

Afloat Communications Management

By **CAPT Paul Lee**
*Afloat Communications
Management Office
Naval Ship Systems Command*

The best possible management techniques as well as the best engineering techniques are being applied by the Naval Ship Systems Command in an effort to ensure the total integration and compatibility of shipboard communications systems. NavShips' Afloat Communications Management Office (ACMO), established in the Naval Ship Engineering Center in the Fall of 1966, is utilizing this combined management and engineering approach to attack longstanding shipboard communications problems and to attempt to break traditional bottlenecks in communication problem solving. It is demonstrating that greater progress can be attained by using communication's combined management and engineering aspects to complement each other rather than by using them as separate components.

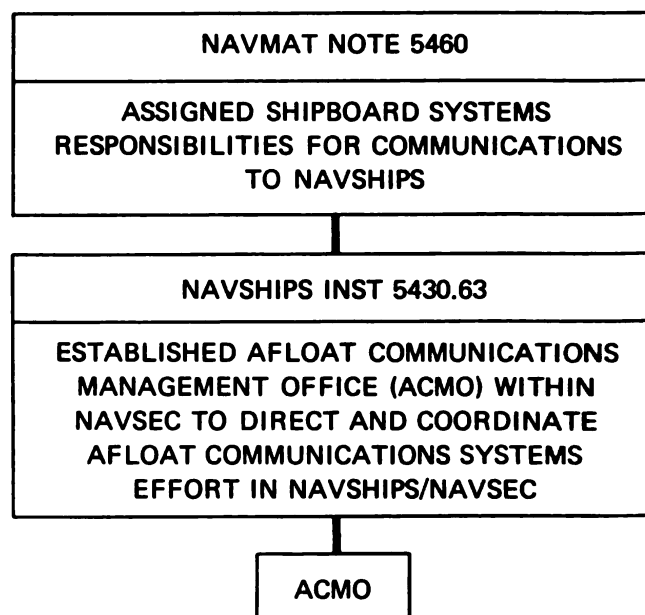
ACMO was established to improve the Naval Ship Systems Command's awareness of fleet needs and to see that fleet problems are given greater priority on the technical side of the Navy. It is working to get fast action on pressing shipboard communications systems problems, to administer shipboard communications systems programs, and to see that priorities assigned by the Chief of Naval Operations get prompt consideration. It is a concrete example of NavShips' intent to be as responsive as possible to requests from the fleet for improved communications systems and is the most practical way to attempt significant improvements.

Specifically, the office directs and coordinates all communications related effort in NavShips and NavSec and acts as the focal point of contact with the Chief of Naval Operations, Chief of Naval Material, and forces afloat on all shipboard communication engineering matters. It provides ship system requirements to, and detailed liaison with, the Naval Electronics Command on shipboard communication systems and equipment developments and procurements assigned to NavElex.

The office was established because of the reorganization of the Navy Department in 1966 which resulted in the establishment of NavElex and NavShips and the other systems commands. NavElex was assigned mate-

rial support responsibilities for shipboard communications equipment under system control of NavShips. NavShips was assigned responsibility for "coordinating ship material support functions assigned to, and discharged by, other systems commands to the extent required for adequate acquisition and support of the ship as an engineering and functional whole." As a result of these assignments of responsibilities, the "hardware codes" of the former Bureau of Ships, which had material support responsibilities for communications equipment, were transferred to NavElex.

Another reason for establishment of the office was because, with the great number of organizations both within and without the Naval Material Command which affect ship communications, equipment and performance, it was necessary to have one office handle all NavShips shipboard engineering responsibilities for control of shipboard communications. To assure fully integrated engineering this control function was assigned, within NavShips, to NavSec.



RESPONSIBILITIES AND ESTABLISHMENT—This chart shows the assignment of communications responsibilities to the Naval Ship Systems Command and the Command's establishment of the Afloat Communications Management Office. The office was established in September 1966.

Currently there are two important sources of information and task input to ACMO's FY 1968 program. They are the Naval Communications Improvement Review Board (NCIRB) and fleet liaison.

The NCIRB was established in May 1967 by CNO for the purpose of monitoring and coordinating progress of a comprehensive long-term program for improvement of naval communications. The NCIRB is composed of representatives from CNO, CNM, NavShips, NavElex, NavAir, NRL, NEL, BuPers, CINCPacFlt, CINCLAntFlt, and CINCUSNavEur. The NavShips member is the NavSec portion of ACMO.

The second input to ACMO is fleet liaison. Fleet communication officers forward to NavSec copies of voyage reports, communications debriefs and other reports of communications problems and recommendations for improvement. Many of these reports contain actual verbatim comments of operating and maintenance personnel concerning shipboard systems problems and deficiencies. These timely reports from the fleet are extremely important to the effectiveness of ACMO's program for fleet communications improvement.

Action items in ACMO FY 68 program are work study, quality monitoring system, status displays, current assets technical worth evaluation, replacement of obsolete equipment, message processing systems, Systems Criteria Handbook, updating training, and future systems planning. Following is a short description of each item.

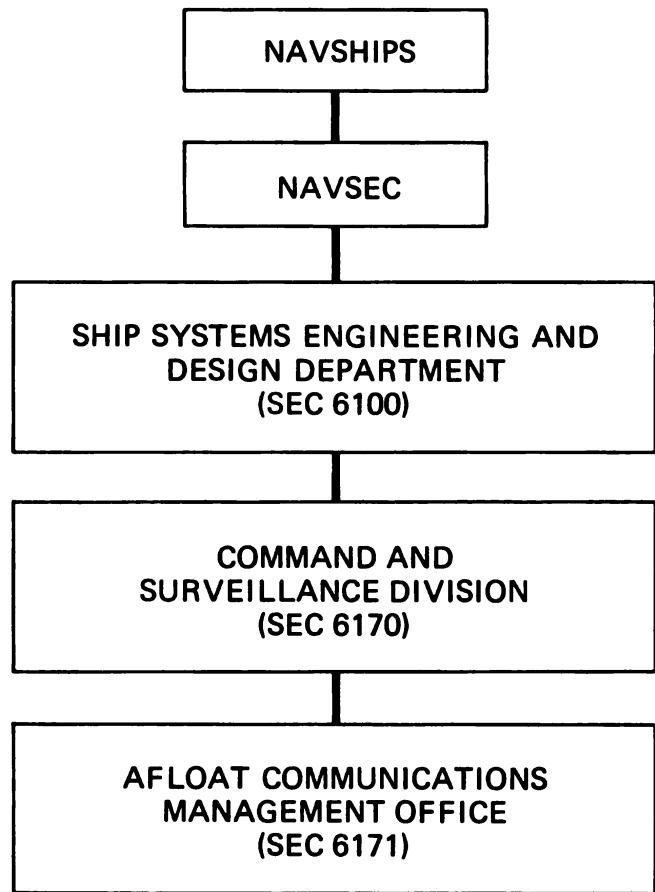
Work Study

Work study is a continuing project which insures maximum efficient utilization of equipment and personnel to provide a smooth, rapid flow of message traffic. It provides improvements in shipboard communication spaces in such aspects as equipment arrangements, working areas, lighting, temperature, acoustics, storage facilities, classified waste disposition, and repair shop locations.

Work Study was performed on about 40 ships during FY '67, and 44 more are scheduled for FY '68. As a result of work study, plans are developed, which are implemented during annual overhauls of active fleet ships. By direction of the CNO, all new ship construction incorporates the recommendations of the work study.

Quality Monitoring System

A quality monitoring system is needed which will give shipboard communications personnel the capability of supervision of a group of circuits to predict performance before transmission and to assure peak performance during transmission. Such a system will measure such



CHAIN OF COMMAND—The Afloat Communications Management Office, established in the Naval Ship Engineering Center, discharges the Naval Ship Systems Command's engineering responsibilities. This chart shows the chain of command leading to the office.

parameters as frequency, amplitude, distortion, etc., at various interfaces between pieces of equipment.

The monitoring system will be built in several sizes based upon the requirements of various ship types and classes. Its use will alert circuit control personnel to circuit deficiencies and enable them to take corrective action promptly.

Status Displays

While listed as a separate subject, status display equipment is closely allied to the quality monitoring system. A simple status display is needed for shipboard communications spaces. It must be capable of showing at any time the current status of each circuit.

The initial approach will be that of manual posting of information, but it is envisioned that as semi-automatic (and later automatic) quality monitoring systems come into being, the status display will become an automatic readout from the monitoring system showing the real-time status of every circuit.

Current Assets Technical Worth Evaluation

A study of ways and means of making better use of current communication equipment assets should improve the overall allocation of the Naval Ship Systems Command's newer and more modern equipment among the various types of ships in the fleet. This will provide an upgrading of the communication suits of the older ships including service and amphibious types, many of which still have noncompatible World War II equipments on board.

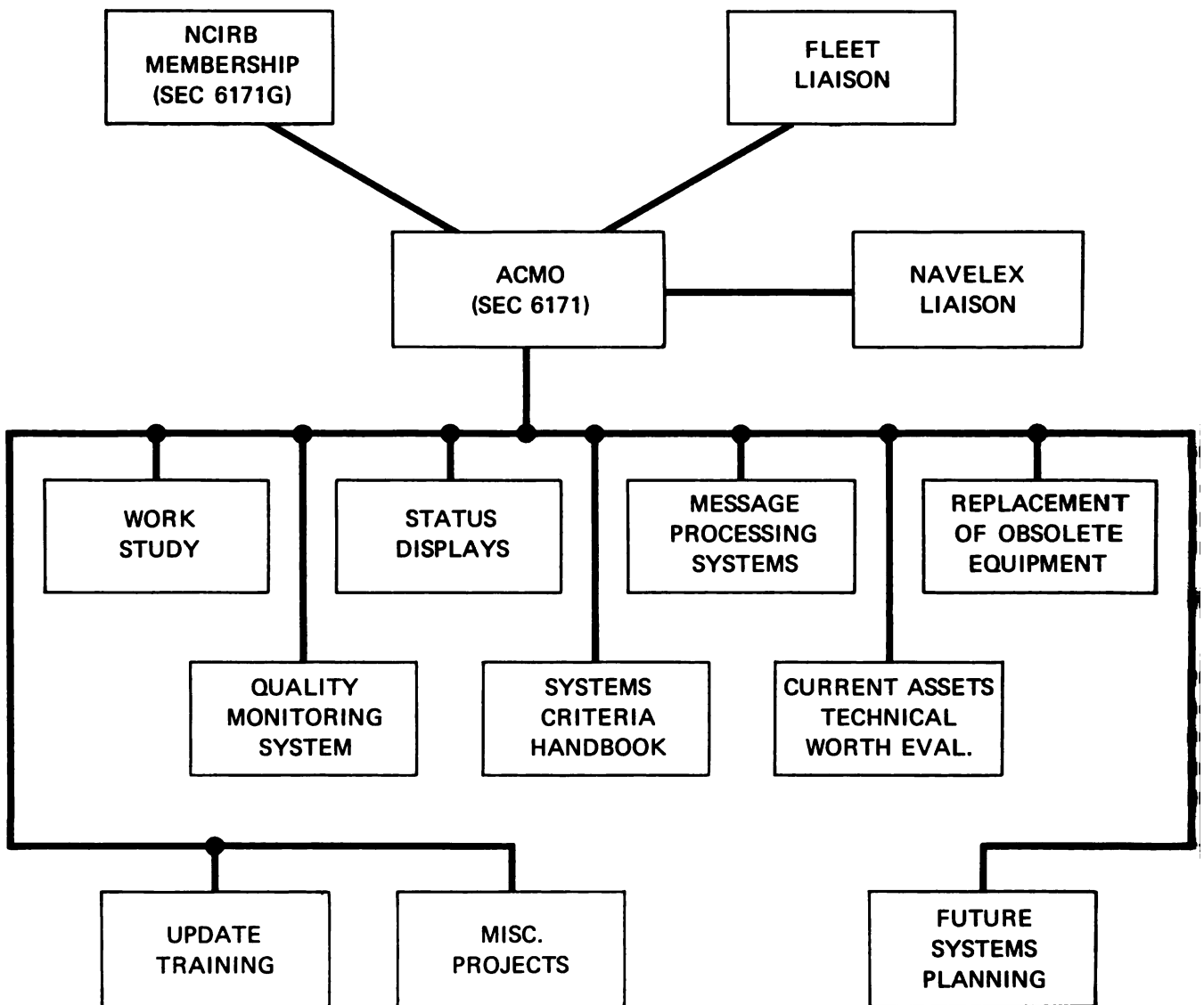
Replacement of Obsolete Equipment

As a basis for funding action for accelerated procurements of new shipboard communication equipments, ACMO is undertaking the updating of the "Ship Type

Electronic Plan" (STEP) and "Class Improvement Plan" (CIP). It is asking the forces afloat to use all possible care and accuracy in preparation of individual ship electronics inventories (NavShips 4110). This project is extremely important because of the urgency of fleet-wide communication improvements such as early implementation of full multichannel ship-shore, ship-ship and broadcast capability, and full single sideband capability.

Message Processing Systems

Current operations in Southeast Asia have dramatically demonstrated the need for more rapid, efficient means of message processing. In order to operate in this kind of environment and to be capable of handling full wartime traffic volumes, U. S. Navy ships must be outfitted with message processing systems. At first these



FY 68 PROGRAM—Action items in the current Afloat Communications Management Office program. Note the two major sources of information and task input, the Naval Communications Improvement Review Board (NCIRB) and fleet liaison.

will be standard, reliable manual message processing units, adequately supported by spare parts and maintenance. Future years will bring into use semi-automatic systems, followed by fully automatic systems.

Systems Criteria Handbook

To fill a long-felt need for shipboard communication systems technical criteria in one volume or series of related volumes, ACMO is undertaking the production of a Systems Technical Criteria Handbook. This Handbook will not duplicate information found in individual equipment instruction books but will supplement it. Its purpose will be to tell clearly and simply how the various pieces of equipment should work together as a system. For example, it will contain technical procedures for such subjects as diversity operation, ship-shore termination, setting of transmitter frequencies for various types of emissions, netting of stations, setting multiplex tone levels, single sideband operation, voice frequency relay, etc. It will be the shipboard parallel to the familiar "Shore Station Electronics Criteria" book, and will be updated annually.

Updating of Training

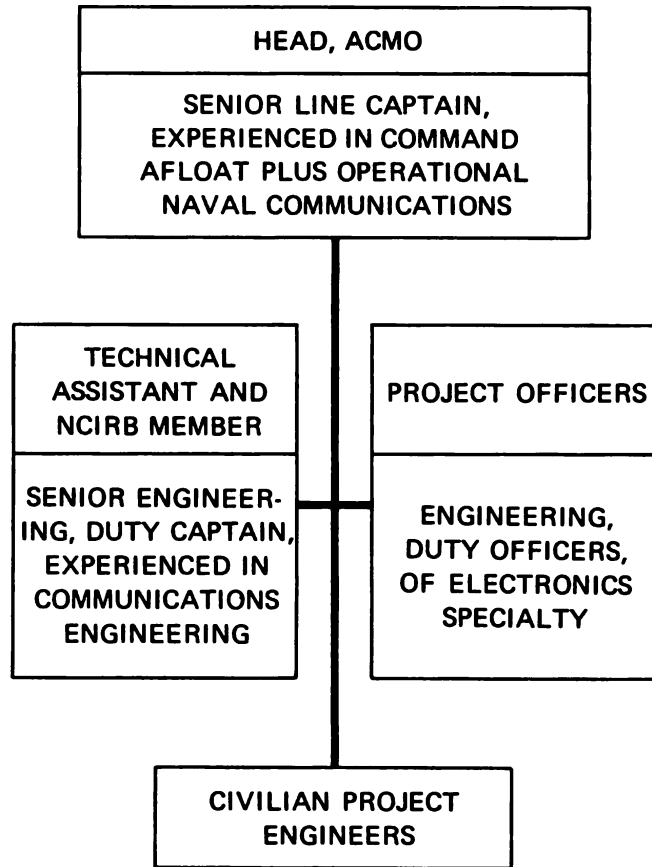
The preparation and publication of the Systems Technical Criteria Handbook will provide a source of information upon which revised training curricula and course material will be based. This will affect both military and civilian training. The Bureau of Naval Personnel will update the training of officer and enlisted personnel, both active and reserve. The Training Division of NavShips will update training programs for shipyard civilian personnel. In addition, steps have been taken to assure delivery of the first units of new types of equipments to the training activities concerned.

Future Systems Planning

While busily engaged in this program for communications improvement, ACMO is not overlooking the impact of new communication systems upon fleet communications. Developments in such systems as satellites, for example, are being monitored, and the results of fleet operational tests are being studied.

The communication channel between ACMO and the Naval Communications Improvement Review Board is a "full duplex" channel, to use the parlance of the communicators. ACMO not only receives information and asks input for its NavShips/NavSec program from this source, but it is able to make substantial contributions to program planning at the CNO level via this route. At the same time it can maintain full liaison with the other commands concerned.

September 1967



MAKE UP—Shown here is the composition of the Afloat Communications Management Office. ACMO is using these skills in a combined management/engineering approach to Navy communications problems or projects, large and small.

This program for naval communications improvement which is being managed by ACMO is a flexible one, in that new problems and miscellaneous small projects can be introduced and handled as expeditiously as large ones. There are frequent personal contacts with or telephone calls from fleet communications personnel reporting problems to ACMO personnel or asking their advice concerning shipboard technical operations.

Among ACMO officer personnel are a senior line officer with many years of experience in seagoing commands plus communications subspecialty backed up by an advanced degree; a senior engineering duty officer who is a registered Professional Engineer and whose professional experience includes many years of both military and commercial communications engineering; plus several junior officers with extensive technical and management experience in communications and electronics engineering. The civilian engineering personnel of ACMO have a combined experience of many years with the Navy and private industry. These talents are brought to bear on any problem or project, large or small.