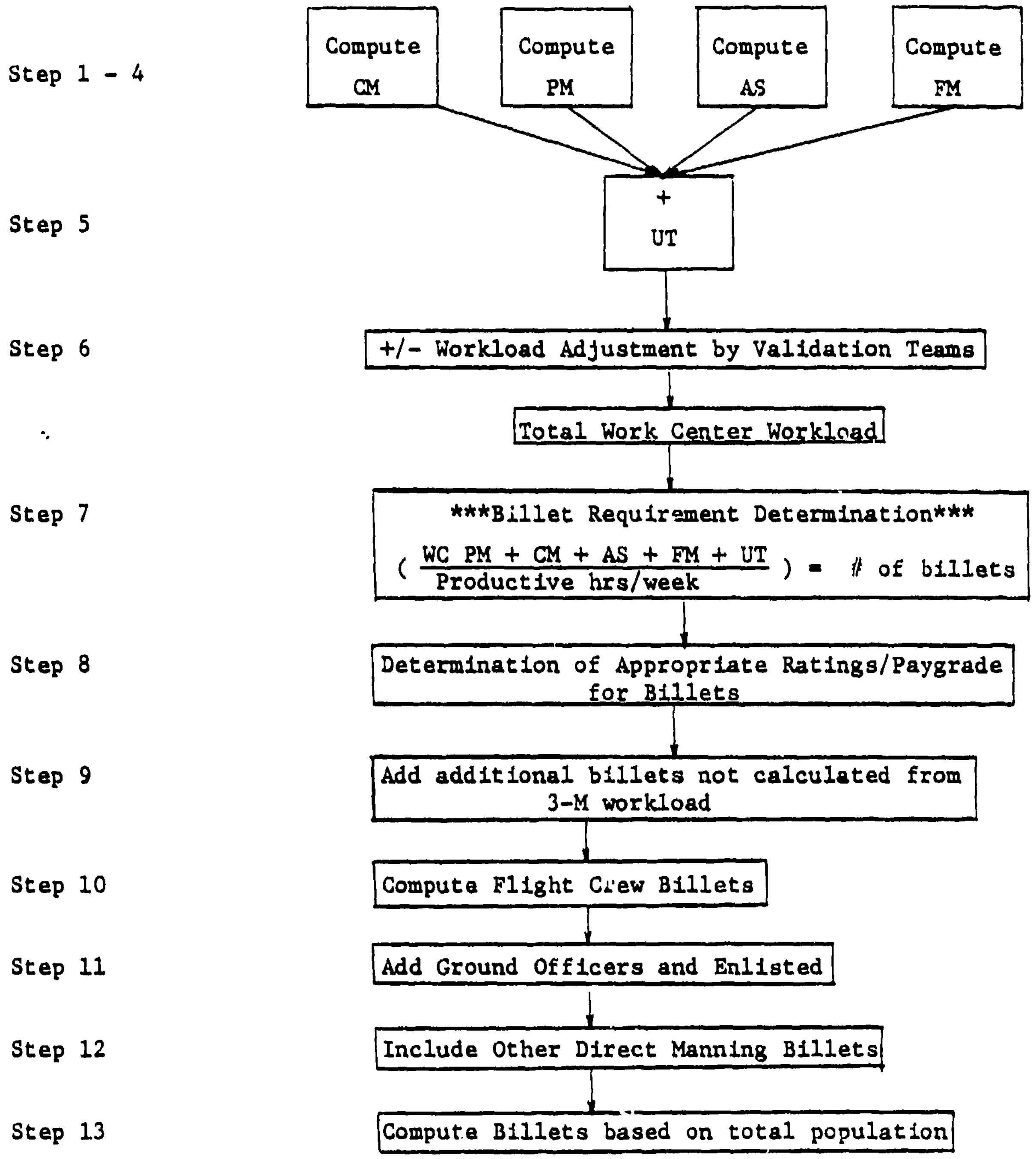


Figure 7: SQMD Computation Process by Work Center

total squadron AS as a function of the total maintenance workload (PM + CM). The actual values of the coefficients vary with environment (deployed, ashore, or shore based Fleet Readiness Squadron), and are of the form:

Total AS = a + bx

where x = PM + CM

a and b are coeffiences for the appropriate environment

The total AS then is divided among the various work centers using a percentage allocation method similar to that used for CM.

d. Facilities Maintenance

FM provides for routine housekeeping of assigned living, working, and operating spaces, including Foreign Object Damage (FOD) walkdowns. It is calculated as a percentage of each work center's AS workload. The formula used to compute FM ias as follows:

WC FC = (WC AS)(WC FM%)

where WC denotes specific work centers

The FM percentages were determined through operational audit, which is a work measurement technique and varies by work center.

e. Utility Tasks

UT workload accounts for the workload assigned to ship-based squadrons in the form of working parties which augment ship's company personnel in performing underway replenishment evolutions (UNREP). UT is in the form of hours of workload which are added to the work centers. The amounts of UT were determined by the OP audit technique. This variable normally is not used in HSL SQMD determinations since deployed units of personnel operate as autonomous units away from the squadron, and thus their personnel are not associated with a specific squadron work center.

f. Adjustments in Workloads

Since the 3-M data used in the SQMD process are subject to statistical averaging, it is necessary for the SQMD validation team to verify the predicted workload by screening the squadron's own in-house 3-M data to determine accuracy. The team is charged with finding any cases of over- or under-documentation, and making any necessary adjustments to the predicted workload. These adjustments may be made to any work center, and to any category of workload.

g. Quantity Computation

After the total workload is calculated for each work center, the billets required are computed by dividing the productive manhours available per week for the appropriate Standard Navy Workweek (OPNAVINST 1000.16E). These workweeks are described in terms of number of total production hours out of a 40 and a 70 hour workweek in Table 2.

Table 2: At Shore and at Sea Navy Standard Workweek

Personnel at Shore		Squadron Personnel at Sea	
Std. Workweek	40.00 hrs	Std. Workweek	70.00 hrs
Less: Training	1.83	Less: Training	3.50
Service diversion	3.00	Service diversion	3.50
Leave	1.85		
Holidays	1.38		
Total Time for Productive Work	31.94 hrs	Total Time for Productive Work	63.00

The computation process is:

$$\text{Work Center Billets} = \frac{\text{WC PM + CM + AS + FM + UT}}{\text{productive hrs/week}}$$

h. Quality Computation

Quality is defined as rate, rating, and naval enlisted classifications (NEC). The appropriate ratings are determined for each work center from the 3-M sources data which were used in computing the preventative and corrective maintenance workloads. The second step in attaching quality to the computed billets is to assign paygrades. Matrices are used which assign a set of paygrades based upon the total billets computed (in the quantity computation). These paygrade distribution matrices were developed using a combination of the BUPERS occupational classification system and paygrade requirements as determined by SQMD analysts using the OP audit technique. Table 3 is an example of the paygrade distribution matrix for the production work centers (W/C 110, 120, 121, 130, 131, 210, 211, 212, 220, 230, and 310).

Table 3: Paygrade Distribution Matrix for Production Work Centers (SQMD Design)

# of Billets	Paygrades					
	E-3	E-4	E-5	E-6	E-7	E-8
11	4	3	2	1	1	0
12	4	4	2	1	1	0
13	4	4	3	1	1	0
14	5	4	3	1	1	0
15	5	4	3	2	1	0

Following the assignment of paygrades, naval enlisted classifications are attached based on the proportion of their occurance in the preventative and corrective maintenance data. For example, in a LAMPS squadron with both Mk I and Mk III aircraft assigned, with the Mk I contributing 70 percent of the workload, and the Mk III airframe contributing 30 percent of the workload in a given work center, the Mk I NECs would be assigned to 70 percent of the billets and the Mk III NECs would be assigned to the remaining 30 percent. NEC assignments are verified for minimum and maximum paygrades in accordance with the NEC manual (NAVPERS 18068 series).

i. Flight Crew

Flight crew billets in non-Fleet Readiness Squadrons are computed from seat factors and crew ratios found in the Projected Operational Environment. The total in each category (pilot, naval flight officer (NFO), and aircrewman) is computed as follows:

Total aircrew billets for each respective aircrew position = (seat factor)(crew seat ratio) x (# aircraft)

After the number of pilot, NFO, and aircrew billets are computed for each type aircraft, these figures are added to give totals for the entire squadron. A squadron seldom maintains different types of aircraft, although a few such squadrons do exist (i.e., VT's, VC, and VX squadrons). The computation normally is accomplished by a one-time application of the formula. All assigned aircraft are figured in the equation even if rework and PAR activities are slated resulting in extended down-times in aircraft availability.

For pilot and NFO billets, the commanding and executive officers normally are paygrade 0-5 (Commander); the department heads normally are paygrade 0-4 (Lieutenant Commander); and the remaining billets normally are divided one-third to paygrade 0-3 (Lieutenant), and two-thirds to paygrade 0-2 (Lieutenant, junior grade). CO and XO billets normally are not counted against a squadron's SQMD. For aircrew billets, NECs are assigned in accordance with the NEC Manual (NAVPERS 18068D).

The Navy Enlisted Classification Codes supplement the enlisted rating structure in identifying personnel on active or inactive duty, and billets in manpower authorizations. NECs reflect special knowledge and skills that identify personnel and requirements when the rating structure is insufficient by itself for manpower management purposes. The NEC is a four-position alpha numeric code. Paygrades are assigned so as to be in consonance with limitations of the NEC Manual, and to provide a scaled-down pyramid within each rating and enlisted classification.

In Fleet Readiness Squadrons, such as the two LAMPS Mk III FRSs, instructor requirements (pilot, NFO, aircrew, and simulator operators) are determined by using the squadron's most recent submission of the planning factors for FRS data (OPNAVINST 3760.13). Student load is determined by the POE. CO, XO, and department heads are included in addition to instructor billets. Usually the minimum officer paygrade for instructor billets is 0-3, and an aircrew/FRAMP enlisted instructor is E-5-6 (Second/First Class Petty Officer).

j. Special Billets

Maintenance/Material Control CPO billets are based on the number of shifts as taken from the POE. Table 4 illustrates the shift matrix from which the billet/paygrade determination is made.

Table 4: SQMD Special Billet Matrix for CPO

# of Shifts	Paygrade E-7	E-8	E-9
1	1	0	1
2	1	1	1
3	2	1	1

Ratings are assigned via a matrix which spreads all ratings equitably over all the squadrons so as not to favor any particular rating in the work center. CPOs are assigned system NECs except for the E-9 Maintenance Chief billet, which normally will not receive a classification. The Executive Assistant billet is written as MCPOC (Master Chief Petty Officer of the Command), and is an E-9 billet.

Division CPO billets (WC 100, 200, 300) are written using the rating, and the most common NEC rating within the Division. The Division CPO billet is one paygrade senior to the most senior work center supervisor being supervised. However, the Division CPO will not exceed E-8.

Watchstander requirements are identified in the SQMD, and billets are written into the "Executive" Department to account for all workload associated with watches, e.g., ASDO, messenger, security watches, BEQ MAA, etc. Watchstander billets are written as APO (Aviation Petty Officer) or PO (Petty Officer) vice a specific rating.

Facilities Maintenance billets in the First Lieutenant Division are computed based upon the number of BEQs, the amount of physical space assigned for upkeep, and the manpower requirements for airstation support duties, i.e., mess cook.

Yeoman billets in the Operations Department are written to account for the administrative workload associated with logs and records, and other departmental workload. Billets are calculated from a formula which relates total YN workload to sorties per week. Other billets in the OPS Department (IS, PH, DM) are determined through on-site OP audit.

AK billets in the Material Control Division are calculated based upon a formula which relates storekeeper workload to the quantity of material requisitions initiated, which in turn is based on the model aircraft and the utilization rate.

k. Other Billets

There are several categories of billets which are not, at this time, derived from CNO approved manpower standards. These billets are determined through OP audit and, where possible, work measurement techniques. Billets that fall into this category are: FRAMP, AIMD, Integrated Services, COMM, and EW departments in the VQ squadrons. These billets normally are included in the Directed Manning (DM) workload category.

l. Final Billet Computations

Yeoman, personnelman, and career counselor billets are computed last since they are derived from equations which relate billets to total squadron population. Separate paygrade matrices are employed for the Administrative and Personnel Offices.

m. Display

Appendix A illustrates an HSL SQMD (OPNAVINST 5320 series). The document is organized in a standard format as follows:

Section I:	Mission, ROC/POE reference
Section II:	Summary by Department
Section III:	Listing of billets by Billet Sequence Number (BSN) and Work Center
Section IV:	Summary of workload requirements by work center
Section V:	Functional Workload
Section VI:	Summary of requirements by rate, rating and NEC
Section VII:	Summary by total billets

III. ANALYSIS OF HSL SQUADRON MANNING POLICY

A. UNOBTRUSIVE WEAKNESSES OF CURRENT HSL SQUADRON ORGANIZATION

1. Background

There exists a number of behind-the-scenes issues that are unique to the HSL squadron organization design. One such issue, the sea/shore duty personnel assignment mix, was noted at the beginning of Chapter II. This nonstandard personnel blend frequently contributes to squadron performance weakness and inefficiency. The following examples serve to illustrate waste and system redundancy.

In each HSL squadron a 40 percent personnel asset overhead is maintained and catagorized as shore based, or nondeploying--many of whom are aviators. Although these aviator assets are employed specifically in the administrative and maintenance of squadron assets, all are required to remain flight proficient even though they never deploy. This proficiency cost in terms of training/evaluating manhours, aircraft utilization, and maintenance/fuel expenditures is staggering.

A second example witnesses many critical billets such as Squadron Legal Officer being assigned to a sea duty/deployable officer. Many weeks and training dollars are expended in formal outside legal training (TAD). As the legal officer deploys, the squadron is faced with the alternatives of gapping the position for six-to-eight months, or redesignating and training another aviator in this essential billet. The latter option is expensive, both in monetary terms and in the loss of a valuable personnel asset during the training process.

A third unobtrusive redundancy exists within the current HSL maintenance division design. When a helicopter deploys aboard ship, air and maintenance crew personnel deploy as a unit. Both crew factions operate autonomously from the control of the parent command maintenance and operations department. The aircraft are fully maintained by combining the talents of the at-sea aviation supply, electrical, mechanical, and maintenance administration personnel. Once the deployment ends, the autonomous maintenance effort ceases to function, and the aircraft and maintenance personnel return to squadron "pools" and reestablish themselves in the squadron maintenance effort.

This conventional organizational practice (outlined in detail in OPNAVINST 4790.2B (NAMP)) ignores long range planning by failing to recognize that these aircrew/maintenance personnel will be reestablished again as a deployed unit. This reestablishment effort will expend precious training dollars and manhours that could be avoided if the aircrew/maintenance unit were allowed to continue to function as an autonomous workforce. A pragmatic approach toward reducing HSL redundancy might be found in allowing the air/maintenance crews to remain as operating units on a continuous basis, thereby eliminating many standard squadron maintenance divisions and reducing manpower requirements. This issue is discussed in later text.

These examples are included to introduce a number of inherent weaknesses in current LAMPS organization design rationale. Ensuing text will expand on these ideas.

B. ANALYSIS OF FACTORS INFLUENCING MANNING

1. Introduction

The following is an analysis illustrating the problems of flight proficiency for sea/shore duty HSL pilots, weaknesses in training, and the substandard manning policies outlined in Section A. It addresses both Atlantic and Pacific Fleet LAMPS Mk I squadrons, and introduces supportive rationale that HSL squadrons do not fit universally in the standard Navy approach to manning and organization detailed in Chapter II. The model used in this analysis was developed in answer to production shop manning prediction methods outlined in previous text, and concludes that actual work week hours and other SQMD variables are significantly different than the standard manning method suggests.

2. Flight Hour Requirements

The COMASWINGSPAC and COMNAVAIRLANT Readiness and Training manuals specifically delineate the per squadron pilot proficiency maintenance requirement (PMR) of 29 flight hours per pilot per month. Current funding constraints are such that less than these required flight hours are available. The difference between funded hours and the readiness flight hour goal is achieved by reducing the shore duty pilot flight time target to General NATOPS (OPNAV 3710.7 series) minimums of 100 flight hours per year. Every possible effort is expended to maintain all sea duty pilots at proficiency maintenance levels.

The squadron "at home" monthly flight time goal for an average month is determined from two requirements. The first variable represents the flight time requirements for the shore duty pilots.

This requirement is constant for all months, and is determined as follows:

$$\frac{(7 \text{ shore duty pilots}) \times (100 \text{ hrs/yr})}{(2 \text{ pilots/aircraft}) \times (12 \text{ months/yr})} = 29.2 \text{ aircraft flight hrs/mo}$$

The seven shore duty pilots require a total of 29.2 aircraft flight hours/month to maintain minimums. The second component of the monthly goal is the nondeployed sea duty pilot flight time requirement. This value is found by taking the number of pilots not deployed, multiplied by 29 hours per month (PMR). According to the test squadron's historical 3-M data, during an average month, 48 percent of the detachments are at home. The average sea duty pilot at-home flight time requirement is then:

$$\frac{(30 \text{ sea duty pilots}) \times (29 \text{ flight hrs}) \times (48\% \text{ at-home})}{(2 \text{ pilots/aircraft})} = 208.8 \text{ aircraft flight hrs/month}$$

The total at-home flight time goal for the average month is, therefore, 208.8 + 29.2 = 238 flight hours. This goal varies month-by-month depending on the number of detachments deployed.

It should be noted that while pilots are authorized for 10 detachments, a number of squadrons examined in this analysis show documented manning levels above the manpower requirements established in their individual SQMDs. This is, in the opinion of the administrative and personnel officers, a manpower buildup in the LAMPS Mk I community anticipating the establishment of the LAMPS Mk III squadrons early in FY83. Due to this overmanning situation, the first portion of this analysis will be conducted using 3-M summary data prior to this non-policy manning condition. This almost unprecedented overmanning situation creates an even more aggravated flight hour requirement for pilot proficiency training.

It also should be noted that the nonstandard requirement of assigning both sea and shore duty pilots to the LAMPS squadrons presents a unique problem to the HSL community--a problem not addressed by current SQMD methodology.

3. Documentable Group Manhours

The HSL squadron maintenance manpower workforce consists of two factions: production, and support rated personnel. Production personnel are concerned with the physical "hands on" maintenance of the aircraft, while support personnel "support" the maintenance effort by performing the functions of supervision, maintenance administration, supply, and tool and equipment support.

Chapter II outlined the number of total productive manhours per week that are available for work under at-home and deployed conditions. This analysis indicates that there is a significant difference between those manhours programmed and the number of manhours actually available for work. To demonstrate the magnitude of the difference, manhours for an average month will be determined in two ways: first, programmed manhours will be developed strictly adhering to the guidelines of OPNAV 1000/16 E (Manual of Navy Officer and Enlisted Manpower Policies and Procedures); and secondly, the actual hours available will be determined using the training and leave requirements experienced by the sample squadrons during the corresponding timeframe as in the 3-M data. Taken from squadron manning publications, the number of personnel remained constant for each method. There were, on the average, 11 shore duty production personnel working in billets documenting manhours, and 95 sea duty personnel in documenting billets.

During this analysis, a squadron average of eight detachments of nine maintenance men each (72 total) were formed during the study period. Out of the 95 assigned sea duty personnel, only 23 were available to support the shore establishment. Of the 11 shore personnel, one enlisted man was utilized in a "nondocumenting" work assignment in the squadron's tool room (as required by current type commander directives). Combining these variables, Figure 8 computes the total average number of groups of production personnel at-home.

11 "shore duty" production personnel documenting manhours
\- 1 person (nondocumented tool room petty officer)
10 documenting personnel

95 sea duty personnel
-72 (8 detachments) x (9 personnel each)
23

Total Nondeploying Production Personnel = 10 + 23 = 33

PRODUCTION PERSONNEL FOR CORRECTIVE MAINTENANCE (CM) AND PREVENTIVE MAINTENANCE (PM) = (48% ashore)(72 deploying personnel) + (33 nondeploying personnel)

= 67.6

Figure 8: HSL At-Home Production Personnel

These hours represent only a portion of the total manhours worked. The ratio of CM and PM to total working hours is specified in the current OPNAV 5320.XXX series (SQMDs), and varies depending on the enlisted rate. For Aviation Electrician's Mates (AE), the average ratio is 82.8 CM and PM hours/124.7 work hours, or 0.664. For Aviation Machinist's Mates (AD), Aviation Structural Mechanics (AMS), and

Aviation Hydrolic Mechanics (AMH), the average ratio is 0.562. Chapter II states that the nonproductive manhours of administrative support, facilities maintenance, and utilities tasks are directly related to the total maintenance workload. Increasing personnel available will not change these ratios, thus they can be used to determine both programmed and actual manhours.

4. Programmed Manhours

The Manual of Navy Total Force Manpower Policies and Procedures states there are 31.94 hours available each week for work. For the sample squadron average of 30.3 AEs, ATs, and AXs, the working hour figure results in programmed manhours as follows:

(30.3 men)x(6.4 hrs/day)x(0.664 ratio) = 128.8 manhours/day of maintenance

Additionally, the daily hours for the study's average of 37.3 ADs, AMSs, and AMHs was computed using the same method and substituting the airframe maintenance/total working hours ratio of 0.562 as follows:

(37.2 AD, AMH, AMS)x(6.4 hr/day)x(0.562 ratio) = 134.2 manhours/day of maintenance

For an average at-home work month of 21 working days, the expected programmed documented manhours is the sum of these values multiplied by 21, which equals 5523.0 monthly PM and CM manhours.

5. Actual Manhours

This analysis indicates that the standard Navy workweek used in determining current squadron manning levels does not describe adequately the real world operating situations. The variables of both training and leave times (regular and emergency) differ greatly from those programmed in OPNAVINST 1000.16 series. The required formal schools for maintenance personnel consume an average of 16.2 days/year for personnel assigned on sea duty, and 19.2 days/year for shore duty personnel. (See Table 5.)

Table 5: HSL Tour Training Requirements by Rate

SEA DUTY PERSONNEL

(length in days follows school)

AE		AT/AX		AD		AMH/AMS	
ASE	(16.5)	LN 66	(10)	T-58 IMA	(17)	NARF Print & Insignia	(12)
FRAMP C/C	(2.5)	FRAMP C/C	(2.5)	NARF C/C	(6)	NARF C/C	(5)
ASN 50	(8.0)	LAMPS SK	(4)	Eddy Current	(5)	Eddy Current	(5)
W/C SUP,E-6 LMT,E-4/5	(5.0)	W/C SUP,E-6 LMP,E-4/5	(5.0)	W/C SUP,E-6 LMP,E-4/5	(5.0)	W/C SUP,E-6 LMP,E-4/5	(5.0)
GSE	(3)	GSE	(3)	GSE	(3)	GSE	(3)
TORP LOAD	(2)	TORP LOAD	(2)	TORP LOAD	(2)	TORP LOAD	(2)
Firefighting	(2)	Firefighting	(2)	Firefighting	(2)	Firefighting	(2)
Plane Capt.	(10)	Plane Capt.	(10)	Plane Capt.	(10)	Plane Capt.	(10)
		Forklift	(5)			DCPO	(1)
		LSE	(3.5)				
TOTAL	49 days		47 days		49 days		49 days

AVERAGE = 48.5 days/3 yr. tour = 16.2 training days/year

SHORE DUTY PERSONNEL

(additional schools to above)

AE		AT/AX		AD		AMH/AMS	
FRAMP	(11.5)	FRAMP	(18.5)	FRAMP	(9.5)	FRAMP	(11)
Battery	(10)						
TOTAL	66.5 days		54 days		54.5 days		55 days

AVERAGE = 57.5 days/3 yr. tour = 19.2 training days/year

Using values derived in Table 5, the actual weekly hours for training were determined by the following method:

$$\frac{(40 \text{ hrs/week})\times(16.2 \text{ training days/yr})}{(260 \text{ workdays/yr})\times(.48 \text{ at-home ratio})} = 5.20 \text{ hrs/week}$$

The factor 0.48 was employed to account for the requirement that all personnel must attend formal schools prior to deployment. A similar formula and rationale was used to compute the weekly leave figure, since leave usually is taken while personnel are not deployed. For the sample squadrons in this study, sea duty personnel leave figures averaged 6.7 hours of leave/week--greater than an entire workday.

This same procedure was employed to determine the total hours/week leave values for shore assigned personnel. Table 6 summarizes the results. Note that the training hours reflect an addition of one hour of formal squadron training/week to the average "school" training value determined above. No time was included for OJT or informal squadron training due to the difficulty of documenting these values.

Table 6: Comparison of Hours Available for Work/Average Week

	OPNAVINST 1000.16E Programmed	Sea Duty Deploying Actual	Sea Duty Non-Deploying Actual	Shore Duty Actual
Scheduled Workweek	40.00	40.00	40.00	40.00
Less: Holiday	1.38	1.38	1.38	1.38
Service Diversion	3.00	3.00	3.00	3.00
Leave	1.85	6.73	1.85	1.85
Training	1.83	6.22	3.62	3.95
TOTAL Available Work Time:	31.94	22.67	30.15	29.82
Difference from Programmed Hours		9.27	1.79	2.12

With the actual hours available for work shown in Table 6, it now is possible to determine the actual manhours in the average month. This value is calculated by taking the average number of personnel onboard working in maintenance billets documenting manhours as a multiple. As computed earlier, there are an average minimum of 57.6 nondeploying sea duty personnel in each sample squadron. This figure is reduced by an average of 10 to account for those production rated personnel filling nondocumenting billets in Maintenance/Material Control, Material Control, AIMD support, and the Tool Room (since there are not enough support rated personnel currently assigned). The total daily available manhours is determined in Table 7.

Table 7: Average Daily LAMPS Mk I Production Manhours

RATE	NUMBER OF MEN		WORK RATIO	HOURS PER DAY	TOTAL
AE/AT/AX	Sea Duty Deployed	17.3	0.664	4.53	44.0
	Sea Duty Non-Deployed	6	0.664	6.03	20.3
	Shore Duty	7	0.664	5.96	23.4
AD/AMS/AMH	Sea Duty Deployed	17.3	0.562	4.53	52.0
	Sea Duty Non-Deployed	7	0.562	6.03	28.0
	Shore Duty	3	0.562	5.96	11.9
		57.6			179.6

(Number of Men) x (Work ratio) x (Hours/day) = TOTAL

The totals from Table 7 are added together to reveal a daily documented manhour figure of approximately 180 hours. For the average month, this gives a total manhour figure of 3771.6 manhours. This figure represents only two-thirds that of the programmed manhours of 5523.0. This total manhour figure compares closely with the sample squadron's average of 3432.4 monthly documented manhours. This analysis alone substantiates this section's theme that the standard Navy workweek prediction figures in OPNAV 1000.16E do not adequately reflect HSL manning needs in the Pacific Fleet.

6. Regression Analysis/Conclusions

The fact that programmed manhours significantly differ from actual manhours is important in manpower planning. If there is a definite relationship between the measure of readiness and training, flight hours, and the production manhours worked, its importance increases as it reflects on squadron battle readiness.

To determine if such a relationship exists, data from the sample squadrons 3-M summaries (see Appendix B) were analyzed using the statistical procedure of multivariate regression analysis. After various combinations of the data were compared, a mathematical model was developed as the best flight hour predicting equation available. The factors that have the most significant effect on flight hours are aircraft operational ready hours (R), and manhours worked (M). The factors are related to flight hours (F) by the equation:

$$F = 0.0273\,M + 51.8112\,\ln R - 352.9361$$

This equation is a fairly accurate description of the relationship of the data variables. The correlation coefficient (r) is 0.91, indicating a high correlation of the factors R, M, and F. The coefficient of determination (r^2) is 0.83, and describes how much of the variation in flight hours is explained by variations in manhours, and operational ready hours. This means that all but 17 percent of the variation in flight hours is explained by changes either in manhours, or in operational ready hours.

The model determined by the regression analysis can be used to predict average monthly flight hours from a given set of manhours and operational ready hours. The flight hours may not be an exact value because other factors account for 17 percent of the flight hour variations in the data which determined the model. This can be corrected by various statistical techniques. Additionally, probability confidence intervals of 50 and 90 percent can be predicted for each set of operational manhours. Using the model and statistics for confidence intervals, Table 8 presents representative sets of production manhours and operational ready hours used to calculate projected flight hours.

Table 8: Predicted HSL Flight Hour Requirements*

Manhours	Op Ready Hours	Expected Flight Hours	50% Interval	90% Interval
3432	1649	125	104 - 146	71 - 179
3772	1649	135	114 - 156	81 - 189
3771	3000	166	145 - 187	112 - 219
5523	1649	182	161 - 203	129 - 236
5523	3000	214	193 - 235	160 - 268

*This Table shows the relationship between production manhours and mission capable (operational ready) hours. The flight hours from a month in which 3432 manhours are worked and 1649 op ready hours exist will fall between 104 and 146 hours 50 percent of the time, etc. The middle of the range is 125 flight hours.

The predicted flight hours are all much less than the average 238 flight hours needed to meet Pacific Fleet HSL squadron readiness goals. With the maximum operational ready hours experienced by the squadrons, and the OPNAV 1000.16E manhours of 5523, HSL squadrons have approximately 25 percent probability of meeting flight time goals.

The following conclusions can be drawn from the analysis. The production manhours that presently are programmed to work will not provide a reasonable probability of achieving the at-home flight goal if operational ready hours remain at their historical levels. Both the Manual of Navy Officer and Enlisted Manpower Policies and Procedures, and the sample squadron's manning documents (SQMDs) program hours greater than actual squadrons' experiences. Training and leave account for much more time than projected, thus reducing the actual time available for work. Additionally, the relationship between manhours worked to support flight hours is presented erroneously in the CNO (OP-124F) instruction which states: "it is 'documented' that as flight hours increase, manhours per flight hour decreases."

This analysis tends to disprove this claim. While the statement approaches truth as flights become longer (increasing flight hours), it does not represent fact as the numbers of sorties increase (increasing flight hour totals) thus requiring greater numbers of production personnel manhours to service the helicopters after each flight. Both linear and exponential regression analyses were performed on the flight hour and work hour data. The linear regression line had a better "fit" on the data scattergram than did the exponential line. Thus, the linear proved to be a better predictor. This was true especially when the natural logarithm of the operational ready hours was used as a third variable, and a multivariate regression analysis was performed.

The model employed in the regression analysis is sufficiently accurate to provide expected flight hours from given production manhours and operational ready hours. It concludes that under current manning procedures and operational readiness requirements, the sample squadrons could expect to achieve the monthly flight hour objectives only 25 percent of the time.

Two recommendations are evident from this analysis. One change could be to increase the number of production personnel assigned, thus increasing the manhours available in an average month. Statistically, the greater the manpower component, the higher the probability of meeting flight time goals exists (even as operational readiness hours increase). While mathematically sound, this proposal does not consider the technical manpower shortage of today's Navy.

The other alternative would be to restructure SQMD procedures to meet the needs of the nonconventional HSL squadron, or to revamp flight hour goal requirements to make them more realistic and obtainable.

This first analysis does not intend to recommend detailed solutions for this problem area. However, it does serve to illustrate mathematically that current policies of manning do not provide the necessary HSL manpower levels to achieve desired states of operational readiness and battle efficiency.

As previously stated, between 1979 and 1981, manning levels in HSL squadrons have been on the increase. This has been the direct result of anticipating the introduction of the future LAMPS Mk III squadron, and not the result of a change in manning methodology. A second analysis was conducted employing 3-M summary data from HSLs 33, and 35, after the introduction of the "overmanning" situation. The initial results show overwhelmingly that the addition of production manpower has greatly improved the squadrons' operational and support capabilities. The regression analysis of the current (1980-1981) operational, manhour, and flight hours resulted in a poor correlation ($r = 0.67$ for HSL 35, and $r = 0.50$ for HSL 33) between these variables.

In dealing with statistical analysis, it must be recognized that correlation does not equate necessarily to causation. However, as was suggested in earlier recommendations, one possible interpretation of this new analysis is that with the increased manpower, manhours and operational ready hours no longer serve as limiting factors to flight hours. This result adds credence to the theory suggested by the earlier analysis, and therefore serves as one more argument demonstrating the imprefections of the conventional squadron manpower model.

IV. ALTERNATIVE SQUADRON ORGANIZATION: THE LAMPS MK III CENTRAL MAINTENANCE SQUADRON

A. INTRODUCTION

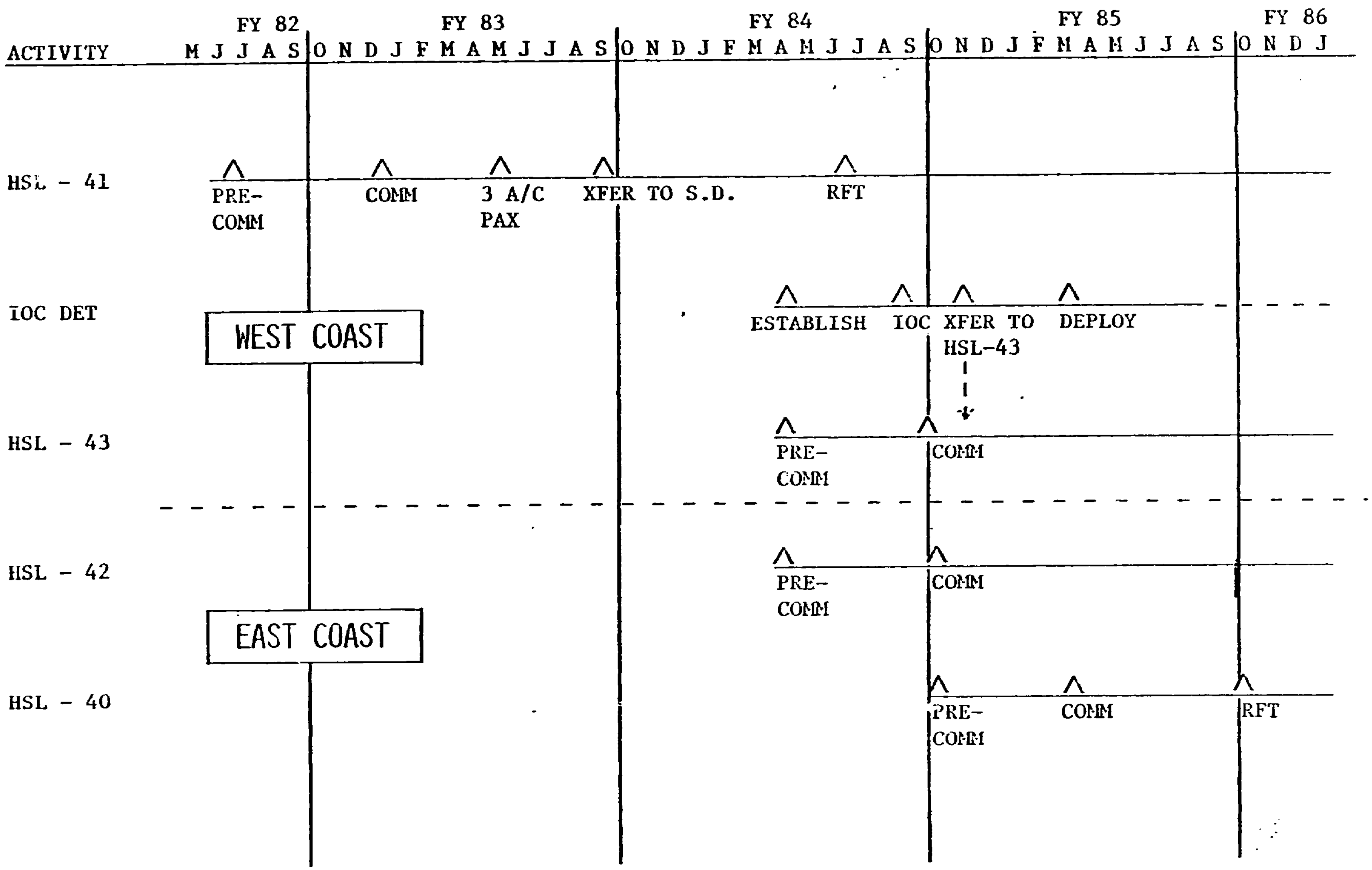
Chapters I, II, and III have discussed the issues necessitating LAMPS squadron redesign. Additionally, data has been presented to support the claim that the HSL, or LAMPS, air community is a unique naval organization which requires special organizational considerations to achieve optimal levels of fleet operational readiness and combat effectiveness. The next three chapters propose alternative organizational structures specifically designed to maximize contained manpower assets while achieving the desired states of operational preparedness.

B. DEFICIENCIES IN THE PROPOSED LAMPS MK III SQUADRON ORGANIZATION STRUCTURE

The introduction of the new LAMPS system will require an additional 2352 personnel to staff and maintain the squadrons and their aircraft assets. Table 9 exhibits the proposed introduction calendar of fleet LAMPS Mk III air squadrons. Although no organization structure presently exists to fully support this introduction, initial squadrons will start being organized in July of FY 82. Appendices C, D, and E, list the preliminary OPNAVINST 1500.8J Billet and Personnel Summaries for the LAMPS Mk III fleet readiness squadron, and the shore and sea components of the operational HSL squadrons.

Close examination reveals that these preliminary LAMPS Mk III manning summaries do not differ significantly from the current LAMPS Mk I Squadron Manning Document (Appendix A). The LAMPS Mk I squadrons

TABLE 9: AIR SUBSYSTEM FLEET INTRODUCTION PLAN



presently maintain an onboard "shore duty" maintenance complement of 50 administrative and production personnel for each 10 assigned SH-2 aircraft. The preliminary manning document for the Mk III squadrons delineates 48 shore duty personnel to support 13 new SH-60B aircraft. In other words, the LAMPS Mk III squadrons will support and maintain three additional helicopters with two less shore maintenance personnel. The obvious equalizing factor will be the additional sea duty maintenance people assigned to support the three additional detachments.

While the addition of the sea duty maintenance people appears to be adequate for at-sea operations, the question remains: What happens to aircraft support when the sea duty work force takes extended pre- and post-deployment leave, or temporarily is assigned refresher training duty and is away from the squadron? The conventional answer is that the reduced shore maintenance staff would attempt to support the additional aircraft to maintain established standards of operational readiness.

Figure 9 graphically presents the current proposed LAMPS Mk III squadron shore component by department. Within this proposed organizational schematic, a number of organizational deficiencies are present. Among them are the following.

1. A formal maintenance check crew is omitted from the structure. The check crew is a body of maintenance personnel that performs preflight and postflight system and physical checks on the aircraft to prepare for turn-around or reuse.

2. No formal avionics branch exists in the proposed plan. The avionics division is vital to aircraft mission capability. At present, the nondeployed sea duty avionics technician performs all avionics

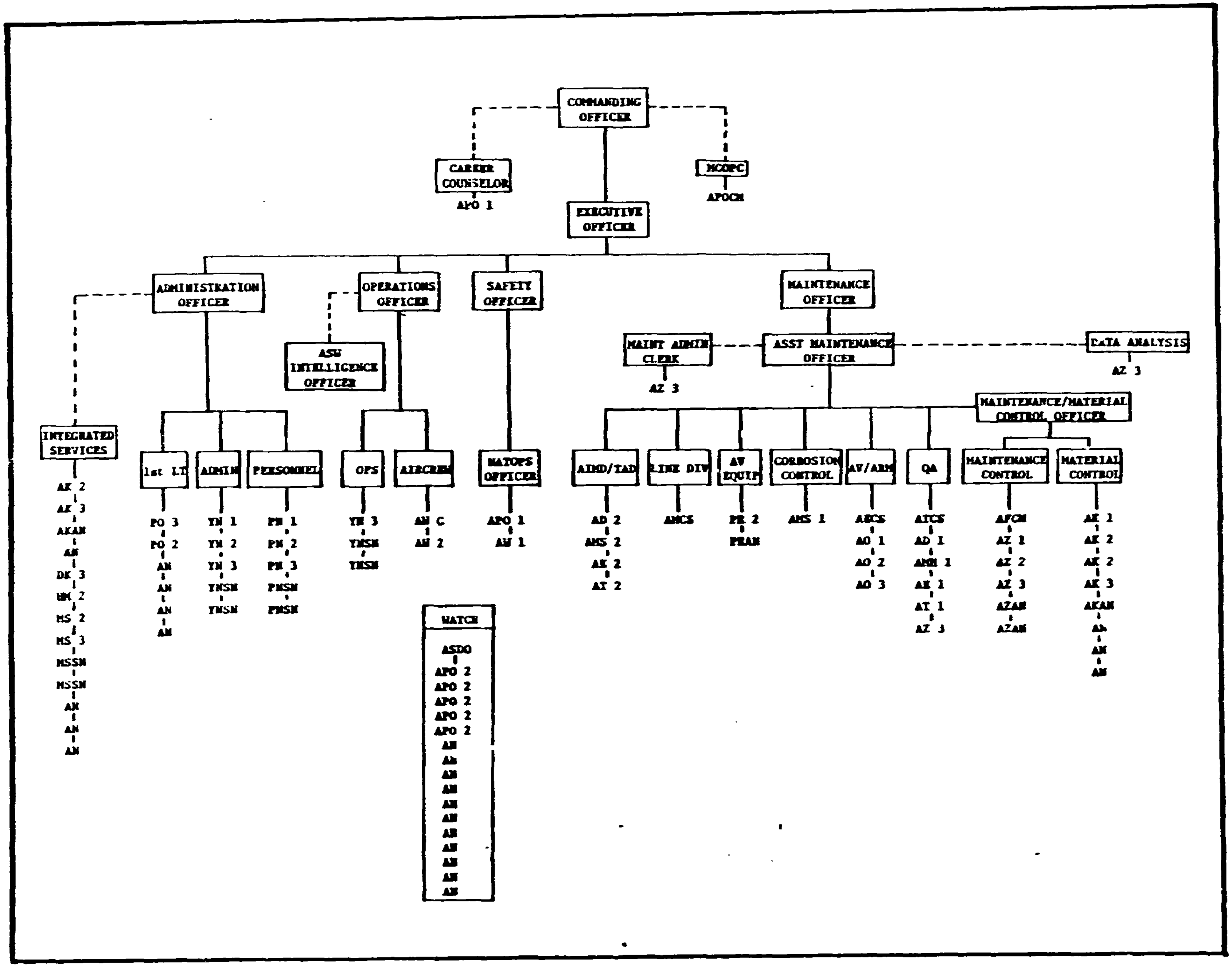


Figure 9: Current LAMPS Mk III Squadron Organization (Shore Component)

duties within the squadron. No guarantee exists that manning needs in this maintenance specialty will be met because of the variables of leave, training, and detachment preparations (workups).

3. The single billet of the line division is inadequate to perform line-handling duties. This especially is true if more than one aircraft is launching or recovering at the same time.

4. The proposed structure lists a total of seven Aviation Maintenance Administrationmen (AZs) in Maintenance Control, Data Analysis, and Maintenance Administration Divisions. This number of AZs is more than is needed. If this organizational structure continues, a better approach would be to redesignate at least four of these billets as a sea component, and use them where their talents are most needed--at sea.

5. The First Lieutenant Division appears to be overmanned in the proposed design. This division is responsible for the physical maintenance, cleanliness, and appearance of squadron work spaces. A team of six enlisted members is, however, a much larger workforce than the job requires. People filling these positions in other than supervisory roles may become stagnant in their career progression. While this design characteristic does not adversely affect the squadron's maintenance effort directly, perhaps a better use of this manpower could be on the line, or in some other mission related endeavor. The recent past witnesses the Navy contracting greater numbers of civilian employees to perform these types of tasks to allow valuable enlisted personnel assets to contribute to mission effectiveness, rather than cleaning or painting. This approach might serve as a viable alternative to this situation.

6. A gross underutilization of manpower is evident in the projected LAMPS Mk III manning design. Reference is made to the 16 billets assigned as enlisted "Assistant Squadron Duty Officers (ASD), Watch Messengers, and Security Watch personnel. No provisions are currently made for these personnel in any work division on the preliminary manning document, yet they are included on the Executive Department's manpower authorization list. The billets for which these members are "assigned" are in other air communities, a duty which is assigned every enlisted member of the squadron so that they might develop in military and leadership watch skills. At the most, this is a technique to assign extra personnel to the HSL squadron(s) where no real manpower need exists.

7. As previously discussed, nondeployed sea duty maintenance personnel supplement the shore maintenance staff to accomplish the maintenance support goals of the squadron. This policy promotes conflict between nondeployed detachment personnel performing real maintenance versus predeployment workup training. In the early stages of a deployment, this situation often leads to a degraded detachment team cohesiveness and coordination.

This chapter is presented in answer to these deficiencies. The alternative organizational structure to be outlined below proposes an unconventional removal of the entire maintenance department from each operational squadron, and reassignment of maintenance personnel in one large central maintenance organization.

C. THE LAMPS MK III CENTRAL MAINTENANCE SQUADRON PROPOSAL

1. Proposal

The proposed central maintenance squadron, shown in Figure 10, would combine the four operational squadrons' maintenance departments, and existing station aviation intermediate maintenance depot (AIMD) and supply depots. This new squadron would perform all maintenance functions on each of the HSL squadrons' aircraft, from line crew/plane captain's handling duties, to airframe, corrosion control, power plant,

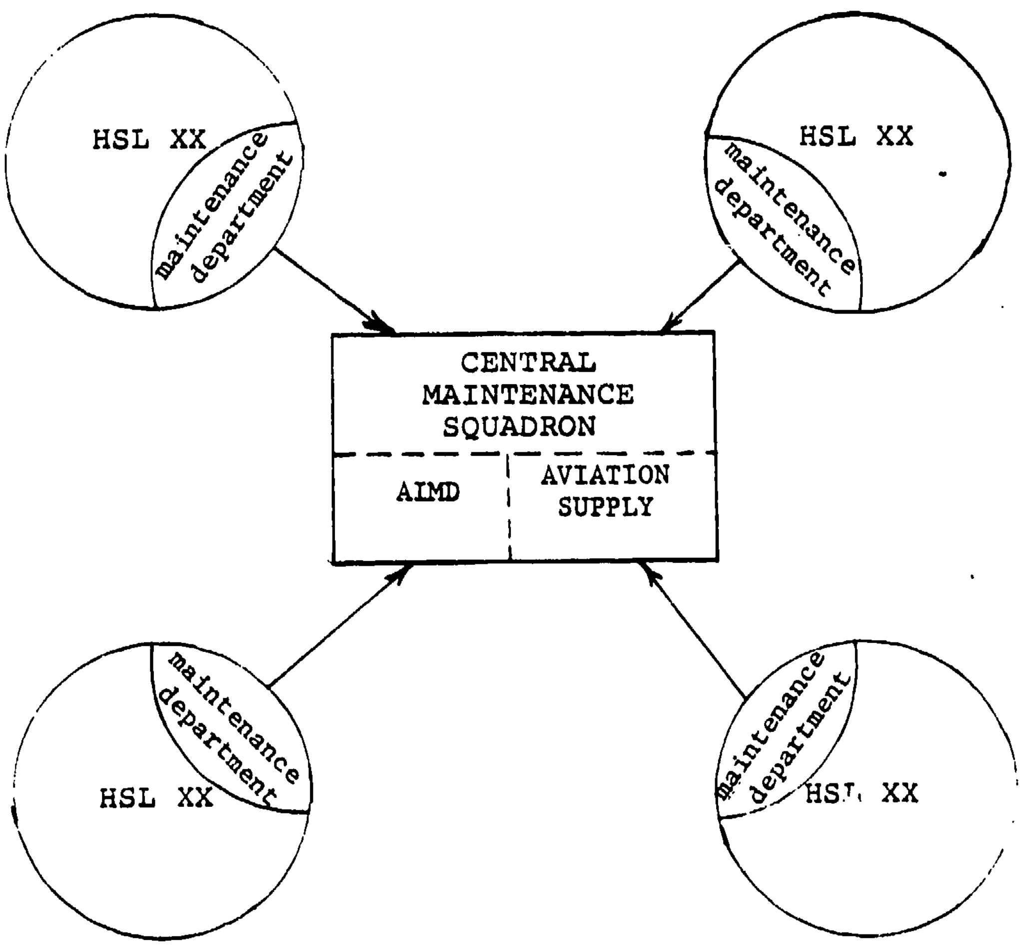


Figure 10: LANT/PAC LAMPS Mk III Central Maintenance Squadron

and avionics maintenance. More specifically, the objectives of the maintenance squadron would include:

a. Maintenance of all HSL operational aircraft not deployed or in use for detachment form-up. (Detachment form-up will be addressed in Chapter VI.)

b. Efficient maintenance, management, and suance of technical libraries to the detachment, as well as provision for expert advise to deploying maintenance teams during form-ups.

c. A technically unified base for at-home detachment maintenance.

d. Centralized management of nondeployed aircraft flight and maintenance log books.

e. Detachment teams with serviced and calibrated ground support equipment, tools, and IMRL test and diagnostic gear for form-ups and deployment.

Upon initial examination, one can see that the central maintenance squadron provides the necessary manpower and organizational division foundation by including only the original "shore duty" assigned personnel. Figure 11 is a schematic presentation of this proposed shore duty component of the maintenance squadron. Each squadron will be assigned 13 SH-60B aircrai . Using the predicted 0.48 deployment ratio, the new maintenance organization will be required to support a minimum of 25 helicopters at any given time. Not displayed in Figure 11 is the non-deployed "sea duty" maintenance component which is in addition to the already impressive array of "shore" maintenance personnel shown.

The 13 detachment crews of 11 maintenance personnel each, multiplied by the 0.48 ratio, results in an "extra" manpower force equating to 69 additional people. Even during those periods of leave and training discussed earlier, this combined workforce is more than sufficient to support expected maintenance requirements.

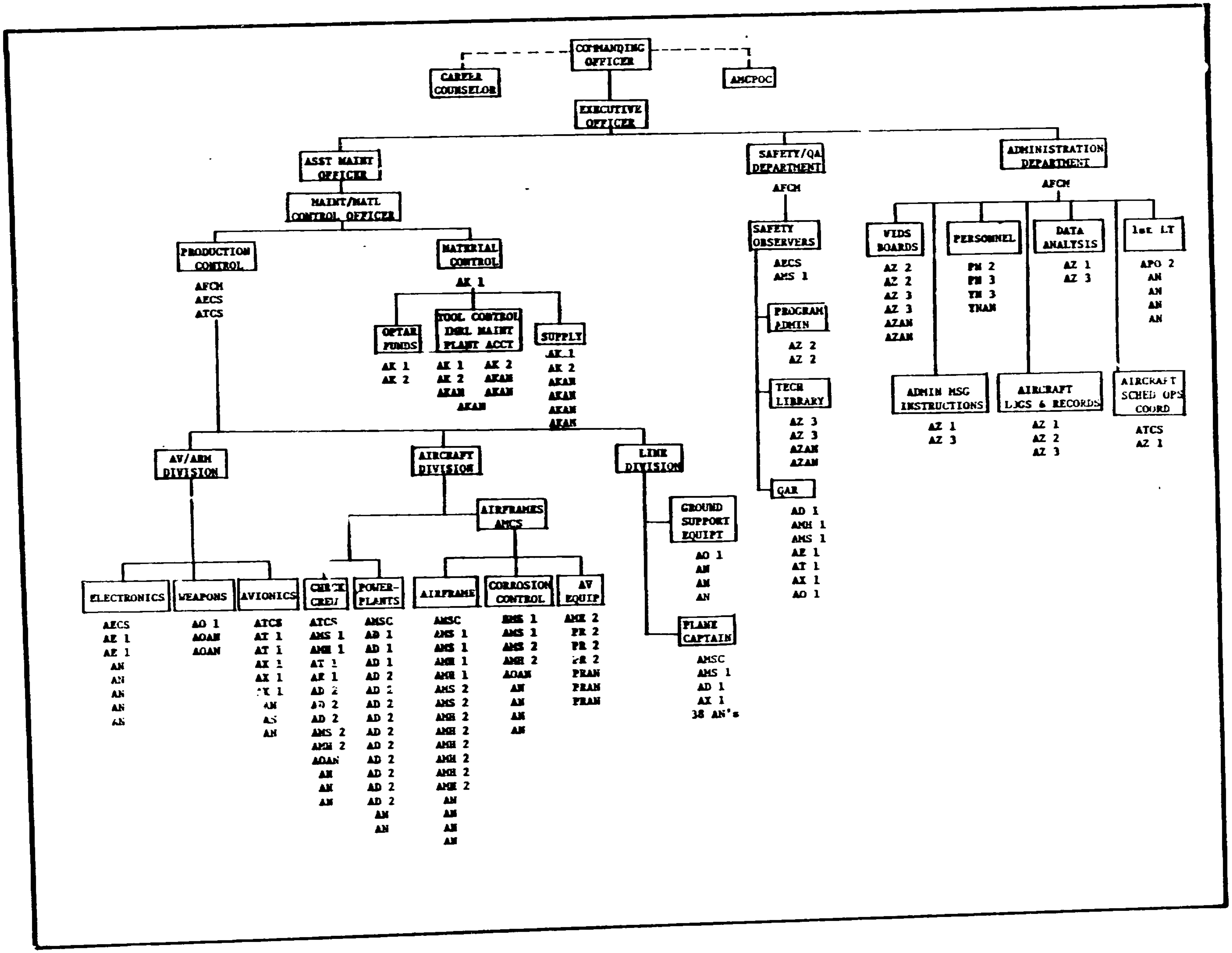


Figure 11: The LAMPS Mk III Maintenance Squadron

2. Relationship of Operational Squadron to the Maintenance Squadron

The operational squadron would remain intact with the exception of all maintenance personnel. The goals and objectives of the squadrons remain unchanged, and would continue administrative and operational control over all aircrews and aircraft. The operations department would task daily flight operations via squadron operations coordinators within the central maintenance squadron. The relationship between the operational squadron and the maintenance of its air assets remains virtually unaltered with the possible exception of realizing higher rates of mission readiness through the expanded maintenance effort.

3. Advantages of the Proposed Central Maintenance Squadron

The proposed central maintenance squadron concept offers unique advantages not afforded to current individual squadron maintenance departments. Among them are the following.

a. The central maintenance squadron would ensure sustained stability within the organization. The sheer magnitude of the maintenance workforce under this proposal guarantees a stable productive maintenance environment. Factors of leave and TAD training will not significantly affect maintenance performance as they presently do in the individual squadrons.

b. Experience levels would be enhanced by forming such a large group of experienced maintenance professionals. Such an atmosphere would promote on the job training of less knowledgeable technicians, and create a positive learning environment for individuals of all rates.

c. Reduction of personnel would result. The maintenance squadron proposal is of a theoretical nature at present, yet there is a strong possibility of operating with fewer than currently required levels of personnel assets. The proposed structure already eliminates many officer and watch billets, and may prove overmanned in several aircraft and line division maintenance work centers. This reduction of personnel could reduce unproductive work hours, and allow the "extra" maintenance specialists to be reassigned where Navy needs may be greater.

d. Improved span of control would occur. Creation of the single maintenance squadron would serve to improve uniformity of maintenance processes and techniques, and reduce current redundancies inherent in separate organizations. Changes in regulations or standards need only be introduced once instead of several times. IMRL, tools, and GSE utilization and control also would be improved, since the tools and equipment would be "pooled" for common employment versus being assigned and maintained within each separate squadron organization. Locating such an organization in close proximity to the AIMD and the aviation supply depot would promote efficiency by reducing the numbers of individual requisition actions and deliveries.

It also would add stability and a sense of ownership for the TAD AIMD workforce. Currently, a technician on temporary assignment with the maintenance depot loses perspective on his/her role in the overall attainment of squadron maintenance objectives. This new concept includes the AIMD as a "team member" for a <u>single</u> maintenance product. Additionally, temporarily assigned personnel would be under the direct jurisdiction and control of their parent command, i.e., the maintenance squadron. Currently all evaluations, recommendations, and discipline inputs are all more difficult to manage because of the AIMD "middle man". Everyone benefits from a base manning concept.

e. Maintenance documentation would be improved. The proposed maintenance structure would remove the "competitive" reporting or operational readiness on 3-M summaries between the individual squadrons. More realistic figures would result, and system weaknesses would be discovered. Perhaps the most important facet of the proposal would be the "sharing of the wealth" of maintenance knowledge. This concept would serve to eliminate the different levels of operational readiness between squadrons that now exist, since all aircraft assets would be maintained universally.

f. Detachment readiness would be increased. The maintenance squadron proposal would allow the sea duty detachment units the freedom to form-up and train many months prior to a deployment, thus becoming a maintenance team instead of performing daily maintenance on all squadron assets as the needs arise. Once the detachment team forms and is assigned their detachment aircraft, the "det" would function as though at sea. It would process its own supply requests, document manhours separately, and maintain its own log books--all under the supervision of the maintenance squadron. Additionally, performance qualification standards (PQS) for AZs and AKs would be assisted by the maintenance squadron, and certified by the detachment officer in charge. In this fashion, maximum training benefit could be realized by the detaching maintenance team prior to deployment.

The central maintenance squadron is a bold proposal because it departs from conventional methods and processes. Yet, it is one that warrants consideration in the redesign of the LAMPS Mk III system.

V. ALTERNATIVE SQUADRON ORGANIZATION: THE LAMPS MK III FLEET READINESS/MAINTENANCE SQUADRON

A. INTRODUCTION

This brief chapter presents an expansion of the central maintenance squadron proposal offered in Chapter IV. The concept will be manifested by a combination of that proposal, and the currently proposed LAMPS Mk III Fleet Readiness Squadron (FRS).

In FY82, two LAMPS Mk III Fleet Readiness Squadrons (one on each U.S. coast) will be established to support the eight new operational squadrons. The mission of the LAMPS FRS will be concerned primarily with aircraft, flight, and tactical training of the HSL aircrew personnel (i.e., pilot, copilot/airborne tactical officer, and AW operator), and technical, mechanical, and electrical training of the sea/shore assigned maintenance support personnel. It is interesting to note the approach of current planning officials in the construction of the HSL shore preliminary manning document (see Appendix C).

The "Proposed Typical Squadron Departmental Organization" contained in OPNAVINST 3120.32A is shown in Figure 12. Attention is called to the fact that HSL squadrons do not require the establishment of a training department within the typical operational squadron. The obvious reasoning for this structural omission is based on a desire to eliminate redundant training billets within each HSL, since the FRS is capable of providing all operational training needs. This organizational precedence is the basis for this section's proposal.

AIRCRAFT SQUADRON ORGANIZATION							
Squadron Types	Department						
	Operations	Administration	Maintenance	Safety	Training	Framp	Other
VA (L)	X	X	X	X			
VA (L) (FRS)	X	X	X	X	X	X	
VA (M)	X	X	X	X			
VA (M) (FRS)	X	X	X	X	X	X	
VAW	X	X	X	X			
VAW (FRS)	X	X	X	X	X	X	
VAQ	X	X	X	X			1
VAQ (FRS)	X	X	X	X	X	X	1
VC	X	X	X	X			
VF	X	X	X	X			
VF (FRS)	X	X	X	X	X	X	
VFP	X	X	X	X	X	X	4
VP	X	X	X	X	X		
VP (FRS)	X	X	X	X	X	X	
VQ	X	X	X	X	6		1,5
VR	X	X	X	X	6		
VRC	X	X	X	X			
VRF	X	X		X			3
VS	X	X	X	X			
VS (FRS)	X	X	X	X	X	X	
VT		X	X	X	X		
VW	X	X	X	X			
VXE	X	X	X	X			2
VXN	X	X	X	X			2
HAL	X	X	X	X			
HM	X	X	X	X			
HM (FRS)	X	X	X	X	X	X	
HC	X	X	X	X	6		
HC (FRS)	X	X	X	X	X	X	
HS	X	X	X	X			
HS (FRS)	X	X	X	X	X	X	
HSL	X	X	X	X			
HSL (FRS)	X	X	X	X	X	X	
HT	X	X	X	X			
RVAH	X	X	X	X			
RVAH (FRS)	X	X	X	X	X	X	

FIGURE 12: Proposed Typical Squadron Departmental Organization

B. PROPOSAL

This chapter's HSL organization redesign proposal addresses the question: If operational training is conducted exclusively within the Fleet Readiness Squadron, why isn't operational maintenance? The proposal incorporates establishment of the central maintenance squadron within the existing Fleet Readiness Squadron's maintenance training division, as pictured in Figure 13. This concept follows much the same rationale outlined in the previous section, yet enjoys additional savings in the areas of increased manpower and aircraft assets.

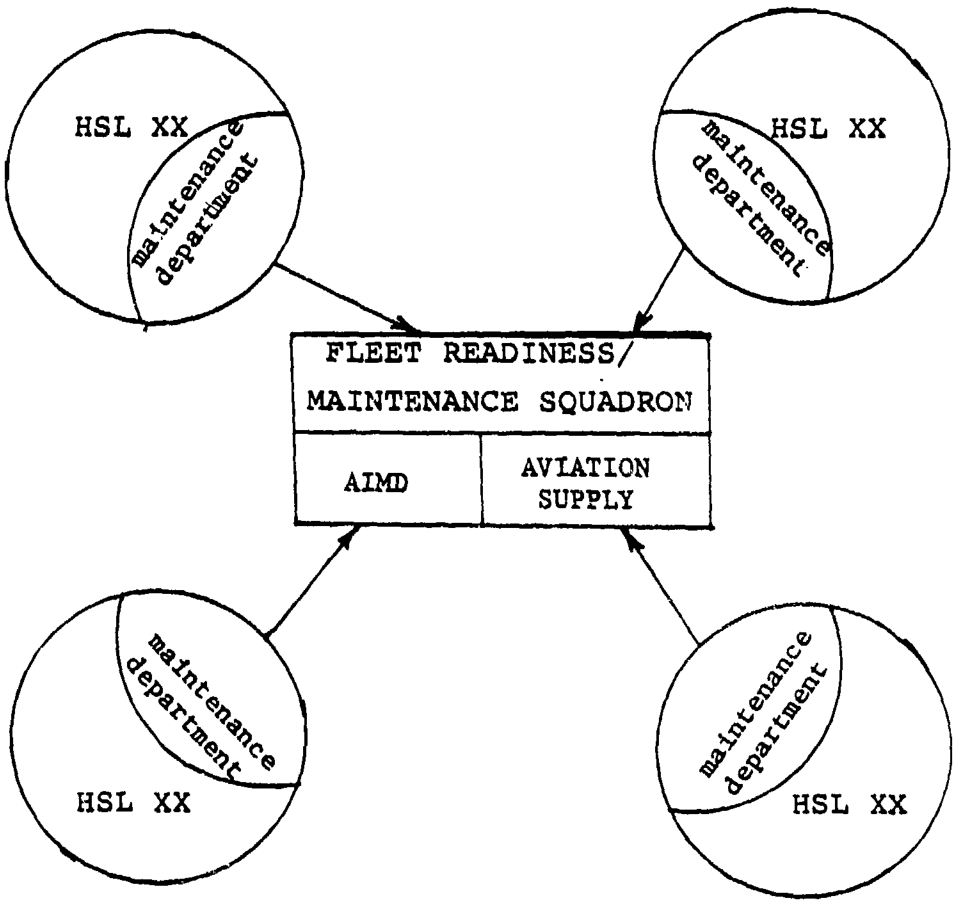


Figure 13: LANT/PAC LAMPS Mk III Fleet Readiness/ Maintenance Squadron Proposal

Figure 14 delineates the proposed organization structure by billet of the FRS Maintenance Training Division combined with that of the central maintenance squadron. The almost overwhelming numbers of maintenance personnel available for maintenance support through this proposal is readily apparent. Note that these billets do not represent nondeployed sea duty maintenance support personnel, or FRS maintenance personnel under training. Although this proposal offers limited manning reductions, manpower studies of this concept--if conducted--may result in added personnel savings.

At present, each Fleet Readiness Squadron is scheduled to receive 17 SH-60B aircraft which will be used in replacement air group (RAG) flight and maintenance training. If implemented, this unique concept could reduce the number of new Seahawks required by the FRS by as much as 40 percent. These aircraft assets would be required to train pilots in flight operations. The maintenance training, however, could be accomplished on actual operational fleet aircraft. This design aspect would provide realistic "on the job" training for student technicians, and introduce them to the tempo of operational maintenance. Although a portion of the actual operational maintenance would be done by the RAG maintenance student, all work would be closely supervised and certified by designated RAG maintenance instructors or quality assurance representatives.

An additional advantage of this proposal is that the experience enriched environment would help create an excellent training atmosphere for student technicians. The reduction of FRS assigned aircraft between the two readiness squadrons could result in a savings of as

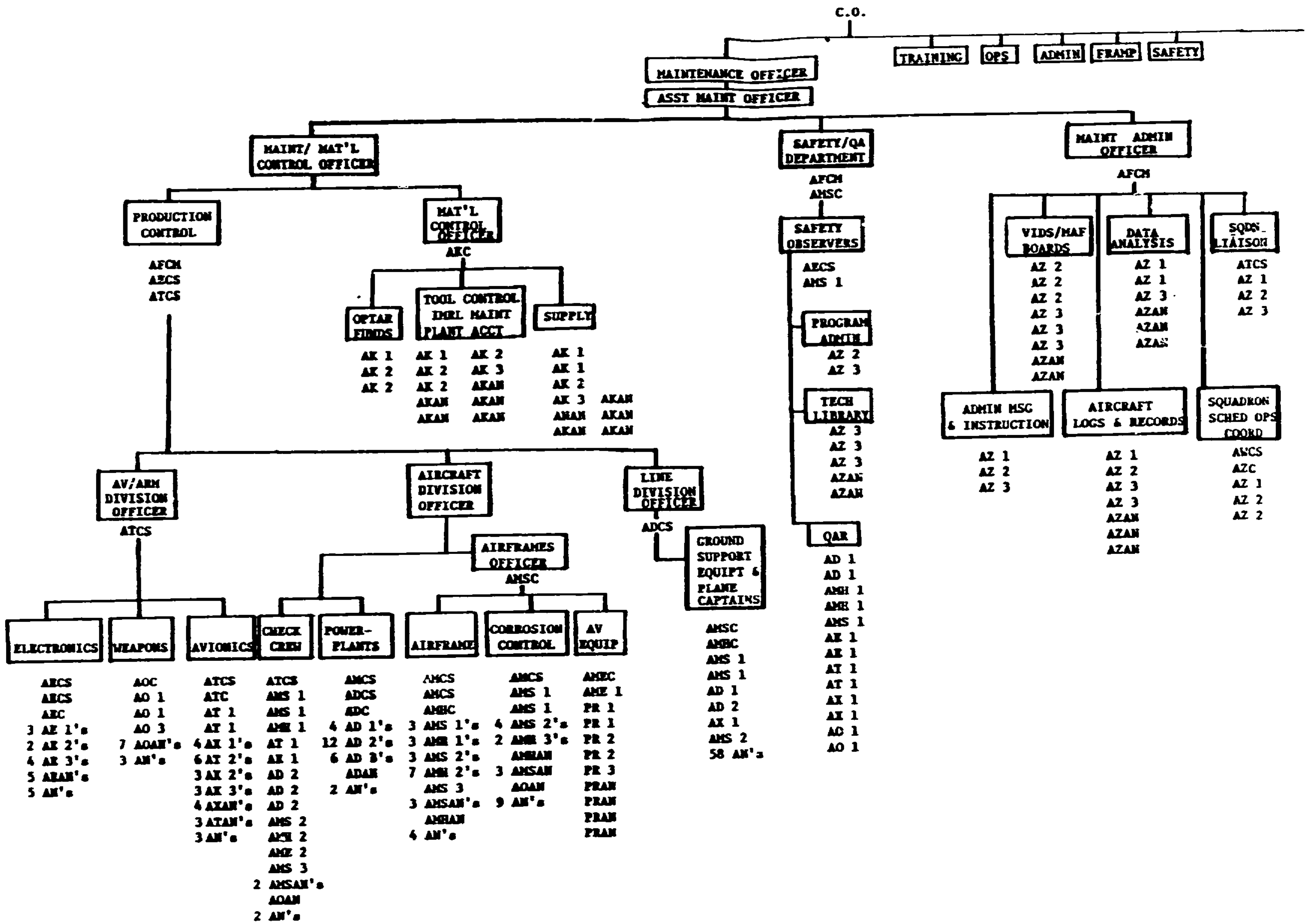


Figure 14: The LAMPS Mk III FRS/Maintenance Squadron

as 11 to 13 aircraft--a number sufficient to establish an additional operational HSL squadron.

The relationship between the operational squadrons and fleet readiness/maintenance squadron would remain the same as outlined in Chapter IV. Each squadron would have a direct representative in the maintenance unit that would perform the duties of liaison and operations coordination. One possible concern regarding these proposals might be that the operational squadrons would lose "control" over the maintenance processing of their particular aircraft assets. This fear should be alleviated by careful examination of the increased ratio of maintenance personnel/aircraft in service under this proposal. Aircraft availability should increase from present mission capable standards, thus shifting the control emphasis from "support" management, to "operational" management.

Both of the maintenance squadron proposals present new and innovative approaches to naval air squadron redesign. Each of the proposals is constructed in such a manner that operational maintenance effectiveness is maximized, while manning requirements are reduced. These concepts are theoretical at present. However, a full analysis of these proposals (which is beyond the scope of this paper) would evaluate the viability of these suggested alternative design solutions.

VI. ALTERNATIVE SQUADRON ORGANIZATION: TEAM MAINTENANCE ORGANIZATION/AUTONOMOUS MAINTENANCE UNIT

A. INTRODUCTION

The proposed alternative squadron organization structures for the LAMPS Mk III weapon system have emphasized the primary aspect of support maintenance in their redesign methodology. The maintenance responsibility is the single most important support duty of the HSL squadron. More men and equipment are dedicated to this support mission than to any other department or task. It seems appropriate, then, to concentrate a redesign effort on that segment which is so vital to the mission of the LAMPS squadron--providing at-sea ASW detachments.

The two previous proposals deviate from tradition and convention to such an extent that while they may appear theoretically practical and organizationally effective, the design concepts may be politically unrealistic. This chapter presents two final design alternatives that are more compatable with conventional naval squadron organization structure. The topics discussed involve specific changes in both management concept and organizational design. They address two inservice adaptive maintenance programs that currently are under development in operational helicopter squadrons. These programs are "Team Maintenance Organization" and the "Autonomous Maintenance Unit".

B. TEAM MAINTENANCE ORGANIZATION

1. Background

Team Maintenance Organization, or TMO, is an innovative management idea introduced by Helicopter Combat Squadron Eleven (HC-11) in the late 1970s. As with the LAMPS squadrons, HC-1's mission is to supply helicopter support detachments to several fleet surface ships. They also have the same problems associated with training and deploying detachments away from the parent squadron for many months, and meeting the wide variety of support requirements at home. The two major problems, as discussed throughout this paper, are the differences in maintenance production beyond deployed and nondeployed personnel, and the continual disruption of the parent unit's organization as detacn-ments are formed, deployed, or reintegrated into the squadron maintenance department.

It has long been recognized that aircraft availability and the quality of maintenance performed on deployed aircraft are generally superior to those of nondeployed aircraft. Historically in LAMPS and HC squadrons, deployed operationally ready (OR) rates of over 90 percent are not uncommon, while essentially the same production crews, when reinstated into the squadron maintenance department, often are unable to maintain a rate of 40 percent. While some of the differences can be explained by the more readily available source of supply for deployed units, and the longer working hours at sea, it is concluded that a large part of the differences lie in the advantages provided by the "organization" of the deployed detachments.

In case after case, high morale of deployed helicopter detach-ments has been consistantly realized. Deployed air and maintenance crews become extremely close knit "teams" who know "their" aircraft well. Deployed det teams are assigned to the ship, but are separate and distinct units from ship's company both in duties and tasking.

Traditionally, detachment tea s pride themselves on the ready status and appearance of their a raft. It is universally recognized within the LAMPS and HC communities that morale, job satisfaction, and pride in aircraft/mission are heightened while teams are deployed. During dets, major onent changes (engines, rotors, hydraulics) and performance tests are often more easily and efficiently accomplished without the encumbrance of coordinating with shops and work centers throughout the squadron. Detachment team maintenance frequently results in more personal attention to the aircraft and equipment.

These statistics and facts gave rise to a need to develop a method which fostered the same detachment morale in the LAMP/HC parent squadron without fragmenting the entire maintenance effort, while at the same time reducing or eliminating the constant turnover of personnel within the squadron as detachments were formed and/or disestablished. The method devised is known as the Team Maintenance Organization.

C. Team Maintenance Organization Proposal

The basic element in team maintenance is the team itself, a nearly self-sufficient unit of 11-13 enlisted maintenance rated personnel headed by a chief petty officer, and three aircrew members. Each team is responsible for the maintenance of "their" helicopter, yet is closely monitored by the squadron's maintenance control and quality assurance divisions. As illustrated in Figure 15, under this proposal the conventional divisions of power plants, airframes, line, etc., work centers are eliminated. However, the quality assurance division is maintained by the squadron. This provides for the highest standards of quality assurance (QA), and for the training of collateral duty quality assurance reps (QARs) for each team, who are designated prior to deployment. Maintenance administration and material control functions remain centrally organized to support teams, and to provide the needed specialized training for maintenance clerks (aircraft log and records, and manhour/flight hour documentation) and aviation storekeepers.

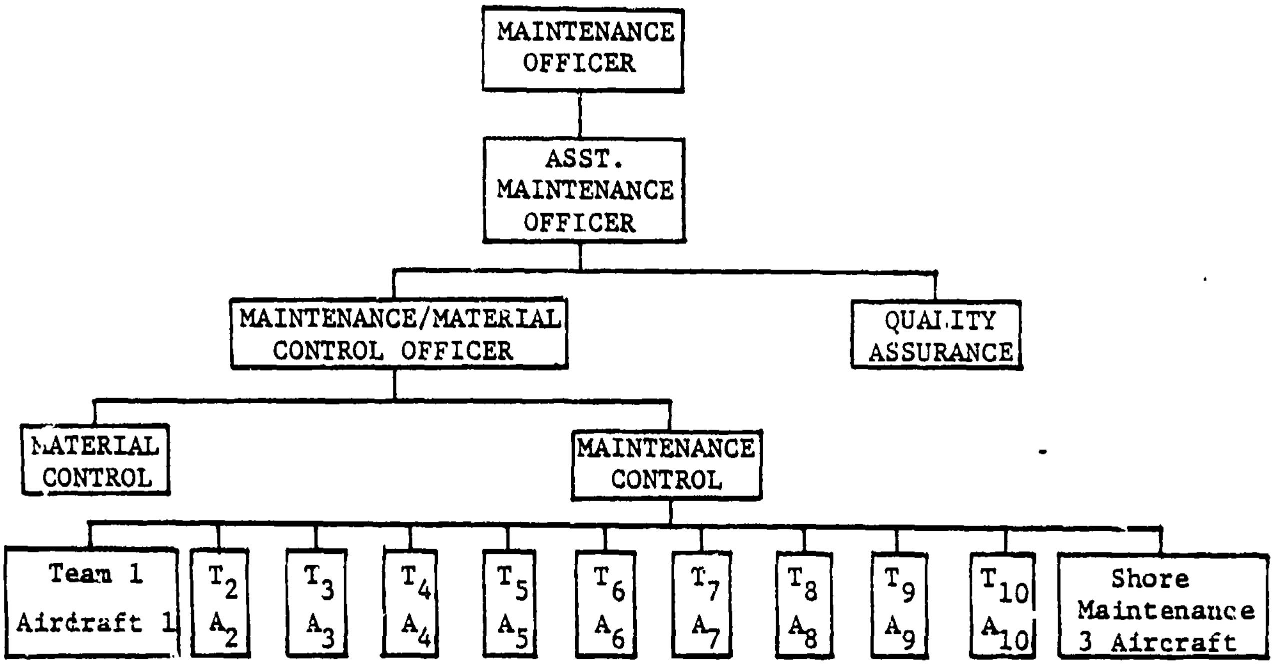


Figure 15: TMO Organization Structure

When deployed, the team becomes the detachment maintenance department with its same assigned helicopter. These aircraft remain with the det team before, during, and after the deployment. This concept allows both the maintenance and aircrews to become thoroughly familiar with the operational idiosyncracies of a particular helicopter, something that is nearly impossible to do under the conventional air squadron maintenance methodology. With only a few individuals in each rating, the person who begins a job usually finishes it. This reduces the chance of errors through maintenance "passdown" and, more importantly, allows the responsibility and credit for the work accomplished to be readily assigned and appropriately recognized.

3. Detachment Methodology

Sixty days prior to deployment, the team becomes a "detachment Unit" under an officer-in-charge (usually the senior pilot/mission commander), and is augmented by an aviation storekeeper (AK) and a maintenance administration man (AZ), and is assigned detachment IMRL equipment. From that time on the detachment functions as an individual "mini-squadron" since all phases of scheduling, flying, and maintenance are accomplished solely by the detachment without squadron interference. The team now processes its own messages and paperwork, and also assumes all QA functions. As an independent group, the team experiences a further growth in pride and professionalism, while morale and safety awareness continues to improve. This warm-up period allows for a time a simulated deployed operation prior to actual shipboard reporting.

Althought not recognized as a sanctioned naval aviation organization structure, the TMO concept has been in existance, on a trial basis in HC-11, since late 1978. According to squadron officials, the effect of the TMO on squadron stability and efficiency has been dramatic. Perhaps the most appreciated benefit from this organizational proposal is the relative ease under which detachment teams are formed.

Conventional squadrons not employing TMO often find forming a detachment to be a formidable task, with ramifications throughout the entire squadron which affect each shop organization and the work of the squadron as a whole. This requires the disassociation of team members from various maintenance work centers and placing on them full maintenance responsibility of an unfamiliar aircraft. The majority of predeployment time often is spent organizing the maintenance effort and establishing working relationships, while the remainder of the squadron maintenance department goes about reestablishing lines of authority and assigning replacements for the personnel pulled out for the det.

During deployment, the technicians develop an exceptional team effort as they work together toward the common goal of keeping the aircraft operationally ready. This finely tuned production team effort ceases to exist after termination of the detachment when the technicians are reassigned to the conventional work center organization. The detachment unit's maintenance production expertise is lost. Formation of each new detachment forces "reinventing" the wheel to become operationally competent.

In employing the TMO concept, the det formation creates only minor changes in the maintenance team, and has little or no effect on the other squadron work centers. Under TMO, predeployment time is spent on necessary aircrew training and aircraft support preparations. To make the team maintenance concept feasible, long range planning is essential at all levels. Detachment teams are formed by balancing the talents, experience levels, and qualifications of personnel from the different maintenance ratings. Projected rotation dates (PRD) close to one another are taken into consideration to allow the detachment group to remain together as a team for the longest possible time.

SDLM induction dates for assigned aircraft are coordinated with projected lows in team manpower, and TAD school assignments are integrated with planned workload requirements. In so doing, deployment schedules can be projected far into the future. This permits team members to make personal plans and arrangements with relative assurance. This aspect alone has helped significantly to improve family relationships and morale under difficult deployment separations. These advantages are even more pronounced on occasions when the inevitable "short notice" or "emergency" detachment is required.

While nondeployed, TMO teams remain intact and are incorporated into the overall maintenance department through maintenance control, which assigns jobs, schedules aircraft for flights, and acts as the hub of the maintenance effort. It should be noted how well the TMO concept could be incorporated into the design of the previously presented central maintenance squadron proposals.

Training normally is accomplished during the at-home cycle, since all teams must be qualified prior to deployment. Peer pressure within the teams to qualify and train new members to serve as plane captains or in other special duties, maintain work spaces, pass periodic QA audits and safety inspections, meet appearance standards, etc., greatly relieves supervisory personnel for the necessary planning and training functions essential for the success of any unit.

Unlike conventional policies, duty and watch sections are based on the team organization, with each team assigned to a duty section as a unit. A team's senior first class petty officer acts as the duty section leader under the supervision of the duty officer, team CPO, and squadron senior watch officer. Squadron staff and administrative personnel are integrated into the watch sections as needed. Line functions also are handled by the team thereby eliminating the personnel "overhead" of a line division. This activity additionally facilitates the training of new personnel in their ultimate production maintenance functions.

The conventional LAMPS/HC air squadron design maintains a number of shore billets for continuity in maintenance staff, QA, and administrative functions. Under TMO, these staff functions do not change. However, shore assigned maintenance personnel are divided into early and late crews to handle limited night and early morning launch and recovery operations. For planned operations outside normal working hours, and on weekends, the team chief and division officers are responsible for managing manpower assets to cover these contingencies.

The responsibility for workload planning and increased personnel management requirements has been readily accepted at the division officer and CPO level, and provides leadership training for the ultimate assumption of these responsibilities while deployed. Under TMO, the requirement for advanced planning continually is emphasized at the command level so that the burdens are eventually distributed throughout the squadron.

The success of the Team Maintenance Organization concept is demonstrated in above fleet average operational ready rates for both deployed and nondeployed assets. In addition to availability, team maintenance demonstrates many added advantages in increased safety, high morale, low absenteeism, and improved reenlistment rates.

Although specifically designed for commands which regularly deploy, team maintenance is a management system whose principles could be applied to any air squadron, and one which could easily adapt and support a central maintenance organization.

C. AUTONOMOUS MAINTENANCE UNITS

1. Background

The Autonomous Maintenance Unit (AMU) is a management concept which recently was brought into practice by Helicopter Antisubmarine Squadron Light Thirty Seven (HSL-37). Executive officers of this LAMPS Mk I squadron realized that the conventional squadron maintenance organization which is comprised of separate, single-rated work centers does not efficiently support detachment type maintenance or team training. The Autonomous Maintenance Unit concept delineated in OPNAVINST 4790.2B seems a most viable solution to this organizational shortfall.

2. Concept

The concept of the AMU essentially is the same as that of the TMO, with one major exception. The concept of AMU requires that a conventional squadron's maintenance department be reorganized into multirated production centers (MRPC) which devote their technical expertise to specifically assigned aircraft (see Figure 16). AMU personnel assignments include people who eventually will form into detachments from the assigned maintenance unit. One of the two AMU assigned helicopters becomes the deployment aircraft. The AMU division officer serves as the detachment OIC and maintenance officer. The biggest difference between the two organizational concepts is that both sea and shore personnel components comprise an Autonomous Maintenance Unit/MRPC. As the sea component forms up and deploys,

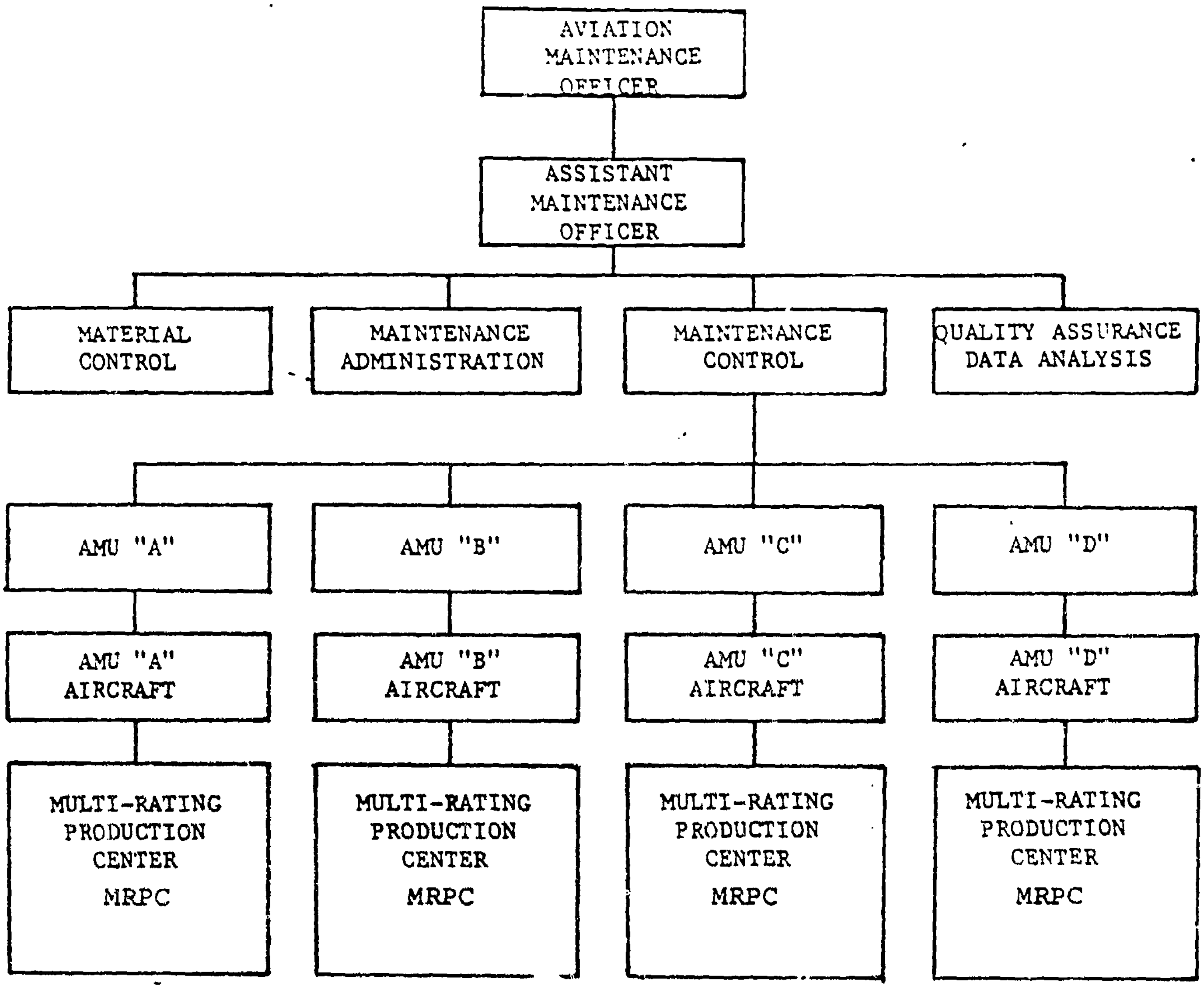


FIGURE 16: AMU Organization Structure

the shore MRPC component remains intact to maintain the other non-deployed aircraft which is used in daily squadron operations. The MRPC, meanwhile, awaits the return of a previously deployed detachment team whose technicians and aircraft rejoin the AMU in support of squadron operations. The AMU will remain in this configuration until their next deployment.

Additional personnel not yet scheduled for a detachment, or who have PCS rotations that preclude another deployment during their squadron tour, are assigned to each production center to supplement the det cadre and provide manning to support the squadron's day/night flight operations.

This adaptation of the Team Maintenance Organization enables the establishment of a maintenance production environment that carries over from one detachment organization to the next, while simultaneously achieving the following goals:

a. train qualified maintenance teams capable of independently supporting their assigned aircraft before deployment;

b. provide training stability and focus in each unit prior to detachment formation;

c. allow long range detachment programming;

d. produce flexibility in the workforce;

e. increase the operational capacity of each maintenance unit whether ashore or at sea;

f. increase aircraft readiness and utilization; and

g. allow immediate squadron response to at-sea operational commitments (surge force, special operations, etc.).

The Autonomous Maintenance Unit offers one conventional design advantage over the Team Maintenance Organization--span of control.

Under the TMO concept, returning detachments rejoin the squadron and are required to relinquish the individual management of their actions back to the parent command's maintenance control. This sometimes causes friction between det members and the shore support personnel. In addition, as detachment personnel depart on postdeployment leave, their aircraft stands idle for the length of the leave period.

In contrast, the AMU concept offers rejoining maintenance forces with the multirated production center. The MRPC is the liaison agent between the det and maintenance control. Thus the reestablishment of control relations with maintenance control is made easier and less disruptive through the production center. The dilemma of an idle aircraft during leave is not present in the AMU concept, since shore personnel maintain the helicopter until the return of the det technicians.

All other aspects and advantages of the two comparative maintenance proposals are nearly identical. The Autonomous Maintenance Unit and the Team Maintenance Organization proposals offer all the required essentials for supporting the mission of providing fully capable detachments and aircraft ready to operate at sea. To this end these concepts develop unity, pride in ownership, consolidated cross-rate training, and teamwork, whether at home or at sea. The proposals now are available to support readiness goals and operational success in the future.

VII. THE EXPANDING ROLE OF THE NAVAL FLIGHT OFFICER IN THE LAMPS MK III SYSTEM

A. THE NAVAL FLIGHT OFFICER

1. Background

The officer corps of the U.S. Navy can be categorized into three warfare subspecialties: (1) Surface Warfare Officer, (2) Submarine Warfare Officer, and (3) Aviation Warfare Officer. Responsibility for aviation operations rests with the latter category. This chapter deals with a subset of the aviation warfare community, the Naval Flight Officer (NFO), and the possible expansion of the NFO role into duties with the LAMPS Mk III program.

According to NAVPERS publication 15197 (Unrestricted Line Officers Career Planning Guidebook), the aviation warfare community makes up approximately one-half of the unrestricted line officers in the U.S. Navy. Officers in this community (known also as the 13xx community) have designators beginning with the number 13. The community is made up of: (1) pilots designated either 1310 or 1315 (denoting regular or reserve military status), (2) Naval Flight Officers designated either 1320 or 1325, and (3) Aviation Generalist Officers, designated either 1300 or 1305.

The military pilot's role is clearly evident and is well-defined in self-explanatory terms. It is delineated more specifically in OPNAV Instruction 3710-7J (NATOPS General Flight and Operating Instructions). However, the role of the other primary member of the community, the NFO, is not evident from the title. Further discussion is warranted concerning the evolution of this non-pilot flying officer.

The increasing complexity of naval aviation's technical hardware, and the rising costs of pilot training were recognized at the General Aviation Conference of 1959. Results of the conference included a recommendation to establish a school to train "back seat" support officers in the handling of sophisticated electronic devices for navigation, early warning, search, attack, and submarine detection. The school was commissioned as the Basic Naval Aviation Officer's School (BNAO), and marked the beginning of the Naval Aviation Observer (NAO) program.

Training was conducted in three phases: (1) pre-flight, (2) basic, and (3) specialized technical schools. Preflight was identical for both NAOs and prospective pilots. The other two phases of the program were specifically designed to train officers as flying crew members in airborne early warning (AEW), fighter (VF), attack (VA), and antisubmarine (VP-VS) aircraft, and for ground jobs in electronics, maintenance, and intelligence fields. Training for this new flying member was accomplished at one-fourth the expense of training a pilot.

The redesignation of Naval Observers to Naval Flight Officers occurred in 1965. In addition, many other major milestones for the 1320 community have been achieved in the recent past. Among them were: (1) the expansion in 1968 of BNAO school to full squadron status as Training Squadron Ten (VT-10), and (2), the addition of a new building housing modern classroom and computer link all-purpose navigation flight simulation, with additional staff personnel to support the training of over 550 student NFOs.

Training received at NAS Pensacola, Florida in VT-10 prepares Navy and Marine Corps Flight Officers for service in several different aircraft pipelines. These officers choose an aircraft type/mission, and then receive specialized training towards becoming: a Radar Intercept Officer (RIO) for F-4 and F-14 fighter jet aircraft, a Bombardier-Navigator (BN) for A-6/EA6B attack jet aircraft, a Tactical Coordinator/Mission Commander (TACCO) for the S-3 and P-3 jet and turboprop patrol ASW aircraft, or an Airborne Controller (CICO) in the E-2c aircraft.

The NAO program was responsible for two other categories of specialized officers, maintenance and intelligence officers, who have their own training pipelines, and who are no longer included in training at VT-10.

B. NFO EMPLOYMENT IN THE LAMPS MK III PROGRAM

1. LAMPS ASW Methodology

As outlined in Chapter I, the LAMPS Mk III system is an integrated air/ship team. Just as in the P-3 and S-3 missions, the LAMPS Mk III will require a special caliber of ASW expertise to ensure mission success. Mission success is defined as having the ability to interface smoothly as a tactical team to accomplish a particular task in the most advantageous mode of operation/control. The airborne team crew function of primary concern to this chapter is that of the copilot, or Airborne Tactical Officer (ATO).

To examine the role of the ATO, an understanding of the operational ASW setting is necessary. The ASW mission scenario was discussed in Chapter I of this paper. This section briefly expands the earlier operational presentation with emphasis on ASW macro methodology.

Tactical ASW consists of four stages: (1) intelligence, (2) detection, (3) localization, and (4) tracking or attack. The tactical intelligence picture includes information about the number of submarines in each class, the number and range of cruise or ballistic missiles, the number and type of torpedoes, as well as the submarine's speed and endurance, noise levels, sonar and radar capabilities, operating tactics, and special vulnerabilities.

The detection phase is concerned with finding this underwater tactical threat through the use of a wide range of electronic sensors. Once the submarine is detected, localization begins. The objectives of this phase are to identify the threat and pinpoint its position. Following localization, the last stage involves tracking or attack, depending upon whether a peace or wartime situation exists. Criteria for attack are classified and will not be discussed further.

A more detailed presentation of one aspect of the tracking function adequately demonstrates the complexities of the tactical options available. For example, if a contact is lost during the passive tracking phase, one option available (if permitted by local command policies) is the use of active sensors. This decision must be made by a tactical officer whose full attention is directed toward the tactical problem. If the choice is made to use active sensors, the aircraft element of surprise is forfeited, since the enemy threat becomes aware of its presence. The tactical decision on this option must be reached in a timely manner, since the datum or search area expands in size with elapsed time.

Modern nuclear submarines can decrease the chances of continued tracking success by use of their high speed dash capabilities. In sea based VS and LAMPS ASW modes, prosecution of contacts also is limited by available on-station mission time, usually controlled by fuel constraints and limited sensor resources.

Both correct choices of sensor allocation and timely tactical progression become increasingly important as mission phases progress. Decisionmaking in ASW tactical situations is the process of converting sensor information into actions. As this example illustrates, mission success depends on the quality and timeliness of decisions by the Tactical Airborne Coordinator--an NFO subspecialty in ASW platforms.

2. The NFO as ATO

Examination of the roles of current ASW NFO's in both VS and VP squadrons reveals a remarkable similarity to task requirements of the LAMPS ATO/Copilot. Table 10 depicts the LAMPS Airborne Tactical Officer's functions. Figures 17 and 18 describe the duties of the VP and VS antisubmarine warfare NFOs.

The S-3 NFO program, in particular, has advanced and developed greatly in the past decade. In 1977, a test program was initiated to put a Naval Flight Officer in the copilot's left seat and have him serve as a tactical ASW/nonacoustic sensor operator and safety of flight observer. These NFOs received hands-on flight experience in takeoffs and landings, as well as in emergency flight situation procedures. The COTAC program has met with much success, and now is employed in every operational VS squadron on the west coast.

Table 10: LAMPS Mk III ATO Airborne Functions

AIRBORNE TACTICAL OFFICER (ATO)

The ATO airborne functions are:

a. Copilot aircraft
b. Monitor tactical operations
c. Direct mission (helo control mode)
d. Configure communications
e. Generate fly-to-points (helo control mode)
f. Monitor ESM equipment
g. Monitor search radar
h. Select/deploy buoys (helo control mode)
i. Designate buoys to be processed
j. Localize contacts
k. Track targets (helo control mode)
l. Select/preset torpedo
m. Drop torpedo

In 1979-80, these squadrons established manning levels to reflect a 50/50 COTAC/Copilot mix for their tactical aircrews. The VS community recognized early that the talents and abilities of the ASW trained Naval Flight Officer could be employed in the COTAC program and increase overall mission effectiveness while responding to the critical pilot retention problem plaguing today's naval service.

In examining the three lists of ASW roles, it is clear that with the exception of the safety of flight requirements, the functions of the LAMPS Mk III Airborne Tactical Officer could be filled by an NFO (132x). In the opinion of this author, this proposal warrants due consideration in light of the enormous success enjoyed by the S-3 NFO COTAC program. The shipboard S-3's ASW mission role and

TACTICAL COORDINATOR.

The TACCO's function is to employ appropria[illegible] and procedures to most effectively carry out [illegible] of the aircraft and its crew. He will initiate a c[illegible]ated plan of action for all tactical crewmembers a[illegible] ously monitor, review and revise the plan as the situa[illegible] dictates. He will make decisions regarding search and [illegible] stores selection and release. He shall ensure the accurate completion, collection and disposition of requi[illegible] mag-netic tapes, logs and records.

The deployment of search stores is determined by the TACCO, and is normally accomplished by the computer. The ordnanceman when directed by either the TACCO or the PILOT may select and launch a store either manually from a pre-loaded SLT or PSLT or in the event of complete equipment malfunctions, through the free fall chute. Kill stores are selected in conjunction with the pilot by the TACCO.
The TACCO coordinates the efforts of all tactical crewmembers advising of the possibility of contact as well as informing them of surface traffic, and the spatial sonobuoy distributions. TACCO ensures that proper EMCON condition is maintained.

NAVIGATION/COMMUNICATIONS OFFICER.

It is the responsibility of the navigation/communications officer (NAV/COMM) to maintain an accurate record of present and past positions, to insert navigation fly-to-points, update geographical position, transmit tactical messages as authorized for release by the aircraft commander, set up rad[illegible] equipment before flight, and maintain a record of the flight. The NAV/COMM is responsible for navigating the aircraft to the specified operational area and transmitting aircraft position reports in accordance with directives promulgated by the operational commander. The NAV/COMM shall provide data link assistance as directed by the TACCO. The NAV/COMM sh[illegible]ll also monitor navigation systems in use. The TACCO shall be advised of navigation system failures.

Figure 17: P-3 NFO's Tactical ASW Duties

S-3 COTAC/TACCO ASW Functions:

COTAC

1) Act as Copilot/relief pilot
2) Safety observer
3) Navigation
4) Communications
5) Non-acoustic sensor operator (radar/MAD/ESM)
6) Relay of tactical non-acoustic info to TACCO for mission implementation

TACCO

1) Formulates tactical methodology
2) Coordinates crew during ASW evolution
3) Data link control
4) Monitor tactical operations
5) Selects/deploys buoys
6) Designates buoys to process
7) Localizes/tracts target
8) Selects/deploys conventional/nuclear weapons

Figure 18: VS NFO Tactical ASW Roles

operating mode is very similar to that of the proposed LAMPS Mk III, and the NFO-Copilot concept has been painstakenly tested and evaluated in extended operational deployments in the Eastern Pacific and Indian Ocean.

In further support of this proposal, the "relief pilot" concept no longer occupies its once vital position of importance because of the introduction of superior autopilot systems in the SH-60B Seahawk. These advanced autopilot capabilities, combined with a short mission endurance (2 hours), nearly eliminates concern about pilot fatigue. The "safety of flight" requirement, however, is still a significant issue when considering placement of an NFO in the ATO position. The NFO would need to perform as a safety of flight backup.

Yet, if the Navy trained the NFO to fly the aircraft, one of the important cost advantages would disappear, as well as the desire to to have a cadre of highly qualified ASW weapon system's operators. Refer again to the successful S-3 COTAC program where NFOs have been trained to perform safety of flight "monitoring" in tactical aircraft.

The ship subsystem position (ATACO) does not involve a safety of flight issue, and the use of a second tour VP or VS TACCO would greatly enhance the capability of the air/ship team concept. The officers assigned to the LAMPS ship subsystem positions described in Chapter I need the ASW expertise obtained by a TACCO in a VP/VS squadron tour to ensure that the combined air/ship system performs as an integrated team. It would be highly desirable for the ATACO to be cross-trained as an ATO.

In addressing this issue, it should be noted that the LAMPS Mk III has many secondary mission roles (e.g., Medevac, Vertrep, SAR, etc.) that do not specifically require an ATO, but might benefit from the services of a copilot. This proposal would utilize NFOs as ATOs in clear daytime operations to form a data basis for more thoroughly evaluating the safety of flight issue. This alternative gives the ATACO the opportunity to relate better to the air subsystem part of the mission during an ASW scenario, thereby increasing his effectiveness to act as the mission's tactical controller while aboard ship.

The safety of flight/NFO-ATO issue is one that should be examined by an appropriate naval air safety agency. This chapter merely concludes that the option to assign an ASW trained Naval Flight Officer as a LAMPS Mk III ATO is one that is viable and could greatly enhance the overall antisubmarine warfare capabilities and effectiveness of this new weapon system.

VIII. SUMMARY AND RECOMMENDATIONS

A. SUMMARY

The LAMPS Mk III weapon system is an important advance in the U.S. Navy's surface combatant antisubmarine warfare program. It represents a sophisticated growth in technology and change. It coincides with the sharp reduction in the Navy's ability to retain naval aviators and skilled maintenance technicians. The LAMPS Mk III program introduces not only a state of the art ASW platform, but also an opportunity to reorganize and redesign the organization structure and management concept of the conventional naval air squadron.

This study charges that there is an important variable missing from the LAMPS organizational equation, that of stability or unity. The conventional naval organization design is "operational specific". Ships and squadrons that employ this design characteristic rarely experience the physical separation from unit that is the rule, rather than the exception, in the LAMPS community. HSL squadrons operate through several aircraft "detachments" of up to six months per year rather than as a fully-deployed force.

To make this transient squadron organization viable, an unique personnel structure is employed by LAMPS squadrons. This structure consists of both shore and sea duty assigned personnel. Sixty percent of the squadron billets are manned by sea duty officers and enlisted personnel who rotate to and from deployments as their respective detachment ship schedules dictate. This transient characteristic results in a lack of organizational stability and continuity, and presents unique problems in training, management, and support which are not encountered in any other naval air community. Despite these diverse operating requirements, Navy officials have failed to recognize that the traditional naval squadron organization structure does not adequately support the Light Airborne Multi-Purpose System.

This report presents evidence that the conventional squadron design will not meet the needs of the LAMPS Mk III helicopter squadron when it is introduced into the fleet in FY 1983. Statistical and organizational analyses have been offered in support of this claim. Several alternative organizational proposals and management concepts have been introduced which could remedy the organizational dilemma of inefficiency and duplication of effort experienced by HSL squadrons operating under current design and manpower constraints.

B. RECOMMENDATIONS

1. Background and Conclusions

Most HSL squadrons employ the standard organizational design, but operate as a matrix organization in which personnel assets are shuffled between departments and detachments to meet changing operational and administrative requirements. Alternative proposals outlined in this study offer solutions for redesign of current structure. This introductory analysis recommends that an alternative organization design must be developed if the LAMPS Mk III program is to succeed.

The program calls for the establishment of 10 new helicopter squadrons, and the assignment of over 2,350 men and women to support its missions. This is a delta increase in manpower, and one that will not be feasible under current manning constraints and recruitment shortages. The only alternative remaining is to create an organization structure that incorporates these limiting factors in its design.

In this regard, it is recommended that a design similar to that outlined in Chapter V be adopted and implemented. The Central Maintenance/Fleet Readiness Squadron is an innovative approach that combines maintenance support and valuable training through its support effort. This concept allows for increased productivity and efficiency by (1) eliminating redundant tasks performed by each individual operational squadron, and (2) reducing the number of personnel required by the creation of a large maintenance workforce. By combining the efforts of each operational squadron's maintenance division, a reduction of four of the five maintenance work centers can be accomplished at a savings of over 50 percent in support personnel.

Additionally, the sheer size of this maintenance division would allow for freedoms and reduced pressures not afforded by conventional maintenance department structures. The colocation of the aircraft intermediate maintenance depot and the aviation supply depot would increase efficiency and productivity by working as team elements of the FRS/CMS. While cost figures were not developed, it is expected that a significant savings of time and money would result from this proposal. An important advantage of the FRS/CMS theory is the saving of millions of dollars in reduced assigned aircraft assets by training maintenance technicians on operational aircraft.

As noted in Chapter VII, naval pilot retention rates are low. The FRS/CMS concept reduces the number of naval aviators required by assigning aviation maintenance officers in squadron officer billets. These officers are highly trained aviation maintenance professionals whose job is to support naval aviation squadrons as maintenance administrators and department heads

A consideration of this recommendation is that as maintenance officers are assigned key positions of leadership in the central maintenance facility, leadership development opportunities are eliminated for line officers as department heads. This further reduction of the already limited department head positions in HSL squadrons could have definite effects on aviation careers resulting from promotion and command screening.

This proposal is sound in organization and management theory, and should be considered for adoption by the United States Navy. Squadron organizational design historically is entrenched in tradition and embodied in politics, but change is needed before LAMPS Mk III is introduced.

An alternate recommendation is the adoption of the Autonomous Maintenance Unit proposal. While this concept contributes little in the area of personnel and aircraft savings, it does offer a proven increase in maintenance support and mission capability. Since it conforms to conventional squadron design characteristics, it is easier to implement than the central maintenance concept. This proposal has been proven in an actual operational squadron that has realized significant increases in operational readiness, detachment availability-training capability, and personnel satisfaction and retention. This concept is palatable in that it costs no more to implement than current HSL squadron proposals, yet it contributes much more in terms of mission objectives and effectiveness.

By the 1990s, more than one-third of naval aviation will be organized under similar squadron methodology. This report is provided as a decision aid for the organizational development of the LAMPS Mk III and future detachment based squadrons. Only time, the dictates of necessity, and economic constraints will determine the actual management/organization structure adopted for the future naval aviation squadron.

APPENDIX A

OPNAVINST 5320.233A

AIRCRAFT SQUADRON MANPOWER DOCUMENT

A TEN AIRCRAFT SH-2F SQUADRON (HSL)

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, D.C. 20350

IN REPLY REFER TO
OPNAVINST 5320.233A
Op-111C2
DEC 18 1979

OPNAV INSTRUCTION 5320.233A

Subj: Squadron Manpower Document for a Ten Aircraft SH-2F LAMPS Squadron (HSL)

Ref: (a) OPNAVINST 1000.16D

Encl: (1) Subject document

1. Purpose. To promulgate the Squadron Manpower Document (SQMD) for a fleet HSL squadron and establish its relationship to Manpower Authorizations (MPA) for these squadrons, as well as certain other manpower directives issued by the Chief of Naval Operations (CNO).

2. Cancellation. OPNAVINST 5320.233 and OPNAVINST 5320.234

3. Background

a. CNO is engaged in developing and updating a series of manpower documents for all types of aircraft squadrons, using a methodology which applies selected work study techniques to quantify basic manpower requirements for operations, maintenance, training, support, and administrative functions. These documents, entitled SQMD, display in detail the unconstrained manpower requirements for aircraft squadrons. This manpower is predicated on configuration, computed workload, specified operating profile, and required operational capabilities.

b. Manpower as shown in the SQMD is termed organizational manpower, that is, manpower necessary to perform mission requirements specified in the Required Operational Capabilities (ROC) and Projected Operational Environment (POE) statements.

c. The SQMD serves as the basis for the MPA described by reference (a).

4. Action. Enclosure (1) shall be used for manpower planning. The organization and billet assignment shown in the SQMD are predicated on workload gathered and analyzed in detail by the Naval Manpower and Material Analysis Centers.

Actual assignment of personnel continues to be the responsibility of the command.

P. M. HARTINGTON
By direction

Distribution (2 copies):

SNDL	21A	(Fleet Commanders in Chief) (less CINCUSNAVEUR)
	24A	(Naval Air Force Commanders)
	42B1	(Functional Wing Commander LANT) (COMSEABASEDASWWINGLANT, only)
	42B2	(Functional Wing Commander PAC) (COMASWWINGPAC, only)
	42V	(Helicopter Sea Control Wing) (COMHELSEACONWING 1, only)
	42CC	(Helicopter Anti-Submarine Squadron, Light (HSL))

Copy to (2 copies each unless otherwise shown):

SNDL	A4A	(CHNAVMAT)
	FF30	(NAVMMAC)
	FJ18	(COMNAVMILPERSCOM) (4)
	FJ87	(EPMAC)
	FKA1A	(COMNAVAIRSYSCOM) (Code 413B) (3)
	FKA6A2	(NAVWPNCEN)
	FKR2B	(NAVWPNENGSUPPACT)
	FKR3A	(NAVAIRENGCEN) (Code 903)
	FKR7E	(NAVAVNLOGCEN)
	FR1	(CNAVRES)
	FT1	(CNET)

Ops-121, 05, 514, 592, 597, and 09R1

Stocked:
CO, NAVPUBFORMCEN
5801 Tabor Avenue
Philadelphia, PA 19120

SH-2F LAMPS SQUADRON (HSL)

SQUADRON MANPOWER DOCUMENT

FOREWORD

THIS SQUADRON MANPOWER DOCUMENT WAS DEVELOPED BY THE CHIEF OF NAVAL OPERATIONS TO DELINEATE THE MANPOWER REQUIRED TO PERFORM THE MISSION TASKING CONTAINED IN THE UNIT'S STATEMENT OF REQUIRED OPERATIONAL CAPABILITIES (ROC) AND PROJECTED OPERATIONAL ENVIRONMENT (POE).

SECTION I

MISSION, ROC & POE

FOR

SH-2F LAMPS SQUADRON (HSL)

MISSION, ROC & POE: FOR FY 82 MAY BE FOUND IN CNO MSG 171337Z NOV 78 AS MODIFIED BY CNO MSG 211548Z MAR 79.

SECTION II

MANPOWER SUMMARY

FOR

SH-2F LAMPS SQUADRON (HSL)

MAJOR ORGANIZATIONAL COMPONENT	OFF	ENL	CIV
EXEC DEPT	2	18	0
ADMIN DEPT	1	14	0
OPERATIONS DEPT	1/2*	4/7*	0
SAFETY DEPT	1	3	0
MAINTENANCE DEPT	3	29	0
INTEGRATED SERVICES	0	11	0
AIMD	0	10	0
TOTAL	8/9*	89/92*	0

* HSL-37 ONLY

SECTION III

MANPOWER REQUIREMENTS FOR SH-2F LAMPS SQUADRON (HSL)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS RT	G R	F A C	REQUIRED TO SUPPORT ROC/POE
00010	EXEC DEPT								
00020	SQUADRON CO		DV2/M	8670		1311H			001
00030	SQUADRON XO		DV2/M	8672		1311H			001
00260	EXEC ASST					APOCM			001
00270	CAREER COUNS				9588	PO1			001
00280	ASDO					APO2			001
00290	ASDO					APO2			001
00300	ASDO					APO2			001
00310	ASDO					APO2			001
00320	ASDO					APO2			001
00350	MSGR						AN		001
00360	MSGR						AN		001
00370	MSGR						AN		001
00380	MSGR						AN		001
00390	MSGR						AN		001
00410	SECURITY WATCH						AN		001
00420	SECURITY WATCH						AN		001
00430	SECURITY WATCH						AN		001
00440	SECURITY WATCH						AN		001
00450	SECURITY WATCH						AN		001
00460	SECURITY WATCH						AN		001
01000	ADMIN DEPT								
01010	ADMINISTRATIVE		DV2/M	2615	2590	1311I			001
01260	ADMIN SUPVR					YN1			001
01270	ADMIN CLERK			2516		YN2			001
01280	ADMIN CLERK					YN3			001
01290	ADMIN CLERK					YNSN			001
01300	ADMIN CLERK					YNSN			001
02000	PERSONNEL OFFICE								
02160	PERS SUPVR					PN1			001
02170	PERS CLERK					PN2			001
02180	PERS CLERK					PN3			001

SECTION III

MANPOWER REQUIREMENTS
FOR
SH-2F LAMPS SQUADRON (HSL)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	REQUIRED TO SUPPORT ROC/POE
02190	PERS CLERK					PNSN		001
03000	FIRST LT OFFICE							
03100	HANGAR MAINT SUPVR					PO3		001
03180	BEQ MAA					PO2		001
03190	BEQ MAA					PO2		001
03350	FAC MAINTMAN					AN		001
03360	FAC MAINTMAN					AN		001
04000	OPERATIONS DEPT							
04010	SQUADRON OPS	0044P	DV2/M	8680		1311I		001
05000	OPERATIONS OFFICE							
05010	OPS CLERK SUPVR					YN3		001
05020	OPS CLERK					YNSN		001
05030	OPS CLERK					YNSN		001
*06000	TRAINING DIV							
06070	TRAINING		DV2/M	3290		1311J		001
07760	LSE INSTR				9502	ABH1		001
07770	LSE INSTR				9502	ABH2		001
07780	LSE INSTR				9502	ABH3		001
08000	AIRCREW OFFICE							
08100	AIRCREWMAN SUPVR			7871		AWC		001

* HSL-37 ONLY

SECTION III

MANPOWER REQUIREMENTS
FOR
SH-2F LAMPS SQUADRON (HSL)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS RT	G R	F A C	REQUIRED TO SUPPORT ROC/POE
14000	SAFETY DEPT								
14010	AV SAFETY		DV2/M	8656		1311I			001
14500	SAFETY PO						APO1		001
14510	NATOPS EVAL			7871			AW1		001
14520	NATOPS EVAL			7871			AW2		001
15000	MAINTENANCE DEPT								
15010	A/C ORGMNT GEN		DV2/M	8190		1311I			001
15020	A/C ORGMNT GEN-ASST			8190		1520J			001
16000	MAINT/MTL CTL W/C 020								
16010	A/C ORGMNT/MTL			8176		73400			001
16050	MAINT/M7I CTL COORD			8375			AFCM		001
16150	MAINT C. CLERK						AZC		001
16160	MAINT CTL CLERK						AZ2		001
16170	MAINT CTL CLERK						AZ3		001
16180	MAINT CTL CLERK						AZAN		001
16190	MAINT CTL CLERK						AZAN		001
17000	MAINT ADMIN W/C 030								
17050	MAINT ADMIN CLERK						AZ2		001
18000	QUAL ASSURANCE W/C 040								
18050	QA SUPVR			8375			ATCS		001
18060	QA REP			8375			AD1		001
18070	QA REP			8375			AE1		001
18080	QA REP			8375			AMH1		001
18210	QA LIBRN						AZ3		001

SECTION III

MANPOWER REQUIREMENTS FOR SH-2F LAMPS SQUADRON (HSL)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	REQUIRED TO SUPPORT ROC/POE
19000	MATERIAL CTL W/C 050							
19050	MTL CTL SUPVR					AKC		001
19060	MTL CTL CLERK					AK2		001
19070	MTL CTL CLERK					AK3		001
19080	MTL CTL CLERK					AKAN		001
19500	TOOL CTL SUPVR					AK2		001
19510	TOOL CTL CLERK					AN		001
19520	TOOL CTL CLERK					AN		001
20000	DATA ANALYSIS W/C 060							
20050	DATA ANALYST			6313		AZ1		001
21000	A/C DIV W/C 100							
21050	A/C DIV SUPVR			8375		ADCS		001
25000	AVTR EQUIP BR W/C 130							
25050	AVTR EQUIP MAINTMAN SUPVR					PR2		001
25060	AVTR EQUIP MAINTMAN					PRAN		001
27000	PLND MAINT BR W/C 140							
27050	PLND MAINT CREW SUPVR			8375		AMS1		001
29000	AV/ARM DIV W/C 200							
29050	AV/ARM DIV SUPVR			8375		AECS		001
35000	ARM BR W/C 230							
35050	ARM MAINTMAN SUPVR			8375		AO1		001
35060	ARM MAINTMAN			8375		AO2		001
35070	ARM MAINTMAN			8375		AOAN		001

SECTION III

MANPOWER REQUIREMENTS FOR SH-2F LAMPS SQUADRON (HSL)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS RT	G R	F A C	REQUIRED TO SUPPORT ROC/POE
37C00	LINE DIV W/C 300								
37050	LINE DIV SUPVR			8375		AMCS			001
4700U	INTEGRATED SERVICES								
47010	RAPID SUPPLYMAN					AK2			001
47020	RAPID SUPPLYMAN					AK3			001
47030	RAPID SUPPLYMAN					AN			001
4711C	MED TECH			8406		HM2			001
47160	MESS MGT SPEC					MS2			001
47170	MESS MGT SPEC					MSSN			001
47460	FOOD SERVICEMAN					AN			001
47470	FOOD SERVICEMAN					AN			001
47480	FOOD SERVICEMAN					AN			001
47760	LAUNDRYMAN					AN			001
47770	LAUNDRYMAN					AN			001
48000	AIMD								
48010	P/P AIMD REPAIR			6419		AD2			001
48020	P/P AIMD REPAIR			6419		AD3			001
48200	ELEC/INST AIMD REPAIR			7105		AE2			001
48400	HYD AIMD REPAIR					AMH2			001
48500	A/F AIMD REPAIR					AMS2			001
49100	ELECT AIMD REPAIR			6605	6632	AT2			001
49110	ELECT AIMD REPAIR			6612		AT3			001
49600	ASW AIMD REPAIR			6526		AX2			001
49610	ASW AIMD REPAIR			6526		AX2			001
49800	SURVL EQUIP AIMD REPAIR					PR3			001

SECTION V

FUNCTIONAL WORKLOAD

FOR

SH-2F LAMPS SQUADRON (HSL)

FUNCTION	FUNC HOURS	TOTAL HOURS
EXEC DEPT		
OFFICER MANNING(OW)	63.8	
DIRECTED MANNING(DM)	575.6	639.4
ADMIN DEPT		
OFFICER MANNING(OW)	31.9	
ADMINISTRATIVE SUPPORT(AS)	148.5	180.4
PERSONNEL OFFICE		
ADMINISTRATIVE SUPPORT(AS)	136.4	136.4
FIRST LT OFFICE		
DIRECTED MANNING(DM)	56.4	
ADMINISTRATIVE SUPPORT(AS)	31.9	
FACILITIES MAINTENANCE(FM)	63.8	152.1
OPERATIONS DEPT		
OFFICER MANNING(OW)	31.9	31.9
OPERATIONS OFFICE		
ADMINISTRATIVE SUPPORT(AS)	60.4	
FACILITIES MAINTENANCE(FM)	11.6	72.0

SECTION V

FUNCTIONAL WORKLOAD

FOR

SH-2F LAMPS SQUADRON (HSL)

FUNCTION	FUNC HOURS	TOTAL HOURS
*TRAINING DIV		
OFFICER MANNING(OW)	31.9	
DIRECTED MANNING(DM)	95.7	127.6
AIRCREW OFFICE		
DIRECTED MANNING(DM)	31.9	31.9
SAFETY DEPT		
OFFICER MANNING(OW)	31.9	
DIRECTED MANNING(DM)	95.7	127.6
MAINTENANCE DEPT		
OFFICER MANNING(OW)	63.8	63.8
MAINT/MTL CTL W/C 020		
OFFICER MANNING(OW)	31.9	
DIRECTED MANNING(DM)	31.9	
ADMINISTRATIVE SUPPORT(AS)	154.8	
FACILITIES MAINTENANCE(FM)	9.7	228.3

* HSL-37 ONLY

SECTION V

FUNCTIONAL WORKLOAD

FOR

SH-2F LAMPS SQUADRON (HSL)

FUNCTION	FUNC HOURS	TOTAL HOURS
MAINT ADMIN W/C 030		
DIRECTED MANNING(DM)	31.9	31.9
QUAL ASSURANCE W/C 040		
DIRECTED MANNING(DM)	127.6	
ADMINISTRATIVE SUPPORT(AS)	31.9	159.5
MATERIAL CTL W/C 050		
DIRECTED MANNING(DM)	95.7	
ADMINISTRATIVE SUPPORT(AS)	133.2	
FACILITIES MAINTENANCE(FM)	8.7	237.6
DATA ANALYSIS W/C 060		
DIRECTED MANNING(DM)	31.9	31.9
A/C DIV W/C 100		
DIRECTED MANNING(DM)	31.9	31.9
AVTR EQUIP BR W/C 130		
CORRECTIVE MAINTENANCE(CM)	10.9	
ADMINISTRATIVE SUPPORT(AS)	42.6	53.5

SECTION V

FUNCTIONAL WORKLOAD

FOR

SH-2F LAMPS SQUADRON (HSL)

FUNCTION	FUNC HOURS	TOTAL HOURS
FLHD MAINT BR W/C 140		
ADMINISTRATIVE SUPPORT(AS)	18.6	18.6
AV/ARM DIV W/C 200		
DIRECTED MANNING(DM)	31.9	31.9
ARM BR W/C 230		
PREVENTIVE MAINTENANCE(PM)	3.4	
CORRECTIVE MAINTENANCE(CM)	38.0	
ADMINISTRATIVE SUPPORT(AS)	49.7	91.1
LINE DIV W/C 300		
DIRECTED MANNING(DM)	31.9	31.9
INTEGRATED SERVICES		
DIRECTED MANNING(DM)	350.9	350.9
AIMD		
DIRECTED MANNING(DM)	319.0	319.0

SECTION VI (PART 01)

SUMMARY OF OFFICER MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL)

DESIG	G O-6 CAPT	H O-5 CDR	I O-4 LCDR	J O-3 LT	K O-2 LTJG	L O-1 ENS	M W-4 CWO4	N W-3 CWO3	O W-2 CWO2	TOTAL
1311		2	4	1*						6/7*
1520				1						1
7340									1	1
TOTAL	0	2	4	1/2*	0	0	0	0	1	8/9*

* HSL-37 ONLY

SECTION VI (PART 02)

SUMMARY OF ENLISTED MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL)

RATING	PRI NEC	SEC NEC	E-9 MCPO	E-8 SCPO	E-7 CPO	E-6 PO1	E-5 PO2	E-4 PO3	DESG STKR	E-3	E-2	TOTAL
*ABH		9582				1*	1*	1*				3*
RATING TOTAL			0	0	0	1*	1*	1*	0	0	0	3*
AD	6419						1	1				2
AD	8375			1		1						2
RATING TOTAL			0	1	0	1	1	1	0	0	0	4
AE	7105						1					1
AE	8375			1		1						2
RATING TOTAL			0	1	0	1	1	0	0	0	0	3
AF	8375		1									1
RATING TOTAL			1	0	0	0	0	0	0	0	0	1
AK					1		3	2	1			7
RATING TOTAL			0	0	1	0	3	2	1	0	0	7

* HSL-37 ONLY

SECTION VI (PART 02)

SUMMARY OF ENLISTED MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL)

RATING	PRI NEC	SEC NEC	E-9 MCPO	E-8 SCPO	E-7 CPO	E-6 PO1	E-5 PO2	E-4 PO3	DESG STKR	E-3	E-2	TOTAL
AM	8375			1								1
RATING TOTAL			0	1	0	0	0	0	0	0	0	1
AMH							1					1
AMH	8375					1						1
RATING TOTAL			0	0	0	1	1	0	0	0	0	2
AMS							1					1
AMS	8375					1						1
RATING TOTAL			0	0	0	1	1	0	0	0	0	2
AN										21		21
RATING TOTAL			0	0	0	0	0	0	0	21	0	21
AO	8375					1	1		1			3
RATING TOTAL			0	0	0	1	1	0	1	0	0	3

SECTION VI (PART 02)

SUMMARY OF ENLISTED MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL)

RATING	PRI NEC	SEC NEC	E-9 MCPO	E-8 SCPO	E-7 CPO	E-6 PO1	E-5 PO2	E-4 PO3	DESG STKR	E-3	E-2	TOTAL
APO			1			1	5					7
RATING TOTAL			1	0	0	1	5	0	0	0	0	7
AT	6605	6632					1					1
AT	6612							1				1
AT	8375			1								1
RATING TOTAL			0	1	0	0	1	1	0	0	0	3
AW	7871				1	1	1					3
RATING TOTAL			0	0	1	1	1	0	0	0	0	3
AX	6526						2					2
RATING TOTAL			0	0	0	0	2	0	0	0	0	2
AZ					1		2	2	2			7
AZ	6313					1						1
RATING TOTAL			0	0	1	1	2	2	2	0	0	8

SECTION VI (PART 02)

SUMMARY OF ENLISTED MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL)

RATING	PRI NEC	SEC NEC	E-9 MCPO	E-8 SCPO	E-7 CPO	E-6 PO1	E-5 PO2	E-4 PO3	DESG STKR	E-3	E-2	TOTAL
HM	8486						1					1
RATING TOTAL			0	0	0	0	1	0	0	0	0	1
MS							1		1			2
RATING TOTAL			0	0	0	0	1	0	1	0	0	2
PN						1	1	1	1			4
RATING TOTAL			0	0	0	1	1	1	1	0	0	4
PO		9588				1						1
PO							2	1				3
RATING TOTAL			0	0	0	1	2	1	0	0	0	4
PR							1	1	1			3
RATING TOTAL			0	0	0	0	1	1	1	0	0	3
YN						1		2	4			7
YN	2516						1					1
RATING TOTAL			0	0	0	1	1	2	4	0	0	8
ACTIVITY TOTAL			2	4	3	11/12*	26/27*	11/12*	11	21	0	89/92*

* HSL-37 ONLY

SECTION VII

SUMMARY OF ORGANIZATIONAL MANPOWER REQUIREMENTS

SUMMARY BY TOTAL BILLETS

SH-2F LAMPS SQUADRON (HSL)

1. ORGANIZATIONAL MANPOWER REQUIREMENTS FOR THIS ACTIVITY ARE:

OFFICER	CPO	OTHER ENLISTED	TOTAL ENLISTED
8/9*	9	80/83*	89/92*

2. GENERAL APPORTIONMENT OF ENLISTED SKILLS ARE AS FOLLOWS:

PETTY OFFICERS	64.04%// 65.22%*
NON-RATED	35.36% / 34.78%*

3. PAY GRADE SUMMARY IS AS FOLLOWS:

E-9 - 2

E-8 - 4

E-7 - 3

E-6 - 11/12*

E-5 - 26/27*

E-4 - 11/12*

E-3 - 32

DESIGNATED STRIKERS - 11

NON-DESIGNATED STRIKERS - 21

* HSL-37 ONLY

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

SQUADRON MANPOWER DOCUMENT

SECTION I

MISSION, ROC & POE

FOR

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

MISSION, ROC & POE: FOR FY 82 MAY BE FOUND IN CNO MSG 171337Z NOV 78 AS MODIFIED BY CNO MSG 211548Z MAR 79.

SECTION II

MANPOWER SUMMARY

FOR

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

MAJOR ORGANIZATIONAL COMPONENT	OFF	ENL	CIV
DETACHMENT	40	110	0

SECTION III

MANPOWER REQUIREMENTS
FOR
SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS RT	G R	F A C	REQUIRED TO SUPPORT ROC/POE
00000	DETACHMENT								
00040	OIC AV UNT/DET		DV2/B	8653		1311	I		001
00050	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00060	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00070	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00080	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00090	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00100	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00110	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00120	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00130	OIC AV UNT/DET		DV2/B	8653		1311	J		001
00200	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00210	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00220	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00230	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00240	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00250	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00260	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00270	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00280	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00290	OPS AV UNT/DET		DV2/B	8653		1311	J		001
00300	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00310	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00320	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00330	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00340	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00350	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00360	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00370	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00380	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00390	ADMIN AV UNT/DET		DV2/B	8653		1311	K		001
00400	MAINT AV UNT/DET		DV2/B	8539		1311	K		001
00410	MAINT AV UNT/DET		DV2/B	8539		1311	K		001
00420	MAINT AV UNT/DET		DV2/B	8539		1311	K		001
00430	MAINT AV UNT/DET		DV2/B	8539		1311	K		001
00440	MAINT AV UNT/DET		DV2/B	8539		1311	K		001

SECTION III

MANPOWER REQUIREMENTS FOR SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	REQUIRED TO SUPPORT ROC/POE
00450	MAINT AV UNT/DET		DV2/B	8539		1311K		001
00460	MAINT AV UNT/DET		DV2/B	8539		1311K		001
00470	MAINT AV UNT/DET		DV2/B	8539		1311K		001
00480	MAINT AV UNT/DET		DV2/B	8539		1311K		001
00490	MAINT AV UNT/DET		DV2/B	8539		1311K		001
16050	MAINT/MTL CTL COORD			8375		ADC		001
16060	MAINT/MTL CTL COORD			8375		ADC		001
16070	MAINT/MTL CTL COORD			8375		AEC		001
16080	MAINT/MTL CTL COORD			8375		AEC		001
16090	MAINT/MTL CTL COORD			8375		AMHC		001
16100	MAINT/MTL CTL COORD			8375		AMHC		001
16110	MAINT/MTL CTL COORD			8375		AMSC		001
16120	MAINT/MTL CTL COORD			8375		AMSC		001
16130	MAINT/MTL CTL COORD			8375		ATC		001
16140	MAINT/MTL CTL COORD			8375		AXC		001
22060	P/P MAINTMAN			8375		AD1		001
22070	P/P MAINTMAN			8375		AD1		001
22080	P/P MAINTMAN			8375		AD1		001
22090	P/P MAINTMAN			8375		AD2		001
22100	P/P MAINTMAN			8375		AD2		001
22110	P/P MAINTMAN			8375		AD2		001
22120	P/P MAINTMAN			8375		AD2		001
22130	P/P MAINTMAN			8375		AD2		001
22140	P/P MAINTMAN			8375		AD2		001
22150	P/P MAINTMAN			8375		AD2		001
22160	P/P MAINTMAN			8375		ADAN		001
22170	P/P MAINTMAN			8375		ADAN		001
22180	P/P MAINTMAN			8375		ADAN		001
22190	P/P MAINTMAN			8375		ADAN		001
22200	P/P MAINTMAN			8375		ADAN		001
22210	P/P MAINTMAN			8375		ADAN		001
22220	P/P MAINTMAN			8375		ADAN		001
22230	P/P MAINTMAN			8375		ADAN		001
22240	P/P MAINTMAN			8375		ADAN		001
22250	P/P MAINTMAN			8375		ADAN		001
23060	A/F MAINTMAN			8375		AMH1		001
23070	A/F MAINTMAN			8375		AMH2		001

SECTION III

MANPOWER REQUIREMENTS FOR SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	REQUIRED TO SUPPORT ROC/POE
23080	A/F MAINTMAN			8375		AMH2		001
23090	A/F MAINTMAN			8375		AMH2		001
23100	A/F MAINTMAN			8375		AMH2		001
23110	A/F MAINTMAN			8375		AMH2		001
23120	A/F MAINTMAN			8375		AMH2		001
23130	A/F MAINTMAN			8375		AMH2		001
23140	A/F MAINTMAN			8375		AMH3		001
23150	A/F MAINTMAN			8375		AMH3		001
23160	A/F MAINTMAN			8375		AMS1		001
23170	A/F MAINTMAN			8375		AMS2		001
23180	A/F MAINTMAN			8375		AMS2		001
23190	A/F MAINTMAN			8375		AMS3		001
23200	A/F MAINTMAN			8375		AMS3		001
23210	A/F MAINTMAN			8375		AMS3		001
23220	A/F MAINTMAN			8375		AMS3		001
23230	A/F MAINTMAN			8375		AMS3		001
23240	A/F MAINTMAN			8375		AMS3		001
23250	A/F MAINTMAN			8375		AMSAN		001
30060	ELECT MAINTMAN			8375		AT1		001
30070	ELECT MAINTMAN			8375		AT2		001
30080	ELECT MAINTMAN			8375		AT2		001
30090	ELECT MAINTMAN			8375		AT2		001
30100	ELECT MAINTMAN			8375		AT2		001
30110	ELECT MAINTMAN			8375		AT3		001
30120	ELECT MAINTMAN			8375		AT3		001
30130	ELECT MAINTMAN			8375		AT3		001
30140	ELECT MAINTMAN			8375		AT3		001
30150	ELECT MAINTMAN			8375		ATAN		001
30660	ASW MAINTMAN			8375		AX1		001
30670	ASW MAINTMAN			8375		AX2		001
30680	ASW MAINTMAN			8375		AX2		001
30690	ASW MAINTMAN			8375		AX2		001
30700	ASW MAINTMAN			8375		AX3		001
30710	ASW MAINTMAN			8375		AX3		001
30720	ASW MAINTMAN			8375		AX3		001
30730	ASW MAINTMAN			8375		AX3		001
30740	ASW MAINTMAN			8375		AX3		001

SECTION III

MANPOWER REQUIREMENTS FOR SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	REQUIRED TO SUPPORT ROC/POE
30750	ASW MAINTMAN			8375		AXAN		001
34060	ELEC/INST MAINTMAN			8375		AE1		001
34070	ELEC/INST MAINTMAN			8375		AE1		001
34080	ELEC/INST MAINTMAN			8375		AE1		001
34090	ELEC/INST MAINTMAN			8375		AE2		001
34100	ELEC/INST MAINTMAN			8375		AE2		001
34110	ELEC/INST MAINTMAN			8375		AE2		001
34120	ELEC/INST MAINTMAN			8375		AE2		001
34130	ELEC/INST MAINTMAN			8375		AE2		001
34140	ELEC/INST MAINTMAN			8375		AE2		001
34150	ELEC/INST MAINTMAN			8375		AE2		001
34160	ELEC/INST MAINTMAN			8375		AEAN		001
34170	ELEC/INST MAINTMAN			8375		AEAN		001
34180	ELEC/INST MAINTMAN			8375		AEAN		001
34190	ELEC/INST MAINTMAN			8375		AEAN		001
34200	ELEC/INST MAINTMAN			8375		AEAN		001
34210	ELEC/INST MAINTMAN			8375		AEAN		001
34220	ELEC/INST MAINTMAN			8375		AEAN		001
34230	ELEC/INST MAINTMAN			8375		AEAN		001
34240	ELEC/INST MAINTMAN			8375		AEAN		001
34250	ELEC/INST MAINTMAN			8375		AEAN		001
42050	AIRCREWMAN SUPVR			7871		AW1		001
42060	AIRCREWMAN			7871		AW1		001
42070	AIRCREWMAN			7871		AW2		001
42080	AIRCREWMAN			7871		AW2		001
42090	AIRCREWMAN			7871		AW2		001
42100	AIRCREWMAN			7871		AW2		001
42110	AIRCREWMAN			7871		AW2		001
42120	AIRCREWMAN			7871		AW2		001
42130	AIRCREWMAN			7871		AW2		001
42140	AIRCREWMAN			7871		AW2		001
42150	AIRCREWMAN			7871		AW3		001
42160	AIRCREWMAN			7871		AW3		001
42170	AIRCREWMAN			7871		AW3		001
42180	AIRCREWMAN			7871		AW3		001
42190	AIRCREWMAN			7871		AWAN		001
42200	AIRCREWMAN			7871		AWAN		001

SECTION III

MANPOWER REQUIREMENTS
FOR
SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS C RT R	F A C	REQUIRED TO SUPPORT ROC/POE
42210	AIRCREWMAN			7871		AWAN		001
42220	AIRCREWMAN			7871		AWAN		001
42230	AIRCREWMAN			7871		AWAN		001
42240	AIRCREWMAN			7871		AWAN		001

SECTION V

FUNCTIONAL WORKLOAD

FOR

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

FUNCTION	FUNC HOURS	TOTAL HOURS
DETACHMENT		
OFFICER MANNING(OW)	2520.0	
DIRECTED MANNING(DM)	2866.0	
PREVENTIVE MAINTENANCE(PM)	905.0	
CORRECTIVE MAINTENANCE(CM)	2225.0	
ADMINISTRATIVE SUPPORT(AS)	904.0	
FACILITIES MAINTENANCE(FM)	43.0	
		9463.0

SECTION VI (PART 51)

SUMMARY OF OFFICER MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

DESIG	G 0-6 CAPT	H 0-5 CDR	I 0-4 LCDR	J 0-3 LT	K 0-2 LTJG	L 0-1 ENS	M W-4 CWO4	N W-3 CWO3	O W-2 CWO2	TOTAL
1311			1	19	20					40
TOTAL	0	0	1	19	20	0	0	0	0	40

SECTION VI (PART 02)

SUMMARY OF ENLISTED MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

RATING	PRI NEC	SEC NEC	E-9 MCPO	E-8 SCPO	E-7 CPO	E-6 PO1	E-5 PO2	E-4 PO3	DESG STKR	E-3	E-2	TOTAL
AD	8375				2	3	7		10			22
RATING TOTAL			0	0	2	3	7	0	10	0	0	22
AE	8375				2	3	7		10			22
RATING TOTAL			0	0	2	3	7	0	10	0	0	22
AMH	8375				2	1	7	2				12
RATING TOTAL			0	0	2	1	7	2	0	0	0	12
AMS	8375				2	1	2	6	1			12
RATING TOTAL			0	0	2	1	2	6	1	0	0	12
AT	8375				1	1	4	4	1			11
RATING TOTAL			0	0	1	1	4	4	1	0	0	11
AW	7871					2	8	4	6			20
RATING TOTAL			0	0	0	2	8	4	6	0	0	20

SECTION VI (PART 02)

SUMMARY OF ENLISTED MANPOWER REQUIREMENTS

FOR

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

RATING	PRI NEC	SEC NEC	E-9 MCPO	E-8 SCPO	E-7 CPO	E-6 PO1	E-5 PO2	E-4 PO3	DESG STKR	E-3	E-2	TOTAL
AX	8375				1	1	3	5	1			11
RATING TOTAL			0	0	1	1	3	5	1	0	0	11
ACTIVITY TOTAL			0	0	10	12	38	21	29	0	0	118

SECTION VII

SUMMARY OF ORGANIZATIONAL MANPOWER REQUIREMENTS

SUMMARY BY TOTAL BILLETS

SH-2F LAMPS SQUADRON (HSL) SEA COMPONENT

1. ORGANIZATIONAL MANPOWER REQUIREMENTS FOR THIS ACTIVITY ARE:

OFFICER	CPO	OTHER ENLISTED	TOTAL ENLISTED
40	10	100	110

2. GENERAL APPORTIONMENT OF ENLISTED SKILLS ARE AS FOLLOWS:

PETTY OFFICERS	73.64 %
NON-RATED	26.36 %

3. PAY GRADE SUMMARY IS AS FOLLOWS:

E-9 - 0

E-8 - 0

E-7 - 10

E-6 - 12

E-5 - 38

E-4 - 21

E-3 - 29

DESIGNATED STRIKERS - 29

NON-DESIGNATED STRIKERS - 0

APPENDIX B

REGRESSION ANALYSIS DATA FROM HSL's 34, 33, AND 35 (MANNING LEVEL COMPARISON)

HSL 34 3M SUMMARY DATA

	FLIGHT HOURS	MANHOURS	OP READY HRS	AT HOME AIRCRAFT
APR 77	230	4897	2713	7
MAY 77	217	5352	2688	8
JUN 77	92	3551	1212	4
JUL 77	34	2015	475	4
AUG 77	252	5619	3034	9
SEP 77	109	3117	1626	4
OCT 77	116	2589	1788	4
NOV 77	120	3109	1903	5
DEC 77	110	4021	2545	7
JAN 78	70	2367	837	7
FEB 78	91	2135	2457	5
MAR 78	137	2511	1243	4
APR 78	53	2261	1234	4
MAY 78	57	2574	632	6
JUN 78	153	5968	1581	7
JUL 78	34	2832	445	5

REGRESSION EQUATIONS

		R^2	R	s_e
1.	LINEAR (F.m)	0.672	0.820	39.82
2.	CURVILINEAR (F.lnM)	0.664	0.815	40.38
3.	LINEAR (F.R)	0.689	0.830	38.82
4.	CURVILINEAR (F.lnR)	0.633	0.799	42.17
5.	TRIVARIATE (F.MR)	0.689	0.830	39.73
* 6.	TRIVARIATE (F.MlnR)	0.823	0.907	30.36
7.	TRIVARIATE (F.MA)	0.669	0.818	41.52

HSL 33: 3M SUMMARY DATA

	F FLIGHT HOURS	M MANHOURS	R OP READY HRS	AT HOME AIRCRAFT
JAN 80	119	6338	2257	6
FEB 80	123	4623	2631	5.5
MAR 80	153	5704	2733	5
APR 80	163	5301	3175	5
MAY 80	194	6168	2127	5.5
JUN 80	218	5334	2680	7
JUL 80	197	4228	2373	7
AUG 80	170	3784	1872	7
SEP 80	168	4204	2774	5
OCT 80	87	2323	1282	4
NOV 80	122	5113	3105	4
DEC 80	123	4742	1944	6
JAN 81	129	4818	1734	6
FEB 81	93	4459	1974	6
MAR 81	199	5387	2905	5
APR 81	198	6171	1932	5
MAY 81	199	6411	1982	5
JUN 81	225	5392	2124	5

REGRESSION EQUATIONS

		r^2	r	s_e
1.	LINEAR (F.M)	0.240	0.490	38.67
2.	LINEAR (F.R)	0.057	0.239	43.08
3.	CURVILINEAR (F.lnM)	0.248	0.498	38.47
4.	CURVILINEAR (F.lnR)	0.087	0.296	42.38
5.	TRIVARIATE (F.MR)	0.247	0.496	39.76
6.	TRIVARIATE (F.MlnR)	0.251	0.501	39.65
7.	TRIVARIATE (F.RlnM)	0.249	0.499	39.69

HSL 35: 3M SUMMARY DATA

	F FLIGHT HOURS	M MANHOURS	R OP READY HRS	AT HOME AIRCRAFT
JAN 80	212	3954	1792	4
FEB 80	123	2866	2163	4
MAR 80	132	2972	1889	4
APR 80	235	6060	1833	5
MAY 80	240	4417	2073	6
JUN 80	302	5412	2124	6
JUL 80	301	5406	2851	6
AUG 80	204	5130	2490	5
SEP 80	239	6016	2127	5
OCT 80	176	5734	2683	5
NOV 80	161	4943	2216	5
DEC 80	150	4943	2141	5
JAN 81	239	5789	2156	6
FEB 81	212	6286	1781	6
MAR 81	277	6214	2828	6
APR 81	245	5694	2652	7
MAY 81	250	5082	3105	7
JUN 81	255	7383	2437	6

REGRESSION EQUATIONS

		r^2	r	s_e
1.	LINEAR (F.M)	0.378	0.564	43.41
2.	LINEAR (F.R)	0.140	0.374	51.04
3.	CURVILINEAR (F.lnM)	0.414	0.643	42.13
4.	CURVILINEAR (F.lnR)	0.131	0.362	51.32
5.	TRIVARIATE (F.MR)	0.424	0.651	43.15
6.	TRIVARIATE (F.MlnR)	0.413	0.643	43.56
7.	TRIVARIATE (F.RlnM)	0.451	0.672	42.08

MANNING LEVEL COMPARISON

1978 - 1979

95	sea duty personnel assigned
- 72	deploying personnel
23	non-deploying sea duty personnel
+ 10	documenting shore duty personnel
33	documenting production personnel

(48% ashore x 72 deploying) + (33 non-deploying) = 67.6

1980 - 1981

103	sea duty personnel assigned
- 72	deploying personnel
31	non-deploying sea duty personnel
+ 25	documenting shore duty personnel
56	documenting production personnel

(48% ashore x 72 deploying) + (56 non-deploying) = 90.6

Additional production personnel: 23

TABLE I. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON (SHORE COMPONENT)

MAJOR ORGANIZATION COMPONENT	OFF	ENL
EXEC DEPT	2	18
ADMIN DEPT	1	16
OPERATIONS DEPT	2	5
SAFETY DEPT	2	2
MAINTENANCE DEPT	3	31
INTEGRATED SERVICES	0	13
AIMD	0	4
TOTAL	10	89

TABLE I. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON (SHORE COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Executive Dept							
	Squadron C.O.		DV4/M	8670		1311H		001
	Squadron X.O.		DV4/M	8672		1311H		001
	Exec. Asst.					APOCM		001
	Career Couns				9588	AP01		001
	ASDO					AP02		001
	ASDO					AP02		001
	ASDO					AP02		001
	ASDO					AP02		001
	ASDO					AP02		001
	Messenger					AN		001
	Messenger					AN		001
	Messenger					AN		001
	Messenger					AN		001
	Messenger					AN		001
	Security Watch					AN		001
	Security Watch					AN		001
	Security Watch					AN		001
	Security Watch					AN		001
	Security Watch					AN		001
	Security Watch					AN		001
	Admin Dept							
	Administrative	9036S	DV4/M	2615		1311I		001
	Admin Supvr					YN1		001
	Admin Clerk			2516		YN2		001
	Admin Clerk					YN3		001
	Admin Clerk					YNSN		001
	Admin Clerk					YNSN		001

TABLE I. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON (SHORE COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Personnel Office							
	Personnel Supvr					PN1		001
	Pers Clerk					PN2		001
	Pers Clerk					PN3		001
	Pers Clerk					PNSN		001
	Pers Clerk					PNSN		001
	First LT Office							
	Hangar Maint Supvr					PO3		001
	BEQMAA					PO2		001
	BEQ SCTY/Firewatch					AN		001
	BEQ SCTY/Firewatch					AN		001
	Facmaintman					AN		001
	Facmaintman					AN		001
	Operations Dept							
	Squadron OPS	0044P	DV4/H	8680		1311I		001
	ASW Intel			9686		1630K		001
	Operations Office							
	OPS Clerk Supv					YN3		001
	OPS Clerk					YNSN		001
	OPS Clerk					YNSN		001
	Aircrew Office							
	Aircrewman Supv			78XX		AWC		001
	Aircrewman			78XX		AW2		001

TABLE I. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON (SHORE COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Safety Department							
	AV Safety		DV4/M	8656		1311I		001
	NATOPS		DV4/M	8696		1311J		001
	Safety P.O.					APO1		001
	NATOPS Eval			78XX		AW1		001
	Maintenance Department							
	A/C Orgmnt Gen		DV4/M	8190		1311I •		001
	A/C Orgmnt Gen Asst			8190		6330J/1520J		001
	Maint/MTL CTL W/C 020							
	A/C Orgmnt/MTL			8176		73400		001
	Maint/MTL CTL Coord					AFCM/AVCM		001
	Maint CTL Clerk					AZ1		001
	Maint CTL Clerk					AZ2		001
	Maint CTL Clerk					AZ3		001
	Maint CTL Clerk					AZAN		001
	Maint CTL Clerk					AZAN		001
	Maint Admin W/C 030							
	Maint Admin Clerk					AZ3		001
	Quality Assurance W/C 040							
	QA Supvr			83XX		ATCS/AXCS		001
	QA Rep			83XX		AD1		001
	QA Rep			83XX		AMH1		001
	QA Rep			83XX		AE1		001

TABLE I. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON (SHORE COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	QA Rep			83XX		AX1/AT1		001
	QA Librn					AZ3		001
	Material CTL W/C 050							
	MTL CTL Supvr					AK1		001
	MTL CTL Clerk					AK2		001
	MTL CTL Clerk					AK3		001
	MTL CTL Clerk					AKAN		001
	Tool Control Supervisor					AK2		001
	Tool Control Clerk					AN		001
	Tool Control Clerk					AN		001
	Tool Control Clerk					AN		001
	Data Analysis W/C 060							
	Data Analyst			6313		AZ1		001
	A/C Div W/C 100							
	A/C Div Supvr			83XX		ADCS		001
	Corrosion Control W/C 121							
	Corrosion Control Supervisor			83XX		AMS1		001
	Aviator Equip Branch W/C 130							
	Aviator Equip Maintman Supvr					PR2		001
	Aviator Equip Maintman					PRAN		001

TABLE I. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON (SHORE COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	AV/ARM Div W/C 200							
	AV/ARM Div Supvr			83XX		AECS		001
	ARM Branch W/C 230							
	ARM Maintman Supvr					AO1		001
	ARM Maintman					AO2		001
	ARM Maintman					AO3		001
	Line Div W/C 300							
	Line Div Supvr			83XX		AMCS		001
	Integrated Services							
	Rapid Supplyman					AK2		001
	Rapid Supplyman					AK3		001
	Rapid Supplyman					AKAN		001
	Rapid Supplyman					AN		001
	Disbursing Clk					DK2		001
	Med Tech			8406		HM2		001
	Mess Mgt Spec					MS2		001
	Mess Mgt Spec					MS3		001
	Mess Mgt Spec					MSSN		001
	Mess Mgt Spec					MSSN		001
	Food Serviceman					AN		001
	Food Serviceman					AN		001
	Food Serviceman					AN		001

TABLE I. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON (SHORE COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC NEC	SPEC CODE	DS G RT R	F A C	NO. REQUIRED
	AIMD							
	P/P AIMD Repair					AD2		001
	A/F AIMD Repair					AMS2		C01
	Elect Inst AIMD Repair					AE2		001
	Mini-Vast Operator/Repair					AT2/AX2/AQ2		001

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON HSL (SEA COMPONENT)

MAJOR ORGANIZATIONAL COMPONENT	OFF	ENL
DETACHMENTS	52	143

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON

HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Detachment 1							
	OIC AV UNT/DET		DV4/B	8653		1311I		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		ADC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH3		1
	A/F Maintman			83XX		AMS2		1
	Elect Maintman			83XX		AT1		1
	ASW Maintman			83XX		AX3		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	Detachment 2							
	OIC AV UNT/DET		DV4/B	8653		1311I		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		ADC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH2		1
	A/F Maintman			83XX		AMS3		1

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON

HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Elect Maintman			83XX		AT3		1
	ASW Maintman			83XX		AX1		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	Detachment 3							
	OIC AV UNT/DET		DV4/B	8653		1311I		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		ADC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH3		1
	A/F Maintman			83XX		AMS2		1
	Elect Maintman			83XX		AT1		1
	ASW Maintman			83XX		AX3		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	Detachment 4							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		AEC		1
	P/P Maintman			83XX		AD1		1

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON

HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH2		1
	A/F Maintman			83XX		AMS3		1
	Elect Maintman			83XX		AT3		1
	ASW Maintman			83XX		AX2		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	<u>Detachment 5</u>							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		AEC		1
	P/P Maintman			83XX		AD1		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH3		1
	A/F Maintman			83XX		AMS2		1
	Elect Maintman			83XX		AT2		1
	ASW Maintman			83XX		AX3		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	<u>Detachment 6</u>							
	OIC AV UNT/DET		DV4/B	8653		1311J		1

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		ATC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH3		1
	A/F Maintman			83XX		AMS1		1
	Elect Maintman			83XX		AT3		1
	ASW Maintman			83XX		AX2		1
	Aircrewman			78XX		AW1		1
	Aircrewman			78XX		AW3		1
	Detachment 7							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		ATC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH1		1
	A/F Maintman			83XX		AMS3		1
	Elect Maintman			83XX		AT3		1
	ASW Maintman			83XX		AX2		1
	Aircrewman			78XX		AW1		1

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON

HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Aircrewman			78XX		AW3		1
	Detachment 8							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		AMHC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH3		1
	A/F Maintman			83XX		AMS2		1
	Elect Maintman			83XX		AT1		1
	ASW Maintman			83XX		AX3		1
	Aircrewman			78XX		AW1		1
	Aircrewman			78XX		AW3		1
	Detachment 9							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/D"T		DV4/B	8539		1311K		1
	Admin AV UN /ET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		AMHC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON

HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	A/F Maintman			83XX		AMH2		1
	A/F Maintman			83XX		AMS3		1
	Elect Maintman			83XX		AT3		1
	ASW Maintman			83XX		AX1		1
	Aircrewman			78XX		AW1		1
	Aircrewman			78XX		AW3		1
	Detachment 10							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		AMSC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE1		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH3		1
	A/F Maintman			83XX		AMS2		1
	Elect Maintman			83XX		AT2		1
	ASW Maintman			83XX		AX3		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	Detachment 11							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON

HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Maint/MTL CTL Coord			83XX		AMSC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE1		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH2		1
	A/F Maintman			83XX		AMS3		1
	Elect Maintman			83XX		AT3		1
	ASW Maintman			83XX		AX2		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	Detachment 12							
	OIC AV UNT/DET		DV4/B	8653		1311J		1
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		AXC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMS1		1
	A/F Maintman			83XX		AMH3		1
	Elect Maintman			83XX		AT2		1
	ASW Maintman			83XX		AX3		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1
	Detachment 13							
	OIC AV UNT/DET		DV4/B	8653		1311J		1

TABLE IV. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY FOR SH-60B LAMPS MK III SQUADRON HSL (SEA COMPONENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SPEC CODE	DS G RT R	F A C	NO. REQUIRED
	Maint AV UNT/DET		DV4/B	8653		1311J		1
	OPS AV UNT/DET		DV4/B	8539		1311K		1
	Admin AV UNT/DET		DV4/B	8539		1311K		1
	Maint/MTL CTL Coord			83XX		AXC		1
	P/P Maintman			83XX		AD2		1
	P/P Maintman			83XX		AD3		1
	Elect Inst Maintman			83XX		AE2		1
	Elect Inst Maintman			83XX		AE3		1
	A/F Maintman			83XX		AMH1		1
	A/F Maintman			83XX		AMS3		1
	Elect Maintman			83XX		AT2		1
	ASW Maintman			83XX		AX3		1
	Aircrewman			78XX		AW2		1
	Aircrewman			78XX		AW3		1

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III FLEET READINESS SQUADRON

MAJOR ORGANIZATIONAL COMPONENT	OFF	ENL
EXEC DEPT	4	19
ADMIN DEPT	6	21
OPERATIONS DEPT	30	28
FRAMP DEPT	3	20
SAFETY DEPT	3	3
MAINTENANCE DEPT	8	157
TOTAL	54	248

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS RT	C R	F A C	NO. REQUIRED
	Executive Dept								
	Squadron C.O.		DV4/M	8670		1311H			001
	Squadron X.O.		DV4/M	8672		1311H			001
	NATOPS Model Manager		DV4/M	8696		1311I			001
	Flight Surgeon			0045		2102J			001
	Exec. Asst.					APOCM			001
	Career Couns				9588	AP01			001
	ASDO					AP01			001
	ASDO					AP01			001
	ASDO					AP01			001
	ASDO					AP01			001
	ASDO					AP01			001
	Messenger					AN			001
	Messenger					AN			001
	Messenger					AN			001
	Messenger					AN			001
	Messenger					AN			001
	Security Watch					AN			001
	Security Watch					AN			001
	Security Watch					AN			001
	Security Watch					AN			001
	Security Watch					AN			001
	Security Watch					AN			001
	NATOPS Model Manager			78XX		AWC			001
	Admin Dept								
	Administrative		DV4/M	2615		1311I			001
	Administrative - Asst		DV4/M	2615		1000J			001
	Legal Admin Asst			2590		1000K			001
	Admin Supvr					YNC			001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (ART I) FOR SH-60B LAMPS MK III
FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Admin Clerk			2516		YN1		001
	Admin Clerk					YN2		001
	Admin Clerk					YN3		001
	Admin Clerk					YNSN		001
	Admin Clerk					YNSN		001
	Personnel Office							
	Pers/MPWR Mgmt		DV4/M	3965		1311J		001
	HUMRESMGT		DV4/M	3320		1311J		001
	Pers Supvr					PN1		001
	Pers Clerk					PN3		001
	Pers Clerk					PN3		001
	Pers Clerk					FNSN		001
	Pers Clerk					FNSN		001
	First LT Office							
	Facilities Mgr		DV4/M	9442		1311J		001
	Hangar Maint Supvr					PO		001
	BEQ MAA					PO2		001
	BEQ MAA					PO2		001
	BEQ SCTY/Fire Watch					AN		001
	BEQ SCTY/Fire Watch					AN		001
	Fac Maintman					AN		001
	Fac Maintman					AN		001
	Fac Maintman					AN		001
	Fac Maintman					AN		001
	Fac Maintman					AN		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	OPS Dept							
	Squadron OPS	0049P	DV4/M	8680		1311I		001
	Squadron OPS - Asst		DV4/M	8680		1311J		001
	Sqn Flight/Schedule		DV4/M	8674		1311J		001
	Sqn Comm		DV4/M	8682		1311J		001
	OPS Office							
	OPS Clerk Supvr					YN3		001
	OPS Clerk					YNSN		001
	OPS Clerk					YNSN		001
	Training Dept							
	Training	0044P	DV4/M	3290		1311I		001
	Training - Asst	0044H	DV4/M	3290		1311J		001
	Trn Pln Avflight		DV4/M	3217		1311J		001
	Trn Pln Avgrnd		DV4/M	3219		1311J		001
	Training - Schedules		DV4/M	3290		1311J		001
	Training - Syllabus		DV4/M	3290		1311J		001
	Trn Pubs & Curl		DV4/M	3298		1311J		001
	Training Aids		DV4/M	3293		1311J		001
	Train Aids - ISD		DV4/M	3293		1311J		001
	Train Aids - ISD - Asst		DV4/M	3293		1311J		001
	Train Aids - ISD - Asst		DV4/M	3293		1311J		001
	Instm Flgtinst		DV4/M	8543		1311J		001
	Instm Flgtinst		DV4/M	8543		1311J		001
	Fl Ins Plt Foa		DV4/M	8593		1311J		001
	Fl Ins Plt Foa		DV4/M	8593		1311J		001
	Fl Ins Plt Foa		DV4/M	8593		1311J		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Fl Ins Plt Foa		DV4/M	8593		1311J		001
	Fl Ins Plt Foa		DV4/M	8593		1311J		001
	Fl Ins Plt Foa		DV4/M	8593		1311J		001
	Grnd Sch Instr		DV4/M	3236		1311J		001
	Grnd Sch Instr		DV4/M	3236		1311J		001
	Grnd Sch Instr		DV4/M	3236		1311J		001
	Grnd Sch Instr		DV4/M	3236		1311J		001
	Grnd Sch Instr		DV4/M	3236		1311J		001
	ASW Intel			9686		1630J		001
	Train Clerk					YN3		001
	<u>Aircrew Training Office</u>							
	Air ASW		DV4/M	8604		1311J		001
	Aircrewman Supvr			78XX	9502	AWCM		001
	Aircrewman Inst			78XX	9502	AWC		001
	Aircrewman Inst			78XX	9502	AW1		001
	Aircrewman Inst			78XX	9502	AW1		001
	Aircrewman Inst			78XX	9502	AW1		001
	Aircrewman Inst			78XX	9502	AW1		001
	Aircrewman Inst			78XX	9502	AW1		001
	Aircrewman Inst			78XX	9502	AW1		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman Inst			73XX	9502	AW2		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman Inst			78XX	9502	AW2		001
	Aircrewman			78XX		AW1		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Aircrewman			78XX		AW2		001
	Aircrewman			78XX		AW2		001
	Subject Matter Expert/ISD			78XX		AWC		001
	Subject Matter Expert/ISD			78XX		AW1		001
	Subject Matter Expert/ISD			78XX		AW2		001
	Framp Dept							
	Trn Pln Avgrnd		DV4/H	3219		1311I		001
	Training			3290		6380J	•	001
	Pers/Mpwr Mgmt - Framp			3965		1000L		001
	Framp Supvr			83XX	9502	APOCS		001
	Sched Couns			83XX	9502	APOC		001
	Sched Couns			83XX	9502	APOC		001
	Pers Supvr					PN2		001
	Pers Clerk					PNSN		001
	Tech Librn					AZ3		001
	ATSS Clerk					YN3		001
	Framp Training							
	P/P Instr			83XX	9502	AD1		001
	P/P Instr			83XX	9502	AD2		001
	P/P Instr			83XX	9502	AD2		001
	Elec/Inst Sys Instr			83XX	9502	AE1		001
	Elec/Inst Sys Instr			83XX	9502	AE2		001
	Air Frame Sys Instr			83XX	9502	AMS1		001
	Hyd Syst Instr			83XX	9502	AMH1		001
	Hyd Syst Instr			83XX	9502	AMH2		001
	Armament Syst Instr			83XX	9502	AX1		001
	Elect Sys Instr			83XX	9502	AT1		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Elect Sys Instr			83XX	9502	AT2		001
	ASW Sys Instr			83XX	9502	AX2		001
	ASW Sys Instr			83XX	9502	AX2		001
	Safety Dept							
	Aviation Safety		DV4/M	8656		1311I		001
	NATOPS		DV4/M	8696		1311J		001
	TYCOM NATOPS Eval		DV4/M	8696		1311I		001
	TYCOM NATOPS Eval			78XX		AWC		001
	SQN NATOPS Eval			78XX		AW1		001
	Safety P.O.					AP01		001
	Maintenance Dept							
	A/C Orgmnt Gen			8190		1520I		001
	A/C Orgmnt - Asst		DV4/M	8190		1311J		001
	Maint/MTL CTL W/C 020							
	A/C Orgmnt/MTL			8176		6330J		001
	A/C Orgmnt/MTL - Asst		DV4/M	8176		1311J		001
	Maint/MTL CTL Coord					AVCM/AFCM		001
	Maint CTL Coord			83XX		ADC		001
	Maint CTL Coord			83XX		AECS		001
	Maint CTL Coord			83XX		AHSC		001
	Maint CTL Clerk					AZ2		001
	Maint CTL Clerk					AZ3		001
	Maint CTL Clerk					AZ3		001
	Maint CTL Clerk					AZAN		001
	Maint CTL Clerk					AZAN		001
	Maint CTL Clerk					AZAN		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Maint Admin W/C 030							
	Maint Admin Clerk					AZ1		001
	Maint Admin Clerk					AZ2		001
	Maint Admin Clerk					AZAN		001
	Qual Assurance W/C 040							
	A/C Mat Qual CTL		DV4/M	8177		1311J		001
	QA Supvr			83XX		AMCS		001
	QA Rep			83XX		AMH1		001
	QA Rep			83XX		AT1		001
	QA Rep			83XX		AD1		001
	QA Rep			83XX		AD1		001
	QA Rep			83XX		AE1		001
	QA Rep			83XX		AX1		001
	QA Librn					AZ3		001
	Material CTL W/C 050							
	MTL CTL Supvr					AK1		001
	MTL CTL Clerk					AK2		001
	MTL CTL Clerk					AK3		001
	MTL CTL Clerk					AKAN		001
	Tool CTL Supvr					AK2		001
	Tool CTL Clerk					AN		001
	Tool CTL Clerk					AN		001
	Tool CTL Clerk					AN		001
	Data Analysis W/C 060							
	Data Analyst			6313		AZ1		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	A/C Div W/C 100							
	A/C Osmt A/C		DV4/H	8197		1311J		001
	A/C Div Supvr			83XX		AMCS		001
	P/P BR W/C 110							
	P/P Maintman Supvr			83XX		ADC		001
	P/P Maintman			83XX		AD1		001
	P/P Maintman			83XX		AD2		001
	P/P Maintman			83XX		AD2		001
	P/P Maintman			83XX		AD2		001
	P/P Maintman			83XX		AD3		001
	P/P Maintman			83XX		AD3		001
	P/P Maintman			83XX		AD3		001
	P/P Maintman			83XX		AD3		001
	P/P Maintman			83XX		AD3		001
	P/P Maintman			83XX		ADAN		001
	P/P Maintman			83XX		ADAN		001
	P/P Maintman			83XX		ADAN		001
	P/P Maintman			83XX		ADAN		001
	P/P Maintman			83XX		ADAN		001
	P/P Maintman			83XX		ADAN		001
	A/F BR W/C 120							
	A/F Maintman Supvr			83XX		AMHC		001
	A/F Maintman			83XX		AMS1		001
	A/F Maintman			83XX		AMH1		001
	A/F Maintman			83XX		AMH2		001
	A/F Maintman			83XX		AMH2		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	A/F Maintman			83XX		AMH3		001
	A/F Maintman			83XX		AMH3		001
	A/F Maintman			83XX		AMHAN		001
	A/F Maintman			83XX		AMHAN		001
	A/F Maintman			83XX		AMS1		001
	A/F Maintman			83XX		AMS2		001
	A/F Maintman			83XX		AMS2		001
	A/F Maintman			83XX		AMS3		001
	A/F Maintman			83XX		AMS3		001
	A/F Maintman			83XX		AMS3		001
	A/F Maintman			83XX		AMSAN		001
	A/F Maintman			83XX		AMSAN		001
	A/F Maintman			83XX		AMSAN		001
	A/F Maintman			83XX		AMSAN		001
	A/F Maintman			83XX		AMSAN		001
	A/F Maintman			83XX		AMSAN		001
	CORROS CTL W/C 121							
	CORROS CTL Supvr			83XX		AMS1		001
	CORROS CTL Team Mbr			83XX		AMS3		001
	CORROS CTL Team Mbr			83XX		AMSAN		001
	CORROS CTL Team Mbr			83XX		AMSAN		001
	AVTR Equip BR W/C 130							
	AVTR Equip Maintman Supvr					PR2		001
	AVTR Equip Maintman					PR3		001
	AVTR Equip Maintman					PRAN		001
	AVTR Equip Maintman					PRAN		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Safety Equip BR W/C 131							
	Safety Equip Maintman Supvr					AME2		001
	Safety Equip Maintman					AME3		001
	Plnd Maint BR W/C 140							
	Plnd Maint Crew Supvr					AMS1		001
	AV/ARM Div W/C 200							
	A/C Omnt AV/WP			8199		6380K		001
	AV/ARM Div Supvr					AXCS/ATCS		001
	Elect/ASW BR W/C 210							
	Elect/ASW Maintman Supvr			83XX		ATC/AXC		001
	Elect Maintman			83XX		AX1		001
	Elect Maintman			83XX		AT2		001
	Elect Maintman			83XX		AT2		001
	Elect Maintman			83XX		AT2		001
	Elect Maintman			83XX		AT3		001
	Elect Maintman			83XX		AT3		001
	Elect Maintman			83XX		AT3		001
	Elect Maintman			83XX		ATAN		001
	Elect Maintman			83XX		ATAN		001
	Elect Maintman			83XX		ATAN		001
	Elect Maintman			83XX		ATAN		001
	ASW Maintman			83XX		AX2		001
	ASW Maintman			83XX		AX2		001
	ASW Maintman			83XX		AX2		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	ASW Maintman			83XX		AX3		001
	ASW Maintman			83XX		AX3		001
	ASW Maintman			83XX		AX3		001
	ASW Maintman			83XX		AXAN		001
	ASW Maintman			83XX		AXAN		001
	ASW Maintman			83XX		AXAN		001
	ASW Maintman			83XX		AXAN		001
	Elec/Inst BR W/C 220							
	Elect/Inst Maintman Supvr			83XX		AEC		001
	Elect/Inst Maintman			83XX		AE1		001
	Elect/Inst Maintman			83XX		AE2		001
	Elect/Inst Maintman			83XX		AE2		001
	Elect/Inst Maintman			83XX		AE3		001
	Elect/Inst Maintman			83XX		AE3		001
	Elect/Inst Maintman			83XX		AE3		001
	Elect/Inst Maintman			83XX		AE3		001
	Elect/Inst Maintman			83XX		AEAN		001
	Elect/Inst Maintman			83XX		AEAN		001
	Elect/Inst Maintman			83XX		AEAN		001
	Elect/Inst Maintman			83XX		AEAN		001
	Elect/Inst Maintman			83XX		AEAN		001
	ARM BR W/C 230							
	ARM Maintman Supvr					AO1		001
	ARM Maintman					AOAN		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Line Div W/C							
	A/C Omnt Line		DV4/M	8196		1311J		001
	Line Div Supvr			83XX		ADCS		001
	PC/Handlers BR W/C 310							
	PC Supvr					AMHC		001
	PC Supvr - Asst					AMS1		001
	PC Supvr - Asst					AD1		001
	PC Supvr - Asst					AMS2		001
	PC Supvr - Asst					AD2		001
	PC					AD3		001
	PC					AMH3		001
	PC					AMH3		001
	PC					AMS3		001
	PC					AMS3		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001

TABLE II. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART I) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001
	PC					AN		001

TABLE III. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY [redacted] FOR SH-60B LAMPS MK III FLEET READINESS SQUADRON (AIRCRAFT OPERATIONAL DETACHMENT)

MAJOR ORGANIZATIONAL COMPONENT	OFF	ENL
INTEGRATED SERVICES	0	18
AIMD	0	6
TOTAL	0	24

TABLE III. PRELIMINARY OPNAVINST 1500.8J BILLET AND PERSONNEL SUMMARY (PART 2) FOR SH-60B LAMPS MK III

FLEET READINESS SQUADRON (AIRCRAFT OPERATIONAL DETACHMENT)

BILLET SEQ NUMBER	BILLET TITLE	SSPEC CODE	AQD/U	PRI NOBC CODE	SEC CODE	DS G RT R	F A C	NO. REQUIRED
	Integrated Services							
	Rapid Supplyman					AK2		1
	Rapid Supplyman					AK3		1
	Rapid Supplyman					AKAN		1
	Rapid Supplyman					AKAN		1
	Rapid Supplyman					AN		1
	Disbursing Clk					DK2		1
	Med Tech			8406		HM2		1
	Mess Mgt Spec					MS2		1
	Mess Mgt Spec					MS2		1
	Mess Mgt Spec					MS3		1
	Mess Mgt Spec					MSSN		1
	Mess Mgt Spec					MSSN		1
	Mess Mgt Spec					MSSN		1
	Food Serviceman					AN		1
	Food Serviceman					AN		1
	BEQ Fac Maintman					AN		1
	BEQ Fac Maintman					AN		1
	BEQ Fac Maintman					AN		1
	AIMD							
	P/P AIMD Repair			64XX		AD2		1
	P/P AIMD Repair			64XX		AD2		1
	HYD AIMD Repair					AMH2		1
	Elect AIMD Repair			66XX		AT2		1
	Mini-Vast Operator/Repair					AT2/AX2/AQ2		1
	Mini-Vast Operator/Repair					AT2/AX2/AQ2		

BIBLIOGRAPHY

BOOKS

Bowman, M. W., U.S. Military Aircraft, Chartwell Inc., N.J., 1980.

Fordyce, J. K. and Wei., ., Managing with People, Addison Westley, 1979.

Hoel, P. G, and Jessen, R. J., Statistics for Business and Economics, John Wiley and Sons, 1977.

Jackson, J. H. and Morgan, C. ., Organization Theory, Prentice-Hall, 1978.

"Skiorsky S-70L (U.S. Navy Designation: SH-60B Seahawk)", Janes Fighting Aircraft, 1981.

Veiga, J. F. and Yanouzas, J. N., The Dynamics of Organization Theory, West Inc., 1979.

PERIODICALS

Claytor, "Navy Lists $400 Million in LAMPS Mk 3 Cutbacks," Aviation Week and Space Technology, September 25, 1978.

Corr, S. F., "LAMPS Avionics Validation Completed," Aviation Week and Space Technology, January 31, 1977.

Fink, D. E., "Workload for Pilot Reduced in SH-60B," Aviation Week and Space Technology, December 1, 1980.

Griffiths, D. R., "LAMPS Mk 3 Moves to Navy Testing," Aviation Week and Space Technology, June 30, 1980

Klass, P. J., "Minimal Effects Seen in LAMPS Changes," Aviation Week and Space Technology, February 12, 1979.

Stevens, P. J., "LAMPS Mk III - Reaching Out," Surface Warfare, April 1980.

Unknown, "LAMPS Mk III Prototype Rolled Out," Aviation Week and Space Technology, September 3, 1979.

Unknown, "SH-60B Helicopter Mockup Evaluated," Aviation Week and Space Technology, October 2, 1978.

Wetmore, W. C., "SH-60B to Fill Several Navy Roles," Aviation Week and Space Technology, April 3, 1978.

Wilbur, T., "The Naval Flight Officer," Naval Aviation News, October, 1968.

U.S. GOVERNMENT DOCUMENTS

HSL 32 Instruction 5400.1A, HSL Organization Manual, HELANTISUBRONTLT 32, 1979.

OP-111C2, A Treatise on Squadron Manpower Document Methodology, Chief of Naval Operations, 1977.

OPNAV Instruction 1000.16E, Manual of Navy Total Force Manpower Policies and Procedures, Chief of Naval Operations, 1981.

OPNAV Instruction 1500.6J, Preliminary Billet and Personnel Summary for SH-60B LAMPS Mk III Squadron, Chief of Naval Operations, 1980.

OPNAV Instruction 3710-7J, NATOPS General Flight and Operating Instructions, Chief of Naval Operations, February, 1978.

OPNAV Instruction 4790.2B, Navy Aviation Maintenance Program, Chief of Naval Operations, 1979.

OPNAV Instruction 5320.233A, Aircraft Squadron Manpower Document for a Ten Aircraft SH-2f Squadron (HSL), Chief of Naval Operations, 1979.

UNPUBLISHED MATERIAL

Burnham, J. W., Tactical Assessment of the Changing Roles of the Naval Flight Officer in Sea Based Antisubmarine Warfare Weapon Systems, M.S. Thesis, Naval Postgraduate School, Monterey, California, 1980.

INTERVIEWS

Anderson, LeRoy, LCDR, USN, Maintenance Officer, HSL-37, NAS Barbers Point, Hawaii, Interview, September 22, 1981.

Benitez, Florantez, AZ1, USN, Data Analysis Petty Officer, HSL-35, NAS North Island, CA., Interview, October 9, 1981.

Burnham, J. W., LCDR, USN, Operations Analyst Section Head, VX-1 Naval Air Test Center, Patuxent River, MD., Telephone interview, October 2, 1981.

Corpus, Isidro, AZ1, USN, Data Analysis Petty Officer, HSL-33, NAS North Island, CA., Telephone interview, October 20, 1981.

Hoella, John, LCRD, USN, Administration Officer, HSL-35, NSA, North Island, CA., Telephone interview, October 7, 1981.

Macri, Frank, Manager/LAMPS System Analysis, IBM Federal Systems Division, Oswego, N.Y., Telephone interview, September 10, 1981.

Purcell, Richard L., LCRD, USN, LAMPS Mk III Fleet Introduction Team, Manassas, VA., Interview, August 24-6, 1981.

Ross, Linda, AZ2, USN, Data Analysis Petty Officer, HSL-37, NAS Barbers Point, Hawaii, Interview, September 22, 1981.

INITIAL DISTRIBUTION LIST

		No. Copies
1.	Defense Technical Information Center Cameron Station Alexandria, Virginia 22314	2
2.	Library, Code 0142 Naval Postgraduate School Monterey, California 93940	2
3.	Dr. John W. Creighton, Code 36 Department of Administrative Science Naval Postgraduate School Monterey, California 93940	1
4.	Assistant for Analysis, Evaluation (NMPC-6C) Human Resource Management and Personal Affairs Dept. Navy Military Personnel Command Washington, D.C. 20370	1
5.	Director, Human Resource Management Division (NMPC-62) Human Resource Management & Personal Affairs Dept. Navy Military Personnel Command Washington, D.C. 20370	1
6.	Director for HRM Plans and Policy (OP-150) Human Resource Management Division Deputy Chief of Naval Operations (Manpower, Personnel & Training Washington, D.C. 20370	1
7.	Commanding Officer Human Resource Management School Naval Air Station Memphis Millington, Tennessee 38054	1
8.	Commanding Officer Human Resource Management Center London Box 23 FPO, New York 09510	1
9.	Commanding Officer Human Resource Management Center 5621-23 Tidewater Drive Norfolk, Virginia 23509	1

10. Commanding Officer 1
Human Resource Management Center
Pearl Harbor, Hawaii 96860

11. Commanding Officer 1
Human Resource Management Center
Naval Training Center
San Diego, California 92133

12. Commanding Officer 1
Organizational Effectiveness Center & School
Fort Ord, California 93941

13. Commanding Officer 1
Human Resource Management Center
Commonwealth Building, Room 1144
1300 Wilson Blvd.
Arlington, Virginia 22209

14. Lt. John R. Bush, USN 1
382 Parkside Drive
Palo Alto, California 94306

15. Coordinator; LAMPS MK III FIT 1
IBM Corporation Building 101/087
Manassas, Virginia 22110