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Computer-assisted detailing for U.S. Naval officers.

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Monterey, California. Naval Postgraduate School

COMPUTER-ASSISTED DETAILING FOR U. S. NAVAL OFFICERS

William Brooks Blaisdell Moody

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

Computer-Assisted Detailing
for
U.S. Naval Officers

by

William Brooks Blaisdell Moody

June 1976

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Computer-Assisted Detailing for U.S. Naval Officers

by

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TABLE OF CONTENTS

"[A decision concerning the]
'Best fitted officer for the job' to be
effective and responsive must be made by
detailers, but assessment and summation
of variability (inputs) along with a
schedule of priorities can be substantially
aided by an effective MIS."

- Officer Distribution Manual

I. INTRODUCTION

When the author first received orders to the Bureau of Naval Personnel (BUPERS) in 1972 as a restricted line assignment/placement officer in the Officer Development and Distribution Division, he had a number of preconceived notions as to how the Naval officer assignment process functioned. These preconceptions of a highly automated, technically advanced system were not borne out by experience. In support of the assignment of Naval officers and other functions within BUPERS, a computer-based Management Information System had been developed; however, the assignment and distribution of Naval officers, one of the key functions of the Bureau, remained and still remains essentially a manual operation. The author's curiosity was aroused as to which, if any, aspects of the detailing process could be made more efficient and/or effective by the application of computer technology and what plans BUPERS has for applying that technology to officer detailing. The genesis of the present thesis was in the aforementioned curiosity and the opportunity to explore the subject in depth afforded by the curriculum and facilities of the Naval Postgraduate School.

In approaching the subject of computer-assisted detailing for Naval officers, four general areas are addressed in Chapters II through V. Chapter II concentrates on a discussion of current detailing practices, the philosophy and considerations that provide its conceptual foundations and the actual mechanics of the process. Attention is paid to the fact that detailing mechanics are not the same in all officer communities. The chapter also discusses the computer-based support which is currently pro-

vided to assignment and placement officers. Chapter III addresses the recent literature (since 1966) on computer-based assignment systems. The discussion centers around three different approaches which recent authors have taken - one that concentrates on the distribution problem, i.e., allocation of scarce human resources to competing requirements, a second which attempts to assign specific individuals to specific positions through an algorithmic approach and a third which concentrates on the automated data-based organization of information to assist a human decision maker.

Chapter IV discusses the BUPERS Future Manpower and Personnel Management Information System (Future MAPMIS) project as it relates to the officer assignment and distribution problem. Future MAPMIS represents the Bureau of Naval Personnel's response to the challenge of the information handling revolution and the realization that manual methods entailed many inefficiencies. The project was given further impetus by the planned transfer of assignment and distribution functions from Washington to New Orleans and a concomitant reorganization of BUPERS. As the reader will note, Future MAPMIS opts essentially for the data-based organization of information approach to the assignment problem and this fact is the subject of the opening section of Chapter V. This last chapter discusses the appropriateness of this approach in the light of the fundamental concepts and practical considerations of officer detailing presented in Chapter II as contrasted with the more mechanical systems reviewed in Chapter III. Lastly, recommendations and suggestions are offered concerning the implementation of Future MAPMIS in the Officer Development and Distribution Division of BUPERS.

II. CURRENT MANUAL SYSTEM

A. OVERVIEW

Within the Bureau of Naval Personnel the assignment of Naval officers is the responsibility of the Officer Development and Distribution Division (Pers-4). In fulfilling that responsibility the Division has evolved a basic conceptual framework within which the problem of assignment can and must be approached. This framework finds its essential statement in the so-called "triad of detailing", the three elements which must be considered in every detailing action [Ref. 13]:

1. The needs of the service
2. The needs of the individual
3. The desires of the individual.

The three elements do not necessarily coincide; in fact, they most often are in conflict. One can understand why conflicts exist by examining the differing focus of each of the three elements.

The first of the triad defined as "needs of the service" is concerned with the optimal filling of specific billets within the Naval establishment. Certain billets required certain experience, talents and education in various combinations. To perform effectively, the occupant of a specific billet must meet minimum standards in some or all of these areas. At the very least, Navy billets are identified by rank (a rough surrogate for experience) and designator (the broadest descriptor of professional field). Refinements may run to nine formal descriptors and any number of informal "desirable characteristics" which carry varying weights, depending on the circumstances. A listing of billet file items is included as

Appendix A. Finding an individual officer who matches the requirements of a particular billet, where the focus is on the billet requirements, essentially constitutes the process of meeting the needs of the Navy. In the language of the Officer Development and Distribution Division, it is the placement function - ensuring that billets are filled with qualified officers.

Increasingly, the "needs of the service" have also come to be defined in terms of personnel cost savings. This additional constraint, which can have considerable impact on an otherwise theoretically optimal assignment, brooks large as a consideration in assignments.

If the two other aspects of the "triad of detailing" did not exist or could be ignored, the assignment of officers would be a vastly simplified process. Such is not the case, however. The needs of the individual and the desires of the individual must also be considered. Although both focus on the individual officer to a much greater extent than the first element, they are not the same and can be conceptualized as having differing focus. The concept of the needs of the individual includes aspects of both service and individual satisfaction. The Navy has long held that the Naval officer should be a generalist to a greater or lesser extent. It follows that an officer should be toured through a variety of different billets so that he can have the breadth of experience which will fit him for positions of greater responsibility and managerial purview. Thus the "needs of the individual" are interpreted as encompassing a career pattern which is varied and includes various types of duty depending on the officer's designator, warfare specialty, etc. The Navy benefits by having officers of broad experience to fill its more senior billets and the individual

benefits from not being confined to a narrow specialization which would ill fit him for positions of broad managerial responsibility. One can also characterize this second element of the triad as the interests of the Naval officer as perceived by the Navy.

Lastly, the focus of the concept of the "desires of the individual" is directly on the interests of the individual Naval officer as he perceives them himself. It is this element that encompasses all the personal preferences, family wants and perceived benefits which are associated with prospective assignments. It is the least stable of the three elements of the triad and its instability coupled with its importance in the individual officer's scheme of things make it the most difficult to deal with in any kind of a systematized approach to the assignment problem. It, together with the second element of the triad, can be subsumed under the assignment function as that term is used in the Officer Development and Distribution Division; under the assignment function it is the interests of the individual, whether from the Navy's perspective or from his own, that are paramount.

The relative weights assigned to the three elements discussed above are a matter of continuing debate. As mentioned previously, because of their varying focus they are in conflict more often than they are in agreement. Congruence is a goal to be pursued and there are efforts to accomplish this through two principal devices. Congruence of individual needs and desire is encouraged through the development of career pattern guides and their dissemination through various educational media within the Navy. Congruence of the Navy's needs and the other two elements is encouraged through efforts at personal contact with constituents by

assignment officers who can provide their constituents with information about the thinking which went into a particular assignment. Despite the efforts to foster the congruence of the three elements, conflicts inevitably arise. In such cases the conventional wisdom has held that the needs of the Navy take precedence. Nevertheless, there is no hard and fast rule which must be applied in all cases. Each assignment is considered to be unique and each is handled on a case-by-case basis. The play and balancing of the three elements of the "triad of detailing" represents both a frustration and a challenge for officers engaged in the assignment and distribution of Naval officers.

B. THE MECHANICS OF DETAILING: UNRESTRICTED LINE

The major components of the Officer Development and Distribution Division of BUPERS for unrestricted line officers (URL) are the grade assignment sections and the placement sections. For the restricted line (RL) and staff corps most of the intracommunity assignments are handled by a double-hatted assignment/placement officer; however, for the URL and intercommunity and general RL/staff billets the assignment officers (detailers) and placement officers are distinct individuals working for separate superiors. Their missions are defined as follows:

> Assignment section: To assign officers under their cognizance to all authorized billets ashore and afloat in accordance with established policies and directives and in such a manner as to make the most effective use of the officer's special qualifications, and with consideration not only for the officers; professional growth, but for their personal interest and morale insofar as is compatible with the best interest of the service.

> Placement section: To place officers, Captain and junior, in activities under their cognizance in order to most effectively utilize these officers in authorized billets as indicated in the approved allowance/ODP (Officer Distribution Plan) for each activity and to furnish complete information to various assignment officers in regard to the current and prospective needs of the program in order to facilitate such distribution. [Ref. 13]

Essentially, the assignment officer - more commonly known as the detailer - acts as the representative of the individual, trying to assign him to the best job possible in accordance with his personal preferences and consistent with his professional qualifications. Probably the over-riding consideration by the assignment officer is to ensure that the individual has had the billets and attained the qualifications to make him as competitive as possible for promotion to the next grade. The placement officer, on the other hand, is primarily concerned with placing (assigning) the best qualified officers available to the activities, i.e., commands, under his cognizance. He is also responsible for monitoring all correspondence pertaining to officer assignments between his activities and the Bureau of Naval Personnel. Thus, there exists an interesting interaction of individual needs and service needs.

Looking at the process in relation to unrestricted line officer assignments, one must first examine the various inputs. First of all, there are the billet requirements themselves, including any special qualifications or training requirements that may be needed. Regarding the individual officer, there are matters of his special qualifications, rotation pattern between sea and shore, professional performance record, personal preferences of locality, ship type - if applicable - and particular billets. Considerations should also be given to minimizing moving expenses. Since

travel reimbursement is made on the basis of the number of family members and household goods, the officer's dependency status must be included as a decision variable.

It becomes obvious that there are many minute details of an assignment; however, the largest problem is that of billet priorities. This has become the dominant problem since the substantial post-Vietnam officer reductions. For example, the surface junior officer assignment has lost 50 percent of its constituent base since 1972 without as rapid a decrease in billet requirements. In the current situation, where fewer and fewer ensigns enter active duty each year, there is an increasing surfeit of billets versus junior officers. At the same time the detailer has to continue to provide an interesting, challenging, and rewarding career pattern to retain these new officers. Thus the tradeoffs between personal preferences, career needs, and service needs loom larger every year.

In the officer assignment system, the Surface Junior Officer Assignment Section has 10 detailers and two assignment coordinators. Each detailer is responsible for approximately 800 to 1000 officers. The assignment process begins when an officer serving in a duty station has had a relief identified. Ideally, this should take place 3 to 6 months prior to the officer's projected rotation date (PRD). At this point the cognizant placement officer releases the officer for reassignment by the detailer. The detailer then draws the necessary records - the fitness report jacket, the latest preference card, and any other pertinent correspondence - and makes the tentative decision as to whether the officer should serve his next duty at sea or ashore. He then recommends a general type of assignment for the officer and forwards his fitness report jacket, officer data

card (ODC), and the latest preference card to the appropriate sea or shore coordinator.

The coordinators hold all outstanding billet requirements in their respective areas - sea or shore. Consequently, they are at the center of the detailing/placement interaction in that they have billets to fill while they are actually part of the assignment organization. The question of billet fill priorities - weighting one command's needs against another's - is a vital part of the coordinators' function. With decreasing assets it has become more vital than ever that they have the means to project future requirements (billets) and assets (officers) in relation to service needs and individual career development patterns. The sea and shore coordinators also need the capability to access effects of incremental personnel cuts both on individual constituents and commands. When an assignment proposal is received from a detailer, the coordinator matches the officer recommended against a specific billet (using some type of priority system) and returns the record to the detailer. At this point a discussion takes place between the detailer and placement officer concerning the officer's qualifications for the job. Once a proposal is accepted by the placement officer, the detailer notifies the coordinator and begins preparing a set of orders.

The other two major components of the unrestricted line community, the fliers (designator 13XX) and the submariners (designator 112X) follow procedures similar in some respects to those of the surface detailers. Matters are complicated, however, by stringent requirements for aircraft type/qualification matching, training rotation patterns and the distinction between nuclear and non-nuclear trained officers. Each community has

unique procedures which arise out of the nature of the technical expertise inherent in its technologies, requirements levied by sponsoring organizations and legal/regulatory strictures. The inputs to the decision process differ considerably in many respects, but the mechanical process of issuing orders is the same as in the surface community.

C. THE MECHANICS OF DETAILING: RESTRICTED LINE/STAFF CORPS

As indicated previously, detailing procedures within the restricted line and staff corps are analogous to those of the unrestricted line, but the distinction between detailing and placement functions becomes academic to a greater or lesser degree. Each community within the RL/Staff, which in total accounts for more than 30% of the Navy's officer corps, differs in its procedures according to its specific needs, functions and customs. As an example of a fairly typical RL/Staff community the author will examine the mechanics of detailing in the Cryptologic officer community.

The Cryptologic officer community consists of approximately 760 officers in three designators: 161X (Special Duty Officer, Cryptology), 644X (Limited Duty Officer, Cryptology) and 744X (Cryptologic Warrant Officer). [Ref. 26] The Cryptologic Officer Detail/Placement Section of BUPERS is responsible for the assignment of these officers in the rank of warrant (WO-1) through captain (O-6) and for the placement of officers in approximately 850 billets. Assignment and placement responsibilities overlap in roughly 80% of all assignments, so that the two cryptologic detailers usually "talk to themselves" when they consider placement matters. There is, however, a small percentage of cryptologic billets which are the responsibility of another placement officer and a somewhat

larger number of billets at cryptologic activities which are written for unrestricted line and other non-cryptologic officers. These latter cases involve the give-and-take of nomination procedures discussed earlier.

Nevertheless, for the most part, the cryptologic detailer faces a situation in which he theoretically knows both the requirements (billets to be filled) and assets (officers available for assignment). The first step in the detailing process begins upon the receipt of the monthly "Projected Rotation Date (PRD) Run" which gives a computer listing by rank and PRD month of officers due for transfer out to 18 months from the report month. Additionally, a posting-strip list of billets to be vacated during the same time frame is received. Normally officers are detailed in blocks of three months to allow for a greater selection of billets and to follow quarterly budgeting patterns. Furthermore, officers are usually considered for new assignments six to nine months prior to PRD. The names are transferred from the computer listing to a hand-maintained slate, and suitable information from other sources is collected and noted: number of dependents from another computer run and verified by reference to the officer's preference card; information concerning the officer's performance from his fitness reports which must be drawn from the files; and other information which would bear on the assignment, such as past duty stations and experience from formal records and his personal desires as expressed in the preference card, correspondence, and telephone calls.

An actual assignment involves the weighting of numerous factors by the detailer. Primary among these are:

(1) The needs of the service: what cryptologic billets requiring a particular man's talents must be filled in the time frame he is available?

(2) The desires of the individual: what billets are opening in the job or geographic area the officer desires?

(3) The needs of the individual: what experience does the officer require to have a well-rounded cryptologic career and to allow him to grow professionally?

(4) The cost of the assignment: how much will the assignment cost and how does his dependent status fit with the general policy of the Bureau on overseas/transcontinental moves? How much of the funds allocated to the office will the assignment use up?

(5) Special considerations: are there any previous commitments to the officer or any special consideration due in view of previous hardship assignments, family problems, health considerations, retirement intentions, command influence, repeated assignments to particularly desirable locations/ billets, promotability or lack thereof, service/postgraduate school selection status?, etc.

No particular weight can be permanently assigned to these factors, as they change from day to day and assignment to assignment. The goal is objectivity, but each assignment is objectively different.

Once an assignment is tentatively made it is reviewed by the other cryptologic detailer as a check and, if finally approved, passed on to the enlisted staff for preparation of the order nomination. The actual order writing procedure is the same as in the unrestricted line.

D. CURRENT COMPUTER SUPPORT TO DETAILING/PLACEMENT FUNCTIONS

As indicated in the previous two sections, the information required to evaluate an officer's qualifications, his career needs and his personal desires comes from a variety of sources. The primary source of career

data on officers is the computer maintained BUPERS master file. Volume II of reference 10, a copy of which is included as Appendix B, specifies those items of information which are currently maintained for each officer. All of this information is printed on the Officer Data Card (ODC) which is provided to a detailer for each officer for whom he is responsible at least once annually and upon specific request. The ODC is a key document in the assignment process and its accuracy is of crucial importance to Naval officers. For that reason, individuals are provided a specific opportunity to review and correct the information on the ODC shortly after the beginning of each new tour. Many a prospective assignment has come to grief because of inaccurate or outdated information in the BUPERS master file as reflected in the ODC printout. The problem of accurate and current information is one that is mentioned repeatedly in planning documents as a major concern in the present information system.

Fitness report information is not currently included as part of the master file, but as the new machine-readable fitness report is implemented, performance information will be made available from a separate computer file. A previous system of fitness report numerical reduction which was formatted for computer analysis and reporting has been abandoned. Unless or until the new system is perfected, there is practically no machine-assisted vehicle available to the detailer for performance analysis and comparison.

Master billet file information setting forth the requirements of each billet is also computer maintained. A listing of the elements of information maintained for each billet is included as Appendix A. The file can be linked to officer data information through the "incumbent" item.

Essentially all computer support for the Officer Distribution Division is in the form of batch processed reports or requests. In the past, the initiative of the individual detailer or placement officer has determined how and to what extent he utilized the data processing support available. In general, these potential users have been so involved in their day to day work that data processing utilization has been minimum. Recently a more aggressive data processing liaison office in the Officer Distribution Division has attempted to inform the potential users of the computer support available and demonstrated a willingness to interface with and tackle any request.

The following recurring reports are run at various time intervals:

(a) A Projected Rotation Date (PRD) listing is published monthly in alphabetical sequence by rank and month of PRD for 18 months into the future for each assignment office. Additionally at the nine to twelve month point for detailers and placement officers, computer PRD posting strips are printed to begin the assignment process.

(b) Officer Data Card Reports are printed for placement activities listing the status of every officer assigned to the commands under his cognizance.

(c) Release From Active Duty (RAD) listings are published biannually and annually listing reserve officers scheduled for release.

(d) All normal letter orders are printed by the computer from OCR data forms as standardized wording permits.

(e) Year group alphabetical listings and other reports are generated by the computer on an "as requested" basis.

The most ambitious attempt at computer-based assistance to the assignment/distribution process to date is the Automated Management Information System (AMIS) prototype. The objective of the prototype was to prove the feasibility and effectiveness of a computerized management tool to aid managers at all levels in the Officer Distribution Division of BUPERS to monitor and plan the effective distribution of officer personnel, meeting as closely as possible in quantity and quality the personnel requirements of every authorized officer billet in the Navy. Figure 1 is a functional diagram of the AMIS prototype. All officers and billets are included, although the initial emphasis is upon the URL community. Because of fluctuations over time in the number and type of billets authorized and in officer accessions, training pipeline flow, attrition and promotion rates, etc., the distribution problem has no steady-state solution; it must be frequently adjusted to cope with the changing supply/demand situation.

As described in reference 18, the basic mathematical algorithms incorporated in AMIS are: (1) Linear Programming (LP) for optimal aggregated distribution and (2) the Priority Allocation Method (PAM), an algebraic technique for computing billet fill rates based on inventory, billet requirements and billet distribution priority. Data for the process is derived from existing files. Condensed files are extracted from the Officer Master File and the Officer Billet File for use in computing requirements. Billet and activity priorities were formulated under a joint placement/project officer effort in BUPERS.

In the schema that evolved, [Ref. 18] each billet in the Navy is assigned a relative priority on a scale from one to four through a

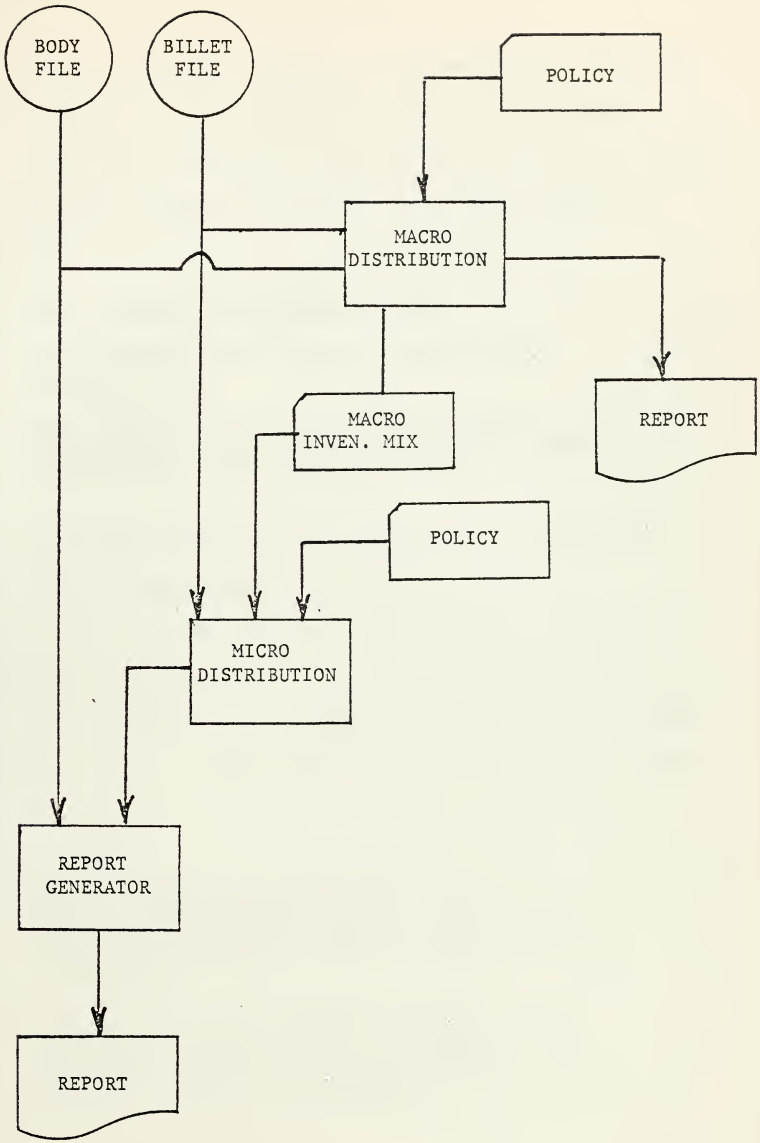

FIGURE 1

AMIS Functional Diagram

combination of activity priority (assigned in decreasing criticality from one to three) and billet priority (assigned in decreasing criticality from A to C). The activity priority is based on the Activity Mission Code (AMC) with three broad categories for activity priorities defined as follows [Ref. 18]:

1 - Ships, squadrons and deployable units

2 - Top management, Fleet support, overseas staffs and staffs afloat

3 - Shore activities in the continential United States (CONUS), CONUS staffs, training and reserve activities and educational institutions

Exceptions to this broad activity priority system are accomplished by using a second AMC to raise or lower an activity's priority.

Billet priority is defined relative to the contribution of the billet to the accomplishment of the activity's mission and is directly related to the degree to which the billet may be gapped and to the billet qualifications which must be met. The billet priority definitions are as follows [Ref. 18]:

A - Essential for the accomplishment of the unit's mission; requires contact relief. Will be filled regardless of activity priority. Least subject to cross- or up-detailing. Subject to down-detailing if required.[1]

B - Very important to the activity; however, a small percentage of these billets may be gapped if requirements substantially exceed inventory. More subject to cross- or up-detailing.

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[1]Cross-detailing: the practice of assigning an officer with a different designator to a billet which calls for a given designator.
Down-detailing: assigning an officer to a billet written for a more junior officer.
Up-detailing: assigning an officer to a billet written for a more senior officer.

C - Important, but functions may be assumed by other officers assigned if necessary. An adjusted percentage of these billets may be unfilled if requirements exceed inventory. Most subject to cross- or up-detailing.

A table-conversion combination of billet and activity priority is used in the model in computing fill rates and guiding up-, down- and cross-detailing. The conversion table used in AMIS and priority-associated relative fill ratios are shown in Figure 2.

Policy is reflected in the model by: (1) the assignment of activity and billet priorities; (2) the combination of activity and billet priority to obtain the distribution priority; (3) explicit definition in terms of designator, grade and billet priority of the officer-to-billet combinations allowed and the relative preference for each combination; and (4) the relative rate of fill for billets in terms of distribution priority.

If the total inventory is less than total requirements, the requirements are filled in accordance with a computed fill rate based on priority. One set of fill rates is applied uniformly across all the designator/grade requirements. The reduced requirements are then filled from the available inventory using up-, down- and cross-detailing, as allowed. The technique employed ensures that the minimum amount of up-, down- and cross-detailing is used. Generally, the following obtain:

(1) Up-detailing is preferable to down-detailing.

(2) If an officer is down-detailed, it is desirable to place him in a higher priority billet; conversely, if an officer is up-detailed, it is desirable to place him in a lower priority billet.

(3) If an officer is cross-detailed, it is preferable to place him in a lower priority billet.

BILLET PRIORITY

		A	B	C
	1	1	2	3
ACTIVITY	2	1	2	4
PRIORITY	3	1	3	4

DISTRIBUTION PRIORITY

DIST PRIORITY	1	2	3	4
RELATIVE FILL RATIOS	100	75	56	42

RELATIVE FILL RATIOS (75%)

FIGURE 2

Distribution Priority and Relative Fill Ratios

(4) No more than one grade up- or down-detailing is allowed except for ensign and warrant officer.

(5) Allocation to multi-designator billets (1000, 100 and 1300) is accomplished in proportion to inventory available for such multidesignator billets.

Thus it is that general distribution policies are included in the model in a quantitative form, explicitly by data input and implicitly by model structure.

The output of the AMIS model consists of a number of reports as follows:

(1) Activity priority listings

(2) Billet priority listings

(3) Aggregate distribution plan (macro)

(4) Placement desk/activity distribution plan (micro)

(a) Authorized billets by grade/designator

(b) Optimal distribution by grade/designator

(c) Onboard inventory by grade/designator per activity

(d) Projected inventory by grade/designator per activity.

The last two reports are the most useful to the detailers, placement officers and higher management personnel.

For the assignment officer the aggregate distribution plan (macro) shows by number and percent for each designator/garde group of the detailer's community the optimal distribution to requirements by grade/designator billet group. For the placement officer the macro plan shows the percentage mix by designator and grade of officers to be used to fill a given group of billets by designator/grade.

The placement desk/activity distribution plan (micro) makes the "fair share" distribution of the officer inventory to the placement desk and activity level. Naturally, the report is primarily of interest to the placement officer and shows the authorized billets, the optimal distribution to those billets and the actual onboard strength for each placement desk and each activity.

For managerial planning purposes and in addition to the information most valuable at the assignment and placement desk, the AMIS prototype can provide an overall view of current officer distribution, problem areas and the overall distribution plan. The prototype can also provide answers to questions in such areas as:

(1) Effects on the distribution plan of specific changes in inventory/billets by number and/or priority.

(2) Effects on the distribution plan of policy changes such as increased activity priority for all training staff and student billets, removing or strengthening prohibitions against up-, down- and cross-detailing and increasing or decreasing the number of authorized transient, patient and prisoner (TPP) quotas.

As an experiment to demonstrate that computer-based techniques could assist in resolving the distribution problem AMIS was and is a success. Reports are produced in a readable format and are regularly distributed to assignment and placement desks in the Surface Detailing Section as well as to the senior managerial levels of the Section. On a practical level, however, the reports have not enjoyed a high level of user involvement. Detail and placement officers did not participate in the basic design of the system, the output of which could be viewed as infringing on the judgemental scope of both. Strong upper and middle management level support has not materialized. The general attitude which has prevailed

in most of the Officer Development and Distribution Division since the introduction of AMIS in December 1973 is perhaps best described as benign neglect.

III. LITERATURE REVIEW

The recent literature on computer-assisted personnel assignment concentrates on three major and differing approaches:

A. The distribution problem

B. Specific algorithms to arrive at discrete assignments

C. Computer-assisted organization of information.

Each of these will be reviewed briefly in turn.

A. THE DISTRIBUTION PROBLEM

James M. Daniels in his 1967 Master's Thesis poses the question, "How can Navy personnel planners best meet expected future requirements for officer personnel with available resources and within existing legal and administrative constraints?". [Ref. 19] To answer this question he devises a nodes and arc schema with penalty costs for other than optimal planning effectiveness (i.e., ordering). He then states an objective function, a feasible flow at minimum cost, and concludes that the problem is reducible to a linear programming model. The output of Daniel's model is designed to assist in the assessment of the effectiveness of planning and in the simulation of changes in input and attrition. It is basically a macro-model, not concerned with specific assignments of individuals; rather, it is a theoretical approach to the problem of distribution of officer personnel in general and its effect on overall Navy effectiveness.

The practical application of a similar approach is discussed in a Bureau of Naval Personnel report issued in 1969.[Ref. 14] It describes

the Officer Management Simulation Model (OMSM) which, again, was (and is) a macro-model. The OMSM allows simulation of various policy decisions on officer corps size and their relation to requirements. Utilizing the officer master file and master billet file in BUPERS as a data base, it is still essentially a tool for top management policy and relates directly to the assignment process only in its ability to assess requirements in a distribution plan which could be derived from OMSM output.

The specific application of computer problem-solving capabilities to the practical matter of an officer distribution plan is discussed in Robert K. Owens' 1970 Naval Postgraduate School Master's Thesis. [Ref. 27] Extending Daniels' approach of weighted (ordered) values to up-, down-, and cross-detailing and weighted priorities to billets, he devises a model which will produce the "optimum" number of billet fills for each grade in each activity. The Owens model descends from the macro-level, although no attempt is made to deal with the matter of specific assignments.

A series of reports written in 1973 and 1974 by D. Cass and others [Refs. 15, 16, 17] details how an Owens-like model was actually implemented and refined at BUPERS under the name of the Automated Management System (AMIS) to provide a theoretically optimum distribution plan. The actual workings of AMIS were discussed in the preceding chapter.

B. SPECIFIC ALGORITHMS TO ARRIVE AT DISCRETE ASSIGNMENTS

A 1967 Naval Postgraduate School Master's Thesis by Ronald L. Johnson and Ronald D. Newmister [Ref. 22] postulated that an assignment model employing a network theory formulation and solution with the "out-of-kilter" algorithm originally devised by Ford and Fulkerson could be used to arrive at specific assignments for Naval officers. A value measure which indicated

the degree to which each officer's qualifications met the weighted billet's requirements was utilized for solution. Output of the postulated model could be set to include any set of solutions from the "optimal" to a stated number of "less optimal" solutions or arranged so that the time to arrive at solutions would determine the number of choices printed out. Alternative assignments were included, as indicated, and the model was described as a "man-machine approach" by the authors, as the ultimate decision would not be made by a machine.

A slightly different approach to specific computer-assisted assignments was mentioned briefly in a 1971 article by Ewosho and Dudding. [Ref. 20] The application of Kuhn's Hungarian assignment algorithm to arrive at postings for Canadian servicemen was being attempted. The authors reported that the practical problem of setting up a matrix was creating difficulties. A much longer and more highly sophisticated mathematical discussion of the use of Kuhn's algorithm appeared in the same year in a report by M.A. Pollatschek. [Ref. 28] The report stressed that such an approach was possible both methodologically and computationally, but also stressed that human intervention in the person of the decision maker was essential during the actual process. The decision maker would have to provide "policy" at critical junctures, since, although "policy" might be reducible to a definable function, the shape of that function was not known.

A DOD contractor, Decision Systems Associates, Inc., also produced a report in 1972 on the feasibility of using the Ford-Fulkerson algorithm for military assignments. [Ref. 21] The authors developed several refinements which they felt would reduce the time required to arrive at a

solution and reported developing a specific program in modified FORTRAN which would be relatively hardware-independent. Not surprisingly, a costing section showed the Decision Systems Associates program to be very cost-effective in comparison with other systems.[2]

A year later another contractor, System Automation Corporation, investigated the feasibility of computer-assisted distribution and assignment of Naval officers in a report prepared under Office of Naval Research (ONR) auspices. [Ref. 23] The purposes of the study, authored by Edward G. Loges, are stated in terms of plans and policies as well as working level orientation. In fact, the management information goals are given precedence over the operational aspects discussed; the goals are listed as follows:

(1) To aid in testing and formulating manpower plans and policy by

  (a) Determining the effectiveness of existing personnel policies

  (b) Assessing the ramifications and feasibility of proposed policy changes

(2) To aid in responding to personnel management queries

(3) To aid in the actual distribution process by providing guidance to personnel action officers and to assist them in interpreting and applying policy.

The system is proposed in three phases:

Phase I -Asset projection (aging of the officer force over a three-year period)

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[2]The U.S. Marine Corps adopted the Decision System Associates algorithm for a pilot enlisted assignment model (EAM). The pilot project uses the algorithm to arrive at assignments for a small segment of Marine Corps enlisted personnel, senior enlisteds (E-5 and above) ordered to overseas duty stations. [Ref. 30]

Phase II -Requirements and goals: development of manning objectives based on authorizations, strength levels and priorities (three year period)

Phase III-Rotation and reassignment: distributes the assets projected in Phase I to the billets authorized in Phase II within the constraints of the manning rules by simulating the rotation of specific individual officers and their optimal reassignment.

Phases I and II are in actuality very close to the AMIS system which was instituted at BUPERS a month after the study was published. The author was careful to point out that these phases did not constitute an assignment model, but Phase III, while not yet refined to the point of being such a model, tends in that direction.

The Loges report does discuss five methods through which an explicit assignment model could be developed. Briefly these are:

(1) Cascade method - an iterative process in which fits between officers and prospective billets are "scored"

(2) Linear programming - which also scores fits, but also identifies an optimal set

(3) Goal programming - an extension of linear programming with the ability to achieve multiple objectives

(4) Hungarian method - described in this report only as "closely related to linear programming"

(5) "Stability of marriage" method - a logical procedure employing an ordinal ranking scheme.

The author tends to favor the last approach. He makes specific provision for varying the "activation levels" of the rules applied to govern assignments, specifying three levels:

0 - Inactive, does not apply

1 - Active, flexible, may be violated

2 - Active, firm, may never be violated.

The assignment officer would specify which "level" of activation would apply to each rule for each assignment. One of the considerations to which the "levels" would apply is up-, down- and cross-detailing. The author concedes that the impact of changes in the permissibility of such detailing would be tremendous and that controls would probably have to be incorporated into the very structure of a detailed model design.

Although the most recent Navy effort in computer-assisted detailing, the Computer Assisted Distribution and Assignment (CADA) System did not extend to officers, the general concept and results certainly impinge upon the officer problem. The rosy predictions of Trippi, Ash and Ravenis in their 1974 article in Computers and Operations Research [Ref. 29] unfortunately did not materialize. The discussion in the CADA point paper/ post-mortem of 1975 [Ref. 29] is very germane and will be discussed later in an examination of the role of specific assignment algorithms with respect to officer assignments.

C. COMPUTER-ASSISTED ORGANIZATION OF INFORMATION

Three studies in 1973 dealt with the use of computers as information organizers in the detailing problem. The Cass-Charnes-Cooper-Niehaus report [Ref. 15], mentioned earlier in connection with the AMIS concept, sketched a proposed "extension" of the AMIS system to include an "information/reservation type system for the Placement Desks and Detailing Officers" and describes the proposed system as a "conversational" one which would allow on-line searches of both officer and billet files, initially as simple sequential searches and then as multi-attribute extensions.

Joseph J. Andrilla in a 1973 Naval War College Review article [Ref. 1] expands upon this concept in relation to the surface junior officer detailing problem. He is much more specific concerning the types of information which should be retrievable and edges towards a modified "algorithmic" approach in suggesting that eventually lists of "alternative assignments" could be generated according to those rules which could be quantified. He also proposes that the placement function be eliminated as such and bases a brief cost-effectiveness statement primarily on the supposition that placement desks could be eliminated.

IV. THE BUPERS FUTURE MAPMIS PROJECT

A. BACKGROUND

In October 1972 initiation of planning for a Management Information System (MIS) concept for the decade 1975-1985 was approved by the Deputy Chief of Naval Personnel and delegated to the Assistant Chief for Management Information (Pers-N, now Pers-3) for execution. The following month Pers-N established the Futures Forum Study Group which was directed to identify future military personnel and manpower needs for Navy management and to develop system design criteria. In its initial report issued in May 1973 [Ref. 8], the Study Group made a statement of very general strategic plans for the period 1975-1985, discussed the future of officer detailing procedures in terms of an on-line information organization/retrieval/scratch-pad system with an order-costing feature and an eventual automatic orderwriting capability. Specifics as to what type of information retrieval was anticipated were not spelled out in any great detail.

Out of the BUPERS Futures Forum Study Group developed the Future System Project Office, which in cooperation with offices both within and outside BUPERS has evolved a Navy Manpower and Personnel Management Information System (MAPMIS) concept. The implementation of the concept is still in progress, but the broad outline of plans are spelled out in three documents: Future Systems Concepts (November 1974), Future MAPMIS Automated Data System: Economic Analysis (February 1975) and Future MAPMIS: Functional Description (May 1975). The content of those documents, primarily in relation to officer detailing and placement, will be the subject of the remainder of this chapter.

B. ORGANIZATION

The general organization and phasing of the Future System is set forth in Future System Concepts [Ref. 11] distributed under the Chief of Naval Personnel's (CNP) signature in November 1974. The objective of the system is stated succinctly: to provide BUPERS managers on-line access to valid data which will be updated on a more frequent schedule. Four major areas of effort were stipulated: data base requirements definition, automated data processing (ADP) applications redesign, present systems redefinition into ADP-compatible terms and source data management. To oversee the entire effort a steering group was established under the chairmanship of the Deputy Chief of Naval Personnel with representatives from the top management levels of potential user groups, both within and without BUPERS, and data processing specialists. An action group referred to as the "Integration Group" was also established to further ensure user involvement in the development of concrete plans, milestones, alternatives and recommendations. Lines of authority, coordination and technical direction were formally established with overall integrating functions concentrated in the Director, Future System Project Office. User involvement was specifically invoked in seven areas: (1) identification of applications, (2) definition of requirements, (3) recognition of economics, (4) acceptance of a requirements freeze at some time during development, (5) establishment of realistic input and output controls, (6) participation in development, test and turnover of the new system and (7) operation and maintenance of applications over which they as users would have cognizance.

Certain broad design criteria were next specified. The system as contemplated would require sharing of data bases with other users and this was stipulated as a basic design consideration. The unique requirements of users would have to be recognized in the design through master/customized file interface provisions. Additionally, time-sharing, communications (external and internal) and security/privacy factors were included in basic design guidelines. An overall timetable based on a modular approach was established with the second module, designated Officer Subsystem, scheduled for development during the period November 1974 to July 1976. Already, however, two major complications were recognized: the increasingly complex privacy and information access requirements of federal law and then-pending legislation and the uncertainty which surrounded the proposed removal of most functions of BUPERS from Washington to New Orleans. After a discussion of the possibility of remote data entry/retrieval, even to the extent of shipboard capabilities via satellite communications, Concepts concluded with a brief cost/benefit analysis of the Future System, estimating initial cost at $29.5 million and annual operating costs of $11 million over a seven year system life.

C. BUPERS MIS REQUIREMENTS: OVERVIEW

The information and processing requirements of the Officer Development and Distribution Division of BUPERS are only a part of the MIS requirements of the BUPERS/OP-01 organization. This is explicitly recognized in both the Future MAPMIS Automated Data System: Economic Analysis [Ref. 6] and Future MAPMIS: Functional Description.[Ref. 7] The former study divides the functions of BUPERS/OP-01 into eight categories:

(1) Manpower: the allocation of Navy military (active and inactive) and civilian billets required to meet mission sponsor requirements during the current year and five future years

(2) Active inventory: accounting for on-board strength (active duty military) and maintaining personal items of information

(3) Inactive inventory: accounting for inactive duty military in various categories of mobilization status and retired military with associated information relating to mobilization, promotion, retention and benefits status

(4) Placement and distribution: the operational process of filling vacant billets with qualified personnel

(5) Military pay: planning and control functions associated with the Chief of Naval Personnel's sponsorship of the Navy military pay appropriation

(6) BUPERS programming, budgeting and accounting: Planning, Programming and Budgeting (PPB) and accounting functions associated with major claimant financial responsibilities

(7) Administration: functions performed to support the overall mission of CNP

(8) Program management: planning and control over personnel programs and other programs that support the effective utilization of human resources.

The later Functional Description [Ref. 7] study modified the framework slightly in specifying seven broad areas of functional system requirements in support of BUPERS/OP-01:

(1) Data input: The data input function constitutes the process of collecting the world-wide sources of information required by BUPERS, performing all editing and correction operations on that information, consolidating and aggregating as required, and inserting that information into the proper information file, specifically the integrated Future MAPMIS data base. This function is differentiated from the dynamic updating of files performed as a routine part of some of the other functions.

(2) Requirements: The requirements function represents the manpower determination procedures within the planning, programming and budgeting cycle as well as the daily execution and control of quantitative and qualitative manpower levels. The process includes formulation of long range plans in accordance with higher planning guidance, interpretation of plans into programmed and budgeted requirements and development of funded end strengths into billet level authorization which ultimately drive the personnel inventory to meet current and future needs. The function requires the routine building and maintenance of files of billets, activities and manpower requirements.

(3) Career development and assignment: The career development and assignment, or "detailing", function consists of the process of finding the correct man to fill a presently or potentially vacant billet. The needs of the Navy, the need for a well rounded career development pattern and the preference of the individual are taken into consideration. This process involves a high degree of personal communication between the detailer and the individual. In order to be effective in the performance of this function, the detailer must have access to a wide range of general information as well as the capability to file and retrieve information unique to his own needs. In addition there is a dynamic interaction with the placement section.

(4) Personnel systems readiness: The personnel systems readiness, or "placement", function consists of the process of getting billets filled. The priority of filling, the training and qualifications needed, the urgency of operational considerations, the total impact of the personnel situation on the readiness of the unit are all taken into consideration. This process involves a high degree of communication with the Commands both afloat and ashore and a dynamic interaction with the career development and assignment function. In order to be effective in the performance of this function, the placement officer must have access to considerable information concerning the status of billets and personnel assignments as well as official fleet manning statistics and fleet evaluation of personnel readiness along with deficiency information. The ability to address combined officer and enlisted manning is essential.

(5) Financial management: The financial management function consists of the process of planning, programming, budgeting and execution of the Military Pay, Navy (MPN) appropriation for which the Chief of Naval Personnel is the Program Manager. In addition, there are seven appropriations for which BUPERS must budget and account. The MPN Financial Subsystem (MFS) of the Integrated Financial Management System (IFMS) is currently being implemented to support part of this process. In addition there is a near term requirement to perform accounting under the Uniform General Ledger Accounting System (UGLAS).

(6) Naval Reserve: The Naval Reserve function consists of all of the processes that support the personnel planning and administration of the Naval Reserves. Under the NPC organization (i.e., after the move to New Orleans when a Naval Personnel Center will be activated), the Naval Reserve Personnel Center (NRPC) will perform virtually all of the personnel accounting for the Naval Reserves and this process will have a high degree of inter-operability with the active duty functions. Included in this process is the planning for mobilization and the administration associated with personnel passing between the active and inactive communities.

(7) Management information: The management information function serves the general requirement for information in support of management needs. This process consists mainly of the ability to gain passive access to the Future MAPMIS data base through a general query capability with the facilities provided to summarize information and generate reports. An additional capability required to support this function is the ability to concatenate private files to the public data base in order to maintain the unique information required for certain management functions. This functional area includes the Chief of Naval Personnel Management Information System (CMIS) requirement in support of the MIC in Washington and the NPC in New Orleans.

All these areas are interrelated, but each has unique aspects. Throughout the Functional Description the balance and play between integration and differentiation of the functional areas is stressed. In practical terms, elements must be developed in meaningful units, while

communications with groups developing other aspects of the total system must be adequate to prevent duplication of effort and to ensure compatibility. For purposes of project manageability, the functional areas enumerated above were partitioned into modules, which while they are "mutually exclusive and exhaustive," are also highly interdependent. The twelve modules are briefly described as follows in reference 7:

(1) IFMS-MFS: The MPN Financial Subsystem (MFS) of the Integrated Financial Management System (IFMS) is provided to assist in the management of the MPN account including Pay and Allowance, Permanent Change of Station, expenditure monitoring and fiscal management.

(2) Billet file management: The billet file subsystem is provided in order to assist in building and maintaining the Billet File, the Activity File and the MARP/FYDP File. It is principally used by the OP-01 organization in the establishing of manpower requirements.

(3) Orderwriting: The orderwriting subsystem is provided to perform the process of coordination of the detailing and placement functions and to support the administrative functions of generating and releasing PCS orders.

(4) Placement MIS: The Placement MIS Support subsystem is provided to give the Personnel Systems Readiness division action officers the MIS support they require for performing their duties. This subsystem is closely tied to Orderwriting.

(5) Assignment MIS: The Assignment MIS Support subsystem is provided to give the Career Development and Assignment Action Officers the MIS support they require for performing their duties. As with the Placement MIS subsystem this subsystem is closely tied to Orderwriting.

(6) Administrative report generation: The Administrative Report Generation subsystem is provided to supply required reports, currently available under MAPMIS, but not scheduled to be provided under some other subsystem. It is anticipated that, as the information provided in these reports becomes available in other subsystems, this subsystem will decrease in requirements.

(7) Management information: The Management Information subsystem is provided to supply a range of capabilities to the users of the data base who are primarily interested in management and passive use of the data versus the highly interactive use under the other subsystems. A range of requirements for support of the CNP Management Information System (CMIS) will be delivered in this subsystem.

(8) Comptroller budget: The Comptroller Budget subsystem is provided to support the budget planning and execution functions now largely done by hand. The capability will be provided to construct and change the budgets for the BUPERS appropriations at the time of planning and submittal and, in addition, the functions of adjusting and monitoring throughout the fiscal year.

(9) Heuristic aids to assignment: The Heuristic Aids to Assignment subsystem will provide those more complex functions that are required to do detailing and placement but are not available under the Placement MIS or the Assignment MIS subsystem.

(10) BUPERS administrative: The BUPERS Administrative subsystem will provide the support necessary for the internal functions of the BUPERS organization and the physical plant. These functions are largely unsupported by ADP at the present time.

(11) Naval Reserve: The Naval Reserve subsystem will provide the full range of support required by the NRPC in the performance of personnel functions for the Naval Reserve. To a large extent many Reserve subsystem functions are similar to those of the active Naval personnel subsystems and in those cases these requirements will be met with the functions of those subsystems.

(12) Planning support: Several planning and modeling systems exist today or will exist in the future. To be effective these systems, which are largely stand-alone, must eventually be interfaced to the data base. The Planning Support subsystem will interface these systems to Future MAPMIS.

For purposes of this thesis modules three, four, five and nine are of primary interest with the PCS portion of the first module also highly relevant. These are the modules dealing directly with the assignment/

distribution problem, both officer and enlisted, described in reference 6 as "the largest operational function performed by BUPERS in terms of resources managed and resources allocated to the process."

D. CRITIQUE OF THE MANUAL SYSTEM

Both studies devote considerable space to enumerating the failings and shortcomings of the manual system of detailing and placement of officers currently in use and discussed in Chapter II. These problem areas can be divided into those stemming from (1) the inadequacy of the current data base or equipment and (2) basic systemic weaknesses. In the first category are such items as inadequate career and educational histories in the automated file, the lack of an automated file of duty preference information, the lack of a fully automated performance record file, the disturbingly high OCR rejection rate for orders submitted for machine production and the inordinate delay encountered in getting corrected information into the data base. Of more serious import are the systemic weaknesses noted, such as the requirement for a manual costing of orders and associated record keeping, the delays and incompleteness of requirements manually posted by the placement desks with the detailers, the delays in the validation of billets themselves (especially 1000, i.e. non-specialist, billets), the sometimes monumental delays encountered in the manual nomination system between detail and placement desks, the requirement for a manually-generated notification to officers on prospective assignments and the necessity in 60% of officer cases to prepare orders manually because of non-standard provisions. Reference 6 sums up the shortcomings of the system very succinctly:

> As it is presently designed and operated, the current Manpower and Personnel Management Information System (MAPMIS) does not adequately support the BUPERS/OP-01 community of users. For example, there is no integrated source of data within the MAPMIS system that users can directly access. The system, designed for 1950-60 management methods, does not adequately respond with the variety of current status and statistical information that is required in the present environment.

E. DETAILING/PLACEMENT UNDER FUTURE MAPIS

Both studies discuss the improvements which the Future MAPMIS project is expected to make in the assignment/distribution process, but the Functional Description [Ref. 7] classifies the items following more or less the modular schema in which the project will be actually structured. The discussion in the following paragraphs is therefore organized along the lines of the modules, although some information is derived from the earlier Economic Analysis. [Ref. 6]

Under the IFMS-MFS module, detailers and placement officers will be provided access to accurate, current data which will standardize the costing of PCS moves and proposed moves as well as maintain the account in the degree of accuracy required, i.e., PCS reservations, expenditures and modifications. Furthermore, provision will be made for automated generation of cost estimates from file and detailer provided information. Available also, more for policy-making levels, but also for individual detailers and placement officers, will be a capability to model cost changes which would flow from policy changes such as projected rotation date (PRD) modifications, area tour length changes, etc.

In designing the orderwriting module, significant improvements are to be made. Specifically, routine clerical functions will be automated,

proposed nominations will be checked for accuracy and those which violate anomaly sensing criteria (e.g., excessive cost, mismatch of training/ experience requirements) will be flagged for verification, routine wording in orders will be included automatically unless specified otherwise, production of final flat paper orders and distribution will be automatic, specific provision will be made for nominative billets, special security requirements and orders which must be individually prepared by hand. Perhaps most significantly, this module will make provision for an expedited negotiation process between detail and placement officers. It will flag the opening of a billet to the placement officer at a specified predetermined time, relay this information with appropriate placement additions to the assignment section, build a "skeletal record" to collect information for the eventual issuance of orders, return a nomination from assignment to placement, upon approval by both desks start the automatic orderwriting process and provide the notification to update the PCS account of the IFMS-MFS module. In short, the orderwriting function is intended to be the principal facility for linking the traditional placement and assignment functions. The negotiation function will be facilitated to the extent that no more than two days will be required for the issuance of orders from the time a requirement is identified.

The Placement MIS module contemplates significant improvements in the accessibility of information, primarily from the Billet and Activity Files. The majority of queries will be in a pre-planned format; however, the capability will be required to respond to some ad hoc queries. A A console-type query/response device is specified as a requirement for placement officers using the Placement MIS module, but the requirement for

the production of hard-copy responses, when specified, also exists. Flexible PRD window queries will also represent a capability of this module so that a placement officer may make provisions for billets which require special procedures. Lastly, access to the personnel data base will also be a necessity so that the placement officer may perform his function of approving/disapproving nominations received from the assignment section.

The Assignment MIS module will be designed to support basic assignment and career development considerations. The assignment officer will require a query capability vis-a-vis the master personnel files of the data bank including a planned microfiche satellite record system for the flat paper portion of an officer's record. Again, the majority of the accesses are expected to be in a pre-planned format, but a modicum of ad hoc capability will be included. Privacy considerations, brought to the fore by the Privacy Act of 1974, will play a considerable part in the final design of the access functions. In accordance with the law, access to personnel data will be severely restricted on a "need-to-know" basis; there will be a capability to provide an individual with an easily readable and exact copy of all data that impacts on his right to privacy under the Act; data items under appeal or challenge will be flagged and the individual so notified. As the Navy established the Social Security Number (SSN) as the principal key to personnel data prior to 1 January 1975, the SSN may legally remain the storage and retrieval key under provisions of the Act. Future MAPMIS contemplates a report generating capability and a data base correction feature in this module of the total MIS. Because of the interface with the placement function, the Assignment MIS module will require access to the Billet and Activities file.

In view of the assignment officer's close contact with his constituents, Future MAPMIS includes provisions for a plethora of capabilities for the Assignment MIS module which would not be suggested by the general nature of the assignment function. A query capability is specified for the type of information that might be required in a typical five minute telephone conversation with a constituent. Mentioned in reference 7 are: billet vacancies of a specified type six to eight months in the future, PRD status, status of distribution actions, status of personnel actions (selection boards, requests, etc.) and the availability of training/ education billets.

Lastly, a "Heuristic Aids to Assignment" module is contemplated, but no further explanation is offered. The brief description indicates that this function is probably along the lines of a sortie into the algorithmic fields discussed in Section IIIB of this thesis, but no detailed information is included in either study.

Miscellaneous features are mentioned in various places in the description of Future MAPMIS - the automatic generation of a postcard to notify a constituent of a prospective assignment, the provision of a "scratch pad" feature so that an assignment officer may build a formal "slate" of the officers for whose assignment he is responsible during a given period of time, automation and display capability for preference card data and a restricted interface with the military security, performance and discipline control section in cases requiring such - for example. Most of these might most logically fall into the Assignment MIS module.

F. GENERAL CONSIDERATIONS

The system as discussed in both studies is by no means exhaustively and definitively described. Indeed, Functional Description prescribes that a detailed study of each module shall be prepared in a "level one functional description." General guidelines and many specific requirements are included, however. Benefits are catalogued; these include reduced manual labor, increased efficiency, better and more timely information for decisions, improved credibility, improved funding through better specified and documented needs, decreased TP&P pipelines, decreased hardcopy requirements, better man/billet matches and better, faster and more accurate responses to queries. Complications are not ignored. The problem of transition from old to new system without a break in service, from a sequentially oriented system to a data base management concept and from batch to terminal (user) orientation are all mentioned; neither are the complications pursuant to the proposed removal to New Orleans and the concomitant reorganization to BUPERS neglected. Lastly, the requirements of Armed Services Procurement Regulations (ASPR) relative to the procurement of hardware are addressed. Because of regulatory restrictions involving the competitive procurement cycle, hardware is expected to be an unknown factor until system design is well into development.

V. CONCLUSIONS AND RECOMMENDATIONS

A. THE ALGORITHMIC APPROACH TO DETAILING

Robert N. Anthony has established a useful framework in which to conceptualize various organizational processes. His categorization is perhaps most succinctly stated in reference 3 which discusses these processes under three headings: strategic planning, management control and operational control. He defines them as follows:

> Strategic planning is the process of deciding on objectives of the organization, on changes in these objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use, and disposition of these resources.
>
> Management control is the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives ... This definition is intended to convey three key ideas. First, the process involves managers, that is, people who get things done by working with other people. Second, the process takes place within a context of objectives and policies that have been arrived at in the strategic planning process. Third, the criteria for judging the actions taken in this process are effectiveness and efficiency.
>
> Operational control is the process of assuring that specific tasks are carried out effectively and efficiently.

He contrasts the latter two as follows:

> Operational control is concerned with tasks (e.g., manufacturing Job No. 5687; ordering 500 units of Item 84261), whereas management control is concerned with individuals, that is, managers ... The tasks to which operational control relates are specific so that little or no judgement is required as to what is to be done; the activities to which management control

> relates are not specified and management decides what is to be done within the general constraints of the strategic plans. In operational control, the focus is on execution; in management control it is on both planning and execution.

Clearly the assignment/placement process does not fall into the category of strategic planning. A case could be made for placing it under the category of operational control, but this writer believes that the process more truly falls into the category of management control. Most aspects comfortably match the facets of Anthony's model. Managers (the detail and placement officers) assure that resources (human, in this instance) are obtained and used effectively and efficiently in the accomplishment of the Navy's objectives. Certainly detailers work with other people, and their activities take place within the context of objectives and policies that have been arrived at in the strategic planning process. Detailers have tasks to perform, but not in the same manner that an assembly line manager has "500 units of Item 5687" to manufacture. In contrast, the detailer/placement officer is concerned with individuals who can be described as managers in their own right, i.e., other Naval officers. The process does most certainly require judgement. In sum, it is most akin to what Anthony terms a management control process and is best analyzed in that context.

Anthony makes the point that processes falling under the category of management control do not lend themselves to programmed control. They cannot be "switched into automatic;" human intervention is necessary. Although there has been a tendency, Anthony admits, for more and more activities to become susceptible to operational control, he maintains even in a much later work, Management Control Systems [Ref. 2], that, "Although

computers can replace human beings in operational control, they are not a substitute for human judgement that is an essential part of the management control process." In this writer's opinion, BUPERS has astutely recognized the distinction between processes which fall under the management versus the operational control category. The latter includes such items as the automatic physical writing of orders and automatic costing of moves detailed in the Future MAPMIS project. The former consists essentially of the actual decision-making process, which is not subject to rigidly programmed rules and is so recognized under Future MAPMIS.

Besides the theoretical objection to an algorithmic approach to the detailing problem, there are some very practical ones which any experimentation along algorithmic lines in the "Heuristic Aids to Assignment" module must recognize. The first is that, although officers are detailed to specific billets for assignment and personnel accounting purposes, the commanding officer of a ship or activity has the prerogative to assign that officer to any duty he chooses within certain broad limits. Therefore, a theoretically optimal assignment may in fact be completely vitiated at the local level under the authority of the commanding officer. Few in the Navy would argue that the right of utilizing his officers as he sees fit should be taken away from the commanding officer. He is circumscribed enough already in what he may and may not do.

Secondly, although billet descriptions should in theory be completely accurate, in practice they often are not. Changing circumstances often modify the requirements of a particular billet. Placement officers in the URL and the combined detailer/placement officer in the RL/Staff are usually aware of such changed requirements through their continuing

dialogue with the commands concerned and can attempt to ensure that the practical requirements are met. It could be argued that the requirements of billets should be continually updated; this is more easily said than done. The bureaucratic delay in modifying a command's billet structure is considerable and probably always will be. Billets represent expensive resources and are not formally changed without considerable documentation. Many commands, for fear of losing these scarce resources, are loath to request billet modifications. The fear is not rational, but it is very real from a practical point of view. For these reasons the requirement for a "human filter" on billet requirements will be a practical necessity for the foreseeable future.

Another very practical objection to an algorithmic approach to the detailing problem is associated with the "triad of detailing" discussed in Chapter II of this thesis. Detailers attempt to foster goal congruence between the needs of the Navy and the desires of the individual by discussing prospective assignments with their constituents. Such an attempt would be severly hampered by the explanation, "A computer algorithm matched you, Lieutenant Jones, with your new billet on Diego Garcia." In this writer's experience, a careful explanation of all the factors that went into a particular assignment decision will often allay initial hesitation or aversion on the part of a constituent. An appeal to some kind of mysterious machine-produced optimization process would be a poor, if not unacceptable substitute.

Also not to be taken lightly is the fact that the "needs of the Navy" are not a monolithic entity. The diversity of requirements for officer talents are present in a formal and an informal framework. On the formal

side are the various communities set apart by the different designators: staff, restriced line and unrestricted line with the numerous subdivisions within each of these broad categories. As indicated in Chapter II, each community has its unique aspects which form an integral part of the assignment considerations for that community. No single algorithm of manageable proportions could apply to all Naval officers in view of this professional specialization. The parallel to officer professional specialization in the enlisted community is the rating structure. The CADA project addressed itself to only three ratings, representing roughly 3% of the enlisted population, and the attempt to arrive at specific assignments in that narrow portion of the enlisted community was essentially unmanageable. Over 20 hours of computer time was required to process the small sample and no final results were obtained. The implications for even more heterogeneous groupings are clear.

In an informal, but equally important framework is the fact that several communities may lay claim to a particular officer. There are often no certain guidelines as to which claims take precedence; the decision is often political in nature. One must consider that very powerful authorities in particular communities can and do exert great influence over particular assignments. There is no conceivable way such a factor could be written into the multiplicity of assignment algorithms which would be required to process members of the various warfare specialties, restricted line and staff communities.

Lastly, although a number of algorithmic assignment methods discussed in Chapter III pay lip service to the idea of the "needs of the individual" and the "desires of the individual," they are all very indefinite as to

how these factors could be incorporated into a model which is essentially one that optimizes an assignment according to a monolithic concept of the "needs of the Navy." This is most clearly evidenced in the Loges study [Ref. 23] which foresees many extensions for undermanned communities as part of this optimization process. Justification is offered in that under such a system "utilization rates of assets and the proportion of billets properly filled would rise" and "seasonal peaks disappear." The justification offered brings out most clearly that the individual-oriented elements of the triad of detailing are to all intents and purposes ignored. The undesirable aspects of such an approach from the perspective of a manager of human resources are manifest, not to mention the legal complications arising out of extensions on overseas assignments which are limited by law.

To summarize: in this writer's opinion an algorithmic approach to the Naval officer assignment problem, while perhaps technologically possible, is theoretically unsound and practically undesirable, if not infeasible. The one experiment conducted to date in the Navy, the CADA system for enlisted personnel mentioned in Section IIIB of this thesis, failed partly through bureaucratic misunderstandings, but principally because of the nature of the problem as discussed above. The architects of CADA, although they had at one time recognized that "almost all assignment problems are initially infeasible" [Ref. 25], forged ahead and attempted to devise "solid constraints" when "considerations" would be a better term to describe the inputs to the assignment process. If this is true of enlisted detailing, it is the sine qua non of officer detailing. Future MAPMIS recognizes the weakness of a strictly algorithmic approach and elects an

approach based on rapid and organized access to information by personnel managers in a Management Information System. At the same time it recognizes the possibilities of a structured approach to the assignment problem and makes provision for it in the "Heuristic Aids to Assignment" module which occupies its rightful place as an adjunct to, but not at the center of the assignment process.

B. FUTURE MAPMIS: TECHNICAL CONSIDERATIONS

While this writer is of the opinion that Future MAPMIS as presented in references 6 and 7 represents a reasonable and feasible approach to the problem of updating and streamlining the officer detailing/placement process, it is recommended that certain considerations be taken into account in the development of level one studies of the various modules. The following paragraphs discuss the technical considerations which have suggested themselves to this writer, and the final section of the thesis deals with overall management considerations raised in the evolution of Future MAPMIS

The heart of the MIS envisaged by Future MAPMIS is the Orderwriting module. It is the critical segment where errors could have the most drastic impact. Future MAPMIS: Functional Description [Ref. 7] implies that once detail and placement have agreed upon a proposed assignment, the orderwriting is automatic, and flat paper or message orders are issued with no further manual intervention. In this officer's opinion, such a procedure, if in fact contemplated, could be extremely dangerous. The opportunities for error are legion and a final check by both the detailer, who is held responsibile for the funds committed thereby, and the placement officer, who is responsible for the actual wording of the orders, is

absolutely essential. Whether a final check is made of the actual flat paper orders/message draft or of the machine-generated orders as displayed at a console (with verbatim reproduction assured) is immaterial. The crucial point is that such a detailer/placement officer review must take place after the generation of the orders by the orderwriting module.

A second aspect of the module which must be considered is the negotiation feature. Although the zero level study in reference 7 recognizes that communities do exist which essentially combine detail and placement in one office, the significant segment of the Navy which is involved should be taken into account. Significant cost savings may accrue from the reduction of this negotiation requirement for a major portion of the dealings of the restricted line, staff and perhaps submarine communities. Some capability will be necessary, but by no means to the extent required by the surface and air communities under the present system. Another facet of the restricted line and staff communities ought to be considered in level one studies; code sponsors often maintain computer files on their own officers which include more detail on career experience and certain other matters than is permitted by the present Navy-wide system. An example is the Commander, Naval Security Group Command's Personnel Resources Information System for Management (PRISM). The ability to access such information, perhaps on a reciprocal basis, should be a consideration in the development of Future MAPMIS.

A last consideration in the Orderwriting module is the matter of automatic generation of a card to advise officers of prospective or firm assignments proposed in reference 6. Correspondence with constituents falls in the realm of "management control" as discussed at the beginning

of this chapter. It involves communication with people and in the opinion of this writer should be removed from the impersonality of computer-generated correspondence. A few hand-written words on a pro forma card would mean far more, and the cost saving could be significant.

The emphasis throughout the Future MAPMIS project has been on user involvement in the requirements formulation phase. Such involvement is critical for success and hopefully will be even more strongly stressed as the project moves into level one descriptions and beyond. One aspect of user involvement in the actual system, however, deserves careful attention; that is the matter of the ability of users to enter corrections into the data base. Functional Description [Ref. 7] states that detailers should have the ability to correct and update items such as projected rotation dates (PRD). It is strongly recommended that the strictest controls be placed on such change/updating capabilities, especially on the design of the mode of entry. Detailers and placement officers are not computer specialists, nor should they necessarily be; they come from operating elements of the Navy to which they will return. The lack of computer expertise of most detailers/placement officers must be taken into account in the final design of any data entry system and, indeed, of the entire MIS.

A final minor technical point deserves passing comment. Functional Description [Ref. 7] anticipates that with the development of "online" functions of Future MAPMIS, there will be a general reduction in the requirement for printed reports. Such a development is devoutly to be wished, but unlikely if the experience of other organizations is a reliable guide. The well-conceived requirement for the capability to produce

printed reports will undoubtedly be used extensively. Cost savings predicated on a reduction in the volume of paper used are problematical at best.

C. FUTURE MAPMIS: GENERAL CONSIDERATIONS

The conversion to a terminal-oriented data base management system as proposed in Future MAPMIS will be proceeding at the same time as two other major changes for BUPERS: a structural reorganization and the move to New Orleans with the concomitant activation of the Naval Personnel Center in that city. In some ways the three are linked; each certainly impacts upon the other. For an organization whose functions must continue despite the disruptions which will be inevitably occasioned by hardware replacement, systemic modifications, organizational realignment and physical removal from the traditional site of operations, the problems presented promise to be truly monumental. The magnitude of the potential turmoil raises a question in this writer's mind as to whether all three changes are necessary or advisable. The case for an updated information system is well documented; a related reorganization may also be advisable. It is the division of BUPERS functions between a Naval Personnel Center in New Orleans and a Headquarters segment in Washington that raises the most questions. Sufficient documentation is not available to this writer to support or refute the rationale behind the plan. Suffice it to suggest that the rationale be reexamined to determine if the reasoning which seemed cogent in 1972-1974 is as convincing in 1976.[3]

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[3]As this thesis reached its final draft stages, the Secretary of the Navy announced that the entire Bureau of Naval Personnel would not move to New Orleans. Only functions identified as "ADP functions" are now scheduled to be transfered. The implications for Future MAPMIS are as yet undiscernable.

A final point should be made concerning the reorganization of BUPERS functions contemplated in Future MAPMIS documentation. [Refs. 6 and 7] The introduction of a Personnel Systems Readiness Branch, which removes the traditional distinction between officer placement and its enlisted counterpart, has some interesting implications. On the one hand, it integrates the view that BUPERS has of specific commands. Both officer and enlisted manning status will be viewed simultaneously and dual imbalances can be avoided. The placement function will be undoubtedly strengthened thereby. On the other hand, the position of the detailer, the representative and advocate of the individual officer, may be eroded. The trend of the reorganization definitely appears to be away from the path advocated by the Andrilla article [Ref. 1], discussed in Section III, and one that this writer as a former RL assignment/placement officer has come more and more to believe ought to be explored. That path is one in which an assignment officer would be given the real tools of management, i.e., the requirements, the resources and the authority to match the one against the other.

The criticism has been made that BUPERS, particularly in the person of the assignment officer, lacks credibility. The improvement of BUPERS "image" (i.e., credibility) is a specific aim of the new Future MAPMIS [Ref. 7] as mentioned at the end of Chapter IV of this thesis. A great deal of difficulty in this area stems, this writer believes, from the inability of a detailer to tell a constituent where he will be assigned until the placement/detail negotiation has taken place and orders are practically written. Assignment officers are practically obliged to be very evasive in discussing prospective assignments until the placement

officer's final approval is obtained. Many an enthusiastic neophyte detailer has had a great deal of painful explanation to give to a constituent who was told of a prospective assignment that did not materialize because of placement considerations. No amount of rapid availability of information will solve this basic dilemma. In reality, the detailer under both the present and the proposed system has only a fraction of the authority of a true manager. If he could be alloted a portion of the requirements (billets) as well as the resources (constituents), the two problems of credibility and of good management practice could be solved.

Such a solution founders on the very real problem of command interest, traditionally represented by the placement function. In the restricted line and staff communities, one or a few officers have successfully satisfied the requirements of both assignment and placement for years, but the size of the communities involved permits this. This officer believes, however, that the concept can and should be extended to the unrestricted line communities. Each unrestricted line officer detailer could be alloted a representative sample of billets for the grade and designator for which he is responsible. Included would be billets ashore, on various types of ships, in various geographic locations, etc. - in effect, a "mini-Navy." His basic responsibility would be to detail the officers for whom he is responsible to the billets for which he is responsible according to an established priority system such as the AMIS system discussed in Chapter II. The concept of a Personnel Systems Readiness Branch would remain under this proposal, but it would be removed from the day-to-day assignment of officers. It would manage the overall status of ships and activities by exception. If manning appeared to be falling below accepted norms, the

Personnel Systems Readiness Branch would have the authority to raise temporarily the priority of selected billets to ensure adequate manning. The Branch would also have veto power over all prospective assignments; it would ordinarily exercise that power only in unusual circumstances. Branch officers would have the right and responsibility to conduct liaison with all detailers, keeping them advised of unusual circumstances in the commands for which those officers would have advocacy responsibility.

Some placement functions (e.g., major command and staff, Washington placement, schools, etc.) would undoubtedly have to remain under a system of strong detail/placement distinction, and some provision for inter-detailer transactions would also have to be made. On the whole, however, this officer believes such a system has much to recommend it: (1) a single manager would have basic responsibility for both aspects of the officer assignment process; (2) in conjunction with the improved availability of information under Future MAPMIS, some officers currently involved in the placement process could be reassigned to the new assignment/placement function, thereby reducing the constituent-to-detailer ratio, a constant source of concern in the unrestricted line community; (3) the interest of commands would be guarded by the Personnel Systems Readiness Branch, which would be freed from the ordinary mechanics of detailing and which could devote its attention to the larger situation and to specific problem areas; (4) discussion with constituents could center around specific billets at a much earlier date and with much more assuredness than is possible under the present system; (5) further savings could be realized from a reduction in the "negotiation" requirements of the Orderwriting module.

Some suboptimization might occur in such a system, but with a manageable yet sufficiently large constituent and billet base this problem ought not to be too great. From personal experience this writer recommends a base of no more than 700 constituents and a like number of billets per detailer. The capabilities of Future MAPMIS may permit a larger ratio. Perhaps an experimental program could be attempted to test the feasibility of the proposal and the optimal number of constituents/ billets per detailer.

Whether the proposal outline above is adopted or not, Future MAPMIS represents a viable, evolutionary approach to harnassing recent data-handling technological developments to the Naval officer assignment and distribution problem. There is always a temptation to fly to the frontiers of technology. In an effort to have the best, the most advanced, the most impressive system available, the intent of the original structure is often forgotten. In the case of officer detailing, the structure serves three basic purposes expressed in the triad of detailing. In two of the three elements of the triad, the focus is on the individual officer - on human desires, aspirations and needs where interaction between constituent and detailer is often critical. To consign these very personal, human aspects of assignment and placement to the rigid logic of a computer's assignment algorithm, if such an algorithm were technically feasible, would negate an essential portion of the rationale of detailing. Future MAPMIS avoids this pitfall. It gives a human decision maker better access to more complete information. In a system dealing with human capabilities, human aspirations and human desires, human concerns and responsibility are preserved.

APPENDIX A

MASTER OFFICER BILLET FILE ITEMS

1. Geographic area
2. Activity name
3. Activity code
4. Manpower Allocation/Requirements Plan (MARP) Code
5. Activity sponsor
6. Officer distribution plan target for Unrestricted Line Officers
7. Unit Identification Code (UIC)
8. Billet Sequence Code (BSC)
9. Billet title
10. Additional Qualification/Utilization (AQD/U) Code
11. Designator allowed
12. Grade allowed
13. Naval Officer Billet Code (NOBC)(maximum of two)
14. Billet subspecialty code
15. Foreign language proficiency code
16. Incumbent

Note: Items one through seven are in the nature of "master card" data on each activity. Items eight through sixteen are in the nature of "detail card" information

Source: References 5, 9 and 10

APPENDIX B

EXPLANATION OF ODC ITEMS

D - Item 1. SOCIAL SECURITY NUMBER: Correction shall be reported only by entry in the Officer Personnel Diary of the activity to which the officer is attached. Authority to correct the SSN is issued to the command by CHNAVPERS, with the corrected SSN appearing in the next Officer Distribution Control Report. If authority to correct is not issued, CHNAVPERS will advise the command of the appropriate action required.

Item 2. NAME: Complete name up to a maximum of 27 characters. For correction procedures, refer to Article 5010240 of the Bureau of Naval Personnel Manual.

Item 3. SEX: One character alphabetic code to identify an officer as male (M) or female (F).

Item 4. DESIG (Designator of Officer): Refer to Part B of Volume I of this manual.

Item 5. GRADE: An abbreviation of the officer's present grade.

Item 6. YRG (Year Group): Three digit code indicating, for promotional purpose, the current precedence of an officer. A year group is not listed for warrant officers. The first two digits will, in general, indicate the fiscal year in which first commissioned. For officers selected early for promotion, the year group is, in general, the same as that of their present precedence contemporaries. The third digit indicates a subdivision of the basic year group when this basic year group has been split at a promotion point.

Example: 431 - first increment of year group 1943
432 - second increment of year group 1943

Year group will appear for those officers with a Precedence Group Code as defined in Item 7.

Item 7. PRECEDENCE NUMBER: (Includes Precedence Group Code and Precedence Number).

(1) Precedence Group Code - A one-letter code prefixed to the Precedence Number indicating an officer's promotion group and the public law which governs promotion.

Code	Definition	Code	Definition
L	Lineal List Officers (Officer Personnel Act) and women other then designator 1XXX or 3XXX	T	TAR Officers (including women and warrant officer TAR's)
M	Bandmaster	W	USN Women (other than warrant officers) with designator 1xx0 or 3xx0
N	USN Warrant Officers (including women)		
P	USNR Warrant Officers (including women)	Y	USNR Women (other than warrant officers or TAR's) with designator 1XX5 or 3XX5
R	Retired Officers on Active Duty (including women)	Z	Temporary active duty officer

(2) Precedence Number - An eight-digit number assigned to an officer to indicate position on the precedence list of active duty officers in the Navy. The first zero in the precedence number is for future expansion purposes and is not shown in the Navy Register (NAVPERS 15013). Precedence numbers in the Register (shown as a six-digit lineal number) may change throughout the year. Precedence numbers are verified on a continuing basis within the Bureau of Naval Personnel and should not

be considered in error in complying with correction procedures contained herein. However, if your precedence in respect to other officers who were formerly junior or senior to you appears to be in error, inquiry is invited to the Chief of Naval Personnel (Pers-48).

Item 8. BIRTH DATE: Month, day, and last two digits of year of officer's birth. This item is not to be corrected under the provisions of this manual. Refer to BUPERSMAN 5010220 for correction procedures. Example: 053016 (May 30, 1916)

Item 9. FILE NUMBER: Intentionally left blank. (Formerly reflected the six-digit number assigned to officer for numeric file identification prior to use of Social Security Numbers.)

Item 10. PREVIOUS MILITARY SERVICE: Active service in any armed force prior to acceptance of appointment in the Navy. Service that does not count for pay or retirement, such as Naval Academy or NROTC midshipman, is not included as prior service. Active service in the National Guard is included provided the National Guard was part of the Federal Service at the time service was performed.

Block 1: A maximum of four codes identifying up to four types of active service branches in the order served.

Code	Definition
A	Prior Active Army Commissioned Service
B	Prior Active Air Force Commissioned Service
C	Prior Active Coast Guard Commissioned Service
D	Prior Active Marine Corps Commissioned Service
E	Prior Active National Guard Commissioned Service
F	Prior Active Foreign Commissioned Service
G	Prior Other Active Commissioned Service
N	Prior Active Navy Enlisted Service
P	Prior Active Army Enlisted Service
Q	Prior Active Air Force Enlisted Service
R	Prior Active Coast Guard Enlisted Service
S	Prior Active Marine Corps Enlisted Service
T	Prior Active National Guard Enlisted Service
U	Prior Active Foreign Enlisted Service
V	Prior Other Active Enlisted Service

Block 2: Last two digits of calendar year of officer's earliest previous active military service.

Block 3: Total number of months active service in branch(es) -- (except Foreign Service). Includes service as a warrant officer.

Block 4: The highest grade or rate held in the indicated branch(es) -- maximum of 4 characters.

Item 11. SS (Submarine): Month and last two digits of year that officer qualified as a submarine officer.

Item 12. HTA (Heavier-than-air): Month and last two digits of year that officer was designated a naval aviator (HTA).

Item 13. NFO (Naval Flight Officer): Month and last two digits of year that officer was designated a Naval Flight Officer. Former Naval Aviation Observers who are now Naval Flight Officers will have the date designated NAO in this block.

Item 14. PRD (Projected Rotation Date): Two-digit month and last two digits of year in which the rotation of the officer is planned by the cognizant BUPERS grade assignment desk. This date should not be considered in error in complying with the instructions contained herein; questions pertaining to Projected Rotation Date should be addressed to the appropriate grade assignment desk by separate correspondence.

Item 15. ELC/D (Estimated Loss Code/Date): Estimated date (month and last two digits of year) that the officer will be a loss to active naval officer strength. The date is preceded by a one-letter code to indicate the reason for the loss. This item is usually blank for USN officers. Codes apply to USN and/or USNR as indicated.

Code	Definition
A	Active Duty Agreement Expiration Date (USNR)
B	Resignation Approved (USN-USNR)
F	Retirement, Statutory (USN-USNR)
G	Retirement Deferred (Involuntary deferral policy) (USN-USNR)
H	Retirement Deferred (Tour policy) (USN-USNR)
I	Indefinite Release Date (No obligated service) (USNR)
J	Extended because of pregnancy of wife (USN-USNR)
K	Mandatory Discharge/RAD/Reversion (USN-USNR)
L	Estimated Loss (USN-USNR)
M	Professional Draftees RAD (USNR)
N	Resignation Deferred (Involuntary deferral policy) (USN-USNR)
O	Resignation Deferred (Tour policy) (USN-USNR)
P	Pending Loss Date (USN-USNR)
R	RAD Date (USNR)
T	Temporary Active Duty (USNR)
U	Retired, Returned to Active Duty (USN-USNR)
V	Retirement, Voluntary (Not deferred) (USN-USNR)
W	Resignation Received, Approval Pending (USN-USNR)
X	Involuntary Active Duty (USNR)
Z	RAD Indefinite (USNR)

Item 16. PEBD (Pay Entry Base Date): Month, day, and year computed to represent the date when all creditable service for pay purposes (37 U.S. Code 205) would have begun if it were continuous to the present. It incorporates all service in any of the uniformed services of the U.S., active and inactive, commissioned and enlisted. Example: 010745 (January 7, 1945)

Item 17. SD (Service Date): Last two digits of the base fiscal year from which total commissioned service is computed. Total commissioned service is used in determining eligibility for retention on the active list. Applicable to permanent USN officers only. Service date is not applicable to warrant officers, temporary officers, or officers whose permanent grade is warrant, or women officers except Nurse Corps women officers. Example: 45 (1945)

Item 18. ER (Eligible to Retire): Last two digits of fiscal year in which an officer will first be eligible to retire contingent on his type of appointment.

Item 19. ACBD (Active Commission Base Date): Month, day, and year computed to represent the date when all active commissioned service in any of the U.S. Armed Services and their Reserve components would have begun if it were continuous to the present. Example: 082240 (August 22, 1940)

Item 20. ADBD (Active Duty Base Date): A six-digit date (month, day, and year) computed to represent the date when all active duty (enlisted, warrant, and commissioned) in any of the U.S. Armed Services and their Reserve components would have begun it it were continuous to the present.

Example: LCDR DOE entered the Navy January 1, 1941. He was released to inactive duty on December 31, 1945. On January 1, 1950 he reentered the Navy and has been on active duty to the present. His ADBD would be 010145 (January 1, 1945).

Item 21. CURR GAIN (Current Gain): Two-digit month, two-digit day, and two-digit year officer was gained for current tour of active duty. This is a constructive date which includes any authorized travel time and period of physical examination enroute.

Item 22. PSD (Professional Service Date): Two-digit month, two-digit day, and two-digit year computed to measure total naval active duty performed as a doctor or dentist. Example: 101560 (October 15, 1960)

Item 23. MSR-C (Minimum Service Required - Current): This item should be blank.

Item 24. SOURCE CODE: Two three-digit codes indicating:

First code - Program under which officer qualified for original appointment.

Second code - Program under which officer qualified for current appointment.

Third Digit of Original Source Code	Third Digit of Current Source Code
0 No significance	0 No significance
1 From active enlisted status	1 From enlisted status
3 From inactive enlisted status	2 From Temporary Disability Retired List (TDRL)
	5 Involuntary Recall

First Two Digits of Original Source / Current Source Code		Definition
01	01	Naval Academy
02	02	Merchant Marine Officer Candidate
03	03	Aviation Officer Candidate (Pilot Training)
04	04	NROTC Regular
05	05	NROTC Contract Student
06	06	Officer Candidate School (OC)
07	07	Reserve Officer Candidate (ROC)
08	08	Naval Aviation Cadet/V-5 (WWII Program)
09	09	WAVE/Nurse Corps Officer Candidate
10	10	Direct Appointment ALIEN

First Two Digits of Original Source / Current Source Code	Code	Definition
11	11	Direct Appointment as Ensign: Prospective Medical, Dental, Chaplain, Judge Advocate General's, or Medical Service Corps Officer
12	12	Commissioned directly from Military Academy (USA)
13	13	Commissioned directly from Air Force Academy (USAF)
14	14	Direct Appointment from Merchant Marine
15	15	Direct Appointment, Other
16	16	From Commissioned status USA
17	17	From Commissioned status USMC
18	18	From Commissioned status USCG
19	19	From Commissioned status USAF
20	20	From Commissioned status USPHS
21	21	USN Integration Program (Enlisted to Ensign or LTJG)
22	22	USN Limited Duty Officer (LDO) (from enlisted)
23	23	USN Limited Duty Officer (LDO-T) (from enlisted)
24	24	USN Warrant Officer Program (from enlisted)
25	25	USN Temporary Officer (USN-T) (from enlisted)
26	26	Temporary Officer (ex-enlisted Aviation Pilot)
27	27	Graduates of NESEP (Systems Eng.) Course "A", upon commissioning from the officer candidate program
28	28	MSC from enlisted by Public Law 337, 80th Congress
29	29	Graduates of NESEP (Science Eng.) Course "B", upon commissioning from the officer candidate program
30	30	USNR MSC, OCS full course
31	31	Aviation Midshipman (Programs prior to 1-1-53)
32	32	V-7 (WWII Program)
33	33	V-9 (WWII Program)
34	34	V-11 (WWII Program)
35	35	V-12 (WWII Program)
36	36	NROTC, Prior to Public Law 729, 79th Congress
37	37	Ensign and LTJG Probationary
38	38	Naval Flight Officer Candidate (132X or 163X)
39	-	USNR Integration Program (from enlisted)
40	40	Appointed Ensign USNR from OCAN
	41	Recall from Retired (other than those recalled from temporary disability retired list)
	42	Recall from Inactive Reserve (previously served on active duty)
	43	Adjustments by Public Law 84, 83rd Congress; Public Law 497, 84th Congress; or Public Law 773, 83rd Congress (Medical/Dental/Chaplain/Medical Service Corps grade and service for pay purposes) (Constructive Service Adjustment)
	44	Direct Appointment with prior broken service
	51	Augment Reserve or Temporary Officer to Regular by Public Law 347, 79th Congress; Public Law 308, 84th Congress; or Public Law 861, 85th Congress, from Active Duty
	52	Augment Reserve to Regular by Public Law 347, 79th Congress or Public Law 308, 84th Congress, from Inactive Duty
	53	Augment Reserve to Regular by Public Law 365, 80th Congress, from Active Duty (Medical and Dental Augments)

First Two Digits of Original Source Code	/ Current Source Code	Definition
	54	Augment Reserve to Regular by Public Law 365, 80th Congress from Inactive Duty (Medical and Dental)
	55	Naval Aviation Cadet Transfer Program
59	59	NEDEP (Navy Enlisted Dietetic Education Program)
	60	USN MSC, Public Law 337, 80th Congress
	61	Appointment to USN-T, from Warrant
	62	Appointment to LDO or LDO-T from Warrant
	63	Appointment to LDO or LDO-T from USN-T
	64	Integration Program from Warrant
	65	Warrant reverted from LDO
	66	Warrant reverted from LDO-T
	67	Warrant reverted from USN-T
	68	Superseding Appointment, prospective staff corps officer trainee; reappointed to Medical, Dental, Chaplain, Nurse Corps from active to active duty
	69	Superseding Appointment, prospective staff corps officer trainee; reappointed to Medical, Dental, or Chaplain Corps from inactive to active duty
	71	Reappointment, Regular to Reserve
	72	Reappointment, Regular to Regular
	73	Reappointment, Reserve to Reserve
	74	Transfer Reserve to Regular prior to 18 April 1946 (Public Law 347)
75	75	Transfer Reserve to Regular by Public Law 381/399
	76	Transfer USN to USNR (Active to Active)
	77	Transfer USNR to USNR (Active to Active)
	78	Transfer USNR to USNR (Inactive to Active)
79	79	NENEP (Navy Enlisted Nurse Education Program)
80	80	Aviation Reserve Officer Candidate (AVROC)
81	81	USNR Warrant officer (from inactive reserve enlisted)
82	82	USNR Warrant officer from active USNR enlisted

Item 25. DEPENDENTS:

Block 1: The officer's primary dependents code as defined below

Block 2: The officer's secondary dependents code as defined below

Block 3: Number of dependents at an overseas activity

Block 4: The date dependents arrived at the overseas activity

(1) Primary Dependency. Primary dependent is defined as any person who bears to a member of the uniformed services any of the following relationships:

(a) Lawful spouse

(b) An unmarried child (including any of the following categories of children if such child is in fact dependent on the member: a stepchild; an adopted child; or an illegitimate child whose alleged member-father has been judicially decreed to be the father of the child or judicially ordered to contribute to the child's support or whose parentage has been admitted in writing by the member) who either -

(1) is under 21 years of age; or

(2) is incapable of self-support because of a mental or physical incapacity and is in fact dependent on the member for over one-half of his support.

Code	Definition	Code	Definition
0	No dependents	A	1 dependent child
1	Wife (no children)	B	2 dependent children
2	Spouse & 1 dependent child	C	3 dependent children
3	Spouse & 2 dependent children	D	4 dependent children
4	Spouse & 3 dependent children	E	5 dependent children
5	Spouse & 4 dependent children	F	6 dependent children
6	Spouse & 5 dependent children	G	7 dependent children
7	Spouse & 6 dependent children	H	8 or more dependent children
8	Spouse & 7 dependent children	J	Dependent husband
9	Spouse & 8 or more dependent children	K	Married woman (no primary dependents)

Example: Spouse and two dependent children would be shown as "3"

(2) Secondary Dependency. Indicates parental dependency for over one-half support. Includes a step-parent or parent by adoption, and any person, including a former step-parent, who has stood in loco parentis to the member at any time for a continuous period of at least 5 years before he became 21 years of age.

Code	Definition
O	No dependent parents
J	1 dependent parent
S	2 dependent parents

Item 26. ACD (Aviation Commission Date): This is a six-digit date (month, day, year format) which identifies a constructed date applicable to all commissioned officers. It may be thought of as the "actual commission date" on which the individual accepted commission or, more technically, took the oath of office. This will be the starting point from which an officer's Phase II (18 years) status will begin and end.

Item 27. ASED (Aviation Service Entry Date): A six-digit date (month, day, year format) which applies only to aviation officers and indicates the beginning of an officer's aviation career. It is used to measure Phase I years of aviation service. This is the date when the officer first reported to the activity having aircraft in which basic flight training was received.

Item 28. MOF (Months of Operational Flying): This is the total number of months that an aviator has acquired operational flying during his/her aviation service that counts toward the 12 year and 18 year gate.

Item 29. MTG (Months to Gate): This is the number of months remaining before the officer reaches the next gate. It is calculated using the date of the ODC and the ASED. For example, an officer at the 12 year gate has had 144 months to acquire 72 months of operational flying. If that officer's MTG (Months to Gate) indicated 60 and his MFR (Months of Operational Flying Required) indicated 48, the ODC would be reporting that the officer had 60 months remaining before the 12 year gate and that there are 48 months of operational flying required in order to maintain maximum ACIP (Aviation Career Incentive Pay) after reaching that gate.

Item 30. (Months of Operational Flying Required): This is the number of months of operational flying which the officer still requires in order to meet the next gate (12 or 18 years).

Item 31. AG (Aviation Gate): This entry will be either a 12 or an 18 and will indicate the next gate toward which the officer is heading. It is based on the ASED (Aviation Service Entry Date).

Item 32. ASI (Aviation Status Indicator): A one character code which indicates an aviation officer's aviation career incentive pay (ACIP) entitlement status.

Code	Definition
A	Continuous ACIP (0-12 yrs.) - An aeronautically designated officer or aviation student with less than 12 years aviation service.
B	Continuous ACIP (12-18 yrs.) - An aeronautically designated officer with from 12 to 18 years aviation service who has performed operational flying duties for at least 6 of the first 12 years of aviation service.
C	Conditional ACIP* (12-18 yrs.) - An aeronautically designated officer with from 12 to 18 years aviation service who has not performed operational flying duties for at least 6 of the 12 years of aviation service. Note: To be entitled to receive ACIP this officer must: a. meet DOD Pay Manual flying requirements of 4 hours per month and b. be under DIFOPS orders and be in an operational flying billet (i.e., Code 1 or Code 2 billet) or c. be under DIFPRO orders and be in an other-than-operational flying billet (Code 0).
D	Continuous ACIP (18-25 yrs.) - An aeronautically designated officer who has 18 or more years of aviation service and has performed operational flying duties for at least 11 of the first 18 years of aviation service.
E	Continuous ACIP (18-22 yrs.) - An aeronautically designated officer who has 18 or more years of aviation service and has performed operational flying duties for at least 9 but less than 11 years of the first 18 years of aviation service.
F	Conditional ACIP* (18-25 yrs.) - An aeronautically designated officer who has completed 18 years of aviation service and did not perform operational flying duties for at least 9 of the first 18 years of aviation service. Note under Code C also applies here.
G	Conditional ACIP (22-25 yrs.) - An aeronautically designated officer who performed operational flying for at least 9 but less than 11 years of the first 18 years of aviation service and who has 22 years of commission service.
H	ACIP Terminated* - An aeronautically designated officer who has completed 25 years of service as a commissioned officer. This officer is not entitled to ACIP; however, he is required to fly if assigned DIFOPS and is in an operational flying billet (Code 1 or Code 2).
Z	All officers with over 18 years aviation service as of 1 June 1974.

*"Saved Pay" authorized through May 1977.

Item 33. ABI (Aviation Billet Indicator): This is a 1-character code which indicates an officer's present operational flying status.

Code	Definition
A	Operational flying billet. This officer was ordered in DIFOPS status and the MOF counter is being incremented monthly for gate purposes.
C	Proficiency flying. This officer was ordered to duty involving proficiency flying (DIFPRO). The MOF counter is not being incremented.
O	This ABI is used for all aviation officers not ordered to DIFOPS or DIFPRO. The MOF counter is not being incremented.

Item 34. FS (Flying Status): Should be blank. Replaced by data appearing in Item 33 (Aviation Billet Indicator).

Item 35. PAD (Primary Aeronautical Designation): A one-digit code used to classify aviation officer personnel.

Code	Definition	Code	Definition
1	Naval Aviator (HTA)	A	Naval Aviator (Medical Officer)
3	Naval Flight Officer	S	Naval Aviation Observer (Flight Surgeon)
4	Technical Observer	E	Naval Technical Observer (Aviation Medical Examiner)
5	Naval Flight Meteorologist		
7	Student Naval Flight Officer	M	Naval Technical Observer (Aviation Physiologist, Aviation Psychologist)
8	Aviation Ground Officer		
9	Student Aviator		

Item 36. PROMOTION HISTORY: Month, day, and last two digits of year that an officer was first appointed to the indicated grade. For 5787 promotions see Items 38 and 39. Asterisks in any grade indicate that the officer has never held that grade. The FLAG block contains the date of rank of the first flag grade held. The W-2 block contains the W-1 date of rank for warrant officers or the W-2 date or rank for all chief warrant officers.

Item 37. PROM (Promotion Status): One letter indicating selection (S) or nonselection (F) to the next higher grade, followed by the last digit of the fiscal year in which this action occurred. A maximum of three numbers may follow the "F" indicating the three most recent fiscal years of nonselection. This item is blank for officers not in a promotion status.

Item 38. SPOT (SPOT Grade): An abbreviation of the officer's SPOT grade (SECNAVINST 1421.3 refers). Any other type of temporary promotion (5787 included) not affecting an officer's position on the lineal list of the Navy will be reflected here. If such temporary grade is not held currently, this block will be blank even if such temporary grade has been held in the past.

Item 39. SPOT DOR (SPOT date of rank): Month, day, and last two digits of year of the officer's date of rank in his SPOT or other temporary grade. See Item 38.

Item 40. PRM GR (Permanent Grade): An abbreviation of the officer's permanent grade. In the case of permanent warrant officers this will indicate the permanent warrant officer grade presently held.

F-Items 41 - 48: See paragraph 1a, Correction Procedures, and Item 53 for flight data reporting information. Corrections to Items 41 - 48 must be reported via annual IFARS Feedback Report in accordance with a forthcoming revision of OPNAVINST 3760.10A to:

Commander, Naval Safety Center
NAS, Norfolk, Virginia 23511

F-Item 41. AS OF FY: Month and last two digits of fiscal year. Indicates "as of" date flight information was processed from the Naval Safety Center data banks to the officer's BUPERS automated record. Flight data is reported on a fiscal year basis.

F-Item 42. TOTAL HRS: Total number of pilot/NFO hours flown as of date in Item 41.

F-Item 43. 5-YEAR HRS: Total number of pilot/NFO hours flown in the last 5 fiscal years.

F-Item 44. JET HRS: Total number of pilot/NFO hours flown in jet aircraft as of date in Item 41.

F-Item 45. HELO HRS: Total number of pilot hours flown in helicopter aircraft as of date in Item 41.

F-Item 46. A/C CDR (Aircraft Commander Hours): Total number of hours flown as Aircraft Commander in heavier-than-air military aircraft as of date in Item 41.

F-Item 47. CV LANDINGS (Carrier Landings): Block (1) contains the total number of arrested carrier landings. Block (2) contains the total number of arrested night carrier landings as of date in Item 41.

F-Item 48: I (Instrument Rating): A one-digit code indicating instrument rating as follows:

Code	Definition	Code	Definition
A	Special	C	None
B	Standard	D	Not required

Item 49. G (Service Group): A one-digit code indicating a naval aviator's flying status as determined by age and physical fitness. Reflects any or no flying restrictions.

Code	Definition
1	Group I -- Pilots under 45 years of age who meet the physical standards for Service Group I (Unlimited flight duties).
2	Group II -- Pilots between 35 and 45 years of age (or those pilots under 35 years of age who have accumulated 10 or more years of active flying service since date of designation as a naval aviator) who meet the physical standards for Service Group II; and pilots of Service Group I, who temporarily meet only the physical standards for Service Group II. Note: Pilots of Service Group II are restricted from carrier operations except in Helicopter or LTA ships.
3	Group III -- Pilots over 45 years of age who meet the physical standards of Service Group I, II, or III; those pilots under 45 years of age who (1) are recovering from illness or injury; (2) meet the standards of Service Group III but are not physically qualified for the other service groups when the need of the service and their flying experience specifically justify their employment in such a limited pilot status.

Code	Definition
	Restrictions: (1) Normally operate only aircraft equipped with dual controls and be accompanied on all flights by a pilot of Service Group I or II qualified in model aircraft operated. (2) With the approval of the Deputy Chief of Naval Operations (Air Warfare), pilots in Service Group III who meet the physical standards for Service Group I or II may solo such aircraft as is commensurate with physical and service qualifications of each pilot. (3) Pilots in this group are authorized to maintain a standard instrument card provided all other requirements are met.
9	Naval Aviators who are not in Service Group I, II or III who have retained their 131X designation.

Item 50. C (Aircrew Category): A one-digit code that categorizes an officer as to age and length of time he has been designated Naval Aviator or Naval Flight Officer.

Category & Code	Definition
A	Officers ordered to DIFOT who are not temporarily or permanently B or C
B	Officers in the grade of Captain and above; or who have held an aeronautical designation for 15 years or more; or officers in a terminal duty status. Terminal duty status is defined as follows: (a) Ordered to separation (b) A requested or approved resignation pending (c) Within six months of retirement (d) Requested change of designator to a non-aeronautical designator
C	Aeronautically designated personnel not assigned to an operational flying billet who are placed in this category by the Chief of Naval Personnel (Pers-43)

Item 51. DESIGNATOR HISTORY: The first DATE block contains the month and year in which the designator in the following DESIG block was lost. The next blocks contain the same information for the previous designator. If designator has never changed, no entry will appear.

Item 52. SERVICE SCHOOLS: Maximum of five officer service schools attended as an officer. The schools are listed in chronological order with the most recent first. When more than five schools have been completed the least significant school is deleted. Generally team, refresher, indoctrination, orientation, and Fleet courses are not recorded. Part K of Volume I of this manual lists the courses recorded and the period for which graduates of each course are recorded. No other courses should be reported on the ODC verification. If an officer attended a course prior to the date listed in Part K of Volume I, that course will not be recorded in this item. The month and year of completion and the duration of the course in weeks are given. Duration is shown as "CC" if a correspondence course has been recorded. Duration is shown as "OO" for Navy officer faculty members who, by virtue of their work as instructors and by study, have attained knowledge equivalent to that required of a student for graduation. Such attainment must be substantiated by a diploma or certificate of satisfactory completion. Changes to this item require listing the title of course, location of the school, completion date, and course duration.

Item 53. SIGNIFICANT MODELS FLOWN: This field represents the five most significant aircraft models an aviation officer has flown with the first being the warfare specialty. These aircraft models are represented by AQD (Additional Qualification Designation) codes (refer to Part C of Volume I of this manual) and are maintained by the officer's detailer. For example, AQD code "DA4 74 MED ATK A6" represents an officer who qualified in 1974 to fly the medium attack A6 aircraft. Item 89 will contain AQD's other than aviation which any officer might have.

Items 54 - 61. FORMAL EDUCATION: (Codes and abbreviations used in these Items are interpreted in Part L, Volume I, this manual.) If substantiated by academic transcripts, education is recorded in two major fields of study; if two degrees are achieved in the same field, the higher degree only is recorded. Changes to these items should indicate "1" for corrections to the upper line, and "2" for the lower line. The name(s) of the institution(s) appear in Item 54. The two digits in Item 55 indicate the calendar year of college completion or last attendance. Item 56 indicates the duration in months for Navy-sponsored postgraduate courses; this item is blank for all other education. Item 57 contains codes indicating education sponsor: A - Immediate Graduate Education Program; N - Navy sponsored postgraduate course; E - NESEP; B - BURKE Program; Z - CNO Scholar. All others should be blank. Item 58 indicates the level of education. The major field of study and the academic requirements for selected professions must be known for the level of education to be meaningful. Terms such as "Master" and "Doctor" used in degree titles are not reliable indicators of level; e.g., Juris Doctor is the first professional law degree (BACH/1PRO) and the Master of Law the second (MASTER); Master of Divinity is a first professional degree (BACH/1PRO), the Master of Sacred Theology the second (MASTER). Consult Part L of Volume I of this manual for detailed information on standards and procedures. Levels in automated records are listed and defined on page L-5, Volume I. The major field of study appears in Item 59. If education is Navy sponsored, a specialty may appear in Item 60. A "Y" appears in Item 61 if an officer has degrees and/or a minimum of 18 postgraduate credits in more than two major fields. A "Y" is also used to validate information reflected in Item 58 when levels shown appear to be of a conflicting nature.

Items 62 - 65. LANGUAGE PROFICIENCY: Proficiency in two foreign languages can be indicated in these items. Pending further revision of the ODC form, printed titles of Items 62 and 63 should be disregarded. The 2 character language code, proficiency level, and evaluation method appear as a continuous entry in Items 62 and 63. For interpretation of the language codes and the criteria for proficiency levels, see Part G, Volume I, this manual. The proficiency level codes and the codes which reflect the methods by which proficiency is evaluated are as follows:

Proficiency Level		Evaluation Method	
Code	Definition	Code	Definition
0	No practical proficiency	1	DOD Standardized Test
1	Elementary	2	Self-appraisal
2	Limited Working	3	Interview (DLI - approved oral interview in subject language)
3	Minimum Professional		
4	Full Professional		
5	Native/Bilingual		

The first 2 numerics appearing in Items 62 through 63 represent the proficiency level and evaluation method for Listening Comprehension (C); the second 2 numerics reflect the proficiency level and evaluation method for Reading Comprehension (R); the third 2 numerics reflect the proficiency level and evaluation method for Speaking (S); the last two digits indicate the proficiency level and evaluation method for Writing (W).

Example (1): FR21210000

FR - French
21 - Proficiency Level 2 (Limited Working); Evaluation Method 1 (Tested) in C (Listening Comprehension)
21 - Proficiency Level 2 (Limited Working); Evaluation Method 1 (Tested) in R (Reading Comprehension)
00 - Neither tested nor self-evaluated for S (Speaking)
00 - Neither tested nor self-evaluated for W (Writing)

Example (2): FR00001212

FR - French
00 - Neither tested nor self-evaluated for C (Listening Comprehension)
00 - Neither tested nor self-evaluated for R (Reading Comprehension)
12 - Proficiency Level 1 (Elementary); Evaluation Method 2 (Self-appraisal) in S (Speaking)
12 - Proficiency Level 1 (Elementary); Evaluation Method 2 (Self-appraisal) in W (Writing)

If the Defense Language Proficiency Test (DLPT) has been administered, the test year will appear in Item 64. Personnel who cannot avail themselves of the prescribed tests may rate their proficiency based on foreign residence, family background, and/or courses taken. Subsequent to May 1975 self-evaluated language proficiency is expressed in the language and the proficiency level, 0 through 5, for each functional skill area (C, R, S, W). Self-evaluated language proficiency recorded prior to June 1975 has been converted as follows and will appear for "S" and "W" only:

Old Code - Definition		New Codes - Definitions	
L	Linguist	4/2	Full Professional - Self-appraisal
I	Interpreter	3/2	Minimum Professional - Self-appraisal
T	Translator	2/2	Limited Working - Self-appraisal
X	Some knowledge	1/2	Elementary - Self-appraisal

A "Y" appears in Item 65 (EY) if an officer has proficiency in more than two foreign languages.

Item 66 - 68. SUBSPECIALTY 1, 2, and 3: A five-character code indicating an officer's career field and education or skill area. This code is also applied to billets to denote the specialized experience, training, or education of interest to the Navy required of an officer to perform in a designated billet. Refer to Part E, Volume I, this manual for detailed discussion of these codes. Basically, however, the first two positions indicate the career field, the next two positions indicate the education or skill area and the fifth position indicates the level of education or skill, i.e., proven subspecialist, master's degree, experience, etc. Qualifying criteria and the Subspecialty Codes as applied to officers and billets are contained in Part E, Volume I. The officer's primary subspecialty should appear in Item 66 followed by secondary subspecialties in Items 67 and 68. Inquiries concerning the assignment of Subspecialty Codes should be directed to the CHNAVPERS (Pers-403) in separate official correspondence.

Items 69 and 70. PROVEN SUBSPECIALTY 1 and 2: A five-character abbreviation of the subspecialty community or communities in which an Unrestricted Line Officer has been designated as a Proven Subspecialist. In those cases where an Unrestricted Line Officer has been selected as a Proven Subspecialist in more than two communities, only the two in which he has had primary assignments will be indicated. Definitions of these abbreviations can be found in OPNAVINST 1211.6E. Inquiries concerning PROVEN SUBSPECIALIST status should be directed to CHNAVPERS (Pers-403) by separate official correspondence.

Item 71. SUBKEY: A four-position code used with the old subspecialty coding system to identify proven subspecialists and weapons system acquisition managers (WASM). An officer selected as either a proven subspecialist or a WASM prior to 1 July 1975 will have a subkey code. The first position, either Q or D, denotes the officer's education level: Q - Masters Level or less; D - Doctoral Level. The next three positions will record up to three communities. Each code may appear in any of the last three positions. Ignore any numerics.

Code	Community	Code	Community
A	POLITICAL MILITARY/STRATEGIC PLANNING	M	PERSONNEL MANAGEMENT
D	AERONAUTICAL ENGINEERING	N	FINANCIAL MANAGEMENT
F	SHIPS ENGINEERING	P	PUBLIC AFFAIRS
G	ORDNANCE ENGINEERING	R	INTELLIGENCE
H	COMMUNICATIONS	T	TRAINING/EDUCATION MANAGEMENT
I	HUMAN RESOURCES MANAGEMENT	Y	METEOROLOGY
J	TRANSPORTATION MANAGEMENT	Z	OCEANOGRAPHY
K	OPERATIONS ANALYSIS	W	WEAPONS SYSTEMS ACQUISITION MANAGEMENT (NOT A PROVEN CODE)
L	COMPUTER SYSTEMS MANAGEMENT		

This coding system will be replaced by the subspecialty system described in Part E, Volume I for all officers. At such time as this new system is fully implemented this code will be removed.

Item 72. UTILIZATION/REASON CODE (INTER): The officer subspecialty utilization code is used in tracking a subspecialist's assignments upon his entry into a subspecialty community. This code is entered by the assignment officer whenever he orders a subspecialist. Codes are assigned based upon the quality of the code match between the subspecialist and the billet to which slated. Specific codes are as follows:

Code	Definition
0	Code match of functional and educational/skill fields.
1	Code match of functional field but not education/skill field.
2	Code match of education/skill field but not functional field.
3	No match in either field. (Non-utilization)
4	Key operational tour
5	Direct assignment
6	Educational assignment (Service College, P.G. training, etc.)
7	Belated assignment. Subspecialty qualification is prime reason for assigning this officer to this billet, although billet is not coded.

Up to five utilization codes will be displayed in this field. The left most should identify an officer's current utilization.

D-Item 73. PRIMARY DUTY: A 14-position title generated by the Billet Sequence Code (BSC) as shown on the NAVPERS 1000/2 (Manpower Authorization). Assignment of BSC 99990 results in "NOT DEFINED" being reflected in Item 73.

D-Item 74. COLLATERAL DUTY: Maximum 14-character abbreviation to reflect a collateral duty reported on the Officer Personnel Diary. NOBC's are not recorded in officer records for collateral duties.

D-Item 75. REPORTED: Month, day, and last two digits of year that officer reported to present activity. Example: 110460 (November 4, 1960)

D-Item 76. PRESENT DUTY STATION: Maximum 16-character title of the activity to which the officer is presently assigned. The one-character code appearing after activity title indicates type of assignment.

Code	Definition
C	Sea Duty
S	Shore Duty
A	Alaska (Shore Duty)
H	Hawaii (Shore Duty)
O	Outside U.S. (Shore Duty)
D	Deployed Ship or Squadron homeported outside U.S.
G	Other non-military U.S. Government Agency in a reimbursable status

Item 77. HOMEPORT: Maximum six-character abbreviation of the homeport or geographical location of present duty station.

D-Item 78. ACC(Accounting Category Code): Three-digit codes indicating the accounting category in which officers are carried in active duty accounts. Initial codes "1" and "3" with 2nd and 3rd digits blank are interpreted as:1 - In Transit to Duty; 3 - In Transit to TEMDU or DUINS.

Code	Definition
100	Duty
300	Pending Detachment
320	For Further Assignment
323	Missing/Interned
330	For Further Transfer
340	Duty Under Instruction
350	Temporary Duty
360	Temporary Duty Under Instruction
370	Temporary Duty Under Treatment
380	Separation/Release/Discharge
390	Temporary Duty in Disciplinary Status

Item 79. STA (Ship/Station Code): Three-character numerical-alpha code (defined in Part H of Volume I of this manual) which identifies the type of ship or station to which officer is currently assigned.

D-Item 80. (A) PRESENT BILLET: The title of present billet to which an officer is assigned is the official title of the Navy Officer Billet Classification (NOBC) shown in the first NOBC column of the activity's Officer Distribution Control Report (ODCR) (NAVPERS 1301/5). The NOBC transfers via the Billet Sequence Code (BSC) to the automated record and the NOBC title is reflected in Item 80; the NOBC code is reflected in Item 81.

D-Item 81. NOBC (Navy Officer Billet Classification): Reflected NOBC is transferred via BSC to automated records.

D-Item 82. DATE: Month and year assigned to present billet.

Item 83. (B) BILLET: Previous billet held in present command as identified by NOBC shown in Item 84.

Item 84. NOBC: NOBC for previous billet (B).

Item 85. MOS (Months): Number of months the previous billet (B) was held.

Item 86. (C) BILLET: Previous billet held in present command as identified by NOBC shown in Item 87.

Item 87. NOBC: NOBC for previous billet (C).

Item 88. MOS (Months): Number of months the previous billet (C) was held.

Item 89. ADDIT/SPEC QUAL (Additional and Special Qualifications): The codes and abbreviated titles appearing in this item identify additional qualification designations (AQD's) which must be certified by competent authority. Refer to Item 53 for information concerning aviation AQD's. Part C of Volume I of this manual contains AQD codes, complete titles, and, for all-numeric AQD's, abbreviated ADP titles. The last two digits of the year an AQD was earned also appears. The year earned is not shown for AQD's which were converted automatically from the old SQ/SD system. The constant "99" is shown in such cases. An asterisk (*) is used to identify an officer's primary AQD or Warfare Specialty.

Item 90. CHRONOLOGICAL HISTORY: A maximum of seven activities in which an officer has served. Temporary duty, temporary additional duty, and duty under instruction are not included. Periods of Inactive Duty, Inactive Retired time, and time in a Prisoner of War Status are included here. Duty stations are added when an officer reported to a new activity for duty. Assignment to an activity for less than five months is generally not included.

To change or correct any past duty station, complete information must be provided; i.e., FROM and TO dates, the past duty station concerned, homeport of geographical location, and number of months deployed, if applicable. To request deletion of an activity line, only the FROM date should be indicated followed by the word "delete".

FROM: Date officer reported to the activity (two-digit month and two-digit year)

TO: Date officer departed the activity (two-digit month and two-digit year)

PAST DUTY STATION: Maximum 16-character title of the activity to which the officer was assigned. A one-character code appears after the 16-character title to indicate type of assignment. See Item 76 for codes and definitions.

Item 91. HOMEPORT (Homeport of Geographical Location): Maximum six-character abbreviation of the homeport or geographical location of the corresponding past duty station.

DPL (Deployment Months): The cumulative number of months, while the officer was assigned, that a unit or detachment was ordered by name or number away from its operational mission. Only periods in excess of 30 days are included; excluded are type training, shipyard overhauls, shakedown and refresher training, etc.)

STA (Ship/Station Code): Three-digit code (defined in Part H of Volume I of this manual) identifying the type of ship or station indicated in Item 90.

NAVY OFFICER BILLET CLASSIFICATION AND NUMBER OF MONTHS EXPERIENCE: Qualification attained as a result of assigned duties identified by Navy Officer Billet Classification (NOBC) codes. Codes, titles, and definitions are published in Part A of Volume I of this manual.

(a) A maximum of seven NOBC titles (qualifications) can be shown - no more than three for any one duty station.

(b) To the right of the abbreviated descriptive title of the qualifications are the appropriate NOBC codes. NOBC's are recorded for an assigned billet only and not on the basis of qualifications gained as indicated in the "In training for" area of the Officer Distribution Control Report (ODCR).

(c) To the right of the NOBC codes are two digits indicating the number of months in which the officer served in a billet acquiring and utilizing the qualifications.

(d) Navy Officer Billet Classifications are usually deleted if time in billet is less than 5 months.

(e) Any corrections or additions must include the key letter (D - U), followed by billet title, a brief description of the duties involved, or the NOBC title or code from Part A of Volume I of this manual.

(f) NOBC title, code, and number of months reflected at keys "D" through "F" identify billets held at the first past duty station shown in Item 91. NOBC titles, codes, and number of months reflected at keys "G" through "I" identify billets held at the second past duty station shown in Item 91, etc.

Item 92. SECURITY (Security Investigation Code/Date): One-character code which indicates the type of security investigation conducted on an officer. The date following the code is the date (MO/DAY/YR) on which the investigation was completed.

Code	Definition
D	Entrance National Agency Check Completed
G	National Agency Check Completed
E	Background Investigation Completed

Item 93. ASSIGN REST DATE ON (Assignment Restriction - Date on): Reflects the year and month an officer commenced serving in a billet which restricts his assignment either currently or in the future.

Item 94. PG INFO-CHOICE 1-2-3/DATE/STATUS:

a. CHOICE 1-2-3 - This block can contain up to 3 separate, 3-position, numeric codes in order of preference which signifies the education curricula an officer has submitted to the Chief of Naval Personnel to indicate his preference for Navy sponsored graduate or undergraduate education. Codes and definitions are contained in OPNAV NOTICE 1520 (published annually).

b. DATE - Month and year that the officer's preference card was submitted to the Chief of Naval Personnel.

c. STATUS - Indicates which FY postgraduate selection board selected an officer, the course, and whether he was selected as a primary or alternate candidate.

Item 95. RC (Race): One-digit code used to identify the race of an officer.

Code	Definition
C	Caucasian
N	Negroid
X	Indian, Malayan, Mongolian
Z	Unknown

Item 96. ET (Ethnic Group): A one-character code which describes segments of the population that possess common characteristics and a cultural heritage significantly different from that of the general population.

Code	Ethnic Group	Explanation
1	Spanish Descent	Includes all personnel of spanish extraction, except when delineated separately.
2	American Indian	Includes all personnel of American Indian extraction except when delineated separately.
3	Asian-American	Includes all personnel of Asian/Pacific derivation except when delineated separately.
4	Puerto-Rican	
5	Filipino	
6	Mexican-American	Includes "Chicano"
7	Eskimo	Does not include Aleut.
8	Aleut	
9	Cuban-American	
G	Chinese	
J	Japanese	
K	Korean	
X	Other	A member of a ethnic group not included.
Y	None	None of the above.
Z	Unknown	

Item 97. OCC (Occupation Code). One-character alpha code used to identify the warfare specialty of all 11XX officers and 11XX associated LDO/WO. Codes should appear for all newly commissioned 110X officers and associated LDO/WO and for officers whose status changes (e.g., Submarine School completion, submarine or surface qualified, UDT/SEAL school completion, attrited flight officers who change their designator to 11XX).

Code	Definition
A	Submarine (Diesel) Trainee. An officer in formal diesel submarine training not yet assigned to a submarine.
B	Surface Officer (previous submariner). An 11XX officer who has qualified as a submariner but is no longer in the submarine program.
C	Surface Associated LDO/WO. An LDO/WO officer associated with the (Non-Nuclear) surface community.
D	Submarine (Diesel) Officer. An 112X officer who has been designated a submarine (diesel) officer in accordance with the BUPERS Manual.
E	Submarine Nuclear Power Trainee. An officer in formal nuclear submarine training not yet assigned to a submarine.
F	Surface Nuclear Power Trainee. An officer in nuclear power training who is intended for the surface nuclear program.
G	Submarine (Diesel) Officer (not fully qualified). An 110X officer who has completed formal diesel submarine training, is in the submarine program, but has not yet qualified in submarines.
H	SEAL/UDT Officer. An 11XX/6XXX/7XXX officer associated with SEAL/UDT community.
J	Prospective Flight Student - Surface Indoctrination. A recently commissioned 1100 officer (USNA/NROTC) serving aboard ship for 6-18 months prior to entering the flight training program.
K	Submarine Associated LDO/WO. An LDO/WO officer associated with the submarine community.
L	Explosive Ordnance Disposal. An 110X officer serving in an EOD billet.
M	Naval Reactor Staff Officer. An 11XX officer serving on the Naval Reactor Staff who is not qualified for surface or submarine nuclear billets.
N	Surface Nuclear Officer. An 11XX officer who has been designated a surface warfare officer in accordance with BUPERS Manual and who is nuclear qualified.
Q	Surface Warfare Officer. An 11XX officer who has been designated a surface warfare officer in accordance with the BUPERS Manual.
R	Submarine (Nuclear) Officer (not fully qualified). An 110X officer who has completed formal nuclear power submarine training, is in the submarine program, but has not qualified in submarines.
S	Submarine (Nuclear) Officer. An 112X officer who has been designated a submarine (nuclear) officer in accordance with the BUPERS Manual.
T	TARS-SURFACE. An officer identified as a Reserve Officer assigned to training and administration of Reserves. TARS-DESIGNATOR 11X7.
V	Surface Warfare Trainee. An 110X officer associated with surface community not yet designated a surface warfare officer in accordance with the BUPERS Manual.

Code	Definition
W	Woman Officer.
Y	Surface Nuclear LDO/WO. An LDO/WO officer, nuclear trained, associated with the surface nuclear power program.

Item 98. UIC (Unit Identification Code): A five-position alpha-numeric code which is the primary Manpower and Personnel Management Information System (MAPMIS) activity identifier. UIC is issued and maintained by the Comptroller of the Navy. UIC is unique to the activity to which assigned.

D-Item 99. BSC (Billet Sequence Code): Five-digit code used to arrange billets sequentially within an activity and to transfer the NOBC shown in the first NOBC column of the activity's Officer Distribution Control Report (ODCR) (NAVPERS 1301/5) to the officer's automated record. See Item 80 above.

Item 100. ELC/D (Estimated Loss Code/DATE): Same as Item 15.

Item 101. BLC (BUPERS Loss Code): A three-digit code which indicates the type of loss from active officer strength. Item should be blank for officers receiving ODC's for verification. Contact CHNAVPERS (Pers-4) for additional information.

Item 102. GLI (Gain/Loss Indicator): A one-character code which indicates the status of an officer for strength accounting purposes. Item should be blank for officers receiving ODC's for verification. Contact CHNAVPERS (Pers-4) for additional information.

Item 103. CMDS (Command Screen Results): A five-position alpha-numeric code assigned to officers who have been considered by a Command Screening Board. The code describes the fiscal year considered, the type of command for which selected (or negated), and the standing (e.g. primary, alternate, etc.). First position of code indicates the final digit of the fiscal year in which most recent action was taken. Second position indicates Selection Category:

Code	Category
A	Command Principal
B	Command Alternate (CDR Aviation CMD Screen Board only)
C	No Principal
D	No Alternate
E	POW or MIA (CDR Aviation CMD Screen Board Only)
W	Personal Descreen (Officer Request)
X	Administrative Descreen
Y	Medical Descreen
Z	Performance Descreen

Third position indicates Board Sponsor. Alpha-numeric: 0 - 9 Aviation CDR (and type A/C squadron); A - Z other.

Code	Board Sponsor	Code	Board Sponsor
1	Attack	A	Surface LT
2	Fighter	C	Surface LCDR
3	ASW	E	Submarine LCDR
4	EW	G	Surface LCDR
5	ELINT/RECCE	I	Submarine CDR
6	Other Helo	K	SUR/SUBMARINE CAPT
7	UPTTRNG	M	Aviation CAPT
8	SPEC MIS		
9	SHORE		
0	Other		

Fourth position indicates type for which screened. Some codes are not currently in use.

Code	Type
1	A3, F4, P3, E1, RA5, HC, JET, NAVFAC
2	A6, F8, HS, E2, EA3, HM, PROP, RECRUITING
3	A7, F14, S2, EAG, HELO, NAS/NAF
4	S3, PSL ANY
5 (RTS)	A3, F4, P3, E2, RA5, HC, JET INST
6 (RTS)	A6, F8, HS, EA3, HM
7 (RTS)	A7, F14, S2, EA6
8 (RTS)	S3, HSL
9 (CVW)	
0 (CVW)	

Code	Type
A (SEA)	SHIP, DIESEL SUB, DEEP DRAFT
B (SEA)	SCS
C (SEA)	SUBRON, FAW
D (SEA)	LPH/LHA, LHA, NUCLEAR SUB
E (SEA)	PHIBRON
F (SEA)	CVN/CVAN, CRUDES
G (SEA)	CV/CVA/CVS/CVT, AS
H (SEA)	SERVRON
I (SEA)	AMPHIBIOUS FORCE SHIP
J (SEA)	SERVICE FORCE SHIP
K (SEA)	PHIBRON/SERVRON
N (SHORE)	MAJOR SHORE
O (SHORE)	MISC SHORE
P (SHORE)	MAJOR PROJ MGMT
Q (SHORE)	RECRUITER

Fifth position indicates second type for which screened, if any.

Code	Type
B	Early Ship (Used with 13XX CDR selected for early deep draft command only)
E	Surface Ship XO Qual Tour (Currently used for officers selected both for diesel submarine command and offered surface XO tours in which to qualify for surface command.)
N	Major Shore
O	Misc. Shore
P	Major Project Management
Q	Recruiter
Z	No second selection. Second commands for aviation CDR's covered by 3rd and 4th positions of code.

Item 104. DTRMK (Detailer's Remarks): A four-character code used by assignment officers to record any additional information deemed necessary for use in officer distribution. Contact appropriate detailer for definition and/or explanation of codes.

Item 105. COMBAT: First block contains a three-position code indicating the month and last position of year (124 equals December 1974) an officer last served in combat. Second block is always blank. Third block indicates the total number of months served in a designated combat area since 1 July 1971.

Item 106. DATE OF ODC: The month, day, and year the ODC was produced.

Item 107. COG/AOC (Officer Cognizance Code/Assignment Officer Code): A two-digit code indicating the placement desk in BUPERS that has cognizance of the activity to which the officer is assigned. This item is assigned in BUPERS and cannot be changed by individual officers. Contact appropriate detailer for further information.

Item 108. RC: A two-character code used in BUPERS to facilitate correct distribution of ODC's.

Item 109. BUPERS: Identifies the individual in BUPERS that requested or authorized production of the ODC.

Item 110. REPORT NUMBER: Identifies BUPERS automated report from which ODC was produced.

APPENDIX C

GLOSSARY OF TERMS AND ACRONYMS

ADP	Automated data processing
AMC	Activity mission code
AMIS	Automated management information system
Assignment	The function that concerns itself with matching an officer to a billet for which he is qualified, which will be career enhancing and which matches his desires
Billet	A Naval position or job which can be identified by a unique number assigned for accounting purposes
BUPERS	Bureau of Naval Personnel
CADA	Computer assisted distribution and assignment
CMIS	Chief of Naval Personnel management information system
CNP	Chief of Naval Personnel
CONUS	Continental United States
Cross-detailing	The practice of assigning an officer with a different designator to a billet which calls for a given designator
Designator	Four-digit job specialty code for officers
Distribution	The function that concerns itself with ensuring that billets are filled with qualified officers
Down-detailing	The practice of assigning an officer to a billet written for a more junior officer
DP	Data processing
Future MAPMIS	Future manpower and personnel information system
IFMS	Integrated financial management system
LP	Linear programming
MFS	Military pay, Navy financial subsystem
MIC	Management information center
MIS	Management information system
MPN	Military pay, Navy
NPC	Naval Personnel Center
NRPC	Naval Reserve Personnel Center
OCR	Optical character recognition

ODC	Officer data card
OMSM	Officer Management Simulation Model
OP-01	Organizational code for the Deputy Chief of Naval Operations (Manpower), a second "hat" for the Chief of Naval Personnel in the Office of the Chief of Naval Operations
PAM	Priority allocation method
Pers-N	Former organizational designation for Pers 3
Pers-3	Organizational code for the Assistant Chief of Naval Personnel for Management Information
PPB	Planning, programming and budgeting
PRD	Projected rotation date
RAD	Release from active duty
RL	Restricted line
SSN	Social security number
TPP	Transients, patients and prisoners
UGLAS	Uniform general ledger accounting system
Up-detailing	The practice of assigning an officer to a billet written for a more senior officer
URL	Unrestricted line
1000 billets	Billets that may be filled by any officer of appropriate rank whose designator begins with 1, i.e., an officer of the restricted or unrestricted line (also called 1XXX billets)

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